

W O M A N

AN HISTORICAL GYNÆCOLOGICAL
AND ANTHROPOLOGICAL COMPENDIUM

BY HERMANN HEINRICH PLOSS
MAX BARTELS AND PAUL BARTELS

EDITED BY ERIC JOHN DINGWALL

WITH MORE THAN 1,000 ILLUSTRATIONS IN
BLACK-AND-WHITE AND SEVEN COLOUR PLATES

VOLUME TWO



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WOMAN

VOLUME II

C. WOMAN IN THE SEX RELATIONSHIP

CHAPTER I

INITIATION INTO SEXUAL EXPERIENCE

1. WOMAN'S RELATIONSHIPS WITH THE MALE SEX

THE consideration of the circumstances which we find in the moral conduct of races must be kept free from the tendency to regard all phenomena from our own cultural position and to measure them by a standard to which we have become accustomed by centuries of Christianity with its ascetic ideals. Naturally, it goes without saying that non-Christian peoples and civilisations cannot be judged from this purely one-sided standpoint, particularly in the field under consideration. From such a standpoint our judgment would fall into error and our subjective pleasure or displeasure with the customs observed among primitive races would only too easily distort our vision. Hence, in the field which we have now to explore, we prefer to treat these matters in as objective a manner as possible.

We have to try to decide whether certain concepts with which, in our cultural position, we endow woman in an ethical respect, and which Christendom does not hesitate to make almost axiomatic, are already ingrained in the original feeling and thought of mankind. Are the concepts of *modesty*, *chastity* and *respect for virginity* innate in the psyche of mankind? How do they manifest themselves among primitive peoples? How have such concepts developed with "civilisation," or how have they become obliterated? All these are questions in cultural history with which we must deal in the following pages.

We shall try, moreover, to investigate the sexual relation of woman to man, and inquire into such facts as we are able to find among primitive races in this connection. We shall meet many social and sexual aberrations according to our ideas and even marriage will appear to us in many unaccustomed forms. Love and the artificial arousing of love, different forms of betrothal, the wedding altar, procreation, impregnation and conception—all these we must study closely. Just as for the gynæcologist the idea of immorality within the sphere of his activities hardly exists, so little must it be recognised by recorders of the history of civilisation and by ethnologists. It was, indeed, a miserable age when sex questions were treated by silence, dots or Latin tags.

2. FEMALE "MODESTY"

In his account of the early history of marriage, Freiherr von Reitzenstein²⁴ wrote:

"When chastity and modesty emerge these concepts are treated without hesita-

tion as if they were innate. Originally, man was as unconscious of the claims of ' chastity ' as of ' modesty ' in regard to nudity and sex matters. Neither concept is primary but is a consequence of economic and religious teaching. When travellers report that in Tahiti, among Australian aborigines, in Samoa, among the Malay elements of the Philippines, etc., the sex act is performed publicly ; when we are told that the women in the Andamans, in Kamchatka, and so on, give birth to children in public, that is certainly want of modesty in *our* sense ; but it is not ' degeneration.' These peoples are still at the healthy, natural stage where sexual intercourse, procreation and childbirth for the further development of mankind are just as necessary as eating and drinking."

Modesty and chastity are often consequences of the phenomena of repression, and are attached, in accordance with the underlying superstition, to quite different parts : to the feet, the breast, the face, the buttocks, the genitals, eating, drinking, sexual intercourse, etc., so that, frequently, parts of the body and actions which are " shameful " to some races are not to others. It goes without saying that the sex parts are most often " shameful " because, being connected with the origin of mankind, superstitions most commonly cling to them. Thus there can be no question of an *inherent* sense of shame : this is a result of education by which sexual repressions are caused which, in their turn, bring about neurotic conditions, one of which is called, for example, as a general conception, " sense " of shame (*cf.* blushing), which is quite incorrect, for, at best, we are dealing with a shame " sensation," but not " sense."

Among the very lowest of the primitive races we certainly find unequivocal signs of fear which our missionaries, in duty bound, call " modesty " quite erroneously. Hence, above everything, we must avoid the mistake of identifying lack of clothing with lack of modesty. The total, or almost total, nudity of many tribes in the world is compatible with, and, in fact, even allied to, a high degree of decency ; while, on the other hand, clothing is no guarantee of modesty, as Max Bartels has very rightly conceded.

Heinrich Schurtz has made the following statement, the correctness of which can partly be conceded :

" Modesty is not something of accidental and incidental origin ; rather it is a necessary consequence of the social development of mankind, and clothing is nothing else but an outward expression of a psychical occurrence : it runs parallel with the rise of a sexual monopoly ; in other words, of marriage."

Karl von den Steinen, for example, found that the same people whose loin cloths were such that they drew one's attention directly to the imperfectly concealed parts, hung their heads in great shame because he was so immodest as to eat in their presence some food which they had just given him as a gift. Hence, it is better to avoid the expression " modesty," for, in our Christian world, a sexual modesty is always understood thereby.

Therefore we must designate as quite wrong any statement that the first sign of female modesty is the concealment of the genital organs. The sense of fear obviously comes long before it, and even when we find the beginnings of a genital covering, it is not certain whether this is concealment in an æsthetic or even a " moral " sense, or perhaps due to some quite different influence.

Certainly we find that among sparsely clothed peoples the children of both sexes go about quite naked until the beginning of puberty. Only when menstruation begins are the genitals covered, not on " moral " or æsthetic grounds, but from those of superstition. However, among a few isolated tribes, even the young

women remain quite naked, as, for example, among a few South American Indian tribes, and the loin cloth is not put on until after a successful marriage. Here Waitz, like Schurtz, considered that men's jealousy was the cause of the beginning of clothing. K. von den Steinen,² however, disagrees here also : he sees in the loin cloth a contrivance to prevent the gaping of the vulva and to protect the membranes from harm. He says :

"It must further be conceded that, assuming the purpose to be protection of the mucous membrane, a need for it is at least strengthened by the sexual life because, in the young wife the membranes are more accessible in a condition of pregnancy and would be eased by confinement."

3. FEMALE MODESTY AMONG SAVAGES

In this connection it is again very instructive to read what Karl von den Steinen² reports about Indian tribes which he visited in Brazil, and which at the time of his arrival were, as is well known, still living in the stone age.

"Our aborigines have no *secret* parts of the body. They joke about them in talk and in pictures with entire lack of self-consciousness so that it would be foolish to call them *indecent* because of it. They admire our clothes as ornaments, they put them on and wear them in our presence and show such complete misunderstanding of all our conventions that their paradisaic innocence is proved most strikingly. Some of them celebrate the initiation of both sexes into puberty with noisy tribal festivals, at which general and wanton attention is paid the private parts. A man who wants to show strangers that he is a father, a woman that she is a mother of a child, acknowledge each other gravely as worthy parents and, with the most unstudied and natural frankness in the world, take hold of the organs from which life springs.

"The Suya women, who adorned themselves with chain necklaces and wore palm leaf rings in their ears, went about quite naked. The Trumai women wore a cloth of soft, greyish white bast which was pressed into a rope, so that concealment was of the slightest and certainly could not have been intended, since they need only have taken wider strips for that purpose. The Bororo women likewise had the soft grey binding of bast which, during menstruation, was replaced by black. The women of the Carib, Arawak and Tupi tribes of the Xingu basin all wear the triangular piece of stiff bark bast [the *Uluri*, which is described in detail by the author (*vide* Figs. 430 and 431)]. These arrangements cover the *rima pudendi* and fit closely over it. The vaginal introitus is not covered by the triangular wrap, but is closed or rather pushed back by the pressure of the garment from front to back."

The same author then comes to the following conclusions :

"Confinement not concealment is common to the various methods of women. Confining the mucous membrane is the common effect of all arrangements of both sexes. The *Uluri* attains this by a covering of such small compass that concealment appears to be avoided as far as possible rather than desired. As a concession to modesty, these bits of clothing cannot be taken seriously. The red threads of the Trumai, the neat *Uluri*, the gay flag of the Bororo invite attention as adornments rather than ward it off. Among the women, if protection of the membrane were sought, this aim was attained and certainly better attained than any aim of concealment. The absolutely naked Suya women washed their private parts in the river in our presence."

Thus no "modesty" with regard to the genitals is apparent here, yet von den Steinen has stated above that the feeling of shame is, nevertheless, not unknown to savages ; but it is more often neurotic, as in Christian civilisation. Photographs like Figs. 470 and 471, which are likely to be interpreted as a movement of "modesty" in our sense, show nothing but fear of the "evil eye." All the instances which Bartels, in the earlier edition of this work, adduces for so-called

“innate modesty” are probably misinterpreted and can consequently be omitted, as we shall deal with them in their appropriate places. With “modesty” in our sense of the term they have nothing in common, and can only cause confusion; and we can now detach ourselves fully and completely from the opinion of our old master of ethnology, K. von den Steinen.

In Polynesia, when a ship goes along the coast the women habitually slip off their clothes, which consist of an upper part like a poncho and a loin cloth wound round the waist. They swim round the ship and climb on board quite unembarrassed

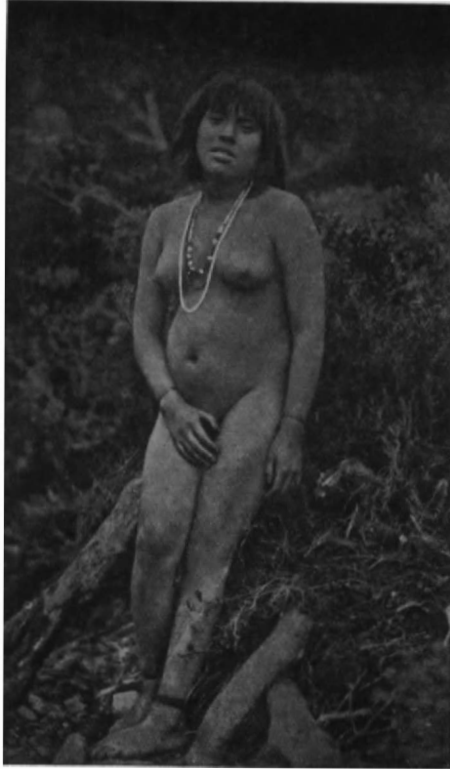


FIG. 470.—Fuegian woman. (Photo: Hyades and Deniker.)

by their state of nakedness. This used to happen when the earliest European travellers landed there, and the custom is said still to exist at the present day. The women of Hawaii, according to Beechey, used to betake themselves to ships in a similar way, holding their silken robes, their shoes and sunshades above their heads out of reach of the waves. This, to our ideas, “shameless conduct” is the original human behaviour, the result of a natural apprehension of moral freedom and purity which these women, as yet unspoilt, showed to the degenerate race of European sailors; but very soon such innocence in contact with impurity was to give place to the most disgraceful prostitution. Originally, “modesty” did not prescribe the concealment of the genitals: in Tahiti, according to Cook’s observation, the women covered their lower parts from “courtesy.” When missionaries on several of the South Sea Islands caused the women to wear an unhealthy and ugly garment, they obtained an entirely new idea of “propriety,” but, at the same time lost the natural sense of “courtesy.”

Good observers who are unbiassed can also come to correct conclusions. Thus the Chin-hwan (Sheng-fan) women of Formosa show no signs of inherent “modesty.” Joest ⁶ reports:

“Modesty is not the reason for their thick clothing: women and maidens, especially when crouching, show their private parts without shyness, and often expressed a wish to see or touch mine merely from curiosity.”

In the town of Lari, too, near Lake Chad, all the women were all but naked, according to Denham.

A head-wife of one of the chiefs of the Apingi tribe in West Africa received as a present from Du Chaillu a pretty coloured shirt, and she undressed at once before his eyes to put it on.

Juan Maria Schuver found at the Court of the Galla chief Tulu in Gobo, in the Territory of the Upper Nile, a very primitive court dress: he noticed that half a

dozen yellow, as well as black, girls went about in a completely naked state, without clothing or any kind of ornament, although many of them were shortly to be married. In the neighbouring tribe, the Koma, however, he found, "on the contrary," that the girls had a very highly developed "sense of shame." On this, Bartels rightly remarks—"here Schuver falls into the usual error of confounding nudity with shamelessness."

Among the Fang women of the Coast of Guinea the clothing is confined to a monkey skin worn at the back and a narrow piece of stuff or a tuft of grass in front ;



FIG. 471.—Fugian women in sitting posture with concealment of genitals. (Photo : Hyades and Deniker.)

in spite of this tenuous concealment, the Fang women are far more "modest" (or rather superstitious) than the women of other tribes.

Zöllner says of the negresses of the West Coast :

"What we call modesty is certainly present here also, but not by a long way so highly developed as among civilised races. In the presence of white men, as well as black, the girls, without the least hesitation, unfastened their slips, these finger-breadth bands, and rubbed themselves over with a black soap manufactured locally and then washed off the soap in the lagoon."

Among many other negro tribes the covering of the genitals is extremely little, or nothing at all. Emin Pasha observed in his journey from the White Nile through Njambara to Kedibe, that in the Amadi district the leaf aprons are often a mere formality ranging according to taste from a thick bunch of leafy twigs, which really can conceal the private parts, to single green tendrils which reach from the girdle in front to the girdle at the back. Emin Pasha says :

"The less populous though, in this instance, very sturdy race is very sparing in clothing, and many of the beauties who are shiny with grease and laden with iron ornaments have no

other covering but their colour. In Moruland, the women are mostly nude, only a few hang a piece of foliage behind. The strange thing is that if one meets a procession of these "décolletées" beauties carrying water, they at once put up their free hands to cover their faces. Everything one sees in Africa goes to prove that modesty is a product of education."

The following observation of Bartels is, therefore, strange :

"Although the Berabra women go about with little clothing, and the young women on their marriage wear only a so-called *rahat* (a fringe of thin leather strips of varying length round the lower part of the body) and move about freely in the presence of strangers, they have great reserve and 'purity of morals.' The women of certain negro tribes cover their buttocks : if one takes off their apron they immediately throw themselves down on their backs to hide the part uncovered ; ' thus, they possess a perverse sense of decency.' " Bartels thus proves merely that, in different tribes, the object of the fear neurosis is different ! That has no connection whatever with purity of morals. And the only just answer was that given by a Japanese to Mitford (" Tales of Old Japan," 1871) when the latter said that Europeans consider it indecent for both sexes to bathe together. The Japanese, shrugging his shoulders, said : " Ah, but these Westerns have such prurient minds."

4. MODESTY AMONG THE MORE HIGHLY CIVILISED RACES

Among more highly civilised races we find very different gradations of womanly "modesty." In Japan customs are to be found which differ essentially from our present ideas of "modesty." First of all, both sexes mingle, completely undressed, in the public baths. We must not forget, however, that until the seventeenth century similar conditions, to which we shall refer later, prevailed in Europe.

Bartels, somewhat incorrectly, cites here the Mohammedan veiling of women ; to which we shall also revert later. Besides, among the women of Islam the fear neurosis is attached to the face, for they would not so much mind the exposure of the genitals. Thus the facts are twisted in accordance with our standard of culture. However, as veiling the face in Islam has led to ideas similar to our covering the genitals, it may remain in this connection. We shall come back to it in dealing with marriage, for, in itself, it is nothing else but the "monopolised" woman's covering of the genitals. In contrast, Bodenstedt, who, from his house in Tiflis, overlooked the women's apartment of an Armenian merchant's house, says :

"There sat (on all festive occasions) in a gay circle, 30 to 40 Armenian women on a big carpet which covered the whole room. They were all dressed in costly materials, a billowing veil on the neck and the bodice cut so low in a double crescent shape that the breasts were almost entirely exposed to view. I may remark here that in the Levant women are much less mysterious about their breasts than with us. There, the most intense modesty is satisfied with covering the face. The other parts of the body are deemed worthy of much less consideration. Decency and propriety (fundamentally inherent in all races but shown in different ways) are one thing. A Scottish woman faints at the sight of a man with a beard, but finds it quite in accordance with her ideas of decency that men should go about without trousers, a circumstance that would bring a blush of shame to the cheeks of women of other lands. A European woman finding herself spied upon by men while she is bathing, will cover everything else before her face. The Asiatic will not. These few examples may suffice to demonstrate how difficult it is to draw the line in what we call morality and decency, between serious and comic, wisdom and folly. Man, limited as he is, is always inclined to ridicule what is beyond his own narrow confines ; the wider the view, the gentler the judgment."

Here, as we see, there is no question of covering the face. The bosom must be covered, and that is just what so many Mohammedan women expose freely. Older women, however, are expressly exempt from the above rule :

“ For such women as can no longer bear children or marry, it is no sin if they take off their garments without, however, showing their ornament : nevertheless, it is much better for them to be moderate even in this for God hears and sees all.”

The only passage which can be regarded as a command to veil in the street is to be found in Sura 33 ; here it says :

“ Command, Oh Prophet, thy wives and daughters and the wives of the Faithful that



FIG. 472.—Japanese public bath. (Anthrop. Gesell., Berlin.)

they shall let their veils fall low ; so it is seemly that they may be known as honourable women and not be affronted.”

This rule appears to be followed by, among others, the women of Beyrut, who cover themselves so completely with a mantle-like wrap that hardly anything of them can be seen.

If the above quotation from the Koran is considered closely, it must be conceded that even here there is no command that women shall be veiled ; and that the passage in the Koran was overstepped was doubtless very convenient for male jealousy—especially in the East.

Among the Armenians of the village Kurd-i-Bala, near Ispahan, according to Bent, the lower part of the face had to be always veiled, and the woman's mouth and her tongue also must not be seen by her husband.

It seems strange indeed to us when we learn from Rittich* that the Chuvash women (Volga-Turks) consider it immoral to show their bare feet, and that they keep them covered even in bed. Analogous to this, Vámbéry relates that the Turkish women of Central Asia do something similar, and decry the Turkoman women as corrupt because they go about barefoot even in the presence of strangers.

Among the Japanese a daily hot bath is customary. According to E. and L. Selenka, Baelz and Heine, the sexes bathe together and are quite unembarrassed. The last named gives the following description from Shimoda :

“In the public baths they are rather sparing with the hot water. Each bather gets only a small jarful, and, crouched down on the tiled floor, he washes and then pours over himself

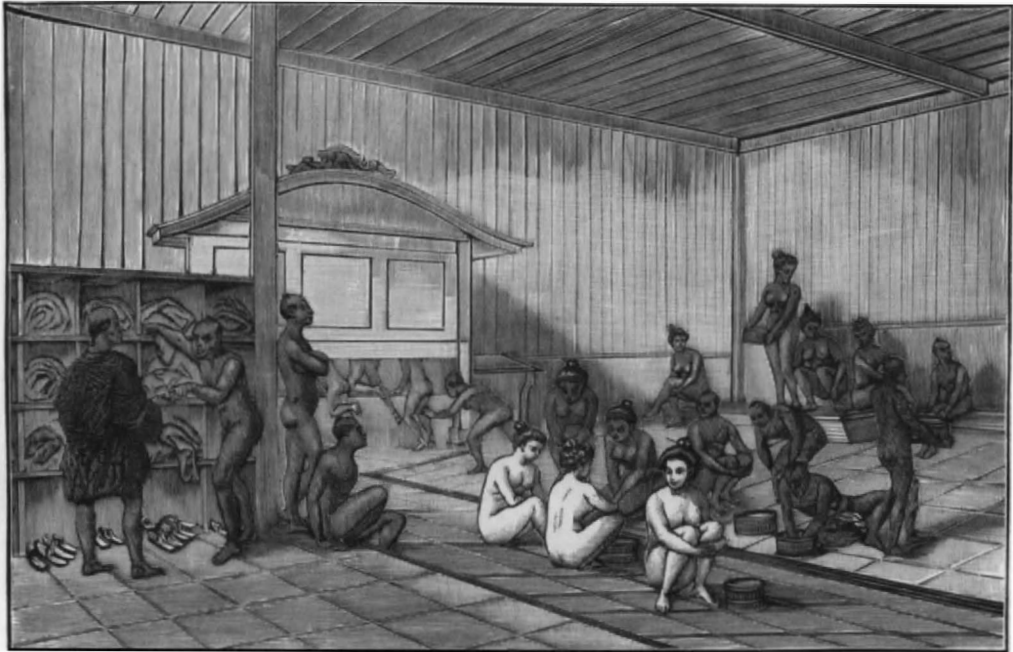


FIG. 473.—Japanese public bath. (After Heine.)

what is left ; the water runs outside by means of a channel in the middle of the floor. Finally, everybody has a last scalding in an enormous tub filled with hot water which is for the common use. Many bathers use the same water after one another just as the same bathroom serves for all, so that men, women and children of all ages are to be seen scrambling about in the most wonderful mixture. Even the presence of strangers does not disturb their peace of mind.”

Such a Japanese bath is depicted in Figs. 472 and 473. A much-travelled lady who was at first much shocked by the, in her view, “shameless” nakedness, declared to Baelz² a few years later : “I am afraid I have wronged these people. I know now that it is possible to be naked and still behave like a lady.” This unconcern in the presence of nakedness is all the more striking in the Japanese women as their dress is expressly designed to conceal their form from profane male eyes. The *obi*, the wide girdle which is wound round the middle of the body, is tied together in an

* [I am not aware to what publication the text refers.]

enormous bunch above the buttocks, so that the back view of the woman is deprived of any human shape. This bunch, tied in front so that the shape at the back is clearly defined is a privilege and mark of *prostitutes*. Fig. 474 shows how the *obi* completely disguises the shape of the body.

Among the Chinese, on the contrary, the husband must not see even his wife's



FIG. 474.—Young Japanese women with the *obi* (girdle) tied behind in a large bow concealing the bodily contours. (From a Japanese woodcut.)

bare feet ; and it is considered improper to glance at women's feet, as we have already remarked.

It would be very wrong to assume that that which is called womanly "modesty and virtue" had already become a fixed and unalterable conception among the civilised peoples of Europe. What extraordinary changes in women's views have taken place here, even in the last 100 years and in the highest and most cultivated circles, becomes apparent from a glance at the rhythmical vacillations of feminine

fashions. What is considered highly frivolous and vulgar one day, the very next day stands for all that is fine, natural and decent. If, to-day, it is held unseemly to show even the wrist uncovered, then to-morrow the whole arm is bared and even an unimpeded view of the armpits is permitted. At one time the neck must be covered right up to the chin ; next it arouses no protest to show the shoulder blades and the breasts almost to the nipples. One moment the very toes must not protrude from under the dress, the next the leg, even to above the knee, is exposed to the profane eyes of men. Lastly, the whole dress is so arranged at one moment that only the vaguest suggestion of a human body may be guessed at, then shortly it is seemly to have the clothes so closely moulded to the body that every anatomical characteristic is plainly visible. That cycling made quite a sudden transformation in the ethical ideas of our women needs no further exposition. Modesty, then, is also a question of fashion.

Apart from these caprices of fashion, however, "modesty" has undergone considerable changes with us ; and if we take the trouble to ascertain the views of the women of the Middle Ages in this respect from our poets and from sermons, we come across manners and customs which seem peculiar if viewed from our modern conceptions and feelings. For example, if we read Parsifal, we find that he was received as guest in the Palace of the Holy Grail, and, in the evening, was undressed by youths :

Youths very nimble
Remove his shoes, his legs are bare.
Many sprang to aid him,
Also did his garments doff
Many a lad of gentle birth.

Now, as he is sitting undressed by the bed, gentle maidens appear, bearing refreshments to him :

Now entered by the door
Four maidens pure
Who should look,
If all be well
And soft the bed . . .
Parsifal, the nimble man,
Under cover quickly sprang.
Thus they spake : "Thou shalt still wake
For our pleasures yet a while."
In his haste he had himself
Quite beneath the bed concealed,
His face alone their glances meeting
Eye to eye in high delight
Ere they had received his greeting.

They now offered him food, wine and fruit :

Words of praise rewarded them :
The man drank, he ate awhile,
Permitted then the maids to go.

The covering of the knight to partake of the meal can, it would seem, have been only rather scanty, for we must not forget that at that time people used to go to bed quite naked. If anyone for once in a way put on a shirt much talk and gossip were occasioned.

In another passage is described how a queen besought Parsifal to free her from her enemies. She visited him

“Alone in his bedchamber at night, not with the desire that makes a maiden unexpectedly a woman in one night, but for help and counsel. She robed herself in state in a white silk shift and a cloak of samite. Her trouble impelled her to go. She knelt down by his bed, but he would not suffer that and offered her his place. She asked him to promise to honour her virtue and not to touch her limbs. He promised solemnly and she then hid in his bed while she told



FIG. 475.—Mediæval public bath. (From a fifteenth-century MS. in the Breslau Stadtbibliothek.)

her plight. He heard her and freed her town as she desired whereupon she gave herself to him.”

It appears to have been customary that the knight who fought for a hitherto unknown lady and conquered should, after cleansing and refreshing himself, retire to bed with the lady and leave her with child and then betake himself on his journey thence (*cf.* Wolfram von Eschenbach).

The mediæval custom of the “public consummation of marriage,” to which the newly wed had to submit, was also very much opposed to our ideas of modesty and seemliness. It appears that the young married couple did *not* in all cases go to bed clothed. A woodcut of the fifteenth century depicts such

a scene (Fig. 476). It appears in "Melusina" of Jean d'Arras, printed by Heinrich Knobloch, and shows the Bishop blessing the couple.

Besides the Bishop, who sprinkled the bed with holy water, three persons are standing by: a young man, an elderly man, and a young woman. Melusina lies in bed with her headgear on. She may be otherwise undressed, however, and her husband, likewise probably naked, lies by her; but they are both covered up to the shoulders



FIG. 476.—Blessing the marriage bed. (From a woodcut of 1483.)

“ Quickly cam Raymound, in the bedde him laide
By fair melusine, the suete doucet made.
Forsoth A Bishshop which that tyme there was
Signed and blissid the bedded holyly.”

by the bedclothes. There exists other evidence that, at that time, this was the general custom (until the eighteenth century, when “morality” began to exercise a contrary influence).

In the fifteenth century also very free customs must have prevailed, against which Geiler von Kaiserberg¹ declaimed:

“The third sin is to have a desire to grasp the bare skin, or to touch women or maidens on the breasts. For there are many so inclined that they think they cannot talk to a woman without touching her on the breasts; that is a great indecency.”

In the thirteenth century the Franciscan monk, Berthold von Regensburg (*fl.* 1250), preached against the “prevailing abuses,” among them kissing and grasping at a woman’s private parts.

From their statements it is clear that women and maidens were easily accessible to such touching.

Concerning modesty in the fifteenth century, Scherr ² says :

“The public bath houses of the town also where men and women, maidens and youths, monks and nuns bathe together quite naked, could certainly not promote chastity.”



FIG. 477.—A noble French lady receives a messenger as she lies naked in bed. (From a MS. in the Bayrische Landesbibliothek, Munich. Cod. gall., 7.)

The same author reports (according to the statements of Poggio) that in the baths in Aargau :

“Early in the morning, the baths were most frequented. He who was not bathing, paid visits to his acquaintances who were bathing. From the galleries which ran round the baths, he could speak to the bathers and see them eat and play at the floating tables. Beautiful maidens begged for alms and he threw coins to them, to catch which they spread out their garments, thus displaying voluptuous charms.” [*Cf.* G. Jung : A. Schultz,¹ 238.]

But even in the household itself there prevailed a lack of ceremony which we should find very difficult to understand at the present day. It was customary among the nobility, as well as in the middle classes, to go to bed quite naked. Owing to the lack of space in the dwellings at that time these customs must have drawn the

attention of the other sex much more than is considered decent to-day. Particularly when there were disturbances by night, fear or excitement must have caused people to appear at the window or to hurry into the street in much too scanty apparel. A woodcut in Sebastian Brant's "Narrenschiff," which is reproduced in Fig. 478, shows us such a scene. A serenade has disturbed the peace of the night and a woman



FIG. 478.—An evening serenade. (From a sixteenth-century woodcut after Seb. Brant.)

with a nightcap on, but otherwise quite naked, is moved to drive off the uninvited company by pouring her chamber slops over them.

In the sixteenth century Johann von Schwartzenberg assumed that "modesty" was "predisposed" by the concealed position which Nature has bestowed on the genitals. He shows the reader a picture of a naked woman with a wrap round her waist (Fig. 479), and writes under it :

"The body's beauty thus laid bare
As far as comfort everywhere :
But limbs by Nature's self concealed
Must be by us still unrevealed."

In the first place, it must be noted that Nature has exposed to view the beauty of form which she has made beautiful but the part of the body (designed for excretion and base to the sight) she has covered. Hence has evolved human modesty and all right-minded men turn their eyes from what is hidden by Nature and perform their needs in the most hidden way ; and they are careful not to name the unclean deeds and words connected with these parts.

Moreover, to-day also this foolish notion about the "concealed position" of the genitals is being revived by moralists. What other place could Nature have found for them ? The situation of the uterus could not be better conceived. By that, too, the position of the vagina and thus of the female outer organs of sex are determined.

Guarinonius describes curious customs which prevailed in public baths at the end of the sixteenth century :

"The key to virginity is shame, for many maidens are preserved from indecency, even against their will by a sense of shame. Yet in these baths, shame is gradually lost as women grow accustomed to being seen naked by men. They undress in the same place, thus losing all sense of shame towards each other. Maidens of 12, 14, 16 and 18 years run from their homes along the street to the baths quite naked, or with only a short, torn bath robe on (cf. Fig. 480). With them run, fully undressed, boys of 10, 12, 14 and 16 years. [Further details on baths and nudity in the Middle Ages will be found in E. Fuchs, "Renaissance," I., 440 pp. ; Max Bauer^{1, 3} ; Ritter ; Bilder-Lexicon, I., 92 pp. ; Rudeck ; H. Ellis, "Studies," etc., I.]

According to du Chaillu, similar customs exist even now in the North of Norway and in Finland, where common bath-houses are used in the country districts.

In the time of the Emperor Charles V., on his state entries, the daughters of nobles considered it an honour to parade before him stark naked, and it is well known that fathers willingly surrendered their daughters to the Emperor as concubines.

A peculiar kind of hospitality was until lately still to be met with in Iceland, as a medical friend of Lord Dufferin describes :

He tells how the grown-up daughter of the family where he had found refuge conducted him to his bedroom in the evening. He was just going to bow and wish her good-night when she approached him with a graciousness that would not be resisted and insisted on helping him off with his coat and then by divesting him of his shoes and stockings. There he thought her ministrations would end and that he would be left to the privacy which is considered seemly at



FIG. 479.—The modest woman. (After J. von Schwartzenberg.)

such times. But no. Before he knew what was happening, he was sitting in his shirt and was trouserless, while his pretty chambermaid was busy folding his clothes and putting them on a neighbouring chair. With the greatest naturalness in the world, she helped him into bed, tucked him in, said all sorts of pretty things to him in Icelandic, gave him a hearty kiss and left him. In the morning he was awakened again by a kiss.

From all these facts we see that what we designate as modesty presents many different gradations and shades.

K. von den Steinen² comes to the following conclusion :

“I cannot believe that a sense of shame which is absolutely lacking in the unclothed



FIG. 480.—Mediæval bath.

American Indians can be a primary sense in other human beings, but assume that it is first developed when the parts were covered, and in perhaps only slightly more complicated economic and social conditions, the value of the maiden surrendered to marriage was increased as was the case among the big families in the Shingu. Also, I am of the opinion that we make the elucidation more difficult by assuming in theory a greater modesty than exists in practice.”

5. CHASTITY IN WOMAN

The less a race is influenced by the ascetic teaching of many European peoples the freer and more unhampered is usually the satisfaction of sexual needs permitted

to the individual so long as the woman is still unmarried. The concept of "chastity" in the maiden is little known. But with marriage, *i.e.*, the passing over into the personal possession of a man, then not infrequently quite different views come into force. Among a few nations the freedom of the women continues even after marriage, and sometimes even their own husbands cause them to bestow their love on a guest.

Eyre gives the following description of the chastity of Australian women from the European standpoint :

"From her tenth year onwards she cohabits with boys of 14 or 15. Later, too, she offers herself to any guest who may visit the tribe for a night. The Australian woman who is married, or rather is in the possession of a husband, can also be borrowed by a guest. If the husband is away, another man takes his place. When several tribes have pitched their camps alongside each other the men of one tribe spend the night with the women of the neighbouring tribe ; for with the Australians who dwell on the Murray River, prostitution, like marriage, is exogamous."

Cook's sailors found the married and even the unmarried young women of the Loyalty Islands, of the New Hebrides, and of New Caledonia still uncommonly reserved : but not from "European chastity," as later reports suggest. There, chastity is little prized : de Rochas called the native women uncivilised "Messalinias" ; and the old women early guided the young girls into the paths of love.

Seligman² reports of the Sinaugolo, in British New Guinea, that sexual intercourse is very frequent before menstruation has appeared, and in many cases the maidens before marriage bestow their favours as they please. Many keep an account of their love adventures by making knots in their girdle, which they usually wear as a necklace.

The moral conditions peculiar to Dutch New Guinea are much "worse," according to the reports of missionaries, *i.e.*, according to the ascetic views of Christian priests. Neither before nor after marriage do the women impose any restrictions on themselves. For example, Keyser, the missionary, says in Neuhaus's work on New Guinea, of the Kai :

"With regard to marital faithfulness, it may be affirmed that among the Kai no such thing exists. I met with women who had had intercourse with about 20 men, and men who could count double that number of women of whom some had already vanished from their memory. Usually, the people can enumerate only 5-10 commissions of adultery. Generally speaking, unchastity is universal. Married and unmarried alike know no bounds to their sexual impulses. The native makes use of every favourable opportunity to satisfy his desires. If a man when hunting meets a woman, single or married, gathering firewood, he casts on her a glance which is sufficient. A woman on her part makes known her intention by raising her grass apron before the approaching man. Incest occurs among the Kai, although only in isolated cases : and between father and daughter as well as between mother and son."

On the Solomon Islands the women, according to Guppy, are, on the whole, chaste. The inhabitants of the neighbouring islands, S. Anna and S. Cristoval, however, exchange their wives for a time and afterwards take them back. This is not regarded as "adultery."

On Nias Island a maiden who has become pregnant is, according to Modigliani,¹ buried in the ground up to her head, which is then stoned until it is smashed to pieces.

The Chevsur maidens are considered chaste. To become pregnant while unmarried is such a disgrace that it is usually not survived. The girl either hangs or shoots herself. The Pshavs are less "chaste," according to Radde.

The sexual morality of the Votjak differs very considerably from that of Christian people.

Max Buch says that men and maidens have intercourse without constraint, and so-called chastity sets no barrier against love. Indeed, it is even a disgrace for a maid to be unsought by a young man. They have a characteristic saying: "If no young man loves her then God does not love her."

Authors' descriptions in regard to this are by no means exaggerated. It is said that a game is played by young men and maidens called the marriage game. Each lad chooses a maid, not always without a struggle, of course; and each couple then hides in a dark place, where the play is conceived very realistically; thereafter, the "family couples" reassemble for the continuation of the game: "As it is a disgrace for a maiden to have few suitors, it follows logically that it is honourable for her to have children. She gets a richer husband and her father is paid a bigger *kalym* (bride money) for her." Buch observes, finally, that "a well-preserved relic of that 'communal marriage' is to be found in the so-called immorality of the maidens, who put no constraint on their feelings and satisfy the needs of love in full measure. This peculiarity must not be regarded as a consequence of moral degeneration, but as something thoroughly natural and primitive."

All the earlier reports agree that the Koryak, like the Chukchee, uphold very strictly the chastity of their women where strangers are concerned, and that they never offer their women to strangers: in fact, there are severe penalties for the violation of marital fidelity or chastity. Other reports, however, contradict this. Both von Nordenskiöld and Bove describe the Chukchee women as moral; though the latter was obliged to take back that characteristic.

The French, on D'Urville's second journey, found on Isabel, as well as elsewhere, that women were offered to guests; and of the inhabitants of Espiritu Santo (in the New Hebrides) it is stated by Roberjot that:

"Ils ont la réputation de céder leurs femmes, mais assurément ils ne les offrent pas et je n'en ai pas aperçu une seule; bien plus, quelques officiers étant allés dans un village situé sur une des îles de la baie, l'ont trouvé évacué par les femmes et les enfants."

In Tahiti, on the Society Islands, the gratification of love is considered the highest charm of life, and the Areois find their whole object of life in indulgence in this pleasure. We could expand still further the lists of these customs. The introduction of Christianity has, naturally, changed conditions to a considerable extent. But in the Hawaii Islands the missionaries found the greatest difficulties for their Christian teaching in the complete lack of understanding of what we understand by "chastity." "The women," according to de Varigny, "knew neither the word nor the thing."

Richard Neuhauss also found the female sex in Hawaii very loose; girls of from 12 to 14 years are, as a rule, no longer virgins; sexual intercourse between father and daughter is by no means rare.

On most of the Polynesian Islands great sexual freedom prevails. Only in New Zealand, as Cook testified, were the women more restrained. Otherwise, on all the islands there was scarcely an idea of "modesty"; and the same traveller found everywhere in the huts of the savages intercourse so little curbed by reserve that sexual union took place, so to speak, *coram populo*. A princess named Obereah instructed a girl to cohabit publicly with a young man.

The question of extra-marital intercourse among primitive races has, of course, nothing in common with the Christian conception of chastity. It is connected, as we have already seen, several times, with beliefs relating to impregnation (see

Vol. I., p. 471). Intercourse with the married woman is forbidden because she is her husband's property : pre-marital intercourse with the maiden before the puberty ceremonies is forbidden in many tribes because it is believed that the impregnation is that of a demon who would become incarnate in the maiden. There is, of course, no "moral" quality involved (*cf.* Vol. I., pp. 477, 651).

Among the Roti Islanders free love between young people is quite usual, but it happens in secret for these reasons. If they are caught the seducer has to pay



FIG. 481.—Young unmarried Igorrote woman before the girls' sleeping house.
(After A. Schadenberg, Manila.)

25 florins or a buffalo. Sometimes, states Graafland, such discoveries are followed by marriage, but not in all cases.

Among the Igorrote on Luzon (Philippines), the guarding of the maiden's chastity is exceedingly strict, and violations of the law are punished by severe physical chastisement or even death. The unmarried Igorrote women of marriageable age spend the night in a special sleeping house, as is represented in Fig. 481. Among the Lepanto Igorrote, the seducer must marry the girl, or must give her a complete woman's outfit and a sow, and, in case the girl is confined, he must receive

the child. The separation of the sexes at the age of puberty in two big huts, of which Lillo de Garcia gives an account, now exists no longer among the Lepanto Igorrote, according to the statement of H. Meyer.

On several islands of the Malay Archipelago, viz., in the eastern groups, there prevails among the young people quite unrestricted sexual intercourse; yet it is most strictly forbidden to use equivocal or unseemly expressions in the presence of women.

Among many of the native inhabitants of the Archipelago the maiden's life is quite unrestricted so long as she is unmarried. But in Lombok, adultery is counted a crime: the criminal pair are bound together back to back and thrown to the crocodiles. In the Dutch East Indies the children devote themselves to sexual pleasure long before the age of puberty, and "coitus" between brothers and sisters of five and six years is by no means rare, according to van der Burg. In Achin an unmarried woman who is pregnant is expected to go into the woods to be delivered, and there to strangle her new-born child and bury it at once. If she omits to do so, the child is killed later, for such a child, states Jacobs,² has no right to live, according to popular belief. In Cochin China and Japan marital fidelity is highly esteemed, but the parents may sell their daughters, either privately or to houses of prostitution. In China, wealthy men buy girls of 14 for their use. According to Samuel Turner, any young girl in Tibet can indulge in extra-marital intercourse without injury to her "reputation."

Among the Altaians in Mongolia, when a girl is seduced (a rare occurrence), all her male relations assemble and try to persuade the seducer to take her as his wife and pay her father a proportional *kalym* (bride-price). Should he refuse, they fall upon him and thrash him till he begs for mercy. Then he pays the father a small fine, gives him a gun and a pelt, and can then go home without fear of further attack; but, in this case, the girl, according to Radloff, is no longer then considered a daughter, but must do all the rough work as a servant.

If a Hindu or Parsee girl becomes illegitimately pregnant she is condemned to death, and her own mother often acts as the executioner. Among the Parsees death is by strangulation in the presence of the priest. The Hindus call the killing of the guilty ones "cold suttee," suttee being the burning of the wife along with her dead husband, a custom of which we have to speak later. The above information is borrowed from Schmidt.⁹

The American Indian, in his sexual relations, follows his inclinations entirely. He may have sexual intercourse with the wife of a stranger or of his friend. Among the Sioux, a strange form of public confession used to take place annually. Youths and men stood facing each other in two rows and all the young women and wives passed between. As they passed, each male put his hand on the woman with whom he had had intercourse during the year. This confession, Dodge states, had no evil consequences for either party: only, for a year, the women were treated as prostitutes if they were found outside the camp without a woman companion.

The women of some Indian tribes have a protection for their chastity which is honoured by their men. An attack on a Cheyenne woman, whose limbs are bound round with cord, is regarded as rape and punished by death; without this talisman, and in the absence of her husband, she is, states Dodge, exposed, defenceless, to any strange man.

The Chetemacha, in the south of Louisiana, were monogamous, according to Gatschet, and insisted strictly on the observance of "chastity." If a girl permitted a man too much intimacy a beating awaited her at home.

On the other hand, Richard Rhode found the women of the Bororo Indians, on the banks of the Paraguay, by no means chaste, for they frequently made love proposals to him as well as to his men.

An insight into the chastity prevailing in the district of Surinam is afforded by the official gazette, which gives the number of births for the year 1899 as 1935, of which only 300 were legitimate (see W. Joest ?).

Von Tschudi's reports of the customs of the old Peruvians throws a light on the prevailing conceptions of chastity there. He says :

“ Among many of the Quechua tribes young men who loved a maiden used to throw sticks or stones at a big stone or rock in order to get their missiles into a split in it. When they succeeded, the maiden was informed and had to bow to the will of the victor who, as Villagomez says, was rarely refused, since it was a great honour to which many superstitious traditions clung.”

In general, many different conditions prevail among the peoples of Africa with regard to what we call chastity. In Wadai, as in Darfur, the young women live quite freely, and a stricter relationship only begins when one suitor is preferred. Among other peoples in Accra, in the Congo, etc., there is no check on the girl's freedom, and just as little among the Pepel (West Africa), where, nevertheless, the fidelity of the wife is highly valued. Similar facts are recorded by Waitz, who, however, also alleges contrasting customs in the Gold Coast and in Dahomey, etc., where the seduced woman is punished or the seducer forced to marry her. According to Thomson,* the Masai, in East Africa, kill every extra-marital case of pregnancy regardless of whether the woman is married or unmarried. Merker, however, does not mention a word of this ; and, according to his accounts, great freedom prevails in this respect, and conjugal fidelity is “ a conception unknown to Masai ethics.” It is obvious here that it depends on the recorder. Where sex questions are concerned we must always expect a mental “ colouring ” of the reports of Christian-thinking recorders. Among the Agar a man who touches a maiden's breast must, according to Schweinfurth and Rätzel, pay the bridal price and marry the maiden. If he refuses to do the latter he must still give the cows which were the price of the bride ; the girl can then marry someone else, but her value is considered diminished. Among some of the South African tribes Döhne states that the seducer of a maiden has to pay a fine, and he is forbidden to marry the seduced girl. Besides the beauty of the Zulu maidens, their chastity is praised by all writers ; that, however, is in connection with their intercourse with Europeans. After all, any girl caught having intimate intercourse with a white man, or about to have a child by a white man, is forthwith put to death, and, therefore, in the end, as Joest ³ states, the chastity is not very meritorious.

The missionary Grützner says of the Basuto women :

“ Only in the case where the girl becomes pregnant, which, strangely enough, does not happen very often, must a fine be paid (the maidens say to the fellows who lie with them : ‘ Don't ruin me ’). The man concerned then pays in some places one or two goats, in others as many as seven cows. But, so long as the girl is not pregnant, she is still, in spite of all unchastity, quite proper. Such unchastity among children is called nothing but playing. A fornicator is only a man who has intercourse anywhere and with anybody, especially any married woman : all the others mentioned above merely ‘ play ’ like fowls.”

Similarly, Wessmann, the missionary, wrote to M. Bartels ⁸ that the Bavenda girls in the North Transvaal, as soon as they reached the age of puberty, were urged

* [I am not aware that Thomson held this view. Hollis does not confirm it.]

by the wives to "play" with the young men. If they refused they were despised by the other maidens; they were ostracised and even stoned. Playing is a loose expression, yet it must be sharply differentiated from co-habitation.

The old women hold a monthly inspection in regard to this, at which the maiden sits upon a stone. If the labia stand apart then she is known to have permitted co-habitation, and she is then scolded or punished. "Playing" is also permitted to the youth after puberty is reached. To indicate his wishes in this respect he openly sends the desired maiden a present, shortly followed by himself. After a general greeting he disappears with her into the house and does with her what he pleases. Everybody, the parents included, know about it. However, if the girl becomes pregnant, then the young man must pay a fine in oxen. After that, all is forgotten, although such a transgression rarely happens.

Fritsch ⁴ (p. 227) relates of the Ovaherero :

"They have a kind of fraternisation between two members of the same sex, which they call 'omapanga.' When men are in this relation to each other they have wives in common. But when persons of the female sex are *omapanga* then they lead an unchaste life together in accordance with custom and with the knowledge and consent of their parents."

Of some of the natives of Madagascar Audebert reports that the children copulate very early without interference from their parents, whose behaviour they imitate with increasing energy, much to the amusement of the parents, and often with their encouragement.

Wulforth reports of the chastity of the young girls among the pagan Ovambo tribes of Mandated South-West Africa :

"Of all the maidens who go to the Efundula (puberty ceremony), not one is still a virgin; they have all been from an early age concubines of men and youths, and with the knowledge of their parents, who are pleased to see a man or youth having intercourse with their daughter so that, if anything goes wrong, they can force him to pay."

Such a girl, however, must not give birth to a child, but an abortion will be procured, as we have indicated above.

Religious law, in very early times, laid great stress on a "chaste" life. Chastity was ordered by Mosaic law : Do not prostitute thy daughter, to cause her to be a whore (Lev. xix. 29). There shall be no whore of the daughters of Israel, nor a sodomite of the sons of Israel (Deut. xxiii. 17) : and the daughter of any priest, if she profane herself by playing the whore, she profaneth her father : she shall be burnt with fire (Lev. xxi. 9).

The introduction of Christianity has affected the ideas of many tribes. Thus, for example, Joest ¹ states that the good and healthy custom among the savages on the island of Ceram was for the young people to sleep in the Baileo, which ceased to exist when they became Christian : then the whole family slept in one house, and, in consequence, the daughters with their lovers and the sons with their mistresses, among whom the most unrestricted free love prevailed : and if a girl married it was mostly the man by whom she believed she had had several children. The customs among primitive peoples often relax and deteriorate by contact with Christian teaching, which does not harmonise with them, and which often robs them of their old customs without substituting really better ones.

Generally speaking, if we must see in the supervision of women with regard to their chastity a progress to higher morality, then this view must be involved in difficulties when we remember that a section of the Mohammedan peoples instals

eunuchs as guardians. We must confess, however, that this and other practices did not originate with the Mohammedans but [many have] come to them from the Christians. Hauri says very rightly :

“ We need hardly say that the Prophet did not desire these conditions. The good old-Arabian usage was destroyed chiefly by foreign Persian and Byzantine influences.”

At the Byzantine court, castration was quite usual. A Moslem theologian of the earliest time reports :

“ The custom of castration comes from the Byzantines, and it is strange that these are Christians, the very people who vaunt their gentleness, humanity and mercy before other nations.”

Dozy says that the Caliphs of Damascus originally imported their eunuchs from the Byzantine Kingdom and those of Cordova got theirs from France, especially from Verdun, where the Jews had eunuch establishments of world-wide fame.

The jealousy of men among primitive peoples, as well as among the so-called representatives of civilisation, contrived mechanical precautions which could prevent possible infidelity in women. These were arrangements which closed the entry to the female genitals. A few African tribes are said not to allow their women to go out without having a sieve or a shell covering bound over their private parts. Another method, devised by male jealousy, is a kind of infibulation, *i.e.*, drawing a ring through both sides of the labia in order to close the vaginal orifice. This is said to have been much in use in the East (*cf.* Fig. 313). In an earlier chapter we learnt in detail the method used, for similar reasons, by many tribes in East Africa (*cf.* Figs. 314, 315 and 316).

Among many peoples certain dances are very erotic. Hutter reports that in the interior of the Cameroons the women perform dances where an erotic ritual is practised which arouses an ecstasy of excitement.

Thus, with regard to the estimation of female chastity among uncivilised races we find every degree from the greatest laxity to the most inexorable strictness, which punishes the violations of chastity with great severity, and even with the death of the woman who has sinned.

6. CHASTITY IN MODERN EUROPEAN CIVILISATION

The moral purity of European women also has not always been in accordance with Christian requirements, and it has long been known that instruments of torture similar to those described at the conclusion of the foregoing section came into use in Europe.

Probably we have to thank the Crusades for these barbaric inventions by which one or other of those knights wanted to assure his wife's inviolable fidelity during his enforced absence. How such cruelty was condemned, even by contemporaries, we can gather from the following facts.

In the Arsenal at Venice an instrument is to be found that comes from a lawsuit against Carrara, the Governor of Padua, in the year 1405 : it served as evidence for his offence, for which he was imprisoned by order of the Senate : “ Ibi sunt seræ et varia repagula, quibus turpe illud monstrum pellices suas occludebat ” (Misson).*

In spite of the exemplary punishment of this man, the instrument seems to have spread not only in Italy but also to France. The first attempt to introduce

* [Dingwall, ^{2, 3}, has shown that the belief in Carrara as the inventor of the girdle of chastity is probably legendary.]

it was made under Henry II. by a tradesman who offered iron girdles of chastity at the fair at St. Germain.

“Du temps du Roy Henry,” we read in Brantôme (“Œuvres,” IX., 133 ff.), “il y eut un certain quinquilleur, qui apporta une douzaine de certains engins à la foire de Saint Germain pour brider le cas des femmes, qui estoient faits de fer et ceinturoyent comme une ceinture, et venoyent à prendre par le bas et se fermer en clef ; si subtilement faits qu’il n’estoit pas possible que la femme, en estant bridée une fois, s’en pust jamais prévaloir pour se doux plaisir, n’ayant que quelques petit trous menus pour servir à pisser.”

The result was highly unfavourable to the merchant. He had to flee, for the people threatened to kill him. Later, the use and employment of this instrument might have become familiar, at least in secret, for in the Musée de Cluny in Paris is such an instrument which, from its worn condition, was probably often in use.

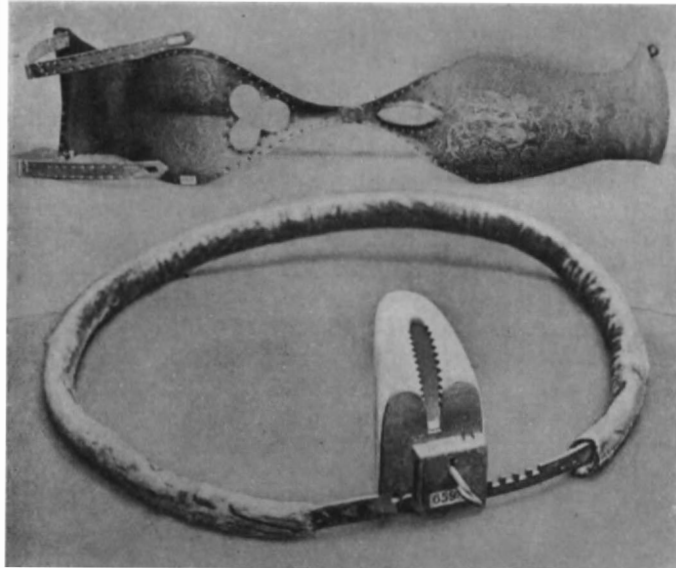


FIG. 482.—Girdles of chastity. (Musée de Cluny, Paris.)

It consists of an ivory plate fastened to a steel girdle, which is red with rust and can be closed in the middle by a lock (Fig. 482).

In 1904 and in 1931 works about the girdle of chastity by Caufeynon and Dingwall appeared. In them quite a number of girdles are represented which have been preserved in different museums. These lists could be doubtless made still more complete.

In the famous collection of weapons in Erbach Castle in the Odenwald, M. Bartels saw two such girdles of chastity made of sheet iron.

One was covered with red velvet, but otherwise unornamented ; the other lacked the covering material, yet it had had such a covering, for the edges were pierced by little holes equidistant from each other. The outer surface of the second one showed somewhat roughly etched pictures in the style of that period, the sixteenth century. From an iron belt in four parts and about 1 cm. wide, a narrow piece of iron plate bent to fit the curving of the body goes from back and front downwards. These two pieces are joined to the girdle by a hinge and have a broad base, then taper to a point, like a lancet. These lancet points meet in the perineal region of the woman and are here also joined together by a hinge. The back plate has a clover-leaf

shaped opening 5.2 cm. wide and 4.5 cm. high, corresponding to the anus. In the unornamented girdle, this opening is round and only 3.1 cm. in diameter. The anterior portion is provided with an opening corresponding to the vulva. This forms a spindle-shaped slit 7 cm. long by 1 cm. at the widest (in the plain girdle 7.6 long by 1.7 cm.). In both girdles this slit is set with fine teeth. Somewhat above this slit, in the finer girdle, there is another opening shaped like an ace of spades, which no doubt has a purely ornamental purpose. On both back and front plates are etched designs and inscriptions. These represent an intertwining network of tendrils which open out towards the top and frame a picture. In front of this is a kissing couple with their arms round each other. The woman sits on the man's lap, as if in deep conversation. Below it is the following inscription :

“ Ach Das sey Eich
Geklagt Das mir
Weiber sein mit der
Brüch geplagt.”

Alas, this be my com-
plaint to you, that women
are plagued with the
breeches.

Somewhat deeper in the surrounding decoration can be seen a little man in his clothes. The back plate has a picture of a woman sitting in half profile and with rather hanging breasts. She is holding in her hand the erect brush of a fox which is creeping between her calves. Under this, too, is a verse :

“ Halt Füxel ich
Hab Dich er Wischt
Du büsst mir Oft dar
Durch Gewist.”

Stop, little fox! I have
caught you. You have
often been through there !

The Mäckisches museum in Berlin has such a girdle of chastity. A specimen from France depicted by Caufeynon has the covering plates richly engraved with arabesques and on the front plate is a picture of Adam and Eve standing under the tree in the Garden. The girdles were all provided with a tastefully worked lock to which only the husband or the lover, as the case might be, possessed the key. However, some facts show that the women thus locked up sometimes got hold of a skeleton key.

Another specimen is in the possession of Pachinger ; it is very similar to those in the Erbach collection, only simpler. We give further examples in Figs. 483 and 484.

As late as the middle of the eighteenth century a wife in France proceeded against her husband because he had put such a girdle of chastity on her. The speech of her advocate, Freydier, in Parliament has been preserved. It is reproduced in the work by Caufeynon [and the case has been fully discussed and criticised by Dingwall,² pp. 97 ff.].

Dingwall and Caufeynon cite several cases of legal proceedings from more recent times, in which the charge was putting on the girdle of chastity. They also published the advertisements of Parisian instrument makers at the end of the nineteenth century who offered girdles of chastity at from 300 to 500 francs. One advertisement is as follows :

“ Plus de viols ! De l'édozone ou ceinture de pudeur.”

[Since their books were published other cases have occurred. In 1930 a girl entered a Parisian hospital wearing a girdle of chastity. She was said by her parents to be an inveterate masturbator and an examination indicated that she was not a virgin. The girdle, which had been purchased at a dealer's establishment, was of the single plate type, well padded and with slotted hip band (see Nageotte).

In March, 1931, a further case was revealed from Batavia, New York. John B., on account of certain dreams he had had, forced his wife to wear a girdle of chastity.

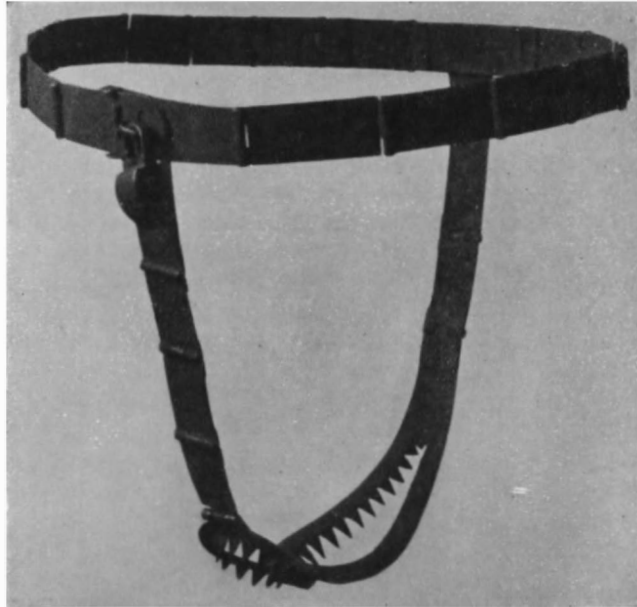


FIG. 483.—Girdle of chastity in iron, found in Würzburg in 1885. (Lossow Collection, Munich.)

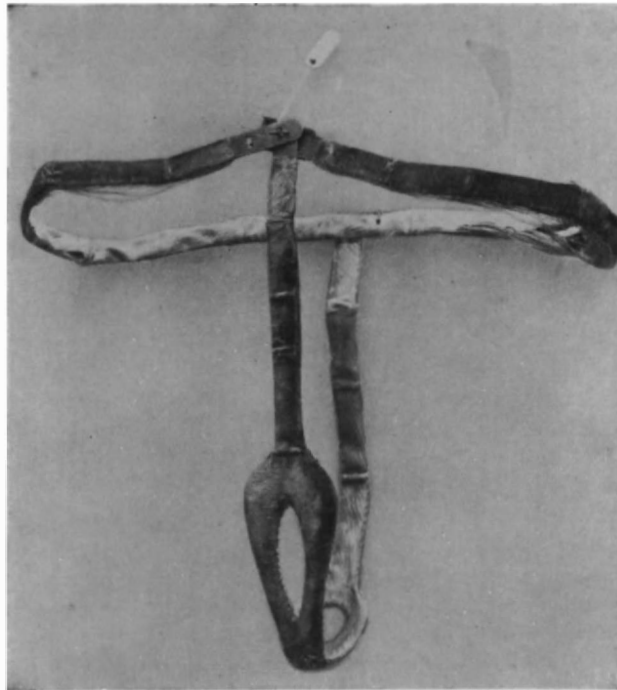


FIG. 484.—Leather-covered girdle of chastity. (Germanic Museum, Nuremberg.)

The discovery was made at the hospital where Mrs. B., the mother of nine children, had entered for treatment. B. was charged with assault in the second degree.

The belt was made of leather and steel and secured by padlocks. It is said that Mr. B. had insisted upon its use for twenty years (see Dingwall ⁵).

In September, 1932, another case was reported from Paris. Henri Littière was arrested on a complaint from his wife. Insanely jealous, he expended 325 francs of his wife's money on a girdle of chastity which he made her wear for three months. According to his own account, it was his great passion for her which moved him. He was arrested again in 1933 for repeating the offence.

Apart from urban localities it does not seem improbable that girdles of chastity are employed in the country districts more often than is commonly supposed.



FIG. 485.—The girdle of chastity. (From a woodcut attributed to H. Vogtherr.)

Heavy leather girdles, studded with rivets and padlocked, used to be well known among the Pennsylvanian Dutch settlers, with whom they were called "Day Belts," and from whom the Indians borrowed. In Hokaido and Kyushu in Japan such contrivances are known, and some of them were on view at one of Daimaru's exhibitions. As late as October, 1933, a case was reported of a New Zealand boy who, after having picked up a girl near a mining camp, found on undressing her that she was wearing a metal plate securely fastened over the vulva (Dingwall ⁵). In December, 1933, the League of Awakened Magyars put forward as Point 19 of their National Programme that all Hungarian girls of 12 upwards and unmarried, should wear girdles of chastity, the keys being kept by the fathers or other competent authorities (see *Time*, December 4th, 1933 ; January 29th, 1934.)]

To return to earlier times, such a girdle has been depicted by H. Vogtherr (?), which engraving has been reproduced by Hirth in his pictorial history of civilisation (*cf.* Fig. 485). The woman is taking coins from an old man's purse with one hand, and with the other gives the money to a young man holding a golden key, while above her is a scroll with the following verses :

“ Es hilft kain shloss für frauwen list
Kain trew mag sein dar lieb mit ist
Darumb ain schlüssel, der mir gefelt
Den wöl ich kauffen umb dein gelt.”

“ It boots no key 'gainst wifely art
No faith can be where love's apart
And the key which now you hold
That I will buy and with thy gold.”

Many other facts show that in earlier times women were not very punctilious



FIG. 486.—Lewdness. (After Petrarca, *Trostspiegel*, 1584.)

about chastity. In a famous sixteenth-century work by Francesco Petrarca, a chapter deals with “dishonourable unchastity.” The accompanying woodcut, from the German translation (*Trostspiegel*), shows how the devil gathers together the unchaste and as counsel the following aphorism is added :

“ For evil lust and knavery
There is no better remedy
Than abstinence in meat and drink
And keep thyself from idleness.”

The dance is cited in Petrarca as a source of unchastity. Fig. 487 has the following verses :

“The devil has conceived the dance
By it much evil to produce
How lewdness comes to use and wont
That in the dance is now well learnt.”

This train of thought is also expressed in the German proverb :

“Wenn die Keuschheit zum Tanz kommt,
Dann tanzt sie auf gläsernen Schuhen.”
“When chastity comes to the dance
Then she dances on shoes of glass.”



FIG. 487.—The Dance. (After Petrarca, *Trostspiegel*, 1584.)

And another reads :

“Kein Tanz ;
Der Teufel hat dabei den Schwang.”
“No dance ;
The devil has his tail in it.”

(See Simrock ⁴)

Sebastian Brant, too, expresses this in his *Narrenschiff* :

“But when I consyder of this folysse game
The firste beggnyng and cause orygynall
I say the cause thereof is worthy blame
For whan the deuyll to disceyue man mortall
And do contempt to the hye god eternall
Upon a stage had set a Calfe of golde
That every man the same myght clere beholde.”

(Barclay's translation.)

As the human mind, however, always sins with a good excuse, so indecency is veiled that the stars may be made responsible for it. For he who was born under the Star of Venus must, according to the beliefs of that time, decline irrevocably into lust. In a household book written for the Goldast family at Constance



FIG. 488.—The planet Venus. (After Bartholomäus Zeitblom. From the mediæval household book of Fürst Friedrich v. Waldburg-Wolfegg, edited in 1866 by the Germanic Museum, Nuremberg.)

towards the end of the fifteenth century, which belonged to Prince Friedrich von Waldburg-Wolfegg, and was published by H. Bassert and W. F. Storck in 1912,

there are large pictures of the planets and what happens under them. These pictures are attributed to Bartholomäus Zeitblom. To each picture is attached a poem, which is put in the mouth of the planet. To the picture of Venus, reproduced in Fig. 488, there is the following :

“ Venus the Fifth Planet I,
 And I am the image of love :
 Damp and cold with effort,
 Naturally plump with mastering my trade !
 “ What children now to me are born,
 Are joyous here on earth.
 One time poor, the next time rich
 But moderate in nothing.
 Harps they’ll play, at times they’ll sing.
 Hearken too, to everything.
 Organ piping, organ humming,
 Dancing, kissing, carousing, mumming.
 This body is just one open mouth,
 Their round eyes ever seeking
 Unchaste and pleasure making
 Child of Venus everyone.”



FIG. 489.—How baths were taken in Aargau in the sixteenth century. (After Seb. Münster, 1548.)

We have already mentioned the conditions in the baths. That it was not only a question of looking at the charms of the other sex, we may find proofs. From the fifteenth century the Florentine Poggio reports of the baths in Aargau :

“ The bathrooms in the inns were fine yet common to both sexes. To be sure wooden partitions were between them, but had so many openings that people on both sides could see and even, as happened frequently, could touch each other.”

Hence Poggio made a characteristic judgment of this spa :

“ Nulla in orbe terrarum balnea ad Fœcunditatem mulierum magis sunt accomodata.”

About 100 years later Sebastian Münster brings into his “ Cosmography ” a picture of the bathers in “ Oberbaden,” as he calls the place. His woodcut is reproduced in Fig. 489. However, the same block is used for the description of the “ Wildbad Zell ” in Württemberg. The old writer, Münster, in describing some other

spas, gives pictures which show both sexes bathing together quite naked. Still more interesting is an engraving which is said to represent Baden-Baden (Fig. 490).

Alwin Schultz gives his opinion about the warm baths of the Middle Ages as follows :

“ We have two interesting representations of such a bath hall, both Burgundian miniatures in the French translation of Valerius Maximus, one in the Municipal Library at Breslau (Fig. 475), the other in that at Leipzig. I might say in advance that I consider the pictures exaggerated, and that in my opinion they merely conform to the predilection of the Middle Ages for coarse obvious jests. The Breslau miniature shows a row of bath tubs in which a man and a woman invariably sit opposite each other. A board, laid over the tub, serves as a table and is covered with a pretty cloth and on it are fruits, drinks, etc. The men have a head covering and wear a loin cloth ; the women are adorned with head-dress, necklaces, etc., but are otherwise



FIG. 490.—Large public bath, Baden-Baden (?). (From a sixteenth-century engraving.)

quite naked. The Leipzig miniature is similar, only the tubs are separated, and over each is a kind of cloth canopy the curtains of which can be drawn. Conduct in this kind of bath is of course, not too proper, and respectable women would indeed not make use of them.”

Here Schultz, like M. Bartels, seems to have fallen into error, otherwise the Church would not have declaimed so fiercely against the bath places. And Schultz himself continues :

“ That the baths were at times used by lovers appears certain. The baths were used as go-between as is clearly expressed in the poem ‘ Des Teufels Netz ’ (about 1420). There it says ;

“ Whores and knaves too soon are they
Who to the baths resort each day
In crowds you see :
Thief, liar and procurer
Knowing all strange tales
So can they traffic
With layman and with priest
He whose desires impel
Can find him maids in plenty.”



FIG. 491.—A scene at the baths in the sixteenth century. (After Ryff, 1544.)

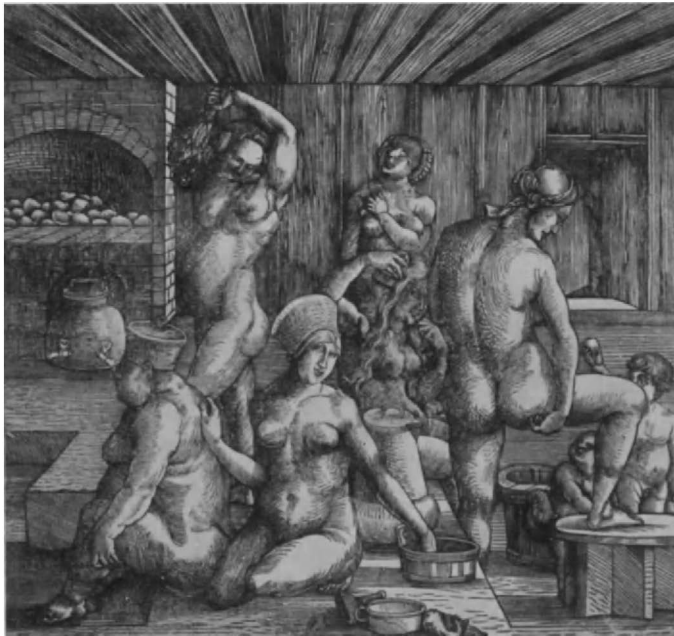


FIG. 492.—Scene in the women's bath. A man is looking through the door. (After A. Dürer, Bibl. Nat., Paris.)

Life in the baths in the sixteenth century is also shown in a woodcut from Gwaltherus Ryff's "Spiegel und Regiment den Gesundheit" (Fig. 491). At a covered table sit a gentleman and a lady; beside them stands a jester and a man

playing a musical instrument. A richly garbed servant bears fresh dishes. A physician stands by examining urine. In front of the table a naked man sits in a tub and a second, also naked, sits on a footstool adjoining : he appears to have a cupping glass on his leg. By his side sits a lady with her skirts pushed up over her knees ; her right foot is in a foot bath and she is being bled on the right arm. A man standing behind her is leaning over her with his hand on her shoulder. This informal scene is in a garden and in the open air.

The publicity of the women's baths is shown in a reproduction of Albrecht Dürer (Fig. 492). The moral conditions in the baths can be still further observed in a discussion by A. Martin of German baths, which is very interesting from a cultural and medicinal point of view. He, too, agrees with Poggio in his opinion, mentioned above, that it was not only the healing of the springs which caused the removal of sterility. He relates that in 1748 there was found in the Liebenzeller bath-house a picture with the characteristic inscription :

“ Auf ein Zeit hat ein Mann ein Weib
Die liebt er als sein eigen Leib.
Weil sie ihm aber kein Kinder gab
So bekümmert er sich hefftig darab,
Rieth ihr, dass sie zog in dies Bad.
Das Weib zog hin auf des Mannes Rath.
Weiss nicht, wie es gieng, gut war die Stund
Schwanger ward das Weib, die Magd und der Hund.”

Which may thus be rendered :

“ Once on a time, a man had a wife
Whom he loved as his own life
Since no child to him she brought
Troubled was he much in thought
Advised her that she try the baths
His counsel thus, his wife went forth
Knew not how it passed, good was the hour.
Pregnant grew the wife, the maid and the dog.”

It is well known that the unfaithfulness of wives and the deception of their husbands was the gist of many mediæval tales. Here the tales of Boccaccio in particular must be mentioned. The moral preachers, too, handled this theme repeatedly ; of this we find several characteristic utterances recorded by Kotelmann. He says :

“ Apart from prostitution, extra-marital intercourse was very frequent among both sexes. Berthold von Regensburg designates as concubinage ‘ that an unmarried man have an unmarried woman.’ Or he says of it : ‘ It is as unchaste for the bachelor and the spinster to go from one to another as for a wife to do so,’ as was very often the case. Has the inherent chastity of the ancient Teutons at length got lost and a widespread moral laxity taken its place ? Berthold cannot lament often enough the great spread of immorality.” (It had not been really otherwise before then.)

Berthold says in another place :

“ Young daughters and the young maids think of nothing but how they can seduce monks and priests.”

And Geiler von Kaisersberg preaches :

“ That people go to the first mass in the monasteries and at other times behave indecently and that women go into the monasteries and frisk about with the monks and then slip into cells

and corners is a public offence and shall not be permitted for no woman shall go into a monastery, it is sheer indecency. Many a devout woman goes into a monastery who has a husband outside. In that case, the man is guilty and should not permit such things to his wife."

The Hungarian tent-gipsies of the present day make use of a peculiar method of keeping their wives secure from seduction, according to v. Wlislöcki³ :

"The young husband, on the wedding night, makes his wife tread barefoot and without her noticing, on a piece of lime-wood about the size of a dollar. On one surface of this, signs and figures are engraved (*cf.* Fig. 493) with a hitherto unused needle heated in the fire. A gipsy woman explained these signs to me as follows : The design of the interlaced lines running round the edge signifies a chain (as the wife shall be fastened to her husband with chains) ; the crosses signify the 'bad luck'—lust, which shall fall in the 'hole.' The figure below represents the the husband's guard on his wife's fidelity, or 'his limbs shall be as strong as the tower,' so that snake (probably symbolic of future seducers) ; and the little square a 'tower,' signifying his wife shall be satisfied with him. On this side of the disc the young wife must tread with her left foot, but with her right on the other side, which is provided with the following signs (Fig.

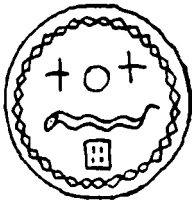


FIG. 493.—Magical wooden disc for preserving conjugal fidelity among gipsy women. Obverse. (After Wlislöcki.)

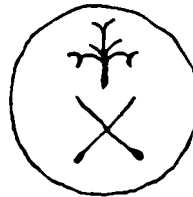


FIG. 494.—Magical wooden disc for preserving conjugal fidelity among gipsy women. Reverse. (After Wlislöcki.)

494). The upper figure represents a flower 'that is love' ; the lower, however, two crossed sticks, 'for the fall, if the wife should forget herself in love.' "

In practice this charm appears not to have been uniformly successful, for v. Wlislöcki³ relates further :

"The gipsy women of Southern Hungary sometimes sell a peculiarly constructed charm which is considered a reliable touchstone for the fidelity of a wife. It consists of three leafless beech twigs and similarly three of rosemary which, tied with a red thread, are drawn through three magpie skulls. The jealous husband puts this charm under his wife's pillow ; if she is pure, then she will sleep peacefully, if not, her sleep will be disturbed and besides, she will, in her sleep, let out all her lapses from virtue. The contrivance is more effectual if it is buried in the grave of an unbaptised child for nine days before use and then sprinkled with a woman's menstrual blood."

A truly barbaric practice appears to be resorted to among many branches of the Southern Slavs, as F. S. Krauss¹⁵ reports :

"I was told that among the Croats it is customary for a jealous husband who has to be away for some time to smear his wife's pubic region with a corrosive substance which causes a painful sore there, making the exercise of cohabitation impossible for her. What corrosive substance is used I have not learnt." According to the same authority, sewing up the vulva is threatened ; but there is no question of its being a practice really in use.*

* [For examples of this see Dingwall² (pp. 108 ff.), who quotes a number of cases ; and for the famous case at Leicester in 1737, see Dingwall,⁴ p. 59.]

CHAPTER II

VIRGINITY : WOMAN AS MAIDEN

1. MAGIC AND ORACLES FOR DETERMINING VIRGINITY

ALL kinds of wholesome mystical influences have been attributed to a chaste virgin, sometimes greatly to her detriment. Thus there appears to have spread among the people all over Germany and elsewhere the unfortunate superstition that there exists no more efficacious remedy for venereal diseases of all kinds than cohabitation with an immaculate virgin, or at least the direct contact of her genitals with the diseased organ. Endless mischief has been done by this means. In the provinces of Belluno and Treviso, too, the same monstrous practice existed, according to the statements of Bastanzi.*

We have already learnt how the blood from the first menstruation of a virgin is used for all kinds of charms and medicinal purposes. Likewise, in the provinces of Belluno and Treviso, the virgin has power to increase the fertility of the swine if she is present when the boar accomplishes the mounting of the sow.

A remarkable custom for driving away caterpillars is reported from the province of Belluno by Bastanzi. A priest and a completely nude young girl must appear in the plantation early in the morning, and when they meet : "Mio Dio, non ci pensiamo !"

This calls to mind a Lithuanian custom of which Bezenberger informs us. He says :

"If there are many fleas in a house, then a maiden must go out nude at sunrise on the first Easterday and throw the sweepings over the field wall."

The "old wives" philosophy (*Gestriegelte Rocken-Philosophia*) introduced into Germany in the year 1709 a remarkable superstition which still exists, that, if you meet a virgin early in the morning it means misfortune.

Now, it is naturally very desirable to possess some reliable mark in order to know whether the maiden encountered has not yet lost her virginity. With regard to this we find, too, in popular superstitions many singular ordeals and oracles. According to Ovid, a thread with which the neck was measured indicated an increase in the size of the neck if the maiden had lost her virginity. Even to-day, according to Karusio, such a thread oracle exists in the province of Bari. One measures from behind over the neck and the lips. If the thread will then not let itself be taken off over the maiden's head, then she is still in possession of her virginity.

We have already mentioned elsewhere that among the Ossetes women in the Caucasus, a full development of the breasts was regarded as a sure sign of active sexual intercourse.†

Lammert also quotes similar virginity tests from the peasants in Bavaria. If a maiden lifts a pot of boiling water from the fire and the water stops boiling,

* [Cf. the magical force of the virgin's hand and the legend of Claudia Quinta. See Kroll.]

† [Cf. Gaetano d'Ancora's book on the signs of virginity, p. 8, and for virginity generally, see Spinner.]

then she has lost her virginity ; or, if a maiden is given the powder from burnt ivy roots, then, if she is not a virgin, she will be unable to hold her urine.

Something similar was known in the fourteenth century to Konrad von Megenberg. Writing of the "Aitstein," by which he means black amber, he says that the water in which it has lain for three days could be used as a virginity oracle.

If a woman drinks the water and nothing happens, she is virgin ; if she is not a virgin, then she cannot hold her own water (p. 447).

According to *Gestriegelte Rocken-Philosophia*, in North Germany it is a proof of virginity if a maiden could blow on an extinguished light so that it again began to burn.

In Styria, according to Rosegger, oracular power is ascribed to a wreath of red roses : it withers on the head of a virgin, but remains fresh on the brow of a "fallen" woman.

The modern Greeks in Morea have a singular test of virginity, according to Pouqueville. Here, the bride, before getting into the bridal bed, has to mount on a leathern sieve. If she goes through it, then her virginity is clearly shown (I., 314).

2. THE DISREGARD FOR VIRGINITY

The concept of virginity is an ethical one arising from the assumption that the *virgo intacta* possesses a quality of peculiarly high moral value. This value is estimated in very different degrees among different races. Originally, the causes were naturally not ethical, but social and religio-superstitious. We ourselves have long been accustomed to honour the ideal of fine and chaste womanhood in the inaccessibility and purity of the virgin state. Even in old Germanic law, virginity was protected (on social grounds) and the Christian religion, as is well known, has from ancient times attached such great importance to a chaste virginal life that many a married woman is still respected at the present day because she has been able to preserve her virginity even in wedlock !

Quite different impulses are at the root of the esteem in which the virgin state is held among primitive peoples. Nothing spiritual, but rather merely physical, is then the motive which causes the jealous male world in a low state of culture to despise the defiled maiden and refuse the privilege of marriage. Most important of all, as we said before, superstitious motives (see above regarding puberty festivals), and also social impulses (interference with the proprietary rights of the maiden's "possessor"), are contributing factors.

An intact hymen counts among most peoples as the sole mark of virginity (Vol. I., p. 38). That was also the case among German people, and the great mass of the population still believe in this sign, although medical jurisprudence has long got beyond this popular view. The hymen, or virginal membrane, forms a high fold of mucous membrane at the vaginal passage, before which it, in most cases crescent-shaped, is stretched. It is generally believed that the wart-like excrescences at the entrance of the vaginal passage, which anatomists designate *carunculæ myrtiformes*, are formed immediately after the rupture of the hymen at the first coitus. But Karl Schröder has proved beyond doubt that the hymen not seldom remains almost unchanged by coitus : often even after frequently repeated coitus it appears merely distended or indented. At most, the open edge of the hymen is ruptured by the penetration of the penis (Vol. I., p. 48, Figs. 59A and 59B). As a rule changes take place only in consequence of a birth, as a result

of which the *carunculae myrtiformes* appear. Accordingly, the existence of the hymen is no absolute criterion that the person in question has not had coitus. On the other hand, however, even if the hymen is absent, it is not justifiable to assume without further proof that sexual intercourse has taken place, for there are many other ways by which the hymen can be destroyed. Hence the widespread opinion about the sign of defloration is subject to very considerable limitations and modifications.

We find, as already mentioned, that there is by no means a uniform conception of and esteem for virginity among the races of the earth in respect to an intact hymen. Even when, as we have just seen, these two concepts do not coincide completely, we are still not in a position to keep them absolutely separate. And thus it is manifest that a whole scale may be formed of the degrees of respect or disrespect which these conditions enjoy in the opinion of the different peoples. If we begin with those nations which entertain a thorough disregard for signs of virginity, then there comes, first of all, the intentional destruction of the hymen, often in the first days of life, by the hand of the mother herself.

It may be that, among some Chinese women, among the women of the Amboina Group, and among some Indian women, it is repeated and vigorous washing, due to an excessive sense of cleanliness, which causes the destruction of the hymen. Among the maidens of the Banda Archipelago who have just reached puberty there are probably also religio-hygienic motives which cause them to put plugs made of bast into the vagina, probably in order that the menstrual blood, regarded as unclean, shall not be seen and shall not soil the thighs. But the intention of the Machacari Indians, when they destroy the hymen of their little children and widen the vagina by means already described above, is quite different. Here the girl is being prepared for very early intercourse with adult men. Similar ends are attained by the masturbatory stimulation which the impotent old men of the Philippines practise on little girls, and similar trifling which, as we have seen, is done by the bigger girls to the smaller among many African tribes, may be a half-conscious, half-unconscious, attempt to attain a similar object. At all events, the above-mentioned custom of the women of the Savu Islands, who put a rolled-up koli leaf in the vagina of girls at their first menstruation in order to widen it, belongs to this class.

We must recognise an absolute indifference to virginity wherever we find quite unrestricted sexual intercourse between young unmarried people of both sexes. Of this we have already had several examples, which need hardly be repeated at this point (South Sea Islanders, inhabitants of the Malay Archipelago, North Asiatics, Japanese, Indian tribes, Africans, etc.), and a similar lack of restriction is to be found among some of the natives of Madagascar, the Basuto, etc., even as children. It is clear that in these places the bridegroom cannot insist on virginity in the bride of his choice.

Among the Tengerese in Java, according to Kohlbrugge,² the men frequently prefer to marry widows rather than young women. However, even before marriage, the girl had much freedom. The young people slept next each other and were often alone in the fields and woods. Even nowadays a young male guest demands to lie next the daughter of the house, and yet they maintain that coitus is not practised. On investigation, however, it is found that often the hymen is absent. The man is indifferent whether or not he marries a virgin. Tribes in Central Asia pay far higher prices for a widow than for a virgin.

There are, however, certain tribes which go a step farther, since they consider

the continuance of virginity in an adult woman a downright disgrace,* a proof, indeed, that the maiden has not found favour in any man's eyes. We have already seen that the Votiaks are an instance of this, and among the Chibcha in Colombia, now almost extinct, virginity was thus regarded as proof that the maiden was incapable of arousing love.

Such views, however, were not altogether foreign to the people of many districts in Germany, and what Paul Heyse reports of Munich in his *Jugenderinnerungen* ("Memoirs of my Youth") is very characteristic :

"When we were engaging a nurse for our first born, she appeared very youthful, and my wife asked her if she knew how to look after such a young child. 'Of course,' said the maid, 'I have had a child myself.' And obviously hurt by her mistress's shocked expression, she added quickly : 'What is the matter, madam ? Indeed I am not so repulsive that nobody could like me !'"

According to Gemelli Carreri, similar ideas were current among the Bisayas in the Philippines in the sixteenth century (Jagor⁸).

"Mais aujourd'hui même un Bisayos s'afflige de trouver sa femme à l'épreuve du soupçon parce qu'il en conclut que n'ayant été désirée de personne, elle doit avoir quelque mauvaise qualité qui l'empêchera d'être avec elle."

Now, even if men of other nations have not gone so far as to see anything dishonourable in the existence of the hymen, nevertheless they regard it as something which hinders and impairs conjugal pleasure, and which must be removed before entering into matrimony.

Among the Sakalava in West Madagascar, states Noël, the maidens rupture the hymen themselves before their marriage if their parents have not arranged to have this preliminary operation performed. In some parts of India, according to Schmidt,⁹ the girl's hymen is ruptured by her own mother during a nocturnal festival which is celebrated with great pomp. The extraordinarily brutal way in which Australian tribes on the Peak River make possible sexual intercourse with very young girls is horrible, for they widen the vagina gradually to the required dimensions. This business is undertaken by the elder men of the community. When the girl's breasts swell and the growth of pubic hair begins, a number of elder men lead her to a lonely place where they lay her down : one man holds her arms, two others her legs. The leading man then introduces into the vagina first one finger, then two, and lastly, four. When back in the camp, the poor creature is unable to leave it for three to four days on account of the violent pain caused by the ill-treatment. As soon as she can she goes out, but is followed everywhere by the men and has to submit to coitus with from four to six of them. Afterwards, however, the one to whom she was promised as a child lives with her as her husband, so that the husband is sometimes five times as old as the bride.

Moreover, Hill in Sydney reports that the aborigines of New South Wales before marriage perform defloration of the bride (who is generally a very young girl) with a piece of flint called *bogenan*, and with which the hymen is split. This is supposed to be done to make the passage as big or as small as seems fitting to the husband.

The statement is not very clear as the recorder has represented it, and as M. Bartels has pointed out, a more or less deep incision of the hymen is not sufficient to make a narrow vaginal passage of a young girl accessible to a full-grown man. Probably there is confusion with an

* [Cf. Maryse Choisy in 1931 ; "Autant elle est charmante avant dix-sept ans, autant elle est ridicule après vingt-cinq, quand on ne se destine pas au couvent."]

operation described by Purcell. It consists in making an incision in the inner section of the vaginal passage with the flint knife ; such a measure must certainly widen it.

The latter recalls the operations which are necessary before marriage among the excised and "infibulated" maidens in Africa, and at which this further cutting is performed either by priests or by old women with very questionably hygienic instruments. The ancient Egyptians cut through the hymen.* It is very probable that these hymen operations were nothing but a parallel with circumcision, *i.e.*, a blood-letting for sacrificial purposes.

Among other races again we meet the custom of the defloration of the bride "*lege artis*," *i.e.*, by the exercise of coitus. This is done not only by the bridegroom, but by some other man in his stead. We must not confuse this custom with a similar one of which we shall hear later when treating of the different forms of marriage ; that is, the surrender for one occasion of the maiden to the tribal companion before she has become, by marriage, the exclusive, inviolable property of one man. Here, as will be explained in due course, are quite different underlying motives. To return to our subject, several variations in this primary coitus by proxy are to be distinguished. The root idea of these customs lies in the superstitions attached to menstrual and defloration blood.

We have already seen several times that this loss of blood was believed to be dangerous because through it "evil spirits" might spring forth which might injure the husband as well as the wife and their offspring. Hence, the "malignity" of menstrual and defloration blood is spoken of, and men arrived at the idea that defloration must be performed either by instruments or by indifferent or especially powerful persons (*cf.* also the work of W. v. Hertz). According to a statement of St. Athanasius, the Phœnicians kept a special slave on whom devolved the duty of defloration.† Among the Bisayas in the Philippines there existed, according to Blumentritt, individuals who carried out defloration as a profession. Gemelli Carreri, too, as Jagor⁹ reports, writes in the sixteenth century of the Bisayas in the Philippines :

"On ne connaît point d'exemple d'une coutume aussi barbare, que celle que s'y était établie, d'avoir des officiers publics et payés, même chèrement, pour ôter la virginité aux filles, par-ce-qu'elle était regardée comme un obstacle aux plaisirs du mari. A la vérité, il ne reste aucune trace de cette infame pratique depuis la domination des Espagnols."

Moncelon reports similarly from New Caledonia. He is speaking of the value virginity possesses, and says :

"On y fait peu attention, car elle la perd en folâtrant dès son bas âge. Chose fort curieuse, j'ai eu la preuve que, lorsqu'un mari ne peut ou ne veut déflorer sa femme, il se trouve en payant certains individus qui s'en acquittent à sa place. Ce sont des *perceurs attitrés*. J'ai pu vérifier qu'au village de Bâ, le nommé Théin, faisait cette besogne singulière."

Hence we must consider it an improvement when we see this defloration regarded as an honour which is given only to a man of high position (*jus primæ noctis*), or a sacred gift which must be offered to the Godhead, and which, therefore, the image of God himself or of the representative of God upon earth, the priest, is fitted to undertake. An example of the first case is to be found among the Balantes in Senegambia, a very barbarous negro tribe. Here the chief, according to Marche,

* [No authority is given for this statement.]

† [I do not know the authority for this statement. Some confusion may have arisen on the subject of temple prostitution in *Contra gentes*.]

has the responsibility of deflowering the bride, which he often only condescends to do in exchange for handsome gifts ; without this favour of the chief, however, no maiden is permitted to marry.

We see the first fruits of virginity offered as a sacrifice to the gods among various peoples of antiquity, to which also the ancient Romans belonged. Roman brides placed themselves in the lap of the god Mutunus by means of whose phallus the hymen was rent and the vagina widened (*cf.* Fig. 458, Vol. I., p. 637). Similar ceremonies were connected with the *linga* cult in India.

“Duquesne a vu,” reports Dulaure, “dans les environs de Pondichéry, les jeunes mariées venir faire à cette idole (le Lingam) de bois le sacrifice complet de leur virginité. Dans une partie de l’Inde, appelée Canara, ainsi que dans les environs de Goa, de pareils sacrifices sont en usage. Les jeunes filles, avant d’épouser, offrent et donnent dans le temple de Chiven (Siva) des prémices du mariage à une semblable idole dont le Lingam est de fer et l’on fait jouer à ce Dieu le rôle de sacrificateur” (*cf.* van Caerden).*

The toil and work in the service of the idol was later assumed by devoted priests or even by sorcerers. The latter was reported in the sixteenth century of the Kumans and others ; whilst in Nicaragua the high priest bereft the bride of her virginity. Even in modern India it is said that the bridegroom sometimes takes his bride to a Brahmin for him to take her virginity. The Brahmin concerned receives for his trouble a present which is often of considerable value. For certain Brahmins in Malabar, this office was the sole duty of their calling.

Defloration can also be performed without risk by strangers (Babylon, Cyprus, etc.).

In this is to be found the explanation of a custom which used to prevail in Cambodia. The priest had to deflower the bride with a finger dipped in wine. With this finger he wet his brow, and the wine was drunk by the parents and relatives of the young husband (see Schmidt⁹). Similarly, virgins in Samoa used to be deflowered by a rod (see also next chapter).

3. REGARD FOR VIRGINITY

At times we find that such tribes as permit free intercourse among their young people nevertheless esteem virginity. To these belong some of the natives in the Dutch East Indies. They allow their young people quite undisturbed sexual intercourse, and, therefore, they do not require a condition of virginity on entering into marriage ; yet it is maintained that they give preference to a *virgo intacta*.

It must, however, be carefully noted that such reports frequently come from missionaries and Christian travellers, and are not therefore very reliable, since they see some “indecency” in all sexual occurrences.

The Ancient Hindus esteemed virginity highly on socio-religious grounds, and warned the young men against marrying maidens who had already belonged to other men and who were already acquainted with the joys of love or had already given birth to children (*cf.* Schmidt⁸).

Whether an esteem for virginity is to be ascribed to the peoples belonging to Indo-Germanic culture or not, is, as O. Schrader realises, by no means an easy question to answer, since, as a matter of fact, we have information that several of these peoples set no value upon female chastity before marriage.

* [I have not succeeded in discovering to what publication the text refers.]

“ Thus, Herodotus states (V.. 6) that the Thracians permitted their women to have sexual intercourse with whom they liked. Moreover, certain circumstances also among our rural population, such as the custom of ‘ trial nights ’ and the conditions, defying all description, in old Russian bath houses and spinning rooms (Fig. 495) might point to ‘ ancient customs of promiscuity before marriage. ’ ”

The greatest value is put on the so-called specific mark of virginity in Asia and Africa, and in most countries of those continents the husband, as a rule, wishes to get unmistakable proofs, at the consummation of his marriage, that the only decisive mark of virginity, the hymen, has been kept intact (to him) and unruptured in his bride, who has often been obtained for much money or money’s worth. Here, too, we find again a noteworthy series of steps in the manner by which the bridegroom tries to get conviction of the sexual intactness of his bride. As a first step in this connection we might consider the Egyptian custom in accordance with which,



FIG. 495.—Life in a spinning-room. (Germanic Museum, Nuremberg.)

as Clot reports, the hymen is destroyed not by the first coitus but by the husband wrapping a piece of white muslin round the index finger of his right hand and forcing it into the bride’s vagina ; and then showing the bloodstained cloth to the relatives. Among other Oriental races the affair is more roughly treated.

The peoples in the Indo-Germanic cultural group knew, as O. Schrader ⁵ deduces, the so-called “ chastity test.” In Russia there still exists the solemn ceremony of the inspection of the bridal nightgown or sheets. “ If stained with blood, the bride has passed the chastity test and, in Russia, it is borne in triumph into the courtyard amid singing and dancing. Vessels are broken nearby and the husband bows before the mother. If the garment is unstained, then the bride’s father or brother is bound with a halter ; the husband does not bow before the mother and no vessels are broken, and instead, a vessel with a hole in it is brought to the parents.” Doubtless similar customs formerly prevailed in Germany, where, even now, in many places and in many families, the sheets from the marriage bed are carefully preserved. We have already reported above that defloration,

like menstrual blood, was intercepted (see Vol. I., pp. 651 and 653) in order to render it innocuous. Later, when the root ideas fell into oblivion, it was made a "proof of virginity." The breaking of vessels is a *death ceremony*, and is not connected internally with the wedding-night ceremony except in so far as with the departure of the bride from her family circle; for them, she, as it were, dies.

In Samoa, as Krämer and Stübel report, there is a virginity test customary at least among the brides of the chiefs and, indeed, it takes place in public. When the ceremonial preparations have been carried out as far as the fixing of the day of the marriage, then the bride, accompanied by a few women (if she is very distinguished the whole village follows her), arrives at the bridegroom's village. The people of the latter village sit down on one side of the village square; opposite them sits the bridegroom between two chiefs; before them a white mat is spread. The bride, who is wrapped up to the armpits in a fine mat, goes towards the bridegroom, but is sent back several times by his attendants to her escort, who encourage her to return to the bridegroom. Then, if the bridegroom's attendants also call her, she comes, lays her hands on the bridegroom's shoulders and acts as if she were going to kneel. Thereupon he pushes his index finger up into her vagina. The blood flows in consequence on to the bridegroom's mat. When the girl feels that her vagina has been pierced by the bridegroom's finger she throws off the fine mat, which was fastened under the armpits, and betakes herself naked to the side of the green where her attendants are. All the people on the square see how the blood runs down her legs. The bridegroom holds up his hand and shows the blood which is on his finger, and calls out: "The girl has been found intact." The noise in the village is great, likewise the joy of the girl's companions. They dance, loosen their *lava-lava*, embrace and kiss the girl and sob from very love (see Stübel).

It goes without saying, that if we can credit the reports cited above, this ceremony was no actual test of chastity since practically all maidens were more or less deflowered before marriage.

According to Krämer, at these marriage contracts among the people, the defloration of the bride with the finger took place in the house.

In Nubia the girl is betrothed when she is about nine: the husband deflowers her with his finger before witnesses; not till a year later, or even longer, does he take her home as her actual husband. Among some of the Arabs, the betrothed, unless she is a widow, is, as in Egypt, bereft of virginity by means of the right-hand index finger wrapped in a linen cloth, yet her husband does not carry out the affair, but a matron, and the latter prudently does it at a time when the betrothed girl is menstruating. The cloth is shown to the parents. The custom of Copts in this respect resembles that of the Arabs.

Among the majority of Oriental races, and also a few of their neighbours, the bridegroom desires to find in the marriage bed after the first coitus traces of blood, as a sign that the hymen has been ruptured by him, and that his wife has only then lost her virginity. These trophies of his victory and, at the same time, "proofs of the chastity" of his bride are exhibited in triumph to the circle of friends and relatives.

Such customs are to be found also among Slavonic peoples, as has been reported repeatedly (*cf.* on *Russia*, P. Bartels, Kahle²; on *Bulgaria*, Krauss, Kahle; on *Ruthenia*, Kahle³).

Even quite recently—*e.g.*, among the white Russian country people—after midday the young people are conducted to the bridal chamber by the young husband's *druschko* (master of ceremonies) and a few older women; it is the *druschko*, too, who, after a short time, has to

inspect the bride's garment and then to announce to the company whether the wedding has been an honourable one or not. If the wedding was an honourable one, the joy is great; red ribbons adorn the young wife and the harness of the horses. Kahle³ thinks it probable that red is the symbol of virginity; indeed, it appears that originally the stained cloth itself used to be hoisted as a red flag; for at least Kahle seems right in thinking it very probable that the red flag which (among the Ruthenians in the Bukovina) is hoisted as a sign of the established virginity, is itself only a substitute. Even in earlier centuries, according to Brückner's account (Kahle²), the Moscow merchants are said to have conveyed the sheets concerned triumphantly through the streets of the town.

A very exhaustive description of these customs from the Ukraine has been given by Hnatjuk, to whose paper we must refer the reader.

Among the Samoyed and Esthonians, it is, according to Pallas, even customary to make a gift to the mother-in-law of the delivered signs of virginity.

Among certain of the Chinese of Peking, on the wedding eve the bride is undressed by a female attendant. She retains her stockings, knickers and the belt, in the pocket of which is a white cloth. The bridegroom must not take off her underclothes, but he takes the white cloth from her pocket and spreads it over the couch so that, at the coitus, it may absorb the *hsi-h'ung*, "the luck-bringing red." If the latter is absent it is a misfortune, and a great disgrace. The wedding decorations are taken down from the door and the guests leave the house as quickly as possible. Of the young wife it is then said: "in public a wife, in secret a concubine." The husband may send back his wife, or he may even take a second wife, who has then the full rank of a regular wife and is not considered a concubine. If the mother maintains that her daughter has lost the hymen by an earlier accident, then she must produce as proofs the blood-stained underclothes worn by her daughter at that time or the wadding with which the blood was absorbed. Both would be carefully preserved by the mother for this purpose (*cf.* Grube).*

Among the inhabitants of the interior of Sumatra, as Maas³ reports, great value is set on the purity of a woman, though only in a limited measure. He states:

"If it has been proved by marriage that innocence is already lost, then they try to conceal it. In Siak, a white cloth is put under a young wife on the first night; if it is proved next morning that it shows no blood stains, then the people assume that the maiden had already been seduced. However, they do not keep quiet about it, but speak about it in public. Among the Minanhka peasants, he who is convinced that he has not brought home a virgin to wife, shares the couch with her only on the first night; in spite of this, the wedding stands. . . . Frequently, however, the efforts of the mother-in-law succeed in bringing back normal relations."

We find analogous accounts of African customs in Eckarth's "Unvorsichtige Hebamme" (1715). There it says:

"The Africans are said to keep such a custom among themselves. For as soon as the bridegroom and the bride reach home after the contracts have been honourably fulfilled, they betake themselves, while the wedding feast is being prepared, to a special room in which the bridegroom looks for the virginity of his bride. When he finds it, he hands the evidence to an old woman who has been waiting outside the door. She now takes a linen cloth filled with rose leaves and shows it to the guests present as a special sign of the conquered virginity. Then the guests sit down and make merry.

"If, however, the roses do not shed their leaves, the bride is sent back to her parents and the invited guests have to go home sad and unfed.

* [This suggests that the alleged destruction of the hymen in China is, if it occurs, purely local.]

“ The *Carmina* of Claudianus show that the Romans celebrated in similar fashion, when he says :

“ Et Vestes Tyrio sanguine fulgidas
Alter virgineus nobilitet cruor.
Tunc victor madido prosilias thoro,
Nocturni referens vulnera praelii.

“ Just as the upper bed, with royal crimson decked,
So is the under sheet with virgin blood befecked ;
That from his moist repose, the happy conqueror springs,
And of the battle held the song of victory sings.

“ Several nations still dwelling in Europe have similar customs, such occurrences are the true marks of intact virginity.”

We may regard our institution of marriage witnesses as a kind of analogy for the custom among many peoples whereby appointed friends or relatives are present at the first coitus of the young couple, and must even assist at it. Thus, *e.g.*, among the Catholic Christians in Egypt the rupture of the hymen is performed by the coitus at which both the mothers-in-law, the husband's mother as well as that of the young wife, are obliged to be present.

In Abyssinia also two witnesses must be present at the first coitus of a married couple, and they hold up the legs of the recumbent woman to make the coitus easier for the husband. These two witnesses thenceforward enter into a relationship with the young couple ; this relationship is similar to our sponsorship by god-parents. Stecker, who informed Ploss of these facts, states also that this holding of the legs at the first coitus is undertaken because there the young woman, as in many parts of East Africa, has her vagina artificially closed up, which is, however, not opened as elsewhere by cutting, but by the young husband, who pushes in his penis forcibly (see Vol. I., p. 356).

It must also be remembered that the Emperor Tiberius had a peculiar edict* passed in Rome. He forbade virgins to be executed. Should they have forfeited their life, then it was the duty of the executioner to deflower them before execution ; certainly an ancient custom is here to be seen, which became known for the first time under Tiberius.

The great esteem in which virginity is held among Mohammedan peoples can be learnt from the Koran. It is written in Sura 55, and says that in both gardens (of Paradise) are virgins with chastely retiring glances whom neither man nor djinn have touched. Beautiful are they, like jacynts and pearls. The most beautiful maidens, with large black eyes, are kept in tents for Thee. Untouched by man or djinn. There they rest on green cushions and splendid carpets.

The great esteem of the Finns for virginity is expressed in their folk poetry. One of their verses runs thus :

“ Sacred event to the evil,
Maiden innocence, maiden honour.
Hüsi (evil principle) himself by virgins all
With lowered eyes doth pass.” (Altmann.)

In conclusion, another custom may be mentioned which Paasonen reports of the Mordvins :

* [This was scarcely an *edict*. Suetonius says : “ *Immaturae puellae, quia more tradito nefas esset, virgines strangulari, vitiatæ prius a carnifice, dein strangulatae* ” (III, 61).]

“ On the evening before the wedding, the bride puts her head covering with a ring hidden in it round the neck of one of her friends ; this head band is called virginity.

“ Meanwhile they sing as follows :

“ My little sister Nayo (Anastasia)
 Come, sisterkin, before me
 Come, sisterkin, to my presence.
 A little present to thee I will present,
 A little gift will give thee.
 Oh, I must leave thee
 My virginity
 My freedom.
 Wear it prettily
 Oh, let it not
 Visit the houses of the dead, the vanished
 Oh, let it not
 Visit the kingdom of the dead (the graveyard)
 No, wear it at weddings
 In wedding houses, in houses where gay chatter goes on,
 Amidst dancing, singing.”

4. LOSS OF VIRGINITY

Woe to the unhappy bride who cannot pass the test of chastity ! Among many races there is no excuse for the lack of the hymen. In Persia, according to Polak, in such a case the wife can, simply on the word of the husband, be driven away after the first night. This unjust practice is often employed for the purpose of black-mailing the wife's parents who do not want to have her reputation tarnished. The Jews stoned a girl found not to be a virgin (see Deut. xxii. 21).

In Nicaragua, too, the young husband could send his bride, according to Squier (II., p. 343), back to her parents if she had already lost her hymen.

The case is similar among some Oriental races ; but among certain African tribes the bridegroom sends the bride back to her parents if he believes that he has not found her a virgin on the bridal night. The marriage is then simply declared invalid and dissolved. Among the Swaheli, in East Africa, if at the marriage the hymen is found ruptured, then the parents have to pay back half the bridal money to the young husband.

At a Zulu wedding, according to Joest,⁵ if the husband finds that the bride is not a virgin, then her brother or father pays the young husband one ox “ to stop the hole,” as the Zulu expression runs in English.

Among the Bulgars the maiden's shame is loudly proclaimed if, at the consummation of the wedding, proofs of her virginity turn out badly ; however, in such a case the parents ease the mind of their son-in-law by making a corresponding increase in the dowry.

5. ARTIFICIAL SIMULATION OR RESTORATION OF VIRGINITY

With rules so strict that they threaten the maiden's whole future happiness, and even her life, if she has not been able to preserve her virginity, it is easily to be understood how she herself, or her relatives, may devise means of simulating, or apparently restoring, the lost virginity for the testing period.

According to Eckarth the thing is not exactly difficult, for we read that :

“ When good bridegrooms seek certainty in this matter, they can be gratified by a little tipsiness and a well arranged deception, the results of narrowness as well as rose juice may remove suspicion.” The reply is then given : “ Mrs. Carilla, I will certainly not accuse you of this, but merely mention, many a full-blown rose may be made to appear a bud, and the underlying sheet sprinkled with poppy juice, and many an Actæon has been made thus before now.” She excuses herself : “ All are not whores who are not exactly virgins ; it sometimes happens doesn't it, that one or another can have a wide hole or cleft from illness or force and other accidents, or the poor maidens when they are so much shut in and left alone may change a little one into a big one to give themselves a little extra pleasure. (Turn an Omicron into an Omega, interjected one of the attendants.) Would one not be well advised by drawing together and binding together with other artificial things underneath to avert from them an unhappy marriage ? ”

The attendants, however, do not let her escape with this, but reproach her in the following words :

“ Is it not enough, that, to prevent an evil married life a man is ensnared and a strumpet, who has crept into every bush and treated everybody venally, should pass herself off as an honest virgin to one who shall keep her for life ? Mrs. Carilla, you know things that people such as you are generally accustomed to, a particular colour, stretching by force, illness and other chances but you will not go beyond these honest things. Force and illness are all very well, but what is understood by those other chances is no excuse for deceptive virginity. An honest man should not be made a fool of, and it is inexcusable that it should happen through a medico, empyrico or midwife that a rank prostitute should be passed as a virgin, for the case would be that with that sinful woman a *summa contritio vite anteaetate* would have to be made honestly, otherwise it should not be.”

Such attempts go back to venerable antiquity, for in the ancient Hindu work, “ Smaradikîpâ,” *i.e.*, “ The Light of Love,” is to be found, according to Schmidt,⁶ a chapter which treats of the “ restoration of virginity.”

Hechstetter reports that such artificial resources were known in the neighbourhood of Augsburg in the first quarter of the seventeenth century. The *Symphytum majus* was used.

“ Noverat serva illa spousa hoc secretum, quæ ante nuptias usa est solio aquae, in qua hæc radix decocta fuit, ut antrum virginalis amico olim *Polyphemo* pervium angustius arctaret.”

In Siberia, according to Krebel, the maiden who is no longer a virgin drinks before the wedding night the boiled fruit of the *Iris Sibirica*.

We saw before that among the Arabs the matrons prudently performed the digital defloration at the end of menstruation.

In Persia, too, a little sponge soaked with blood is said to be put with benefit into the vagina on the nuptial night.

Among the Persians, if a maiden has lost her virginity, then she is married either to a poor fellow or to a young boy, and the parents take care that their daughter is then quickly divorced. Afterwards, she can, without trouble, be given as wife to a respectable man. But there is also another method of appearing to get back the lost virginity on the decisive day. A few hours before the wedding the Persian surgeons used to put a few stitches in the maiden's labia, which then will be certain to be torn out by the man's attempt at cohabitation. Of course blood flows, which the man regards as the sign that the bride was *virgo intacta*.

A similar process was known to Cervantes, and perhaps it continued in Spain from the time of the Moors. Cervantes relates in his story, *La Tia Fingida*—“ The pretended aunt ”—the

conversation of two ladies, the niece and the aunt, who are travelling to Salamanca. The niece says : " However, one thing I will tell you and assure you of again so that you may have no delusion and pretence about it, namely, that I will not be tortured by your hand again, however much you may offer me. Three flowers have I already given away ; just as many as Your Ladyship has sold, and three times have I gone through unbearable pain (*insufrible martirio*). Am I then made of brass ? Has my flesh no feeling ? Do you know of no better way of doing it than sewing it with a needle like a torn frock ? By the blessedness of my mother, whom I have never known, I will not submit to it again. Let me now, Aunt, keep the gleanings in my vineyard for, in many cases, the gleanings tastes better than the first crop ! If, however, you have determined to sell my garden pure and intact, then seek another milder way of closing the portal, for you must not imagine that my flesh will again approach a locking up with silk twist and a needle." The old woman, however, replied : " You silly, there is nothing on this earth to be compared with needle and flesh-coloured twisted silk ; all else is trumpery. Sumac and ground glass are of little use, leeches less, myrrh is of no use at all, neither is sea onion, nor pigeon's crop, nor any other loathsome and disgusting mixture that one has, for nowadays no man is such a blockhead ; if he pays the least attention to what he is doing, he at once perceives the employment of counterfeit coin. Long live my thimble and my needle ; long live, at the same time, thy patience and endurance."

In South Russia such artificial aids must have been not exactly rare, for the people try to guard against them ; they have there, according to Ásböth, the custom that the bride, before she is abandoned to the bridegroom, must undress completely before witnesses so that it may be established whether she has any means of deception on her. Something similar is related by La Martinière in an old travel book in the year 1671, quoted by Kahle.²

[In modern Europe, and also in earlier times, the operation for restoring a lost virginity is constantly discussed in erotic literature. Delicado mentions a sponge full of pigeon's blood which has to be thrust up the vagina and which often has admirable results. The " artificial maids " and " doctor'd virgins," as Middleton called them, plied a good trade in the various houses of assignation where a demand for virgins was always well known. Montesquieu sums up such women well, " des femmes adroits font de la virginité une fleur qui périt et renaît tous les jours, et se cueille la centième fois plus douloureusement que la première."

During the craze for virginity, which appeared in England towards 1885, these methods were widely used in the brothels for young girls. It was this fact which led to the decline in the traffic when it was exposed by W. T. Stead in the *Pall Mall Gazette*.]

CHAPTER III
WOMAN IN THE SEXUAL ACT

1. SEXUAL INTERCOURSE

THE position of woman in the family and in the nation, and the reciprocal relations between husband and wife are of the highest significance for the stage of morality to which each people has attained. A whole scale manifests itself in this connection, from the deepest contempt to the highest respect, from the most shameful ill-treatment to the tenderest consideration. The purely sexual relationship alone is the first consideration only amongst the most barbarous races, but it still plays a highly important part among half civilised nations ; in civilised conditions, however, while the female sex is believed to be endowed with the virtue of spirituality, the sexual relations, under the domination of refined æsthetic ideas, are confined within the narrowest moral limits. Where woman is nothing but an object to satisfy desire on the one hand, and to diminish man's strenuous labour on the other, then there, too, the worst is exacted from the woman in respect of sexual intercourse.

We can only summarise the facts very shortly since the numerous reports of travellers which are concerned with this subject give very few data which have any importance from a scientific point of view.

To the field of somatic anthropology would belong in the first place those statements which pronounce an opinion on the greater or less sensuality of the female sex in different peoples : such information is to be found for instance in Finsch and Riedel,¹ on the women of the South Sea Islands, in Stevens on the women of the Orang Bèlanda and Orang Lâut in Malacca, in Appun on the native women of Guiana. Bartels is, perhaps, not wrong in his opinion when he regards these statements with scepticism ; the experiences usually refer to intercourse between white men and native women, and it is quite conceivable that consequently all kinds of motives are present which do not permit of correct judgment of the actual conduct in intercourse between members of the same race. He could, therefore, but touch lightly upon these statements. Other reports, however, are of some ethnological interest. It may next be mentioned that among not a few tribes sexual intercourse is carried on with girls before they have reached the age of puberty, as we shall show more specifically later in the section on the age at marriage.

There is a certain psychological interest in the information that in many tribes coitus is publicly performed. This was seen (*cf.* Blumentritt) among the Malays in the Philippines (when it is done informally in the street), by Cook's fellow-travellers in Tahiti, by La Perouse in Samoa, etc. However, we do not need to go so far away. We already have such reports from antiquity. Thus Athenæus reports (*cf.* Reitzenstein,²⁴ p. 14) that the women of Thessaly thought it by no means a disgrace to have any kind of sexual act done to them or to do it themselves in the open air under observation. This is rather the custom of the country, and they are far from considering it a "shameless" one. According to some authors (see Brucker), Crates of Thebes and Hipparchia consummated their marriage in the presence of onlookers, and Lactantius (*Div. Inst.*, III., 15) says that this was a

common occurrence.* The Greeks found on their anabasis to the Black Sea, a people, the Mosyni, in Pontus, about whom Xenophon (*Anabasis*) and Diodorus (XIV., 30, 7) report in similar phrases "that the men have intercourse with the women in front of everybody."

The time at which coitus is performed is naturally and usually during the night. Merker gives a remarkable reason, speaking of the Masai: "Cohabitare non consuerunt nisi nocte. Ad lucem coeuntes timent, ne vir sanguine in vasa uxoris translato nihil nisi aquam retineat." Yet the reverse is also to be met with. Thilenius³ says that on the Tawi-Tawi Group sexual intercourse mostly takes place during the mid-day rest in the plantations, and it is also reported of the women on Buru Island that, in consequence of the labour imposed on them, they are usually too tired at night, so that cohabitation takes place by day under the trees.

Many tribes make use of external stimuli to excite female desire.

On Ponape Island (W. Carolines) it is considered a mark of female beauty to have the labia minora much lengthened and the elongation of these, as well as of the clitoris, is, as we have seen, artificially brought about in little girls. The man arouses desire in the women by seizing the elongated labia with his teeth in order to pull them out, and some men, as Kubary asserts, go so far as to put a piece of fish into the vulva in order to lick it out little by little. Such abnormal experiments are carried on with the chief wife by whom the man wishes to have a child, until she begins to urinate and then only is coitus accomplished (see Finsch).

In Abyssinia, as on the Zanzibar Coast, the young girls are instructed in the trunk movements which they have to carry out at coitus in order to increase sexual excitement; ignorance of this muscular action is considered a disgrace; here the movement is called *duk-duk*. To this appertain all forms of penis treatment, but we shall see that originally they had a different purpose.

In order to enhance the woman's pleasure at coitus by a strong stimulus, many Dyaks pierce the glans penis with a silver needle; they leave this needle in long enough for the passage to heal as a canal. Before the sexual act, a contrivance is firmly fixed in this canal which causes violent friction in the vagina, and thus considerably increases the woman's sexual pleasure.

The substances introduced into this canal are various: little rods of brass, ivory, silver or even bamboo. More complicated arrangements are also put in. These are of silver, and provided with openings at both ends into which little bunches of bristles are fixed so that the contrivance is like a kind of little brush. v. Miklucho-Maclay¹ says:

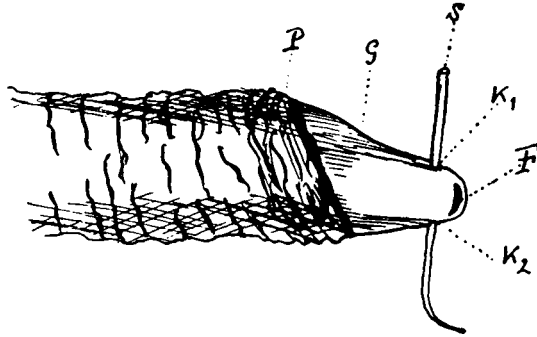
"It is probable, since this operation is painful and indeed dangerous, that this custom, together with all such contrivances, is devised by the women themselves or invented purely for the sake of the women. In any case, it is kept up by incessant female demands, whilst the men without this arrangement for fitting the stimulus apparatus are repulsed by the women. The men who have several such perforations and can wear several instruments are specially sought after and admired by the women."

The contrivance is called *ampallang*, also *untang* or *kampion* (Fig. 496). The woman makes known to the man in symbolic fashion her wish that he should use such a contrivance; he finds, for example, in his rice dish a rolled-up siri leaf with a cigarette put in it, the length of which represents the dimensions of the desired *ampallang* [cf. also Hœvöll].

Among the natives on North Celebes, too, Riedel found similar and still more

* Nam quid ego de Cynicis loquar? quibus in propatulo coire cum conjugibus mos fuit.

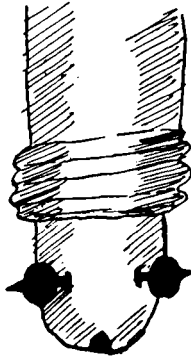
complicated contrivances, which were called there *kambiong* or *lambi*. Here the eyelid edge of a goat with the eye-lashes attached is bound round the corona of the glans, to heighten the sensation for the woman [and Grubauer describes a similar



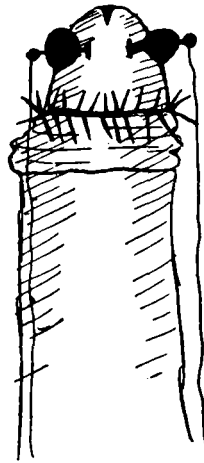
Perforatio glandis penis. Specimen in the military hospital at Batavia. P = Prepuce; G = Glans; S = Sound; F = Meatus; K₁ = Upper artificial meatus; K₂ = Lower artificial meatus.



Dyak penis with the *ampallang* seen from in front and laterally.



Penis of a native of North Celebes with the *kambiong* in position.



The glans encircled by a ring made from the eyelids of a goat.

FIG. 496.—Ampallang.

contrivance called *taléde*]. In Java and among the Sudanese before coitus the penis is sometimes bound with strips of goat skin in such a way that the glans remains free.

Such customs are widespread. In Pegu, Linschoten found that some men wore on the front of the penis little balls of the size of walnuts, and in China volup-

tuaries bind the corona glandis with the down from a bird's feather, which spreads out like a brush at coitus and causes friction. Hagen discovered among the Batta in Sumatra an operation performed by travelling medicine men whereby as many as ten little stones (called *persimbraon*) were pushed under the skin of the penis; and sometimes also little pieces of gold or silver, so that the pleasure in coitus should be heightened for the woman [cf. also Weissenberg¹² and Staudinger]. (According to Römer, the Batta himself performs the operation; in later life the Batta makes incisions in the prepuce, in which he lets grow sharp prismatic bits of quartz "ad augendam coitus voluptatem.")

Similarly, as Deevall, Goffron and A. B. Meyer⁸ inform us, the penis is perforated by the Malays in Borneo, and a strand of very fine brass wire introduced, which is spread out brush fashion at the ends. Presumably the end to be put through the hole must be pressed together before its introduction, and only spread out again before the coitus.

H. Vaughan Stevens succeeded in discovering a strange transformation of such a custom among the Sakai in Malacca. The Orang Tëmiâ had, in earlier times, the custom of applying such a contrivance. It consisted of a wooden rod, one end of which carried a knob-like protuberance. Now, when this rod was

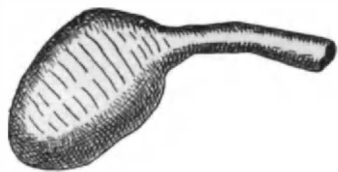


FIG. 497.—Magical device in wood used by the Orang Senoi of Malacca for increasing the sexual impulse in women. (After H. V. Stevens.)

introduced into the hole bored in the penis, then a second knob was screwed on to the free end, and then the little contrivance was firmly fixed in its place. Nowadays, however, it is no longer used. Now, from the Orang Tëmiâ the Orang Senoi learnt to know this contrivance. They knew it had something to do with the sexual act, and so they copied it, and found in it a resemblance to man's genitals. They did not pierce the penis, and so, of course, they could not use it as the Orang Tëmiâ did. But they were convinced it must have some influence on sex activity, and so they put it under the sleeping mats in order to "increase the sexual urge in their wives during copulation." Thus it has become a charm (cf. Fig. 497).

Jacobs reports of the people of Bali thus :

"The Balinese know a number of agents for increasing sensation in coitus (*mekatoekan*), and their use is by no means limited. These agents mostly belong to the vegetable kingdom. One most commonly used is the *Padang-derman* (bal) (or *Panderman*, jav.), the leaves of *Artemisia vulgaris* L. The Chinese, too, supply them with many things for this purpose. With the object of increasing pleasure in coitus, the women also put a red, resin-like powder, called *gopita*, into the vulva. This powder has pungent and astringent properties, and appears to cause a change in the lumen of the vagina. Van Eck says wrongly that these substances are used for the purpose of promoting fertility in the women."

R. Lehmann-Nitsche also described a contrivance for increasing the sexual sensation in women, such as the Araucanians employ, a so-called *geskel* :

"Our specimen," he says, "consists of a carefully constructed little brush of horse hair; a section of hair is, as in any brush, bent in the middle so that a bundle twice as thick and 4 cm. long results; 21 such bundles are interwoven into a flat brush by means of a doubled thread, the ends of which terminate at the longer end and are there joined by a knot, whilst the shorter end is, naturally, the doubled part of the thread. This shorter end measures 22 cm., reckoned from the arrangement of bristles; from the same point the longer end measures 41 cm., whilst the breadth of the brush is 3 cm. The horse hairs of which it consists are not uniform, but half the bundle is black, the other half dark brown. Obviously the instrument is intended to be

attached firmly to the male member by the thread. The extremely careful execution seems to indicate that it is made by women who are very skilful in all kinds of female handwork." (See v. Reitzenstein, *Das Weib bei den Naturvölkern*, Berlin, 1923, Tafel III., Figs. 2 and 3.)

The instrument was presented to the Museum of La Plata with the explicit assurance that the specimen in question had been in use among the Argentinian Araucanians for the purpose stated.

Such instruments, however, appear to be forbidden in Japan and Indonesia according to the special treatises of Schedel and M. Funke, although other devices, as in Europe, are employed.

[In Siam the custom of inserting objects into the penis was not unknown. In the "Record of Strange Notions," a Chinese block-book of about 1392, of which, apparently, only one copy is known, occurs a passage in which it is stated that in Hsien-lo (Siam) the penis is sometimes slit and jewels are inserted "in order to indicate wealth and position." This may be compared with what Linschoten says about Pegu.]

It is obvious that these contrivances were not "invented" by women in order to increase their own sensual pleasure, just as tattooing was not "invented" from a sense of beauty, or circumcision from hygienic reasons. They can, of course, only be due to the observance and effect of an *existing custom*. In M. Marcuse's "Handwörterbuch d. Sexualwissenschaft" (Bonn, 1926), p. 636, v. Reitzenstein has tried to explain the origin of the custom. It belongs, he thinks, to the sphere of practices like circumcision, ear, lip and nose piercing, tattooing and making scars as an adornment, and is a kind of scarification and sacrifice by blood, which is performed at puberty festivals, and to which, later on, are attached significant social and religious consequences.

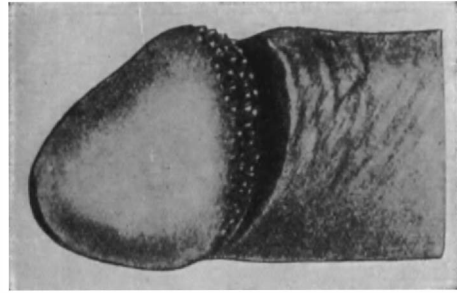


FIG. 498.—Glans penis showing *papillæ genitales*.

Consequently, an effort was made to carry out these operations so that they remained permanently visible; rubbing of colour into cuts and pricks of tattooing, putting rods in ears, lips and noses, cutting off little bits of flesh, and incorporating little rods in the private parts, etc. Along with these scarifications rites was a second motive. As the medicine men "cure" a disease by appearing to draw a foreign substance from the body (crystal, etc.), people therefore came to believe that the incorporation of certain curative stones, shells, crystals, would increase the functional power of parts of the body, a belief which had, as consequence, scar tattooing, the incorporation of pebbles, etc., in the penis. It was natural that a member thus altered should exercise a greater stimulus on women, and, after they had got used to them, that they should be desired for increasing their sensations. Meisenheimer (*Ib.*, p. 547) maintains that men originally had papillæ on the penis (*cf.* Fig. 498). Reitzenstein does not believe that human memory reaches back so far, or that the phenomenon is so frequent as to be widespread. [These papillæ are not unknown to-day. See B. Lipschütz, Buschke and Gumpert.]

One belief of the ancient Hindus must be mentioned, according to which unpleasant people could be dispatched with the help of certain prostitutes. For this

purpose the poison maiden (*visakanyā*), or the poison woman (*visanganyā*), is used. Concerning these, Schmidt⁹ writes :

“ The Hindus, and not they alone, believe that one can, by the habitual use of a certain poison, be impregnated to such a degree, that the mere touching, yes even breathing upon or looking at suffices to bring about the immediate death of the person touched. In this conviction specially beautiful maidens who had been nourished on poison from childhood, were used as the most effective love gifts when it was a question of destroying quickly a general and his men, The embrace of a poison maiden was infallibly deadly ! Several such cases are mentioned in Sanskrit literature. . . . The Hindu sources say nothing so far as I know about how the poison is administered to the maidens destined to be *visakanyās*. From Kazwini's report, however, we learnt that the herb *el-bis*, which is supposed to be found only in India, is first strewn for sometime under the cradle of the new-born child, then among the bed stuffing and then among the child's clothes. Lastly, it is given in milk to be drunk until it is eaten by the growing maiden without danger to her life. Now this poison is nothing but the root of *Aconitum fera*, called *visa* in Sanskrit.”

2. ORDINANCES AND ABSTINENCE

Many believe that it should really be taken as a matter of course that the husband should have no sexual claim upon his wife when she is menstruating* ; and, in fact, this is mostly the case. Among many peoples, however, as we have seen, women at this time are banished entirely from the room and the company of the male sex.

But this apparently natural continence was not observed in all cases. As is well known, Mosaic Law considered it necessary to enact special laws for it, and as soon as a couple among the Israelites broke this law, then the lives of both were forfeited.

Among orthodox Jews, as Weissenberg⁸ has pointed out, the laws are very strict :

“ Wives who know the time, avoid intercourse one day before. After the cessation of the flow, but not before the fifth day, the wife must satisfy herself by putting a clean piece of rag into the vagina, in order to see if the flow has ceased. From this moment, seven further ‘ clean ’ days are reckoned during which a clean rag must be used to test whether really every trace of red stain is absent, so that then the ceremonial bath may be taken. In case of doubt the Rabbi decides, or a further seven days are reckoned. The usual reckoning, however, is simpler, whereby twice seven days are reckoned as unclean.”

Manu gave the ancient Hindus the warning, and declared that :

A man, even intoxicated with desire, may not approach his wife or rest on the same couch with her when her menses appear. If a man approaches his wife when she is soiled with her menstrual blood, then will his wisdom, his energy, his strength, his sight and his vitality perish (IV., 41).

In the Koran, also, Mohammed forbade husbands to cohabit with their wives during their menses ; they were even forbidden to touch the parts under their clothes from the waist to the knees ; only the parts which lie above are permitted to be touched. This prohibition continued till the cessation of the courses, for God has commanded : “ Avoid your wives till they have purified themselves with water ” (cf. Bertherand).

* See Dr. Th. Van de Velde : “ Ideal Marriage,” Chapter XVI, 289 *et seq.*

Likewise, coitus during menstruation was strictly forbidden to the ancient Medes, Bactrians and Persians.

In the Middle Ages such things seem not rarely to have occurred, as we can learn from the preachings of Berthold von Regensburg. He says :

“ The fourth time is a time that the Almighty God speaks of as an abomination. That is, when women are ill : then you must take great care that you do not break the law with them the whole of that time, and take care that four weeks are out. I say further : if you are two years away from her, you must guard against cohabiting with her in that time.”

Berthold then holds up the despised Jews as an example, saying that their wives give a sign to their husbands to remain apart from them by tying a knot in the bed linen.

“ Now you are fine people and an honourable people and see how a filthy Jew, who reeks like a goat, keeps continent in that time with great zeal. For, as often as the Jewish wife makes a knot in a linen sheet and puts that on her bed, so long as the Jew sees the knot hanging there, he must flee that bed as he does the devil. And so should you be continent in that time.”

The venerable Alfonso Maria dei Liguori (1696–1787), whose moral theology, according to the decision of the Popes Pius IX. and Leo XIII., is valid in the Catholic Church, held, as R. Grassmann has pointed out, views somewhat different from those customarily held. He writes :

“ Licet petere debitum tempore menstrui, tempore praegnationis, tempore purgationis post partum, tempore lactationis, tempore morbi, si morbus non tendet proxime ad mortem i.e. morbus non solet de brevi et facili mortem in ferre, die communionis in diebus festivis vel jejunii, in ecclesia s. in loco publico, si copula conjugalis manet occulta ” (“ Lig. Theol. moralis,” VI., n. 909, 911, etc.).

In accordance with the ascetic ideas of Christendom in the early Middle Ages, it was considered praiseworthy and godly if, even in wedlock, total abstinence was achieved. We find a certain suggestion of this among the Cheyenne Indians. An old woman of the tribe told Grinnell that it is customary with them for a woman not to have a second child before the first is 10 years old. When the child has attained this age its parents go with it to a great dance festival and the father presents a good horse to one of his friends or to a poor man, and announces publicly that the child is now of an age to have a little brother or sister. It is considered a great honour for the parents to be able to make such an announcement, and everybody praises the self-control of the parents.

Also at the other “ functional ” periods in the woman’s life, *i.e.*, at the time of pregnancy, the confinement and lactation periods, both among semi-civilised peoples and also among many primitive peoples, the husband avoids coitus. We shall find examples of this later in the appropriate sections.

Some special reasons which appear to have imposed a temporary abstinence are shown in the following statements.

Eisenmenger quotes from the old Hebrew work, “ Emek ha-Melek,” the passage :

“ Lilith, from who may merciful God protect us, has power over those children who are conceived when a man lies with his wife in the gleam of the light, or when she is naked or when it is forbidden that he should lie with her.”

Abstention from sexual intercourse is commanded among the Wakamba and Wakikuyu in East Africa, so long as the cattle are at pasture, and also during the day from driving out in the morning till driving in in the evening. Further, among these tribes the men do not go to a

woman so long as they are travelling, this custom extending even to their own wives when they are in the caravan. As a sign of mourning on the death of a relative or chief, the Wanika are obliged to refrain from going to a woman for three days.

Among all gipsy tribes, according to v. Wlislöcki, the weasel is considered the favourite animal of the demons of disease, and an accidental meeting has, therefore, an evil significance. "If married people lying on the marriage bed see a weasel running by them, they must abstain from intercourse for nine days."

3. CEREMONIAL ABSTINENCE

Apart from menstruation, however, there were also times in which, according to the commands of the clergy, coitus must not take place. In the Christian Middle Ages there were specially appointed feast days. Thus Berthold von Regensburg points out that "it is surely possible to keep the five masses and be continent with one another in bed."

The sacred times are named and the wives told that their husbands may be unwilling to observe this prohibition.

"But if he is so wicked that he speaks evil and wilt go from thee to another and is serious about it, and thou canst not restrain him; rather than that thou shouldst let him to another woman, then wives, if it is the Holy Christmas night or the Holy Good Friday night, do it with a faithful heart for thou art not guilty: it is not thy will."

Mohammed, likewise, prescribed for his believers abstention from coitus for certain holy times. During the period of the pilgrimage to Mecca, for example, it is forbidden under any circumstances. For times of fasting the prohibition is in force, but the Prophet makes it easy for his followers, for he forbids only sexual intercourse during the day. In the second Sura of the Koran it says that:

"It is permitted to you to have intercourse at night with your wives during the periods of fasting; for they are a garment for you and you for them. God knows that this has been forbidden you; but, in accordance with his goodness, he has granted you this. Therefore, lie together and desire what God has permitted, eat and drink till in the morning a white thread can be distinguished from a black one. Then, however, fast until night comes, stay away from them, withdraw from the bed chamber. These are the limits which God has set; do not approach them too closely."

Stoll states that among the tribes of the Verapaz region in Guatemala, when the time of the festival was fixed preparations began with all kinds of mortifications of the flesh. Sexual intercourse was forbidden even to married people.

Sapper also reports of the Kekchi Indians in Guatemala, who, in spite of their Christianity, are still devoted to their heathen gods, that before important sowing of grain a great festival is offered to the god Tzultaccá, the god of the mountain and valley. He writes:

"According to the importance of the business for which the blessing of Tzultaccá is to be invoked, the measure of sacrifice and penance is decided. Thus, the Indians must practise total sexual abstinence for eight days before and 16 days after the May sowing (altogether 21 days long, *i.e.*, an old Indian month and one day) whilst at the bean and chili sowing (*paprika*, *Capsicum annuum*) a few days suffice and are absolutely commanded only for those who have heavy sowings in order to trade with the products." [Cf. Frazer, "The Golden Bough," II. 114 ff.]

The natives of Nias, the Battak, Dyak, and also Toradja, according to a state-

ment of Juynboll, have to abstain from coitus during the rice harvest because otherwise the soul substance of the rice would escape.

It is probable also that we have to regard as a festival abstinence the custom of the Abyssinians, who prohibit cohabitation with their wives on Saturdays. A peculiar custom also, which Lammert reports from Bavaria, should be mentioned here. He says :

“ On the first Saturday after the wedding in many districts of Upper Bavaria, the young wife forsakes her house and the marriage bed and makes a lonely trip to a neighbouring place of pilgrimage (to Mariaegg in the Bergener Tal or to the Kirchentel at Lofer) whilst she spends the night at the house of her parents or of relations. For Saturday night is dedicated to the Virgin Mary and such a sacrifice of abstinence assures the special protection of the Queen of Heaven for the marriage ” (see next Chapter).

Among the people of Herzegovina it is forbidden to have sexual intercourse the night before Sunday. It is believed that a child conceived in such a night will be a cripple, a witch or a wizard. This applies also to children conceived by a menstruating woman (Grgrič-Bjelokosič).

Likewise, the white Russians, according to P. Bartels,³ ascribe the birth of a deformed child, especially a hunchback, to infringement of the ecclesiastical abstinence laws. The Greek Church also forbids intercourse on Mondays, Wednesdays and Fridays (see Kahle,² p. 439). Among the Jews there exists a similar prohibition for the first nine days of the month Ab (“ Siege and Destruction of Jerusalem ”).

4. POSITION IN COITUS

(Revised impression from the second edition of the work, 1887.)

It may seem strange to give special consideration to the attitude and position in which coitus is carried out. It is by no means our intention to examine in the manner of Pietro Aretino every position that refined sensuality has been able to devise, but only those positions claim our attention which are used among certain tribes according to rule and custom, but which differ from the manner which we consider usual. Thus it is not the erotic but the ethnographico-anthropological interest which has caused us to discuss the matter here. For we must turn our attention to these facts because, in consequence of differences which have been observed, the question must arise, even if it cannot yet be definitely answered, as to what causes and conditions really come into play. Is it perhaps a question merely of imitation of the behaviour of certain animals or are there peculiar deviations from the bodily formation of the rest of the human race which must be regarded as the reason for the differences ?

As, however, the performance of various physiological functions is different among different peoples, it cannot be always assumed that the aim is to obtain sensual excitement ; one has only to think of the manner of sitting among different races, of their attitudes when eating, or of their position in sleeping, which are by no means consistent even among closely related peoples. Similarly, many of the differences in the position at coitus can certainly not be explained simply as the result of “ lust,” and, therefore, are deserving of the interest of anthropologists and ethnologists. Hence, therefore, a discussion in this book.

That man, in sexual as in all physiological functions, should choose the attitude and position in which the act seems the most easy, comfortable, and also pleasurable,

is quite comprehensible ; yet here, too, man is not entirely governed by customs acquired by experience, but is dominated to a great extent by ideas, perhaps forced upon individuals in the race, and which seemed to their fellow tribesmen and fellow countrymen worthy of imitation, and thus became both national and traditional.

Such views obtrude themselves in connection with coitus ; we can only say for the present that man will mostly choose the position in which the woman (as is usual with us, and certainly among most other nations) is prostrate with raised thighs, and the man kneels between her legs and supports himself with hand and elbow during the embrace. Besides this there are a few other positions in use among some peoples as the normal position in sexual intercourse.

Among the Bakongo negroes on the Loango Coast, copulation is performed lying on the side. Pechuel-Loesche could not discover any special reasons for this ; the size of the penis may, he thinks, be the reason. Yet, as we shall see, other tribes have a similar custom although the penis among them does not exceed the usual dimensions.

One of Leonardo da Vinci's anatomical drawings has been preserved, the so-called "*Venus obversa*" (Fig. 499), which depicts the construction of the human genitals. Blumenbach³ states that he observed it particularly and noted the relation "of the genital member when in a state of tension to the direction of the vagina."

Other favoured positions, however, may originally have been employed among some tribes, as we will proceed to show. It has been abundantly proved that our normal position was common among different races in earlier times. For instance, amongst the Peruvian antiquities at the Leipzig Ethnological Museum there are two

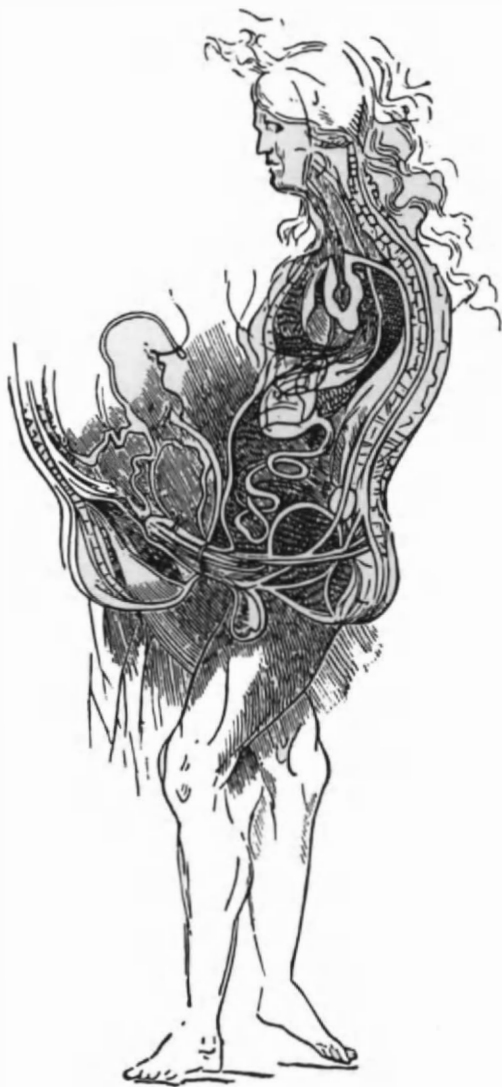


FIG. 499.—*Venus obversa*. (After Leonardo da Vinci.)

precisely similar double vases which are moulded to represent a couple in coitus, in which the woman lies on her back whilst the man lies breast to breast, so that he touches the woman's chin with his mouth. On the back of the male figure is the opening of the vessel from which one can drink.

On the other hand, the Berlin Ethnological Museum possesses an ancient Peruvian urn (Macedo collection) on the lid of which a woman is shown in the knee-

elbow position looking round at a man standing behind her with his hands on her hips, and on the point of inserting the penis. Thus we have here from the same country two different representations, and can regard neither the one nor the other as the expression of the custom prevailing at that time. [Both were clearly known and practised as in our own day.]

It is by no means easy to say how far we are justified in treating these pictorial representations as evidence. The Ethnological Museum in Berlin possesses a group, carved in wood from the Benue territory in West Africa, where the couple is depicted in the usual position, the woman flat on her back and the man lying upon her. In the same collection is a group in brass, from the West African slave coast, with numerous figures, which shows, in two cases, the woman on her back with knees drawn up and lower legs almost perpendicular, whilst the man, in an upright position but with bent knees and with the lower part of the body near the ground, is accomplishing insertion. In the famous prehistoric rock drawings at Bohus-län, according to the copies made by Brunius, there are two couples standing during coitus. Talmudic physicians, as R. J. Wunderbar informs us, were of the opinion that when coitus took place standing there could not be impregnation (N. F., Bd. II., 2^o, Abt. 18).

Coitus, it appears, is carried out among the majority of primitive peoples with the woman lying on her back ; at least, if this were not the case, the occurrence of a different position would be more frequently mentioned by travellers and observers. By the Fuegians, who appeared in Europe in 1881, coitus was practised, according to their leader's statement, "*ab anteriore*" (cf. von Bischoff). It is naturally possible that other positions may be chosen on occasions.

Among the Swahili in Zanzibar (East Africa), according to information received by Bartels from Kersten by word of mouth, coitus is practised sometimes in the "natural position" described above, sometimes so that the man is supine whilst the woman is above, and, as it were, lies on him.

Other methods appear to be popular in East Africa. In Abyssinia coitus is accomplished mostly in the semi-lateral position ; but also when the woman is on her back whilst the man puts her legs over his shoulders (cf. Strecker). Among the Sudanese, it appears, coitus is carried out in a peculiar manner, for it takes place not only lying down, but also standing, since the woman bends forward, leans her hands on her knees, her buttocks stretched out backwards, whilst the man accomplishes coitus from behind.

In Italy something similar may have occurred in earlier times. Presuhn, who studied the wall paintings at Pompeii in detail and had many of them copied and published, observed that in those pictures whenever the subject was a couple in coitus, they were in the *a tergo* position, where the woman is bent forward and the man approaches from behind. Presuhn expressed the opinion, contrary to that of Ploss, that this position was perhaps very common in Southern Italy at that time. It is also proved to have existed in the Paleolithic Age (cf. Fig. 500).

In the far north, also, there exists a tribe where the man usually approaches the women from behind. According to Bessels, the Eskimo of Smith Sound have a special preference for performing coitus in the manner of quadrupeds ; the same author also learnt from a friend by word of mouth that this is also the case among the Koniaga.

Another position is the lateral. Steller, speaking of the Kamchadale, says : "By them it is considered a great sin to lie upon the woman in coitus. An orthodox Kamchadale must use the lateral position for the reason that the fishes from which

they get most of their nourishment, do so." Here a reason is brought forward : it is the supposed imitation of animals, which serves as model or pattern. The Chukchee and the Yuit Eskimo have similar customs.

The customs in this matter vary greatly among the inhabitants of the different islands in the Bismarck Archipelago and other groups. The Buru islanders practise coitus under trees, when the woman adopts the recumbent position. The inhabitants of Ceram also cohabit in the woods, but coitus is performed standing. On the Kei Islands it is performed in a sitting position, according to Riedel.¹ On the Aru Islands, too, coitus is carried out in a squatting position as among certain kinds of apes (cf. Riedel ⁶).

In Sissanu (New Guinea) the woman, according to Neuhaus,³ lies on her back with her legs drawn up ; the man squats in front of her.

According to the report of the missionary Kempe, coitus is carried out by the

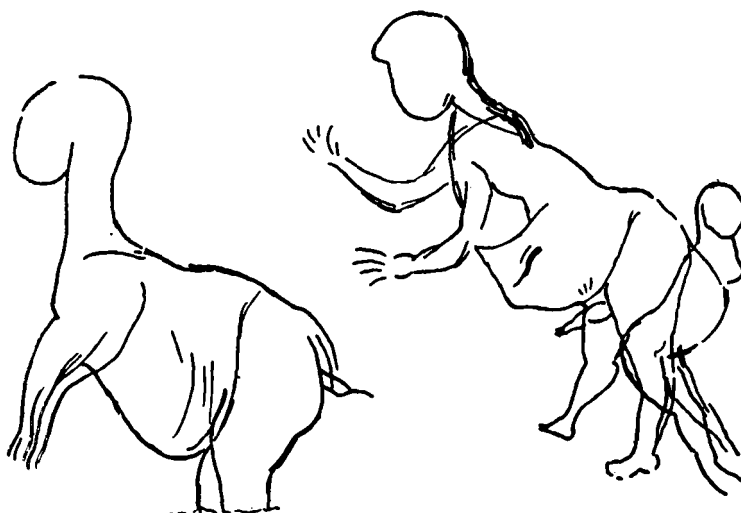


FIG. 500.—Scene depicted in the Cave of Combarelles.

Central Australian blacks on the Finke Creek lying down ; this observation covers the country round the mission station Hermannsburg near the Macdonell chain.

Among the Australian women on Vincent Gulf (Adelaide), it is said that the vulva is placed in a rather more posterior position than among other tribes, hence the men "as is also the custom among most Australians," accomplish copulation from behind.* On the other hand, among the tribes in some districts of Australia special positions are popular. A position which is quite different from any among the other tribes is customary in West Australia. Oldfield reports that the manner of their copulation is *sitting*, face to face, a method also customary among the Maoris (see Fig. 501). Oberländer also, who stayed for some time in Australia, stated that couples used to squat on the ground in a breast-to-breast embrace, and exercised peculiar crossing of the legs. Miklucho-Maclay collected more exact information, for the aborigines were not shy of undertaking copulation before onlookers in broad daylight if they were promised a glass of gin. They adopt one of the squatting positions depicted by Miklucho-Maclay.⁴ The woman then lies

* See Köler and Basedow, p. 152.



FIG. 501.—Man and woman. Carved pillar from a veranda, Maori, New Zealand. (Auckland Museum.)

on her back, the man squats between her legs and draws the woman (still lying down) towards him, till the genitals meet. Sometimes coitus is finished in this position,



FIG. 502.—Early representation of possibly sexual significance. Solutrian. Laussel Shelter.
(After G. Lalanne.)

the man squatting, the woman lying down, but in most cases this is only the position preliminary to a further process, in which the squatting man draws the upper part of the woman's body to his and finishes copulation breast to breast in a close embrace.

Von Reitzenstein is of the opinion that the oldest representation of coitus which we possess is to be thus explained, whilst others assume that the woman is sitting on the man (*see* von Reitzenstein,¹⁷ and *cf.* Fig. 502).

A. Morton, a reliable young man, further reported as eye-witness, that, one evening, finding himself near a camp of aborigines, it occurred to him to ask a native who begged him for a glass of gin, to perform the sexual act. The native went off willingly to call a woman, who appeared at once. Without any sign of embarrassment, with only the thought of earning his glass of gin quickly, the man went near the woman, whereupon the couple assumed the above-mentioned position. The operation in this position was going too slowly for the man, so with the remark: "it lasts too long this way, let us try it in the English fashion," told the woman to lie on her back, and he himself also lying down, brought the coitus to an end. In consequence of what had been told him by other experienced white people, Morton's attention was drawn to the woman after the coitus. He noticed then that after the man had got up and reached for the glass of gin the woman also rose, stood with legs apart, and with a sinuous movement of the middle part of her body she threw, by a jerk towards the front, a bubble of whitish slimy substance (sperm?) on the ground, after which she went away. This way of getting rid of the sperm, which is indicated by a word in the native dialect, is, according to the statements of white settlers in North Australia, usually employed by native women after coitus, with the intention of having no further consequences from being with a white man.

It is not inconceivable that racial differences in bodily structure have some share in determining the choice of position. M. Bartels has drawn attention to the fact that in Chinese representations the legs of women are frequently depicted raised upright, and he thinks that it may be conjectured that the crippling of the feet and the abnormal position of the soft part of the pelvis presumably brought about by it, may cause the introitus vaginæ to be pushed backwards. Frequently the statement "from behind" is to be found (*e.g.*, Köler reports this of the Australians on Vincent Gulf near Adelaide) without a more definite indication of the position adopted. Such cases have a special racial anatomical interest because they might also perhaps be caused by the vulva being placed farther back. Therefore, and with regard to the positions adopted by animals, and especially the apes, the matter deserves further consideration and more detailed description on the part of the investigators.

5. RITUAL COITUS

When we recall to memory what an important factor the sexual instinct may be in the lives of individuals, as well as in the fate of whole nations, we shall not be astonished that in comparatively early times the priesthood drew even the sexual act into the sphere of its influence. This sexual intercourse influenced by religious ideas and precepts, quite irrespective of whether it takes place between married people or out of wedlock, we have called *ritual coitus*.

With the ritual which interests us at this point must be reckoned such regulations as prescribe that the first conjugal coitus of the newly married shall not take place until one whole day has elapsed after the conclusion of the wedding ceremonies. To this category belong likewise all those rules which reserve the first coitus for a god or his representative, to whom the unfortunate young husband must also make sacrifices and bring gifts. Later we shall mention many examples of this.

It seems to us quite natural that the blessing of God should be asked for this extraordinarily important act.

Thus in accordance with the laws of Zoroaster, not only must certain prayers be said before coitus but after it ; both husband and wife must cry out together :

“ O Saponomad, to thee I dedicate this seed, deign to receive it, for it is a man ! ”

The Muslim, too, must pray at coitus “ in order to keep away evil spirits.” Al-Ḥalabí says of this :

“ At the moment when the Dkeur (penis) penetrates the vulva, it is good to utter the holy words : ‘ In the name of God, indulgent and merciful.’ Thus djinns and evil spirits will be kept away, whose mission is to preside at the conception of deformed and unhealthy babies.” Later, when the introduction of the member begins, he says : “ It is at this moment that, to put the devil to flight, both of you say ‘ In the name of God ! ’ If at the time of the final spasm, at the moment of ejaculation, the woman holding herself motionless, as if in ecstasy, you can add the rest of the sacred formula, ‘ indulgent and merciful ! ’ the result will be perfect, and the child whom you procreate will never feel the hand of the demon ” (P. de Régla, pp. 44 ff.).

Among many tribes the belief prevails that coitus is “ unclean ” inasmuch as demons are attracted during that time ; this is probably the older idea, in consequence of which the *pez* developed, and which we have already mentioned above (Vol. I., pp. 273 and 457, and likewise the *pahēke*, Vol. I., pp. 651 and 653).

There is a kind of emanation according to the beliefs of the Syryenians with regard to sexual intercourse and it can be seen clearly that other nations either know of this idea or have known of it.

Herodotus says : “ As often as a Babylonian has intercourse with his wife, he burns incense and places himself near it, as also does his wife. At daybreak, both then bathe, for among them, no unclean person must touch anything. Both these things are done also by the Arabs ” (cf. Leviticus xv. 18).

We frequently meet with ritual legal regulations of the number of cohabitations, and also a statement of the rights of the wife.

According to the religious laws of the Mohammedans, the husband is only forbidden to cohabit with his wife when she is ill, menstruating or in childbed ; if he marries a virgin, he shall devote himself to her for seven consecutive nights ; if he takes to wife a woman who is no longer young, then only three consecutive nights are due to her. Al-Ḥalabí similarly states that :

“ If, having a wife already, you take a second, you must spend three consecutive nights with your new wife ; you will grant her seven, if she is a virgin.”

The husband can cohabit more frequently with one of his wives than with another if the other wife agrees that she can be neglected whether voluntarily or not ; on the other hand, one wife may give her fellow her own turn for love-making visits.

Now, if Mohammedans are bound, according to the Koran, to cohabit with their wives regularly once a week, the same law also forbids husband and wife to cohabit during the whole period of pregnancy and suckling, during menstruation, as well as for eight days before and after it, and, lastly, during the 30 days’ fast in the month of Ramadhan. Thus, as Oppenheim shows, the Muslim who keeps the laws strictly could not even with his four wives, attain the 104 embraces a year which are permitted to us according to Luther’s dictum.*

The Israelite law, according to the words of Rabbi Eleasar in the Midrash Bērēshith Rabba ; states : “ Idlers perform coitus daily, workers twice a week, ass drivers once a week, camel drivers once a month, seamen only every six months ” (see Wünsche¹ and Preuss³).

Zoroaster prescribed that a husband have coitus with his wife once in nine days ; Solon fixed the minimum at three times a month ; Mohammed declared it a ground for divorce if the husband did not do his duty at least once a week.

Among the ancient Hindus it was said, according to Schmidt,⁸

“ He who does not visit his wife after she has bathed at the end of menstruation, although he stays by her, his ancestors do rest in her menstrual blood this month. He who for three years fails to satisfy his wife during her favourable periods, undoubtedly is as guilty as if he killed a fœtus.”

* [For Luther on marriage, see Strampff.]

A hygienic Japanese rule says : " In spring, three times monthly ; in summer, six times, in autumn, once ; in winter, not at all." But Ehmann, who imparts this information, is of the opinion that this rule is rarely followed.

Among the Tengerese in Java, if a man has two wives, which is not frequent, then, according to Kohlbrugge,² each wife has a separate bedroom. With the first chosen wife he must lie 10 days, then with the second five days, etc.

In this connection, however, it must be kept in mind that in old calendars of the fifteenth to the eighteenth centuries definite commands and prohibitions were

specified for intercourse (as for blood letting), and for its fulfilment favourable or unfavourable days were indicated. It is very probable, as M. Bartels emphasises, that there is here a noteworthy example of an ancient survival whose roots may extend back like those of the whole existence of calendars, to the dawn of Asia's history. In this assumption he is supported by the Kama-Shastra, already mentioned above. This contains a certain chapter of which the title is " Sexual Connection according to the days of the month." In this are to be found at the same time precise rules about the place and what kind of " by-play " should be linked with it. Both these points still play a not unimportant part in ritual or religious conduct in certain parts of India. There are, for instance, in Orissa, a series of temples in which, in the plastic groups, are represented this by-play as well as a series of the positions and methods of coitus, which to our ideas seem very complicated. According to Rājendralāla Mitra, these representations exist exclusively in the temples and their vestibules, and never on the walls surrounding them or on gates or buildings of a non-religious character.

They are also depicted as wood-reliefs on the great coaches which are used in ceremonial processions for conveying the images of the gods Jagannāth, his brother Balarāma, and their sister Subhadra. Such a coach is exhibited in the Ethnological Museum in Berlin. It comes from Puri in Orissa. Among the reliefs, sixteen show a couple in coitus and in positions hardly conceivable to the boldest imagination. Four further panels also show us a couple, but still *ante actum*, engaged in different forms of *purattolil*, the already mentioned by-play. All the representations give evidence of a fairly high degree of craftsmanship on the part of the sculptor who has executed them. They are carved in very high relief from a single piece of wood and the edge of the wood encloses them like a frame in the highest relief.



FIG. 503.—Consummation. Ellora. (After Cohn.)

Thousands upon thousands of Hindu men, women and children, states Rājendralāla Mitra, visit the temple of Orissa every year; they make long and difficult journeys in India's severest season; they endure the greatest privations



FIG. 504.—Many-armed Tibetan deity. *Yab-yum* position. (After Kunike in *Cicerone*, xiii., p. 300.)

in order to reach it, and they return home in the firm conviction that by this pilgrimage they have been purified of all their sins. The whole thing is a mystery, a mystery from ancient times, hallowed by age and wrapped in all that is pure and holy. And they have no desire to raise the veil and penetrate the secrets or to examine the reasons of the mysteries which their forefathers have left undisturbed for centuries.

Rājendralāla Mitra is strongly of the opinion that it was far from the desire of the first creators to represent anything indecent. That idea was first introduced by Christian ascetic teaching. The creators were not "immoral," but their modern interpreters appear so. The sole original intention was to make a realistic personification of a religious conception. And this conception is, without any doubt, connected with the worship of the gods of procreation. [Cf. Bernier, p. 305; Bishan Swarup, Manomohana Gangopādhyāya, A. Stirling, A. Sutton.]

In another religion, too, sculptured and painted representations of coitus play a very prominent part, that is Lamaism. Eugen Pander,^{1, 2} whose exceedingly valuable collection passed into the possession of the Ethnological Museum in Berlin, imparted, during his life, much interesting information on this subject. He states that the tutelary deities are generally represented in an embrace and so also are the Dhyāni-Buddhas and Bodhisats. This position, which has several variations, is called *Yab-yum-shudpa*, i.e., the father having coitus with the mother. The *Yab-yum* position of the Lama gods has brought Lamaism a bad reputation among Christians. The Lamas, meanwhile, repudiate with indignation the suggestion that anything "obscene" can occur in their religion. They explain the *Yab-yum* position as a union of matter and wisdom, a wisdom not perceptible to the senses. Spirit is latent in nature; matter, however, is dead. Only by the union and transformation of both is life and consciousness engendered. The primitive form in which the fertilisation of matter by the spirit takes place is the sexual union, which—as the cause of all organic life on earth—is worthy of the highest reverence. Sexual intercourse between husband and wife can be regarded as impure only when both, unlike the gods, are sinful and impure and perform coitus not with a view to the glorification of the great principles of nature but for their own personal pleasure. A Tibetan picture with two many-armed gods in the *Yab-yum* position is shown in Fig. 504.

The god is usually represented standing while the *yum* in his embrace has put her legs round his hips (Fig. 505). Often, too, the *yum* stands with one leg on the ground and has only the other leg round the god's hips. At times, the god sits on the ground with crossed legs and then also supports the *yum* on his hips (Fig. 506). The latter always has her head bent back with an ecstatic expression and one can see by the convulsed state of her toes that she is at the height of voluptuous sensation. The little bronze figures are masterpieces of metallurgic technique. Figs. 504–506 are examples of these representations. [See also the discussion in Getty.]

Dr. H. Adolphi, a physician to the Chinese Eastern Railway, was so kind as to send a photograph of a temple painting in his possession, which was executed on linen in several colours from a Lama temple, destroyed in 1900, which was not far from the Trans-Baikal-Manchurian frontier. This picture shows a variation of the *Yab-yum* position. The *Yi-dam* (tutelary deity) is enthroned on a low pedestal, his lower limbs are crossed in front and his arms round the *yum's* back, whom he holds pressed to his body. She holds her head as far back as possible with her arms spread out in passionate excitement; her legs are in a remarkable attitude, the thighs turned backwards widespread and bent backwards in a position anatomically impossible; the lower limbs are flexed, the feet are not visible, and all closer details of the *Yab-yum* position are concealed by the clothing of the *yum*.

"There remains one interesting fact," says Pander, "that the Chinese Court has forbidden the Lamas to depict the penis in the case of the *Yi-dam* in the *Yab-yum* position and the *Draggshed* (who, as martial gods, are represented phallically to symbolise their unfailing energy) when represented in the temples which are visited

by the ladies of the Imperial harem. The Lamas shrug their shoulders over this and regret that the Chinese cannot attain to a more idealistic conception of these things (*cf.* Grünwedel,³ 94 ff.).

In Japan, according to Schedel, the phallic cult is widespread. A stone (*cf.* Fig. 507) representing a male and female god in the act of coitus is to be found in



FIG. 505.—Lamaist Yi-dam figure (protecting deity) with his Yum in the *Yab-yum* position. (Chinese bronze group. Mus. d. Völkerkunde, Berlin. Photo, M. Bartels.)



FIG. 506.—Lamaist Yi-dam figure (protecting deity) with his Yum in the *Yab-yum* position. (Chinese bronze group. Mus. d. Völkerkunde, Berlin. Photo, M. Bartels.)

Netsumura, Oगतगори in the Province of Shinano. Miyase Sadao has made a copy of it which has been reproduced by Schedel.

In Doreh, in South-West New Guinea, v. Rosenberg found near the coast, standing in the open sea, a remarkable house which was only 6 ft. high and 85 ft. long. The peculiar construction is described in detail; there was no bridge connecting it with the land (Fig. 508). The following is of interest to us:

“ In the middle of the interior of the building lies a beam on which male and female figures in coitus are crudely carved. Pictures of snakes, fishes, crocodiles, etc., are to be seen on the beams of the framework of the roof, while on both the supporting props are fixed two big figures representing the first parents of the people of Doreh. On the western, open side of the

building lie two wooden figures, 4 ft. long, representing a man and woman in the act of coitus, the former with his knees drawn up. Both have painted faces and those parts of the body which



FIG. 507.—Onna-ishi. "Female" stone in Kamakura, visited by women who wish to become fertile. (After Dulaure.)

have a growth of hair are covered with *gumutu* (fibres from the leaves of the sago palm). The head of the man is movable so that it can be drawn up by a piece of rope fastened to it and let fall again in the woman's face. Behind the man, a child, 1½ ft. long, lies on its back, its legs

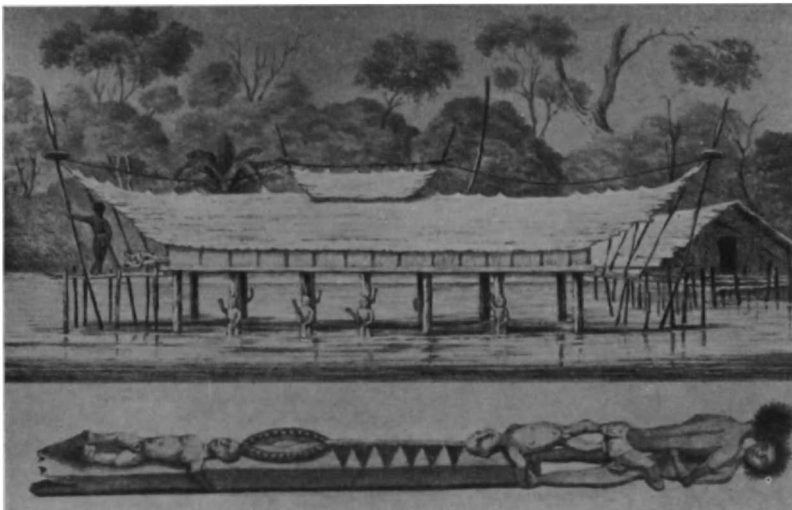


FIG. 508.—Representation of coitus at Rasambori (Doreh). (Mus. f. Völkerkunde, Dresden.)

propped against the anal region of the male figure. According to tradition, the child is annoyed with the father for lying again with the mother while it is still in the need of help. Behind the child is a little basin-like cavity, in which there is fresh water with which the visitors to the

building moisten their hair. On the opposite side of the building lie similar figures, but without the child. On the outer side of the props which support the building are male and female figures, 3 ft. high, with disproportionately large genitals. Those which are on the side towards the sea have their right arm raised threateningly, the women on the side towards the land, cover their private parts with the same arm. As to the origin of the figures and the building, which no woman may enter, the natives declare that the figures represent their ancestors and the pictures of snakes, crocodiles and fishes indicate those of their forefathers who descended from such animals. Until a short time ago, a similar building stood in the village of Mansimam ; in the year 1857 it collapsed, and up to now (1870) has not been rebuilt."

Similar figures, now in the Dresden Museum, were found in the youths' sleeping house in Kordo, and these are shown with a few images of a similar kind in Fig. 509. A. B. Meyer, at one time director of the Dresden Museum, writes of them in the *Jahrb. des Ver. für Endkunde*, vol. XXXI., thus : "I (Dr. Meyer) brought from



FIG. 509.—Figures from Kordo and Salawati. (Mus. f. Völkerkunde, Dresden.)

Kordo in the Island of Misori (Schouten), a series of large figures carved in wood as they, judging by earlier representations and tales, were similar to the *Rumsram* procured in Doreh. They were in a house used as night quarters for the youths. In the eyes of the Papuans they are not considered at all 'obscene.'" Meyer observes in addition, "It would be a subject worthy of a specialist to study thoroughly once and for all the sexual conditions of such a primitive race. In the understanding of such things we civilised people are but groping in the dark." Did Meyer then not know that nowadays there are "scholars" and officials who consider such scientific activities beneath them and go so far that they conceal such material in libraries and make it inaccessible in museums, even to experts (*vide*—for example, a Director of a Museum in Naples, about whom our most distinguished research workers had to complain) ?

The three figures must have been erected differently, as they differ among themselves. Figures 1-3 come from Kordo, 4 and 5 are so-called "standing Korware" from the south coast of Salawati. Figure 1 probably belonged to the interior of the

house and is 71 cm. high. Coitus in a similar artistic representation is in evidence at the Rasambori-house in Doreh, and also on several beams which were put into the house and also on the cross beams which support the roof. Figure 2, of a woman with child, came from the youths' sleeping house at Kordo, and is 83 cm. long. Figure 3 represents a phallic figure from the same place. It is 71 cm. long. It is not, however, meant to represent urination, but is an ostentatious showing of the phallus. Figure 4 is a male figure in wood from Salawati, about 85 cm. high. The eye is a white pearl. Figure 5 is also a group in wood from Salawati. The figure has both hands round the child which faces her. Thus we have a kind of " pictorial instruction " in sexual intercourse and the care of children, which may perhaps be connected with puberty ceremonies.

It may be recalled here that buildings have been found at other places in New Guinea with carved representations which appear " obscene " to our eyes. In them, too, as we saw above, snakes, fish and crocodiles play a conspicuous part (Figs. 466 to 469).

Thus we find that many representations, which we should simply judge as " obscene," are constituent parts of the worship of a deity. We have also many statements according to which it appears that the performance of coitus is undertaken as a religious act.

Thus in Java a man goes out to the rice fields at night with his wife to sacrifice to Venus in order to stimulate his rice fields to greater abundance by his example (see van der Burg). The inhabitants of the Moluccas do the same thing in their tree plantations with the same purpose, according to van Hœuvell. F. S. Krauss¹³ reports of the Southern Slavs that, when a family is about to move into a new house, the master of the house or one of his sons, at his bidding, first performs coitus, and then only is the moving accomplished. Similarly, on George's day, the farm labourer performs coitus in the open field and in the same place afterwards offers up seven grains of maize while invoking the seven saints so that the field may be fruitful. F. S. Krauss has a whole series of parallels assembled partly from the reports of strangers, partly from his own collection. It is enough to refer to them in this place, as there is no reason for examining them in detail, here more especially as a few examples are amply sufficient.

Another form of ritual coitus, the extra-marital sexual intercourse ordered by religions, as it appears in sacred orgies, will be discussed in a subsequent section.

Customs appear which are repugnant to us, as we have just learnt, and it has not been thought necessary to treat them in full detail. The examples brought forward will, however, convince the reader that more primitive people are, in certain ways, more " moral " than civilised people. It must, however, be regarded as a worthy task of folklore to make the stirrings of a people's soul comprehensive to us even if it can only inspire us with disgust !

6. MASTURBATION, TRIBADISM AND BESTIALITY *

One not infrequently encounters the opinion that everything that is accustomed

* [The terminology for the various forms of auto-erotic and homosexual satisfaction among women is much confused. Tribadism, sapphism and lesbianism are often used synonymously, whereas some differences should be apparent. The word *tribadism* comes from the Greek *τριβάς*, from *τριβειν*, to rub, *Lat.* *Fricatrix*. The term should properly then be applied to the practice of solitary or mutual rubbing for the purpose of sexual relief. The poetess Sappho, who, according to some, was a native of Lesbos, was supposed to have encouraged homosexual practices among her female acquaintances, and the so-called " Lesbian love " was understood to refer to such acts (*cf.* Aristophanes, *Frogs*, 1308). Thus both *sapphism* and *lesbianism* are terms which can be used broadly to describe homosexual practices among women. *Tribadism* should be confined to those actions in which *rubbing* is the dominant feature ; whilst other actions have their own nomenclature.]

to be characterised as unnatural sexual pleasure owes its origin to the excessive sensuality engendered by a high state of civilisation. That is the opinion of the modern school of jurisprudence, but it is quite erroneous, for we find, on the contrary, not infrequently a highly refined and developed sexual life among tribes of very low culture, although people like to imagine them as living in an idyllic state of nature. We sometimes get descriptions of these tribes as if the golden age with all its blessings still existed among them (*cf.* J. W. Howe).

We had occasion to refer above to a few artistic sculptures of the female genitals which are clearly connected with the most ancient superstition and religion. Letourneau says rightly: "The attitudes shown are abnormal, but, to tell the truth, not contrary to nature, since they are to be seen in a number of animals."

In fact, we must recognise in *masturbation* and similar sexual stimulation a common animal desire, and here must be called to mind the behaviour of the dog, the sideways spring of the cow and the onanism of the ape. Moreover, Ploss had occasion to observe two hyænas mutually licking the genitals and obviously with great satisfaction to both. Even in the Zoological Gardens such cases can always be seen (*cf.* Zuckerman²; Ellis, *Studies*, etc., I., 164 ff.).

It may certainly be assumed that masturbation can bring about a change in the form of the genitals (see Vol. I., p. 135). But, apart from this local-anatomical influence, it can have serious consequences for the whole organism.

Eram, who practised as a physician in the East for some time, asserts that masturbation is "very common among girls in Oriental countries."

Among the Nama Hottentots masturbation is so common among the younger members of the female sex that it may be considered a custom of the country. Hence, according to Fritsch,⁴ no special mystery is made of it; on the contrary, the people speak of it in tales and sagas as one of the most usual things.

We have discussed above similar customs among the Basuto and Ovaherero women.

The Bisayan women in the Philippines had already, according to Blumentritt, at the time of the arrival of the Spaniards made an artificial penis so as to be able to appease insatiable appetites.

Among the Japanese women, too, the artificial penis plays an important rôle. According to Schedel it is called *engi* in Japanese, and the phalli are made of paper or clay and sold in the streets at New Year. A Japanese colour print by Kumegawa, reproduced in Fig. 510, shows how a fox spirit uses such an artificial phallus as a bait for catching maidens. Besides these, however, as Joest⁵ reports, little balls called *rin-no-tama* are used. They are thrust up the vagina for the purpose of exciting women sexually and are kept in place by a plug of paper.

"Ordinary girls, even when they were fairly experienced in the *ars amandi*, knew the balls only by name and by sight. They were used by geishas of high rank (if we may use the expression), *i.e.*, dancers, singers and by those priestesses of Venus generally inaccessible to Europeans. The balls are hollow, and in them are four metal tongues between which a small, solid metal ball lies freely movable. The least movement sets the latter rolling and causes, by means of the metal tongues, a slight vibration. This produces a not unpleasant tickling, or a gentle shock somewhat like that of a very weak induction coil. Chinese women also are said to make use of similar stimulant balls or 'Bell globes.'" [Boxes containing sets of such stimulative apparatus are known in Japan and are called *harikata*. They contain a variety of pieces of apparatus, the artificial phalli being usually made of horn (see *Bilder-Lexikon*, I., taf. 131). The erotic balls are known also in the West. In the *Anecdotes piquantes* of Bachaumont such an instrument is described. It was the size of a pigeon's egg, gilded and of smooth surface.

Introduced into the vagina its movements cause pleasure and “on conçoit quel débit il en aurait, surtout dans les couvents !”]

Among the women of Bali prevails, likewise, great sexual freedom, according to Jacobs,¹ who remarks :

“Onanism and masturbation are common ; they are called *njoktjok*. *Kentimoen* and bananas are much used by the Balinese maidens as dainties—but not only for eating. In the



FIG. 510.—Japanese fox spirit goes girl hunting. Phallus serves as a bait. (Coloured woodcut by Kumegawa.)

boudoir of many beauties, and certainly in every harem, is to be found a waxen *plaisir des dames*, that bears the modest name of *ganèm* or *tjèlak-tjèlakan malèm* (*tjèlak* = penis, *malèm* = wax), and many an hour is spent in quiet seclusion with this *consolateur*. The *ganèm* is also called *koempèntje*.” * Jacobs² reports also of Achin (Atjeh) that masturbation frequently occurs among children of both sexes, and older girls even masturbate with an artificial penis (*dilin*) made of wax.

* [Corresponding to the *balak* of Borneo.]

Here may be mentioned the Mādigo of the Hausa women, a contrivance made in imitation of the male organ, which women strap on in order to gratify other women, and which is employed especially in very large harems. Before England took possession of the country a woman found with such an instrument was very severely punished: she was buried alive and her partner was sold into slavery. [For further details see Mischlich, "Bilder-Lexikon," I., p. 419; and for the same customs among the women of Lake Chad, see Bouillez.]

In classical antiquity, especially in Greece, as Knapp illustrated with various examples, the use of an instrument called "Olisbos," knowledge of which apparently came from Asia Minor, was for a time very widely spread so that even the authorities took severe measures against it. Passages in Aristophanes, Herondas, Lucian, as well as certain pictorial representations, which Knapp discusses in greater detail, give full particulars.

[The use of the ὄλισβος or βαυβών in antiquity is illustrated by a number of representations on Greek vases, of which Vorberg, Licht, Knight and the "Bilder-Lexikon" discuss and give selected examples. In Latin the term *fascinum scortium* was employed, and the artificial phallus under the terms of *fascinum*, *godemiché*, *diletto*, *passo-tempo*, *dildo*, etc., was used and discussed up to the present day, as we shall see later.]

Apparently, too, such customs were not unknown to the ancient Israelites (cf. Ezek. xvi. 17). In the Midrash Schemot Rabba the following characteristic parable appears in this connection:

"Like unto a king who, as he entered into his house, chanced upon his wife embracing a tripod toilet table (*mensa delphica*),* whereupon he fell into a rage. Then his bride's man stepped before him and said: 'If a child is born' (i.e., if a child were to be expected from this intercourse) 'you would do right to be angered.' The King replied: 'Nothing is of importance in this matter but that she shall learn that she must not do such a thing'" (Wünsche²).

Very mischievous conditions must have prevailed in ancient India as a consequence of the hierarchy, as we can gather from the oft-quoted *Kāmasutrā* (see J. Kohler²). In both sexes we find sadistic tendencies, which are indicated as customs in certain neighbourhoods, as when it reads: "that one side strikes the other with the wedge on the breast, with the scissors on the head, with the piercing instrument on the cheeks, with the pinchers in the sides . . . certainly," says Vātsyāyana, "such doings are painful, barbarous and base. One may act according to the custom of the place, but, of course, only so that there is no danger to the other side. In connection with it, however, cases are cited that no more and no less, the King of the Panchalas making love to a courtesan, killed her with the wedge, that another lover, Naradeva, put out a dancer's eye with a needle prick" (cf. Fraxi,² p. 466).

Kohler also points out that masochism was not unrepresented among the women. Thus the *Kāmasutrā* states that some women were to be won by beating since by beating their lustfulness was aroused. Similarly, it is said of the women of other places that they enjoyed severe beatings. Moreover, the *Auparishtaka* (= *fellatio*) contemptuously designated "crows' love" was not unknown. [Artificial phalli were also well known. See Schmidt,⁸ pp. 325, 334, 528, 540, 782, 783, 936.]

A form of abnormal intercourse which is not rare consists in so-called *tribadism*. This act is often found with *lesbianism*, because it is said to have been widespread among the women of Mytilene, the capital of the island of Lesbos. From here it is

* [Cf. Daremberg v. Saglio, Fig. 4908.]

supposed to have spread to Greece, Rome and Egypt. In the East, and especially among the Arabs, it is said to be well known even at the present day; and in the rest of the world also—especially as a result of a false asceticism, it is very widely spread in Europe. Lucian described it in his classic “Dialogues,” and it has since been dealt with in detail by a multitude of authors (see Ellis, *Studies*, etc., 3rd ed., II., 195 ff.; Kaarsch-Haack; Sinistrari; McMurtrie, etc.).

Preuss³ quotes a few passages from the Talmud which show that tribadism was known, but it is not mentioned in the Bible. The usual expression for it is *solédeth* (= “moving towards each other with a springing or hopping movement”). Only a few schools fancied that such women should be treated legally as prostitutes; the others declared such doings to be “unmoral,” but attach no legal consequences to it.

An excessively large development of the clitoris naturally makes it easier for those who practise tribadism, the *fricatrices* or *subagatrices*, as the ancient Romans called them. In this, too, the women in Bali are said to excel. Jacobs¹ states that:

“Almost to the same degree as pederasty, yet more secretly, there prevails among the maidens so-called Lesbian love (or rather tribadism) (*mētjèngtjèng djoeoek*), literally: striking the buttocks noiselessly together, with digital and lingual variations. Bali girls have the clitoris well developed and this feature is helpful during such abuses.”

Among Oriental women this natural enlargement of the clitoris is said to be not infrequent; and from this may be explained how a kind of sexual intercourse may take place among women without the help of further artificial means.

Duhousset claims to have met with a case where a woman became pregnant by such Lesbian love; we must leave the proof for this to him. He reports the case of two women friends in Egypt, who had practised this “indecent” together. One of them was married and it happened that the unmarried friend became pregnant. The explanation was that the other from an earlier copulation with her husband had still some semen in her vagina, which she passed over to her companion when they had intercourse. This case was communicated to the Parisian Anthropological Society in the year 1877.*

Mocquet, in his “Voyages,” reported a horrible punishment for such tribadism in Siam. “Counterfeit members” were employed by some women and for a punishment they were found to have a phallic image painted on their thighs.”

We see from the Penitentials drawn up by Bishop Burchard of Worms in the twelfth century, that many abnormalities must have prevailed, too, among German women in the Middle Ages. In this it runs:

“Fecisti quod quedam mulieres facere solent, ut faceres quodam molimen aut machinamentum in modum virilis membri ad mensuram tuae voluntatis, et illud loco verendorum tuorum aut alterius, cum aliquibus ligaturis colligares, et fornicationem faceres cum aliis mulierculis, vel alie eodem instrumento, sive alio tecum? Si fecisti, tres annos per legitimas ferias penit. Fecisti quod quaedam mulieres facere solent, ut jam supra dicto molimine, vel alio aliquo machinamento, tu ipsa in te solam faceres fornicationem? Si fecisti, unum annum per legitimas ferias penit” (see Wassersleben, p. 658; Ellis, *Studies*, etc., I., 169.)

[As has been remarked above, the use of the artificial phallus by women deprived of normal satisfaction has persisted from the most remote antiquity to modern days.

* Tribadism occurs too among North American Indian women. In a saga it runs a maiden had had a kind of sexual intercourse with another and, in consequence, had given birth to a tortoise. The pregnant young woman is said to have had a clitoris like the penis of a tortoise. (Cf. McMurtrie.)

The story of the girls going to see Kerdon who made these leathern phalli (see Herondas, *Mim.*, 7) can be matched to-day by the stores who stock and sell them to their female clients.

In England the word *dildo* is usually employed. The O.E.D. states that it is "a word of obscure origin, used in the refrains of ballads." It was, however, used for other purposes, and the word may be connected with the Italian *diletto*. Thomas Nash sang the praise of this object "attired in white velvet or in silk," which indeed "maie fill, but neuer can begett," and for the pleasure it gives "no tongue maie tell." Such playthings were amongst the miscellaneous assortment of objects hawked by pedlars, which trade Boucher has painted (see "Bilder-Lexikon," I., 245), and Shakespeare has mentioned when he speaks of the "delicate burthen of dildos and fadings" ("Winter's Tale," Act IV., sc. 4).

As time went on and French influence began to be felt these pieces of apparatus became more complicated. They were constructed of leather or rubber, and additions were made in order to render them more realistic (see Pearl, "The Story of a Dildœ," etc.). As late as 1848 Moodie declared that they were used extensively in Scotland; and a correspondent informs me that they are commonly employed in Germany at the present day, whilst in France I have myself seen a number of such devices (cf. Schwaëblé). The usual term for them is *godemiché* or *godemichet*, the etymology of which is not clear. Some suggest *gaude mihi*; others *godemelin* (a kind of leather); and others a combination of Gode (= Claude) and Michi (= Michel) after Rabelais. The French street girls call it *gode*, *Jacque* or *Jacquot*. The literature in which the *godemiché* figures is enormous. Joubert, in discussing such matters, mentions a candle being used for these purposes, and a poem in "Le parfaict macquereau" deals with a similar theme, where the apparatus is called *gaudemisi*. In the eighteenth century it was widely used. Books are devoted to it (cf. "Godemiché: Joujou," D—, L'Abbé, Imbert, etc.). It was sometimes quite complicated in construction (see Sängerin, *Belle*, *Violette*, *Sade*, *Andrea de Nerciat*), and was used to such an extent that Morel de Rubempré, in the middle of the nineteenth century states that its virtues persuaded many women that it was superior to what it imitated. Finally, we have the picture of the modern French girl drawn by Binet Sanglé, who sketches the straits to which she is driven when deprived of a lover—"Angèle, chaque soir, sur un siège différent, vous vous donnez à vous-même le plaisir que donne un amant"; Julie with her "*accoudoir d'un petit fauteuil*"; Hélène with her *traversin*: Agnès with the *lèvres de Suzanne*: Jeanette with *la langue de son King-Charles*² and finally, Elise of 18 with her secret *phallus artificiel*. As Jane de Magny says of modern France, "jamais le saphisme n'eut tant d'adeptes!"

An unnatural intercourse between women and animals is likewise not a discovery of modern times only. Mantegazza³ says of it:

"The woman was not spared the shame of bestiality also. Plutarch tells us that from the earliest times the women abandoned themselves to the caprices of the sacred goat in Mendes. Nowadays, after a lapse of many centuries, it is the dog which takes the place of the goat. Sometimes charming women in the highest circles of the most cultivated society in Europe, adore their lap dogs for reasons which they would not confess to a living soul.* Moreover, the dog is sometimes no lapdog, and then the aberration is still baser and more abominable and instead of tribadism with animals we have an example of coitus with animals."

* [Except perhaps to their confessor. Archbishop Claret in 1860 directs confessors to ask their female penitents questions on these delicate matters. *Aliquando ponens salivam aut panem in vas et cogens canem ut lambat, etc.*]

Further information about this matter is to be found in F. S. Krauss,¹⁶ therefore we can spare ourselves from giving a more detailed account here.

The ape, too, plays an important part in these matters. In the districts where the gorilla or the orang-utang lives, numerous tales are told of the abduction of girls by these great beasts and of how they have had sexual intercourse with those abducted. Such intercourse with animals, however, was, of course, always by force. But we have also reports of voluntary sexual union between apes and women. Thus the Indians in the territory of the Amazon believe that the tailed men occurring among the Uguia, according to the legend, sprang from such union between an Indian woman and a coati (M. Bartels).

According to Francis de Castelnau, such cohabiting with the coati is said to take place even now in these districts. He says :

“ Going down the River Amazon, I saw one day near Fonteboa, a black coati of enormous size : he belonged to an Indian woman, to whom I offered a very high price for this curious animal ; but she refused and burst out laughing. ‘ Your efforts are useless,’ said an Indian who was in the hut, ‘ that is her husband.’ ”

For further details, see F. v. Reitzenstein,¹⁵ pp. 312 ff.

CHAPTER IV

PROSTITUTION

1. DEFINITION AND ORIGIN OF PROSTITUTION

WE have already learnt repeatedly in the foregoing sections that it is not always with the legitimate spouse that women have sexual intercourse. In earlier times, in Germany, people were very ready to apply the name of whore to any woman who acted thus. At that time, it was, of course, considered a great dishonour.

In ethnology, the subject of the prostitution of women must not be approached with such views. For many a tribe not only permits but even exacts from its women that they shall engage in extra-marital intercourse, and in this case any trace of shame obviously disappears.

The word "prostitution" is nowadays used as often wrongly as rightly. In many spheres any extra-marital intercourse is designated prostitution. That is quite incorrect. By prostitution is understood the surrender of a young woman to several men for *recompense*. A female who lives with a man as his *concubine* is thus not necessarily a prostitute; but, on the other hand, we must reckon among the harlots many of the greatest women artistes who give themselves to various men in return for diamonds, etc., if, and only if, the gain thereby is the first consideration. Free Love and the so-called "liaison" must likewise be eliminated. The origin of prostitution is clear to the reader of the above lines: it is not a phenomenon of modern times; its roots lie rather in antiquity, and it may be viewed as a deterioration of free sexual intercourse which has existed from the time of the nomadic tribes. Thus Iwan Bloch² says very justly: "Modern prostitution is, generally speaking, in its organisation and manifestations, a product and survival of classical antiquity: in its primary origins it goes back to the earliest history of the human race." It is the *result of a false morality*, especially of the struggle for monogamy. Woman herself is not the party least guilty in the matter. The gift of her body is her greatest *capital*, by which is assured her future in marriage; hence she has an instinctive dislike for the young woman who claims not a lasting alliance but merely money. Wulffen¹ expresses a similar idea when he writes: "Many hold women at least partly to blame for the ineradicable condition of prostitution because she demands monogamy before everything, thus misunderstanding the polygamous nature of the male, and driving him to a sexual satisfaction which he can buy." Bloch² comes to the same conclusion. He says: "Prostitution appears also among primitive peoples wherever free sexual intercourse has become limited or restrained. It is nothing but a substitute for, or another form of primitive promiscuity" (*i.e.*, of the unrestrained intercourse of the earliest times). Unfortunately, space forbids our discussing the inner causes of contemporary prostitution which, for the woman, lie partly in the unsolved "sexual problem," partly in necessity and often in "inclination." We see, also, that prostitution does *not* result from frivolity and looseness, etc., but is rather a necessary consequence of human development. So long as marriage exists, prostitution will exist also, and, since we cannot eliminate marriage

without the abandonment of our civilisation, we cannot eliminate prostitution, however much it may be called a necessary evil.

It is, of course, false to speak, as often happens, of a *religious* or *hospitable* prostitution, for these relations are not true prostitution. They are religious and social phenomena, for the essence of prostitution lies in earning money for a living by offering the body. We shall revert to this in a few sections (*cf.* von Reitzenstein ²⁵).

Similar to concubinage, but still not identical with it, there was a form of prostitution such as we find in ancient Greece. This is *hetærisism*. In Greece the

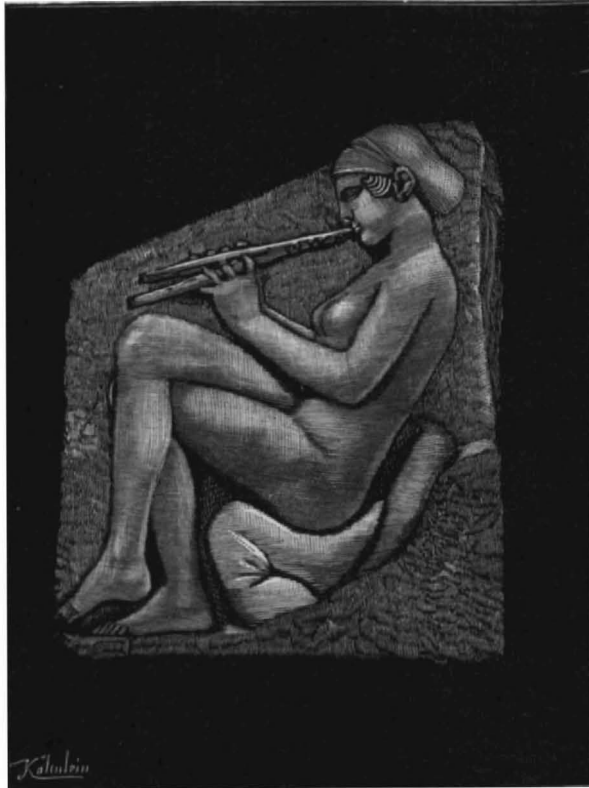


FIG. 511.—Greek hetæra. Fifth century B.C. Marble relief in Mus. naz. delle Terme, Rome. (After Petersen.²)

legitimate wives were confined to a domestic life, and the husbands found a stimulating pleasure in free intercourse with women who, by their cultivation, refinement of manner and witty conversation, together with the surrender of their female charms, exercised an irresistible power of attraction over the men of higher standing. It was mostly freed women who resorted to the position of hetæra, but free-born citizens also, driven by poverty, entered into such alliances with men.

The loves of Alcibiades, Timandra and Theodata faithfully kept their friends in remembrance, whilst other hetæra certainly thought only of exploiting their lovers, as is shown in Lucian's "Dialogues." In middle-class life in Athens the hetæra played a considerable part.

A characteristic representation of a Greek hetæra from the fifth century B.C. is to be seen on a relief-plaque in the Ludovisi collection, which is now in the Museo Nazionale Romano delle Terme Diocleziane in Rome (Fig. 511). Petersen,² on important archæological grounds, declares this plaque to be the side of a throne on which the ritual portrait of the Eryxian Aphrodite in her temple before Porta Collina in Rome had been placed. It came from Mount Eryx, near the town of Elymer in Sicily. Petersen says of the figure in relief: "She sits, contrary to good custom, with her right leg crossed over her left, quite naked, except that her hair, with the exception of the temple locks, obviously without further dressing, is confined in a cap: in the ear lobes, is the hole for the introduction of an ornament." Petersen proceeds to explain "that this is a type of hetæra well known at the beginning of the fifth century, of which the cap, flute, nudity, position on the seat, and ornament are the usual distinguishing marks."

Aristophanes of Byzantium introduces into his book the names of 135 famous hetærae, and Solon is said to have made the vocation of hetærae legal out of regard for public morality, for he hoped, in this way, to restrain men from the prohibited intercourse with married women. Pericles who, although married, chose the famous Aspasia (see Hermant) as his lover, was first to set the example, and he subsequently found many imitators. Lais sold her favours to the highest bidder; and Phryne, with the wealth she had earned, was able to offer the Thebans the chance of restoring part of the ruined walls of their city. Hetærisms was there a free vocation and not forbidden by custom. A full account of the matter has been given by Bloch.

2. ETHNOGRAPHY OF PROFESSIONAL PROSTITUTION

We have defined above the concept "prostitution." Moreover, there are and were among all races women representatives of it. Among the ancient Mexicans (*cf.* Seler-Sachs) were such public young women, yet their profession was generally despised; the same was the case among the ancient Peruvians.

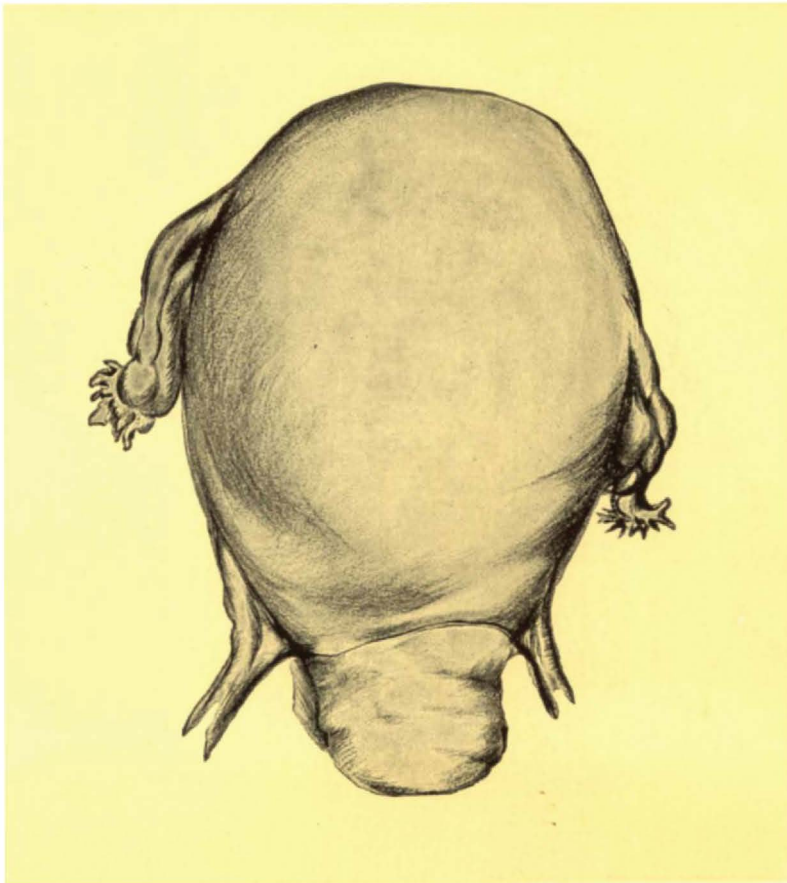
Among the Arabs, in the time of Mohammed, prostitution was considered a great disgrace. A father whose daughter had surrendered herself used to bury her alive. With women slaves, however, people were not so particular, and in the Koran, Sura 24 ("the Light"), Mohammed had to order:

"Let not your women slaves, when they wish to be honourable and chaste, be forced to sin, in order that ye may gain the casual benefits of this world. Yet if anyone forces them to it, yea, after they have been forced, God will be forgiving and merciful to them."

In the same Sura Mohammed gave the following law against prostitution:

"A whore and a whoremonger ye shall whip with a hundred strokes. Let not yourselves, contrary to the judgment of God, be taken by pity towards them, as ye believe in God. A few believers may witness the punishment. The whoremonger shall marry no other wife but a whore or an idolatress; and a whore shall take as husband only a whoremonger or an idolator. Such alliances are, however, forbidden to the faithful."

In the half-civilised countries of modern times prostitution appears more or less strongly according to the opposition against a full development of the sexual life. The Awâlim in Egypt (*cf.* Fig. 512) and the Nautch girls in India (Fig. 513) are the representatives of common prostitution, just as among still primitive peoples we find the Puzen in Java and the Sivas in Polynesia.



Pregnant uterus. (Spalteholz Preparation. Hygiene Museum, Dresden.)

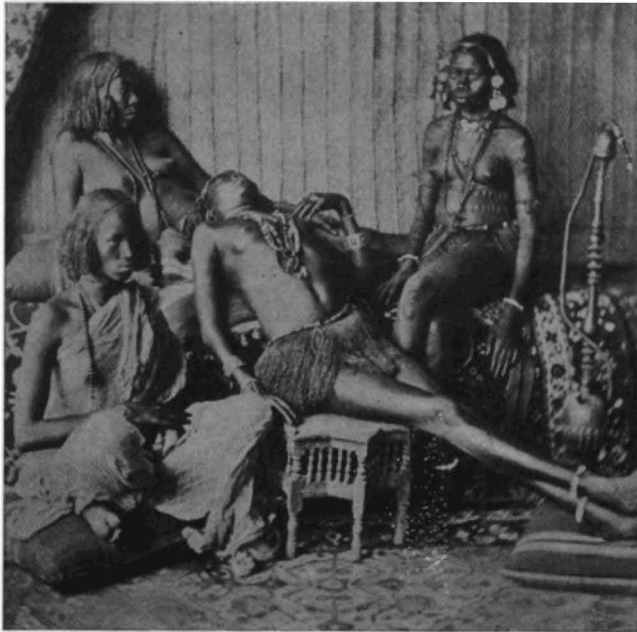


FIG. 512.—Prostitutes resting. Upper Egypt. (Anthrop. Gesell., Berlin.)

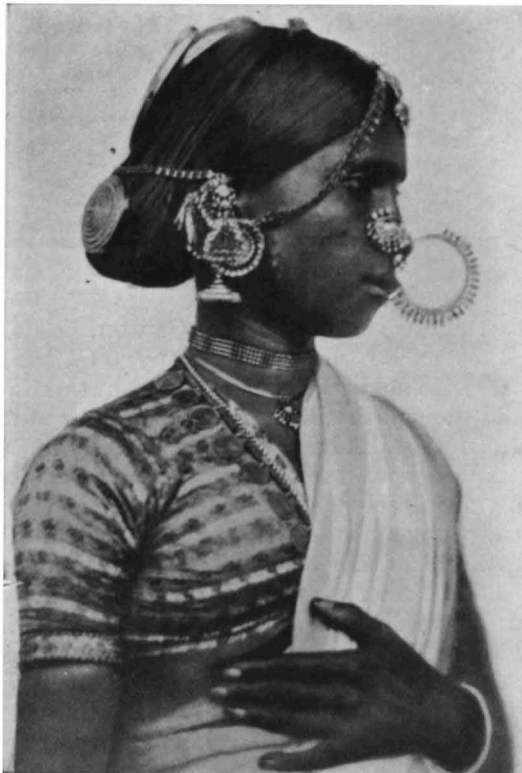


FIG. 513.—Nautch girl. Telinga-Coromandel. (Anthrop. Gesell., Berlin.)

According to Moncelon prostitution exists also in New Caledonia : " It appears," he says, " in isolated cases. It is tolerated, but despised."

We shall speak about prostitution in New Britain in a later section.

On the Pelew Islands prostitution is quite a common phenomenon. When a girl is 10 or 12 years old and has still no husband, she goes as " Armengol " to a strange district, and there enters a Baj, where she lives as the paid mistress of a native ; but, in secret, she has to cohabit with all the other men of the Baj for money. If she does not find a husband, then she goes to a second Baj, then a third, etc, until at last she becomes the wife of a native. Such a marriage is generally unfruitful, and according to Kubary, this latter is the case in three-fourths of all the marriages. The husband has had just as dissolute a past as the wife.

In China the state of prostitution is very much developed, and special laws do not harass the harlots. They are often lodged in brothels which are usually furnished with great luxury. On account of their blue blinds they are sometimes called *blue*



FIG. 514. Flower boats. Canton. (Anthrop. Gesell., Berlin.)

houses (Tsing Lao). In those towns which, like Canton, lie on the river, specially built, firmly anchored ships, called " flower ships " (*Hua Ch'uan*) are also frequently used as brothels (Fig. 514). The girls accommodated in these places are the slaves of the brothel owner, and their position, as well as the fate awaiting most of them is truly lamentable. They are usually trained systematically for their profession, and just as systematically exploited by their owners. At the age of from six to seven years they have to wait on the elder girls and their male visitors ; at the age of 10 to 11 years they learn to sing and play, also to read, write and paint ; but as early as the age of from 10 to 11 years they are utilised to earn money for their masters ; first of all outside the house, afterwards, however, in the institutions themselves, when two to three years have elapsed. These unfortunate beings fade early. In later life they are to be seen in every street in the big towns sitting mending, for very little reward, the torn clothes of soldiers and labourers. According to official reports there were in the year 1861, in Amoy, a coast town with a population of 300,000, 3,650 brothels which accommodated 35,000 girls.

In the early history of China the " flower girls," *i.e.*, the occupants of the

floating "flower boats," play a similar part to that of the distinguished hetære in Greece. They are the epitome of all beauty, good education and culture, and are sought by male youth to complete their own education. Even to-day this arrangement still exists, and guests are sometimes received in the flower-boats and sometimes in the blue houses. Poor children are stolen or else sold by their parents to be brought up solely for prostitution. But the ideal which formerly gave an ennobling



FIG. 515.—Inside of a Cantonese flower boat. (After Schlegel.)

touch to this arrangement (if we may believe Colquhoun's descriptions) has been completely lost. He says that the young ladies, though some of them are not wanting in good looks and a certain gracious bearing of their own, are very illiterate and incapable of reading and writing—far less of improvising poetry—as they are said to have done in the good old times. A few who can do so may still be found in the North. He continues: "only the utter insipidity of Chinese home life could drive anyone, with any mind, to seek the society of the ladies in these flower-boats,

where the only variation from the round of songs and childish badinage is a turn at that most imbecile of games, *morra*, so common in Italy" (I., 30).

Knochenhauer, from his own personal knowledge, gives a very clear description of such flower boats and the life prevailing upon them. He writes :

"There are floating restaurants and brothels which, lit up by all kinds of lanterns, lie ranked side by side on the river, and, with the reflection of thousands of lights upon the water, give a really fairy-like impression. The lower decks of these high-built vessels are pleasure houses of the lowest kind for the common people, in which an uncommonly lively and unrestrained intercourse takes place. The rooms placed at the disposal of individuals are no bigger than the cabins in a sleeper of a train. Above, however, in the saloon, the elegant world, the *jeunesse dorée* of Canton, amused itself by carousing to music. The interior decoration of these places is magnificent, with many gilded or brilliant lacquer carvings and splendid silken hangings, illuminated by the full light shed by more than a dozen large, brightly burning paraffin lamps.

"No foreigner omits a visit to a flower boat and, in fact, the saloon restaurants are fitted up also for European visitors. I have been there with several European ladies and gentlemen of Hong-Kong society. We were on the open quarter deck from which we had a splendid view of the many festively lighted flower boats and of the city of Canton with its pagodas and temples. The quarter deck is not covered over ; the saloon is open towards this side and so we looked straight in. A number of well-born Chinese in rich silken garments sat about a large round table busy with a meal. Behind each, on the same seat, sat a singing girl, each of whom had a maidservant. But only the gentlemen of the company ate and drank ; the pretty maidens looked on and now and again had the task of diverting the company with loud singing accompanied by a single-stringed squeaking fiddle. Among the company extraordinary gaiety prevailed."

The former Military Attaché of the Chinese Embassy in Paris, Mr. Ching-Ke-Tung, describes this in a somewhat different manner. He says that

certain travellers have taken it into their heads to describe these vessels, called flower boats, which are to be seen near big towns, as places of excess. That is incorrect. The flower boats serve this purpose just as little as the concert halls of Europe. This is a favourite amusement of Chinese young men. These water parties are arranged especially in the evening in the company of ladies who have accepted invitations to them. These ladies are unmarried : they are musical and are invited for this reason. If a party is to be arranged, then invitation cards are to be found on board on which one need only fill in one's name and that of the artiste and the time of the gathering. This is a very pleasant way of beguiling slowly passing time. On the boats is to be found everything that an epicure can possibly wish for ; and in the cool of the evening, with a cup of deliciously perfumed tea, the women's harmonious voices and the sound of musical instruments are not considered a nocturnal debauch.

The invitations are good for one hour only. The time can, however, be extended if the lady is not engaged elsewhere, and naturally the expense is then doubled. The ladies in our company are not judged by their morals ; in this respect, they can be as they like ; that is their affair. The charm of their conversation is as highly appreciated as their art. If anything else is asserted of these gatherings, then it is simply a perversion of the truth.

It is, however, admitted later that the Platonic friendship in which this Chinese authority would have us believe is not absolutely consistent.

We see how varied, in sexual questions particularly, are judgments about the same conditions. According as to whether the observer is more or less dependent on a veneer of Christian morality, so is his judgment.

The *Hak-ka* in Southern China (among whom, as we have seen, it is customary to kill off new-born girls), make raids, according to Eitel, across the borders towards Tonkin in order to provide themselves with women : .

“The prettiest are reserved for the houses of prostitution in Canton, and their price is much higher than that of the others. They are placed as servants in the numerous inns which are dotted along main roads of China and where the traveller can always obtain for a ridiculously small sum (about 100 sapeks) water and fire to cook his rice and can pass the night under cover. The proprietors of the inns add to this poorly-paying industry that of procuration, and many women stolen from Tonkin are added to the personnel of these establishments.”

Prostitution in Japan has been much described, most vividly and clearly perhaps by Crasselt, whose account we shall follow here :

“The daughter takes it as a matter of course that she shall sacrifice herself for her parents if their means are precarious. This is a result of the duty of obedience to parents and nothing

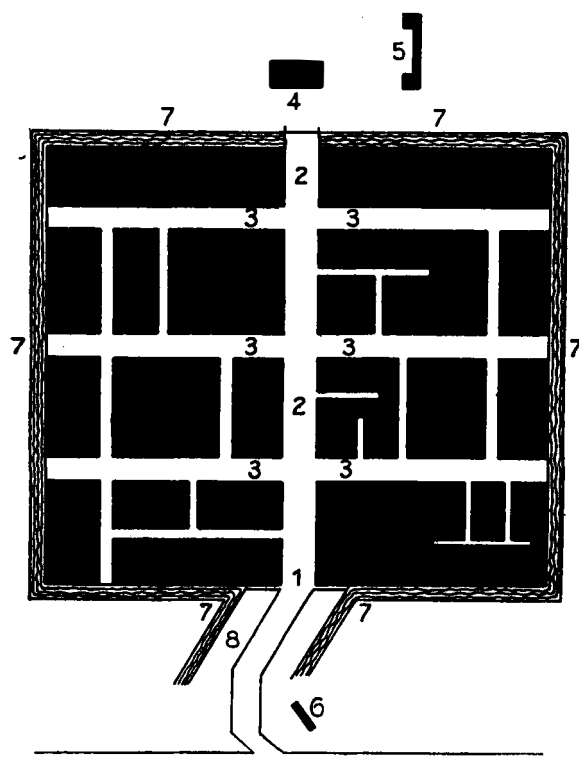


FIG. 516.—Yoshiwara ground plan. (1) O-mon = Great doorway; (2) Naka-no-cho = Main street; (3) Cross streets. Here were the houses where the girls were exhibited in cages and their portraits displayed; (4) Administration building; (5) Hospital; (6) Temple; (7) Moat; (8) *Go-jikken-machi*. (After Baumann.)

sadder can be imagined. She becomes a prostitute with the full knowledge and consent of her parents. Thereupon, she changes her name on entering a brothel and keeps this name so long as she has engaged herself to the proprietor of the house. According to the number of years for which she has engaged herself, she receives a fixed sum, mostly 200 yen [about £20 10s.] for four to five years, and this sum, minus the considerable expenses of agents, goes into her parents' hands. After she leaves the brothel she resumes her original name and is now not regarded as in the least dishonoured. On the contrary, by her heroism as an obedient daughter, she has earned the respect of her fellow-men. In order to appreciate fully the word heroism, it is absolutely necessary to explain the conditions on which the Japanese girl is placed in a

brothel. Old as is the history, even the ancient mythical history of Oriental Japan, so, equally old is the existence of prostitution. The girl, or even the wife, sold herself for a definite number of years in a brothel and had to stay there for that time. At the beginning of the year 70, an order was issued by which this was forbidden and all prostitutes had to be set free. Many obtained their freedom in this way, but the Government had not reckoned with the cunning of the brothel owners and the bureaucracy of the police. For the brothel owner changed the name brothel (*seirō, ageya, girō, jōroya*) to *kashijachiki*, i.e., a place to be let, and now hired their living wares instead of buying them. Thus, they had the same power as before. When the girl received the money on entering, she had to undertake in writing to practise her trade of public prostitute in the house of the brothel owner until she had paid back the earnest-money she had received in advance in the form of a loan. If the girl had engaged to do this, she could never get out of the brothel again, for when she had been in the 'service' of the brothel keeper for a few years and had had 200 yen lent her at her entrance into this 'lodging house,' she found that, instead of being proportionately reduced, this sum had doubled itself. Without



FIG. 517.—Exhibition of Japanese prostitutes in a kind of cage with gilded bars. (After Bienvenu.)

payment of the sum she could not leave the brothel, even if she applied to the police for release. The police rule required that the written agreement of the brothel owner was necessary, in default of which the girl could not give up her trade or leave the public brothel. Consequently she was obliged to stay there. Sometimes brothel owners exchanged their wares with owners in other towns, or with the owners of the so-called tea-houses. And so the unfortunate girl wandered from one hand to another with no prospect of ever bringing this life to an end, and all out of obedience to her parents. The glittering misery of the famous brothel quarter, Yoshiwara (*yoshi*, happiness; *wara*, meadow) in the capital, Tokyo, should be seen. This Yoshiwara is an enclosed quarter of the town (Fig. 516), with a special entrance gate and conceals thousands of these unhappy creatures in its houses. In the evening it is lighted by electricity. Behind the wooden bars (Fig. 517) of each brothel, in the light of electric lamps, sit from 10 to 30 girls in splendid old Japanese costumes, with a smile on their lips and offer a welcome to the passers-by. It is a sight of strange splendour; nothing else like this Yoshiwara exists in the whole world. And yet it is a tragedy when one recalls from what motives most of these girls have to act this sad part, a rôle which they play smiling. Their inner thoughts long for freedom or their homes, but, outwardly, nothing of this is to be seen. They are always

amiable and always smiling when they are applying themselves to their sorrowful duty" (Cf. Fig. 518).

The life and doings in the Yoshiwara have been described very attractively and sympathetically by Tresmin-Trémolières in a little work, and a more detailed account has been written by Becker, to which readers are referred. Compare, also, the work of V. G. Murphy.

A record of the sights worth seeing in Tokyo, published in Japanese and English, "Pictorial Descriptions of the Famous Places in Tokyo," contains also the lives of



FIG. 518.—Portrait of a woman from Yoshiwara with *kaburo*. Utamaro. (Sig. Lipperheide, Berlin.)

a few famous prostitutes, as well as their portraits. They took up the profession from necessity and of one of them it says: "She has stained her body but not her heart," and she is called "the Lotus in the Marsh" (*Miki Tei-ichi*). Many are the terms for this ancient trade. Thus a Japanese expression for the calling of prostitutes quoted by Ehmann, is: "The service of the hard world."

As one of the names by which the Japanese call their courtesans, F. W. K. Müller⁸ quotes the expression *keisei*, which, according to Serrurier, means "falling or fragile citadels." Müller says: "*keisei* is the Japanese pronunciation of the Chinese ideogram *k'ing c'êng*. The latter is an ancient Chinese metaphor indicating women's beauty and the perils of that beauty."



FIG. 519.—Japanese prostitute in her characteristically rich garb, hair decoration and high shoes. A servant attends her. (Photo : Kamon, Kyoto.)

Another designation, states Ehmann, is *michibata no hana*, i.e., "a flower by the wayside."

The dress of these girls is quite distinctive. First of all, the head dress is



FIG. 520.—Celebrated Japanese prostitute with her mat. (From a Japanese coloured woodcut by Yoshitoshi.)

striking, with a great number of hairpins, as can be seen in Figs. 518 and 519. In addition to this they are accustomed to wear the *obi*, or big sash in front; a manner not proper for respectable girls and women, who wear it behind. The clothing is often also extraordinarily rich and costly; the photograph given by Dr. Kamon,

of Kioto, which is reproduced in Fig. 519, shows this feature, the garments being made of heavy silk with wonderful coloured embroideries.

A famous Japanese courtesan is often depicted in Japanese books. Fig. 520 shows such a one from a Japanese colour print by Yoshitoshi of the year 1892. She is wandering over a field in the moonlight, her head covered by a wrap. Under her left arm she carries a rolled-up mat. This is provided as suitable for lying upon in the pursuit of her calling. She is supposed never to leave the house without taking the mat with her.

On the houses of prostitutes in the bigger towns is hung a lantern adorned with the "coat of arms" of the girls concerned. There are special books in which these lanterns, with the "coats of arms" and the umbrella carried by the prostitutes are reproduced in the manner of a register. Fig. 521 gives an example from such a register for the girls concerned in Tokyo.

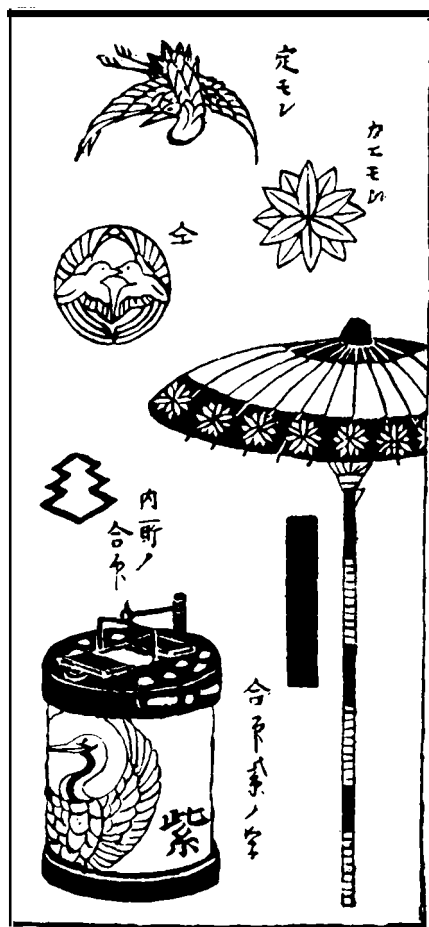


FIG. 521.—Lantern, parasol and "coat-of-arms" of a Japanese prostitute. (From a Japanese woodcut.)

As Hintze reports, brothels were originally scattered all over the towns. In 1626, after almost 10 years of building, the Yoshiwara of Tokyo was founded. "Towards the end of the eighteenth century the custom was formed of classifying the houses externally by the height of the bars behind which the girls were exposed to view. In houses of Class I., the wooden bars reached to the ceiling: in Class II., they were shorter and narrower; and in Class III., they ran not vertically but horizontally. This distinction continued until 1872, when the buildings also were limited to two stories. Since then, a quick succession of houses with more stories and some really beautiful buildings worth hundreds of thousands of yen, have been erected. The houses of the first and second classes no longer exhibit their girls, but affix photographs of individual occupants to the outside of the house; others do not even do that." Prospective visitors must first go to a tea-house which undertakes 'delivery' inclusive of maintenance and charge. The Yoshiwara of Tokyo had in 1899, five first-class houses, four second-class, and 147 third-class, and accommodated altogether about 3000 girls.

In the town quarters of the Japanese prostitutes there takes place once every year the so-called "*Tayu-no-Michiyuki*," the "street procession of the beautiful ladies." Fig. 522, from a Japanese woodcut, represents one of these, and Fig. 523 shows the street procession in Kioto, from a photograph kindly taken by Dr. Kamon. Adolf Fischer saw this procession of the most beautiful prostitutes in Kioto. From his description the following extract is taken:

"The ladies, who were chosen to show themselves in royal splendour to the people, had to excel not only in beauty but also in culture, talents, as, for example,



FIG. 522.—Annual parade of Japanese prostitutes (*Tayu-no-Michyuki*.) (From a Japanese woodcut.)

a special skill in koto playing (the 13-stringed harp), artistic arrangement of flowers, cleverness in versification, and so on. Apart from the most respectable crowd, they were quite silent as the procession slowly approached. It was led by five Geishas (singers) in splendid costumes and obis (wide silken girdles), which were tied like wings behind and reached to the nape of the neck.

“By a red and white rope they drew a carriage on which stood a gigantic golden flower basket ; in it was a gorgeously coloured bouquet of peonies, camelias, tiger-lilies, chrysanthemums and sprays of cherry blossom. This vehicle was followed by the beauties. In front of each were two richly dressed children, the girls wearing garlands, golden tassels, butterflies or some such finery in their hair ; while the boys had all kinds of strange tonsures. Behind these little satellites, who fluttered like butterflies round a flower, came, one at a time, truly beautiful maidens, even to European taste, in wonderfully embroidered garments of silk brocade of a richness of material and a taste in colour such as I have never seen. The obi was tied in front on the breast covering the lap. With all the gay colours there was nothing crude ; between two bright shades, a softer tone ; everything was in the finest harmony and shading, so that one could wish nothing either added or removed.

“Barefooted, in very high lacquered sandals, walked the priestesses of beauty, so that one could also admire their faultless snow-white feet. Holding the train of their rich garments across their breasts with their delicate hands, these Phrynes went ceremoniously and gravely along the streets without a trace of frivolity. A servant in a gay kimono held a big bamboo umbrella protectingly over the pride of her house so that the sun's rays should not injure the bloom of her delicate girlhood.

“To this æsthetically perfect sight an irresistibly comic contrast was formed by the honest occupants of the Joroyas (pleasure houses), who had fixed huge flowers on their festival dress and walked proudly through the throng near the most beautiful girl their house contained. Still funnier was the effect of the anxious matrons on me ; incomparably funny old women who, continually plucking and pulling at the heavy show garments of their favourites, took the greatest pains to let the young ladies appear in the most favourable light.”

Schmidt ⁹ has contributed reports about brothels in Pegu. There are closed houses there in which only prostitutes live, and where anyone can choose whom he likes for his money. To these establishments all those women who have been found guilty of adultery must go and surrender themselves.

On the Gilbert Islands, according to Krämer's ² report, girls of the middle-class are prepared to surrender themselves, and it is not considered at all scandalous ; in fact, the fathers take pains to offer their daughters to men of high position for a payment in money. Hence they have the same word for a girl of the middle-classes and a courtesan. It is characteristic of their morality, which is quite different from ours, that in yielding herself, the girl is not thought to have done anything scandalous ; it is, however, considered shameful and mean if she gives herself without receiving a reward for her family.

Prostitution occurs, as Jacobs ² reports, in Achin in Sumatra, more frequently in harbour and fishing districts than in the villages of the interior. It is held in contempt and can only be carried on quite secretly. Those who become prostitutes are almost always fully developed girls and young widows for whom marriage or re-marriage respectively was impossible. Usually, the matter is managed through the agency of an old woman who then, as a rule, arranged also for the place where sexual intercourse can take place. However, if the affair becomes known,



FIG. 523.—Part of the annual parade of Japanese prostitutes in Kyoto. The women, richly dressed, are accompanied by small girls, who later will also become prostitutes. Behind them stand servants. (Photo: Kamon.)

then the headman of the village usually banishes the women concerned. Sometimes several such persons gather together under the leadership of an old procuress ; but there are no brothels in Achin, so these women go about the country in groups. Now, if a young man meets such a group and desires to engage himself with one of these women, he turns to the old leader and says : “ Mother, I am thirsty, yet I desire no water ; I am hungry, and do not want rice : are you in a position to satisfy my desire ? ” The old woman then answers : “ Indeed, I can ! ” The ensuing meeting generally takes place in a forsaken watch-house in one of the neighbouring rice fields. Half the sum agreed upon as payment must be paid in advance.

3. COMPULSORY PROSTITUTION OF WIVES

Among some tribes prostitution is carried to the extent of wives being forced by their husbands to surrender their charms for gain. Thus, in the Lampong (Sumatra) district, for example, many men marry second and third wives, according to Harrebomée, in order to hire them out for payment.

The men of the Haida Indians, with their wives, undertake, according to V. Jacobson, speculative journeys to Victoria every summer, each trying his luck separately on the way, and then all returning home together. The sad consequences are often serious diseases among the women.”

Of the Tenggerese in Java also, Kohlbrugge says :

“ When there are many Europeans, it happens, even to-day, that women and girls are driven to ‘ shame ’ by the men for the sake of money.”

Among the Olo-Ngadjoe, a Dyak tribe in South East Borneo, a husband gets a fine of from 100 to 800 guilder for adultery.

“ In order to gain this money the Dyak sometimes drives his wife to the same offence, to *hadjavit* (to work), as he calls it. *Jā hadjavit hapan sawæ*, he works with his wife, *i.e.*, makes his wife give herself to other men, so as to be able to claim the corresponding fine. There are frequent cases of the wife leading a man on, but, at the right time, the husband always appears, who sees no shame in the disclosure of his wife’s shame ” (see Schmidt ⁹).

Among other Dyaks, too, and among the Olo-Ot-Danom, also in Borneo, there exists, according to Schmidt,⁹ a custom, that many men, especially decrepit ones, marry as a speculation from two to seven young girls, and often boast of their fine wives who have made their husbands rich.

Likewise, nearly everywhere in equatorial Africa the wife is regarded as a lucrative possession whose charms produce even more than the work of slaves. Hence husbands are prepared to yield their wives at the first opportunity, even to offer her to a man, for, if the stranger is rich, he will pay, but if he is poor, he will become the husband’s slave. Prudishness towards a generous lover the wife’s husband would soon banish with the “ *kassingo* ” in his hand.

Again, Wissmann writes from the Congo territory :

“ The crafty Songo often sends his wife at evening into the camp of a trader and waits concealed in the neighbourhood till, according to the arrangements, the beauty betakes herself to the hut of a bearer ; then he appears immediately to accuse the bearer of the seduction of his wife and to claim from him, according as to whether the caravan is large or small, peaceable or bold, payment for the ‘ *milongo*. ’ ”

A comment on the effect of Europe’s “ civilisation ” on savage peoples !

4. TEMPORARY AND PROFESSIONAL PROSTITUTION

It has a strange effect on us when we hear that among some tribes professional prostitution is engaged in by every young woman in the tribe without exception. It lasts, however, only for a limited time, and when they have earned enough money they give up the business and return to their ordinary life to follow an honest occupation. In contrast with the foregoing chapter, it is a survival of the free intercourse of youth, "capitalistically" turned to account.

Thus Herodotus (I., 93) relates of the Lydians that :

"Among the people of Lydia, all the daughters become prostitutes in order to acquire a dowry, and they do this until they marry, as they furnish their own trousseaux. Of all the wonderful objects worthy of remark, such as occur in other lands, Lydia has none except the golden sand brought down from the Tmolus. Only one production is to be found there, which is by far the greatest, with the exception of Egyptian and Babylonian works, namely, the tomb of Alyattes, the father of Croesus, the foundation of which consists of huge stones; the remaining part, however, is a mound of earth. It had been erected by tradespeople, and the pillars were still standing in my time and on them was engraved in writing what each person had done in the construction. And when one measured, the part which had been done by the prostitutes appeared the greatest."

Just as the Lydian young women used to do, so do to-day those of the Algerian tribe, the Ulad-Nail, representatives of which can be seen in Figs. 393 and 394. The old writer, Valerius Maximus (II., 6, 15), lays stress upon the sexual freedom of the Venus cult to which the natives of the neighbourhood designated Sicca Veneria, did homage. According to him, even women of good family from all parts of the province used to resort to prostitution in order to earn a dowry to take with them to their husbands. The ancient town of Sicca was situated in the district which is known now as Goff or Keff. Here the Ulad-Nail dwell to this day. Caffarel says that they are the most important Arab tribe of the Sahara, and reports of them :

"The Ulad-Nail are the most important of these tribes, because of their position. They are divided into two great groups or divisions which are called, *Cheraga*, or eastern, and *Reraba*, or western. They are merchants and traders, kind and hospitable, but very loose in morals. Their daughters, famed for their beauty, enjoy the sad privilege of being sacrificed from their most tender years to prostitution which, in this tribe, is a veritable institution. Each girl, before marrying, goes, accompanied by her mother or an elder sister, to abandon herself to public love. After a time, they go back to the tribe and buy a flock; and the rounder the sum they have amassed, the surer they are of finding a husband. These courtesans of Algeria are, at the same time, famous for their dancing."

H. v. Maltzan also visited this tribe, and says :

"This ancient Numidian moral trait still continues among the tribes of the Sahara. The girls of the tribe Ulad-Nail, called Nailia, and also those of other tribes, are accustomed to go in great numbers to the oasis-towns visited by foreigners and nomads, for the purpose of pursuing the profession of an *alma* (originally 'dancer'), until they have earned so much that as women of means, they can get a distinguished husband in their native place. They almost always succeed, as the desert dwellers are in the habit of being jealous of their wife's present but not of her antecedents." v. Maltzan knew much respected Algerian chiefs decorated with French orders who married such prostitutes.

Of such prostitution Al-Ḥalabí says :

"*K'ah'ba* (prostitution) is contrary to the laws of Islam and to the moral principles which ought to govern us in our relations with women. This prostitution of the woman also was

unknown during the first centuries which followed the preaching of Mohammed. If then one finds to-day in an African tribe subject to the French, girls who go to the big towns to traffic with their bodies in order to return to their own people afterwards to marry and settle down, they must not be regarded as anything but a deplorable example of the profound ignorance into which several of our brothers and our sisters have fallen" (cf. also Ubach and Rackow).

5. HISTORY OF PROFESSIONAL PROSTITUTION IN EUROPE

Dufour has published a work, of little value, in six volumes on the history of prostitution. The reader will, therefore, not expect that anything exhaustive in this connection will be presented to him here, where space is so limited. We are not in a position to give more than a very cursory sketch. For in civilised countries particularly, in no field have former views changed so essentially as those regarding professional prostitution. Now proscribed and prosecuted to the uttermost, now specially protected and promoted by princes, magistrates and clergy then again, only just tolerated and kept in check by strict police regulations, nevertheless, it has proved its tenacious vitality which it has kept fresh even to the present day. It reflects a section of the history of civilisation as few others can. To anyone who wishes for more exact information, the books of Parent Du Châtelet, Lombroso, Sorge, Sanger, Friedland, Hayward, E. Schultze, J. Bloch,² Flexner, Woolston, Waterman, Kneeland, Reckless, etc., offer satisfactory information.

It was Solon who introduced regular prostitution into Greece, and especially into Athens; and even hetærisms, of which we have already spoken, was, in itself, nothing but prostitution in a refined form which corresponded to the cultural position of the people. One can at least conceive of persons like Phryne as almost analogous to the present-day "*femmes entretenues*" who belong to a man only so long as he pays them. Moreover, there existed among the Greeks a form of common prostitution as appears from several passages in Aristophanes. Taxes were legally levied on public prostitutes and brothels for the benefit of temples, etc.

Wulffen's¹ estimation of this phenomenon is very striking: "The classical age of the Greeks and Romans," he says, "is so closely interwoven with this prostitution that without knowledge of it the finest flowers of genius would remain unintelligible. All the arts and even philosophy sprang, to some extent, out of prostitute soil. The great exploits of the artists, sculptors, painters, poets and philosophers which are still admired to the present day, were inspired not by their legal wives, but by hetærae, who, in a sense were closely related to prostitution."

In Rome, as in Greece, the Venus cult contributed not a little to the development of prostitution. The Romans had public pleasure houses (*Lupanaria* and *Fornices*) as well as independent "*filles de joie*" (*Meretrices* and *Prostitulae*), and prostitutes used to appear at the baths. An ancient brothel of that kind had been brought to light in Pompeii, and the extraordinary narrowness and smallness of the rooms is remarkable.

The aversion from mercenary love which was peculiar to the women and girls among the ancient Teutons was lost in great measure as a result of the penetration of Roman culture and contact with other races as well as with the ideals of an ascetic Christendom. Indeed, in the increasing degeneration of morals in the Middle Ages the female sex had a remarkable share. Prostitution became extraordinarily prevalent in spite of the efforts of jurists and rulers who were still imbued with the old Germanic spirit to repress it. Thus Charles the Great (c. 742-814), in his capitularies, gave the first example of iron severity towards prostitutes and those

who hired them (see Baluze; Rabutaux, p. 183). Frederick I., surnamed Barbarossa, in the "Lex Pacis Castrensis," issued on his first march to Italy in 1158, forbade his warriors, under pain of severe punishment, to have prostitutes with them in quarters; women caught at it had their noses cut off (see *Mon. Germ. Hist.*, Legum, Sect. 4, 1893, Constit. I., p. 240). Yet, in spite of all the regulations with which celibacy was pursued, there was nothing commoner in every town than loose women and houses for such women. In the time of the Emperor Otto, brothels were apparently widespread, and appear to have already been regarded as a social factor, as we know from the dramas of the nun Roswitha von Ganderheim. With the attempt strictly to maintain monogamy and the elimination of concubinage, etc., prostitution thrived exceedingly, especially as knightly culture with its "Minnedienst" came to an end and the cultural pressure was transferred to the towns. It was as long ago as then that the question began to arise which still occupies the front rank of interest, whether *brothels*, *i.e.*, prostitution confined to special houses, or *free prostitution* is the better. It is peculiar, but just as characteristic, that contemporary problems of prostitution have gained nothing from the wealth of material at hand. It is, therefore, natural that those who mostly discuss the question to-day know as little about the history of prostitution as the public generally. The whole question is considered either as a moral one, *i.e.*, a matter of *feeling*, or as a *political* one; but few have ever taken the trouble to study it as a *scientific* one (*cf.* v. Reitzenstein²⁵).

The Crusades especially contributed much to the degeneracy. There existed at that time, according to some authors, those Magdalene orders of which Sauval speaks. Any maiden who was satiated with sensual pleasure entered one of these orders so that she could give way to pleasure according to her taste and choice. In the twelfth and thirteenth centuries the towns issued regulations* for the public houses of ill-fame; for example, Augsburg, in 1276, under the title "Verordnung des fahrenden Fräulein." The licensed landlords of these houses were heavily taxed. In Vienna there were two brothels which were sovereign tenures, the tenants of which were included among those who marched to meet the Emperor at his entry. Joanna I., Queen of Naples and Countess of Provence, founded a house of the kind in Avignon. She was then 23 years old. The statutes are still extant and have been re-issued by Freudenberg. The following are extracts:

"(1) On the 8th of August in the year 1347, our good Queen Joanna has permitted a house for young women to be erected in Avignon for the pleasure of the public. She will not allow all the courtesans to be spread throughout the town, but she commands them to stay in these houses only and it is her will that, in order to distinguish them, they wear a red band on the left shoulder.

"(2) If a girl has once fallen and goes forth to abandon herself again, then shall the bailiff take her by the arm and, amid beating of drums, shall lead her through the streets with the red band on her shoulder and bring her to the house where her future companions in pleasure are assembled. He shall forbid her to let herself be found in the town on pain of being whipped in private on the first transgression, but on the second publicly birched and banished from the country.

"(3) . . . A door shall be made through which anyone can enter; but it shall remain locked so that no male person may visit the red marked girls without permission of the female superintendent, who is to be chosen anew every year by the Town Council. The superintendent shall have the key in her keeping and shall warn the young people seriously to make no uproar or torment the girls, for at the least complaint made against them they must at once be put in the tower under arrest.

* *Cf.* E. Fuchs, *Ill. Sittenges*, I., 417 ff.

“(4) It is the will of the Queen that every Saturday the superintendent and a surgeon chosen by the Council, shall examine each girl, and if one of them is found infected by an evil arising from coitus, then she shall be separated from the others and put in a separate room and the infection of the young be prevented,” etc.

The last paragraph is of quite extraordinary interest in the history of civilisation. The authenticity of this document has, however, recently been contested.

The high ecclesiastical authorities also did not fight shy of undertaking the protection of these houses, supported by a dictum of St. Thomas, who says :

“Prostitution in the towns is like the cesspool in the palace : take away the cesspool and the palace will become an unclean and evil-smelling place.”

Economic considerations, moreover, were not unimportant. Thus the Archbishop of Mainz complains in 1422 that by licences the town does damage to his income from loose women and illicit intercourses.

According to Schultz,¹ the regulations for low women in brothels, which were issued by the Nuremberg Council in the fifteenth century, begin with the words :

“Although an inheritor councillor of this town by praiseworthy descent is more inclined to increase his estate and encourage good morals than to permit the activities of sinful and criminal persons, yet for the sake of avoiding worse evils in Christianity, low women will be tolerated by the Holy Church,” etc.

On special occasions, such as Government meetings and Councils, crowds of wandering women were to be found, and all campaigns at that time were accompanied by a powerful gang of such females, whose discipline had to be officially placed under the authority of an inspector of harlots. A description of an army on the march is given in Parsifal (I., 459) :

“Of women too, one saw enough ;
Many bore the twelfth sword girth
As pledge for their sale of lust
They were not exactly queens ;
Those same paramours
Were named women of the war canteen.”

At the Council of Constance in 1414–1418 there came some 1400 prostitutes to the town, and the high ecclesiastics did not resist it because it was considered a matter of course. When festivals were held the public women were invited to them : if a prince entered the town they met him with bouquets of flowers sent by the corporation, and received a reward for them. Thus, in the record of the accounts of a town for May, 1438, this appears : “Item for the women who went to meet the king, 12 *achterin* of wine,” and on the visit of Emperor Siegmund in 1435, velvet dresses were made for them at the town’s expense.

According to Schultz there were in the army of Charles the Bold, outside Neuss, 900 priests and 1600 prostitutes ; and in 1476 there were, following his army, even about 2000 harlots. Fig. 524 represents one of these canteen followers from an engraving of an unknown contemporary German master.

At the first parliament which Charles V. held at Worms, the streets were crowded with pretty ladies and low prostitutes. Not long afterwards the army which the Duke of Alva led to the Netherlands was followed by 400 courtesans on horseback and 800 on foot.

In the Middle Ages long journeys were attended with great hardships ; hence

the princes of that time when they undertook a journey, could not expect their wives and daughters to accompany them. Only courtesans were hardened enough to be able to follow the princes on foot or on horseback on their journeys, or when marching with the army, and thus they became a necessary part of the princely retinue, and in war, were regarded as an indispensable part of the camp followers.

Leonhard Fronsperger, in his War-book has described in detail the duties of the whore-usher :

“Item, when a regiment is strong in numbers, then the camp followers also are not few; there should be appointed by the colonel, an official, an able, honest, sensible warrior, like the one mentioned above, namely one who has helped in battle and attack. He should have his own lieutenant, and second-lieutenant, when the gang of camp followers is strong in numbers. He should have captain's pay and his lieutenant and second-lieutenant, as arranged, for such an officer must know how to order and lead such troops just as ordinary or straying troops have to be kept in order and led.

“He must see to it that they do not hinder the troops on the march, and that they do not come into camp before them, where they would take away everything usable from the combatants. Besides, he must see that whores and loose fellows keep clean the latrines, and further :

“That they wait upon their masters faithfully and that they are kept occupied when necessary with cooking, sweeping, washing and especially attendance on the sick; and that they never refuse either on the field or in garrison, running, pouring out, fetching food and drink, knowing how to behave modestly with regard to the needs of others and taking it in turns to do what is necessary according to orders.”

Under the officer for the harlots is a provost, whose duty it is to establish peace and order.

“When he cannot make peace by other means, he has a conciliator about the length of an arm with which he is authorised by their masters to punish them.”

We see from Fronsperger's remarks that these women were not taken with the army for the sole purpose of sexual enjoyment, but that they also had many other duties.

Louis the Pious was the only king in the Middle Ages who tolerated brothels in his kingdom yet strictly forbade them on his crusades. The other sovereigns, before and after him, found solace for their separation from home in the arms of courtesans; the many hundreds of prostitutes who followed the troops were treated by them as a harem from which they chose the best ones. Writers of that time saw nothing strange in such conduct, the only thing they found worthy of censure was that the kings sometimes dressed up their mistresses like princesses and introduced



FIG. 524.—Camp-follower. (From an anonymous sixteenth century engraving. After Hirth.)

them to the society of illustrious and noble ladies, so that their own wives were in danger of having to offer the kiss of peace to courtesans.

From what we have seen it is clear that the owners of brothels were not considered dishonourable, and that landowners, clerics and towns regarded it as quite a normal element ; for, indeed, they were regarded as public institutions. Thus the Archbishop of Mainz, in 1457, enfeoffed the Counts of Henneberg with the brothel, and Bishop Johann of Strassburg himself built such a house in 1309 in order to draw the revenues from it. The hereditary imperial marshals (Counts von Pappenheim) had as an important source of revenue the taxes of the brothels in the royal burghs. Duke Albrecht IV. of Austria appears, in 1390, as the owner of the brothel in Vienna. Mostly, however, the corporation itself was the owner. Indeed, what is most clearly reflected from a survey of that time is the fact that officials used to enter as items in their accounts the amount they spent in brothels (as, for example, in 1446 an Ambassador of the Council at Frankfurt). The attitude of the German Emperor to the brothel is also highly interesting. Thus the Council at Ulm in 1434 lighted the streets in the evening only when Emperor Siegmund or his retinue went to the "girl house" ; and the Council at Berne in 1414 issued an order to all brothels that the young women should receive amiably and without payment all gentlemen from the royal court, for which the Emperor publicly expressed his thanks to the council. Thus the women of the Nuremberg brothels in 1471 were able to go so far as to take Emperor Frederick III. prisoner by means of a chain 3 fathoms long on his entry into the town, with these words : " Your Highness must be taken prisoner," whereupon the Emperor, entering into the joke, replied : " We do not like being taken prisoner, we wish to set ourselves free," and he gave them 1 gulden. Again, in 1493, Count Eberhard von Württemberg wrote to the patricians of Ulm saying that he could not come to the Shrovetide festival, but asking them to send him some game that they were to devour with the " pretty ladies."

With this support for mercenary voluptuousness there was an allied traffic in human beings. Rostock merchants took vagrant women to the herring fisheries in Schonen ; Swabian prostitutes were taken to Venice, Flemish to London, and were considered good samples in that city.

Valuable, too, was the safeguarding of the future of the women, for whom were erected so-called homes for penitent women, Convents of White Women and of St. Clare, and homes for Beguines. It was characteristic of the religion of the time that no taint of punishment clung to the homes ; they would correspond to the homes for the aged of our times.

Among themselves the young women were organised ; they formed a corporation at the head of which was a chief. In Geneva and Nuremberg, this chief was even called " queen." She was elected by the corporation and bound by oath. The struggle against free prostitution, the adherents of which were called *Böhhäsinnen* (interlopers), was very often left in the hands of the brothel women. In Frankfurt in 1493 the council ordered the brothel women in Rosental to fetch a clandestine prostitute by force if she did not go voluntarily to the brothel within 14 days.

On the other hand, in order to cause no scandal, the brothels were always situated in back streets, preferably near the city wall or in quarters where there was little business activity. Even to-day many street names in our towns recall this ; Frauengasse (Nuremberg, Altenburg) ; Frauenfleck (Vienna) ; Frauenpforte (Frankfurt) ; Rosengasse (in many towns), etc. Frequently they were in the streets where the baths were (*e.g.*, in Dresden, the Lochgasse, later called Badergasse).

Often, too, they lay near the city wall or close to convents. The situation of many of them can be estimated fairly exactly from the records that have been preserved. The name "Rosenstrasse" (Rose Street) in German towns indicates the place where they used to "pluck roses," *i. e.*, have intercourse with prostitutes.

Whilst we in a more hypocritical, but so much the more dangerous way, endeavour to hush up the facts of prostitution, so formerly people were obliged to make it publicly recognisable. Thus, in 1506, prostitutes in Leipzig had to wear yellow cloaks with blue trimmings; in Vienna, a yellow kerchief fastened on the shoulder; in Frankfurt yellow trimming; in Augsburg, a green band at the waist; in Venice,



FIG. 525.—The paramour. Lucas Cranach. (Germanic Mus., Nuremberg.)

Berne and Zurich, small red caps. In general it seems to have been the practice that no brothel might harbour girls of their own town, but "citizenship" was bestowed on the strangers because they served a public, social institution. A series of laws, some of which were very reasonable, regulated the management of the houses. Above all, the proprietor was responsible to the corporation for everything that happened in the house, and was strictly pledged thereto; thus in Ulm, he had to promise on oath to maintain fourteen suitable and clever, clean and healthy women.

The dress prescribed for these women by the corporation showed all kinds of variations, according to time and place. They can, however, be divided into two main groups. At one time the dress had to be as modest and as concealing as possible; at another, it had, by its conspicuousness, at once to arouse men's attention (Fig. 525). The famous work on costumes of the sixteenth century by the

Venetian, Cesare Vecellio, contains examples from both groups. To the group of the "concealed" belong the courtesan from the time of Pope Pius V. (1565) (Fig. 526) and the prostitute from Bologna (Fig. 527); to the group of the "conspicuous" belong the prostitute of Rhodos (Fig. 528) and the Venetian harlot, who is shown in Fig. 529. A very interesting garb for prostitutes is to be found in Holtmont's "Die Hosenrolle" (München, 1925, p. 19).

In individual towns it was strictly decreed that no priest or married man should be permitted to enter a brothel, and Jews were in no circumstances allowed to enter. In the Statute for Avignon, quoted above, the last paragraph has :

"Further, it is the will of the Queen that the superintendent permits no Jew to enter this house. Should one of these cunningly creep in unnoticed and try to have intercourse with one of the maidens of the house, he shall be arrested and immediately whipped through all the streets of the town."

The inhabitants of these houses formed their own guild, but they could not prevent all kinds of competitors from springing up. For instance, there were the bath-houses, in which the female attendants were very complaisant to the guests. Schultz quotes the following verses from Cl. Hätzlerin, I., 91, 104 :

"And from the playhouse we shall go ;
Thence into our bathing
With us invite some pretty maids,
That they may rub
And beguile
Us the while.
No one hastes
Thence away ;
He rests
Then like a prince.
Thou bath miss
Now take pain
That each gain
His bath well done, a fresh, clean bed."

Ladies of quality, too, were not ashamed to take part in this competition, for, according to Scherr,³ "there is authentic proof that in Lübeck, about 1476, well-born burgesses, concealing their faces under thick veils, went to the wine cellars in the evening to indulge there, unrecognised, in the pleasures of prostitution."

The nuns appear to have been particularly dangerous competitors. Thus, in verses attributed to Hans Rosenblüt (*fl.* 1460) we read :

"Loose women too complain of their position,
Their ground is much too lean become,
The secret wife and servant maid
Daily devour upon her pasturage . . .
Complaints too have they of the cloister nun
Who can so coyly kick the traces
When they must to be bled or bathe
They bid with them young gentlemen." (111, 1112)

Hans Holbein's famous Dance of Death shows us the conditions. Death has come to fetch the nun who is kneeling before the altar in her cell. Yet she turns



FIG. 526.—Italian courtesan of the time of Pope Pius V. (After Cesare Vecellio.)



FIG. 527.—Courtesan from Bologna. Sixteenth century. (After Cesare Vecellio.)



FIG. 528.—Courtesan from Rhodes. (After Cesare Vecellio.)



FIG. 529.—Courtesan from Venice. (After Cesare Vecellio.)

her head towards a young man who sits on her bed playing her something on the mandoline (Fig. 530).

Schultz, who quotes the above verses, then continues : " Indeed, the authorities also recognised their rights and permitted them to make reprisals." The same author continues (p. 76) :

" 1500, item on the same day " (November 26th) relates Heinrich Deichsler, " Then came eight prostitutes from the brothel to the burgomaster, Markhart Wendel, and said that, under the protection of the armoury there was a house full of clandestine whores and there the proprietress received married men in one room and young bachelors in another, day and night, and they begged him for permission to take them by surprise and destroy the whore house. He gave them permission ; then they attacked the house, forced the door open, pulled down the stoves and broke the windows and each bore away something from it and the birds had flown and they beat the old proprietress terribly."



FIG. 530.—The Nun from Hans Holbein's " Dance of Death." (After Lippmann.)

leaves, to announce the fact to the commissary of the quarter ; likewise when he gets a new inmate.

" (3) No owner may keep in his house more young women than are provided for in his contract.

" (4) In order to preserve the health of the visitors as well as that of the young women, a duly appointed *chirurgus forensis* in each quarter must visit every young woman of this kind in his district every 14 days," etc.

What went on in these houses is shown to us in a painting of the Dutchman Jan Sanders (*fl.* 1540), called Jan van Hemessen, which is in the possession of the K. F. Museum in Berlin. A similar representation is possessed by the Royal Picture Gallery in Copenhagen.*

It is clear that the soil of prostitution is not unfruitful when the state understands how to cultivate it. This is shown by the example of the Republic of Venice, that grand centre of European culture. Among the courtesans of Venice we find, for instance, a poetess of significance, Veronica Franco, whose work Schaeffer

In many brothels in the seventeenth century there prevailed the custom that in the reception room portraits of the inhabitants were hung on the walls. From this catalogue the guest made his choice. An old engraving (Fig. 531) presents this scene. The subject is a famous brothel which existed at that time in Brussels, and bore the name "*la Schoon Majken.*" Further details of it are to be found in Francisque and Fournier's "*Histoire de Hôtelleries.*"

Freudenberg writes in the year 1796 :

" At the present time, in all the chief European towns where brothels are either authorised or tolerated in silence, it is very necessary that they should be regulated and inspected. At least, nowhere but in Berlin are they under special legal police regulations. The latter formerly consisted of the following points :

" (1) This establishment is, of course, not sanctioned by law, but is tolerated only as a necessary evil.

" (2) Every owner is obliged, as soon as a woman

* Cf. E. Fuchs, *Ill. Sittenges*, I., 403.

considers the best of its kind in the whole of the sixteenth century. He writes in his "Frauen der Venezianischen Malerei": "In Venice the ancient sensuousness awoke from its thousand years' sleep into which it had been sung by Christian anthems. As always when a culture is under the influence of sensuous pleasures, as at Athens and Alexandria, woman was in the ascendant in Venice in this century. And just as in Athens and Alexandria, not the married woman but the courtesan." Finally, that whole great blossoming of art, for which we have to thank the Papacy, is not conceivable without prostitution, and especially at that time in which the Papacy was encouraging culture. [For Venetian prostitution see "Legge e Memorie," etc., and for an appreciation of Veronica Franco see Graf.]

For some years now the keeping of brothels has been prohibited in Berlin as



FIG. 531.—"La Schoon Majken." A seventeenth century brothel in Brussels. (After Francisque and Fournier.)

well as in a great part of the rest of Germany. In spite, however, of strict supervision, neither in Germany up till now, nor yet, of course, in any other European country, has prostitution been suppressed; and, alongside the persons authorised and supervised by the sanitary police, the unlicensed women continue to exist, as before, to the common danger.

The changes have succeeded in abolishing most of the brothels in order, so it is said, "to elevate the honour of women." As a matter of fact, the authorities, who up to now have been unmoved in their resistance to registration, have already begun to see the foolishness of the attempt. Perhaps the whole movement may even yet learn something from history, and when the altruistic feminist epoch is past, may draw the conclusions.*

* [For a vivid account of contemporary prostitution in Berlin since abolition see Weka.]

6. ABOLITION AND RE-INTRODUCTION OF BROTHELS

In spite of this legally recognised position, we have early evidence of the abolition of brothels. One of the first of these accounts is the abolition in France, at the beginning of the thirteenth century, without any discoverable reasons. Still more interesting, however, is the fact that they were reintroduced in 1254, then abolished again in 1560, and almost immediately afterwards re-established. In the sixteenth century they gradually disappeared in Germany also. It cannot be assumed that moral feeling may have changed, as unlicensed prostitution rejoiced in greater freedom. Nor, as was thought at an earlier date, was the Reformation the cause. Rudeck's evidence to the contrary is very valuable. He showed that the revenue from the brothel at Altenburg (called *Rotschilt*) in 1505-1506 amounted to only 15 groschen, and it was stated that it "had caused much trouble." In 1512-1513 there were 22 groschen; in 1514-1518 it was stated only that there was only a small amount; in 1519-1520, the income amounted to 30 groschen 6 pf.; and in 1520-1525 nothing at all was received, so that in 1525 the closing of the *Rotschilt* resulted. Moreover, the houses in Albertine Saxony were closed also, without a general prohibition having been issued. In 1553 it was said of Regensburg that the proprietresses could no longer pay their rent. Thus there is no doubt that a sudden impoverishment took place from want of visitors. At the same time many complaints were received from the brothels that unauthorised competition from unlicensed young women was doing them a great deal of harm. Hence, about the year 1512, one of the two proprietresses in Regensburg named a number of middle-class houses in which 67 prostitutes were secretly concealed so that they would have to pay no interest to the proprietresses. We can see that it was the time when *unlicensed prostitution* sprang up so surprisingly strongly, a period also that was linked with economic conditions. On the other hand, with the armies stationed nearby, owing to the continuous wars, many of the soldiers' prostitutes were dragged in their train. The prostitution of the young women of the town had become so great, owing to the narrow-minded morality on the one hand, and, on the other, to the commencing system of industrialisation, that the relatively strict discipline of the brothels was no longer suitable. Hence came the enormous increase in syphilis, with which they had to contend without adequate knowledge, and which, in the absence of hygienic measures, was, of course, caught in baths and brothels, particularly whilst the young women of the town were still free to cause the greatest danger of spreading it. It was an unfortunate time for this measure to be taken. First, Würzburg shut its gates at the beginning of the sixteenth century, then Constance in 1519, Ulm in 1537, Nuremberg in 1562, Bâle in 1534, Nördlingen in 1536, Frankfurt in 1560, Munich in 1597, etc. In France, as we saw, the case was similar. The consequence was that the whole people were tainted not only with syphilis but also with prostitution, which caused such endless misery throughout Europe, and even spread to the convents. Everything seemed in some measure to be drawn into the vortex. The citizens of most towns had, at any rate in the beginning, resisted the abolition of the licensed houses, which the reformers especially supported, doubtless on social grounds. Thus Wursteisen, in the Bâle Chronicle, to which Rudeck also refers, says: "the ordinary man set his face against it and even thought that one could not keep an innocent wife and daughter if they were abolished."

The development of the matter proved his surmise correct. In Ulm, to take only one example, where, as we saw, the houses were abolished in 1537, the council

was charged, as early as 1551, to reintroduce them in order to avoid worse abuses. Thus brothels were again introduced everywhere, but a terrible mistake was made. They were no longer "public institutions" with honourable management, but clandestine corners full of alcohol, dirty speculation and shameful exploitation of the young women. The police regulations were quite opposed to it and forced the whole question into a criminal setting; the young women had no assurance for their future, and so had no longer any interest in the future of those who visited them, while unlicensed prostitution grew, and with the increasing employment of women in business occupations, found in that an excellent cloak. He who solves the question of prostitution solves the whole sexual question; and how to solve this will shortly be one of the most burning questions which must come before the public, if its nature does not cause too great a resistance. One thing is certain: anyone who tries to eradicate prostitution increases and debases it, for the sexual life cannot be suppressed; it can only be regulated.

7. THE PREVENTION OF PROSTITUTION

At the time of the Patriarchs prostitution was so strictly forbidden to the ancient Hebrews that one of the punishments fixed for such women was death by burning (Gen. xxxviii. 24; Lev. xxi. 9). The men, however, sometimes had intrigues with prostitutes from neighbouring tribes. In later times, however, harlotry was not to be suppressed, even among the Jews, and the priests might even accept for the temple gold or other gifts which were earned by prostitution.

Regardless of the dictum of St. Thomas (*De Reg. principum* (*Opusc.* 20), IV., 14), and in spite of the tenet of faith laid down by St. Augustine: "Abolish prostitution and you will see confusion" in Europe in the Middle Ages, rulers of church and state have, as we have already said, repeatedly tried to suppress prostitution. As is to be expected, there was no lack of refined cruelty in accordance with the spirit of the age. Not infrequently prostitutes were publicly whipped, as under Charles the Great, but even earlier, under the King of the Visigoths, Reccared, who had decreed 300 lashes of the whip for them. In many places they were led ignominiously through the streets, sometimes naked, sitting reversed upon an ass. In England people used to throw filth at them (*oletum et stercus*).

According to Rabutaux (p. 27), Jousse reports the treatment of prostitutes in Toulouse as follows:

"A woman condemned for this crime is taken to the town hall: the executioner ties her hands, puts on her a sugar-loaf bonnet trimmed with feathers, with a label on the back on which can be read full details of her guilt. . . . Then she is taken near the bridge to a rock in the middle of the river. There she is put into an iron cage made for the purpose and dipped three separate times and then she is left for some time in such a way, however, that she cannot suffocate, a spectacle which attracts the curiosity of nearly all the inhabitants of the town. That done, the woman or girl is taken to the prison where she is condemned to spend the rest of her life in the hard labour section."

A similar method was in use also in Bordeaux.

But even where these women were tolerated they became liable to punishment if they did not submit to the rules and regulations decreed for them. In this connection Schultz quotes from a *Fastnachtsspiel* the following verses:

“ But that have I not forgotten,
 That thou art among the guests' seats
 In that same whore house where ten years
 Wert combed from Strassburg's meanest streets.
 Army harlot wert commonly called.
 At Strassburg thou wert once dipped
 And with that almost mortally whipped ;
 And where thou couldst, so have been treated
 Thou would'st by them have been drowned.

The question was also attacked by prosecuting with inexorable severity landlords and landladies who kept prostitutes in their houses. Flogging, branding with hot irons, banishment and confiscation of their property, played a great part in this campaign, and in cases of a second offence capital punishment was decreed. Louis IX. of France also made very vigorous attempts to eradicate prostitution in his country by means of a rigorous severity. However, Rabutaux observes (p. 40) :

“ His Majesty failed in his purpose and the evil grew worse. The order was enforced rigorously. Clandestine prostitution succeeded to the prostitution which was supervised up to a point ; it was neither less active nor less scandalous ; respectable women could no longer live in security in the towns where the prostitutes were obliged to try to look like them and to be confused with them. The latter, moreover, ceaselessly persecuted, took refuge in country places and corrupted them ; and so, after two years' effort, the curse that could not be overcome had to be tolerated.”

Louis IX., as well as his successor, in spite of renewed attempts, could not nevertheless subdue prostitution, and, in the end, they had to be satisfied with limiting it by severe penal regulations, *i.e.*, debasing it.

In the civilised states of the present day people endeavour in an increasing degree to restrict prostitution. The modern state has two motives for thinking it necessary to restrict the existence of prostitution : on the one hand, on the ground of *public morality* (the existence of which is very doubtful) ; on the other hand from *hygienic considerations*. For the first, offices for the regulation of prostitution were established ; for the second, the officers of the board of health were enjoined to keep a strict watch upon prostitution as the worst propagator of syphilitic diseases. Legislative practice has adopted various courses for this. In general, two opposed systems are to be observed : on the one side “ conditional tolerance ” ; on the other, the most rigorous efforts for the suppression of prostitution. It was recognised more and more fully that *clandestine*, like *open*, prostitution (which makes its appearance in all places where there is much traffic), unquestionably does harm to society as a great social evil. But the two kinds of prostitution operate in different degrees. Wherever clandestine prostitution is in inverse proportion to public, there the former is most licentious and most widespread ; where the latter does not exist at all, and there is no outlet for impurity, then it contaminates all classes of society, and even family life is affected by it.

On the other hand, the reproach would be made against the existence of the brothel that the withdrawal of a repentant girl from brothel to a regular mode of life is hardly possible. Even as far back as the Middle Ages we find rules and regulations, the purpose of which was to keep the occupants of these public houses pecuniarily independent of the landlords so that when repentance seizes them they can withdraw from their employer's sphere of influence.

A further reproach against the brothel lies in this. That those who maintain

these houses, by force and cunning and all kinds of intrigues, try to get innocent girls into their power ; whose shame and despair make impossible their retreat into ordinary life.

It is clear that this evil was also combated in the Middle Ages, as can be seen from many threats of punishment. In the year 1357, for example, Rabutaux reports the case of "Ysabelle, who had sold a young girl to a canon, after having been exposed on a ladder and tortured and scorched by a burning torch, was banished from the territory where she had committed her crime."

In the last decades a widespread movement has arisen which, under the name of *abolitionism*, is, in a misdirected philanthropy, trying to resist the police regulation and supervision of prostitutes. It clearly sails under religio-political colours supported by the movement for women's rights. We cannot in this place go further into their arguments which are sometimes supported by faulty statistics, but must refer readers to the important work of Tarnowsky on this point. The endless dangers implied in the demands of the abolitionists, which some think would infallibly result in a hitherto undreamt of spread of syphilitic infection in all civilised nations, are to be found analysed in that work. Prostitution would not, as some abolitionists expect, disappear on that account.

"Prostitution," says Tarnowsky, "will exist in one form or another, since apart from any change in social circumstances, a whole series of other factors enter into the question— influence of climate, race, heredity, mode of life, education, example of parents, etc.—factors which we know only in part and generally not sufficiently or not at all, and by virtue of which the sexual needs of mankind are developed in the most varied strength and intensity, just as is the capacity for abstinence, for the suppression of passionate impulses, for the assimilation of moral principles, etc. The time of sexual maturity, the strength and intensity of the sexual urge, just like moral and physical individuality, are quite different in different human beings and cannot for the convenience of a moral theory go back to a common immutable measure. Sexual abstinence will be endured by one, thanks to the innate characteristics of his organism ; whilst another will be driven by it to seek satisfaction for his gnawing passion either in the arms of women, or in delusions like those of St. Anthony, or in demonomaniac hallucinations, or, finally, in onanism, through which he will be irretrievably ruined."

In Japan, also, an effort was made to get rid of the prostitution confined to the Yoshiwaras (see Hintze). In 1872 an important edict declared that all prostitutes were to be set free and the Japanese newspaper *Tokio Kwaika-Hanjo-shi* wrote graphically : "Thousands of these unfortunate women, whose lives may be compared to that of birds shut up in a cage, were suddenly free and the confusion which was caused by the crowd of happy parents and daughters which pressed into the prostitution quarter in thick crowds, defies description." Soon, however, new licences were granted, and in these houses the girls were received partly because of debts, partly for other reasons. The houses were now called *Karhi-zashiki* : "houses with rooms to let." In the Yoshiwaras, at least, medical supervision was made possible and achieved. In Hintze's work, the regulations and documents in question have been published.

Moreover, B. Tarnowsky also opposed the optimistic assumption that the prostitutes would better themselves. He shows how infinitesimal are the results of the so-called Magdalene institutions, even under the most humane guidance ; how the young women return to the brothels ; and how even when fate has brought them a happy, care-free marriage, yet after a time they forsake their husbands and seek refuge with a brothel keeper.

It does not lie within the scope of this work to investigate what laws and police regulations have been made by modern states ; that must be left to a treatise relating to constitutional law on this subject so important hygienically.

[It may, however, be of some interest to offer a few remarks on modern tenden-

cies. Generally speaking there is a widespread feeling that the licensed house does not serve its purpose. Moreover, it is clear that such establishments offer scope as centres for the trade, which would be hindered by their abolition. Unfortunately, the work of the abolitionists, both on the League of Nations and elsewhere, is marred by their ignorance of the practical side of prostitution and also by the emotional fervour of their propaganda. Any candid examination of these propagandists will reveal the motives behind their work which is inspired not only by a desire to suppress prostitution but by a desire to suppress the manifestations of the sexual life altogether. They are dominated by Christian traditions and Pauline asceticism ; and, whereas they fulminate against the prostitution of the female body for gain they are singularly silent on the subject of the prostitution of the male mind for the same purpose, which is one of the outstanding features of Western civilisation. The psychological significance of their attitude becomes then immediately apparent, and it is also revealed in startling clarity by the Records of the International Conference for the suppression of the circulation and traffic in obscene publications, which was held in 1923. The sardonic comments of the Chinese delegate, Mr. Tchong Loh, on the British delegate's address should be studied by all those who wish to obtain a sober and dispassionate point of view.

Apart, however, from the mentality of the abolitionists, the problem of female prostitution is not likely to be solved by any measures based on fixed standards of so-called morality, least of all those which have become attached to Christian ethics. The processes of life are not to be restrained by laws founded upon psychological complexes of morbid character. Rather will a compromise be effected by the extension of human freedom coupled with the prevention of human exploitation through economic pressure. Prostitution is a dangerous trade and should be controlled, just as other dangerous occupations are controlled and supervised. The factory manager is forced to observe certain regulations for the safety and health of the workers ; and, similarly, the brothel keeper should be compelled to offer facilities for health and recreation to her inmates. Much has been done in the French houses in this respect during the last few years. Since the abolition of the licensed houses in Germany conditions have not noticeably improved ; and Weka's account of Berlin street life is confirmed by the Editor's own observations in the prostitute quarter in Hamburg.

With the disappearance of the licensed brothel will emerge an improved system of prostitution which has already become established in England and the United States, and is beginning to be widely utilised in France and elsewhere. This is the house of assignation or *maison de rendezvous*. It has various forms, but the essentials are the same. It consists of an establishment where visitors are supplied with what is wanted exactly as in any other trade. In England (*cf.* Corbett-Smith, p. 261) a number of girls often club together for the purpose. One of their number has a private flat where visitors can come and make their arrangements. The girls are free to accept or reject suitors, have their own physicians and fix their own charges. It is a form of upper-class prostitution which has much to recommend it. The problem of the lower-class harlots remains as acute as ever. Their condition, as observed in Paris and Hamburg, London and New York, is deplorable. Some measure of relief will doubtless be obtained with a diminution of economic pressure, with the encouragement of temporary alliances between young people and with the general rise in the conception of human dignity and a fuller understanding of the bases of social morality.

No understanding of the problem of prostitution can be obtained without a

first-hand acquaintance with prostitutes themselves, their protectors or "bullies," the manageresses of the brothels, and the actual houses. As a preparation for such a study the following authors should be consulted. The Editor has not found any of the facts disproved by his own observations, although his conclusions are not always identical with those of the authorities whose opinions he has been able to check. A study of these documents will provide the reader with a better survey of the real problem of female prostitution than any of the publications of the League of Nations or the prejudiced accounts of the abolitionists.

There is no accurate and useful account of modern prostitution in England. Croft's account of night life is of little value, and recourse must be had to Blue Books and the contemporary press for records of trials relating to raids and similar activities. Salardenne¹ (pp. 15-43) has given a very brief account of certain aspects of life in London, but a detailed description has yet to appear. For the United States the works of Waterman, Woolston and Reckless should be consulted. For a well-balanced discussion of the case for preserving the licensed houses see Robinson. For Germany prior to the Hitler *régime* see Weka and Moreck for Berlin, and G. Walter for Hamburg. H. Ostwald's books also are very valuable for German urban life; and for the lower strata consult Brettschneider.

For conditions in modern France see Roberti, Choisy, Willy and Prille, Merlet, Drouin and Valti, all of whose works are essential for understanding contemporary conditions and problems. For the lower-class prostitute see Carco. For a discussion of regulation see for the earlier periods, Fiaux, and for a summary of the contemporary position see Lépine. A review of the so-called Strasbourg experiment will be found in the *Mercure de France*, 1929, Vol. 213, p. 193, and a criticism of the experiment in Merlet (p. 80).

A neglected source of information on brothel life is the work of fiction. Nevertheless, it is useful when checked by personal knowledge, and often throws light upon the psychology of the prostitute. Among the many dealing with French harlots are those by E. de Goncourt, V. Margueritte and A. Baillion; for the United States see W., O., W. Smith and Georgie; for Germany see "The Diary," etc., Frey, Corrinth, Wegner, Sonnenfeld, and Neumann. For Russia see Bjarne and Kuprin. These few examples will indicate what material exists.]

It must, finally, be observed that a few isolated primitive races also proceed with great vigour against prostitution. Thus, according to Elton, among the natives of the western group of the Solomon Islands, it is punished by a heavy fine, sometimes even by death. Prostitutes there are merely the women of hostile tribes captured in war. On Nias Island, too, the penalty for prostitution is death.

8. THE ANTHROPOLOGY OF PROSTITUTION

Recent anthropology has often attempted to explain satisfactorily the oft-stated fact that professional prostitutes almost always try to return to their vocation even if the possibility is offered to them of being able to lead a care-free and regular life instead of this existence full of shame, persecution, care and privation. Just as with the criminal, people have tried to regard inborn physical and mental abnormalities as the cause of his condition, so they would ascribe certain anthropological peculiarities to these prostitutes which should be the cause of their having taken up their profession. Thus to them, the anthropology of prostitutes is only a branch of the so-called criminal-anthropology and in this field Lombroso and his pupils,

also the two Tarnowskys, were especially eager to give support to this theory. (Compare here Wulffen³ a work to which we have to refer owing to the impossibility of extending the chapter.)

These two groups have, as a matter of fact, many points of contact ; for, on the one hand, there are many women criminals who are also prostitutes, and, on the other hand, among prostitutes, certain crimes are not unusual. Among these the chief is theft.

[It must however be remembered that any examination of prostitutes who are confined in prisons or reformatories can only give information concerning such samples. Any correct picture of the prostitute class must be derived from examination of numbers taken at random. It is unlikely that such an examination would reveal a "prostitute type" any more than it did a "criminal type."]

The first fundamental observations which can be designated as the beginnings of an anthropology of prostitutes are to be found as early as 1836 in the famous works of Parent-Du Châtelet : "De la Prostitution de la ville de Paris." There he has given two detailed chapters under the following titles : "Physiological Reflections on Harlots" and "Of the Influence which the practice of their profession may have in general on the health of harlots." However, he has not considered the possibility that these anatomical and functional peculiarities which he has been able to point out among prostitutes might already have existed at the beginning and have driven these young women with irresistible force into the arms of prostitution. Moreover, he does not doubt for a moment that all these changes are a result of the life which these harlots are accustomed to lead. In this, his viewpoint differs radically from that of the above-named scholars.

First of all, he draws attention to the plumpness which characterises so many of them. This generally develops at the earliest when they are from 25 to 30 years of age and is probably a result of the rich food and lack of work and physical exercise. He has also had occasion to observe some excessively thin prostitutes. Later, he draws attention to the change in the voice and says :

"There are some young women who are remarkable for their beauty and freshness, their exquisite behaviour and elegant bearing, whose whole being suggests the best breeding, who, in a word, have everything that is pleasing and seductive. But how changed is all that when they begin to speak. There is no longer that tone of voice which increases a woman's charm. From their mouths come hoarse jarring tones which a ploughman could scarcely imitate. . . . It happens among many but not amongst all ; there are many exceptions in this way. As a rule, these hoarse voices come at about 25 years of age and they are most usual among girls of the lowest class who drink at bars, and when drunk are in the habit of screaming and shouting. These tones are also found among girls who have descended from a higher class into the lowest, and have adopted base and intemperate customs."

Some blame is due also to the inclemency of the weather in which these persons are obliged to go out. Investigations have shown no characteristic changes in the genitals. Neither were the vaginæ substantially enlarged nor was there any peculiarity about the clitoris. "As among all women, there were many variations but nothing remarkable." Fairly frequently the development of the inner labia is unusual, but this too Parent-Du Châtelet considers is not peculiar to prostitutes. In a great number of cases, however, the infrequency and irregularity of menstruation is remarkable, often at intervals of several months. The fertility of prostitutes is likewise considerably reduced and still-births as well as abortions are frequent phenomena.

That prostitution has an injurious effect on the inner genitalia is a fact now

generally recognised among physicians. This is true also of alien races. Stratz was able to examine some 1000 women in Batavia who were for the most part prostitutes, and who ranged from 16 to 30 years of age.

Only 162 were healthy ; other women showed the following diseases :

	Per cent.
Retroflexio uteri	605 60
Ovarian tumours	130 13
Myoma	90 9
Salpingitis and tubal tumours	104 10
Parametritis	25 2.5
Prolapsus	22 2
Arrested development of uterus	24 2

The great number of retroflexions is probably intentionally produced by massage, to prevent conception. To this method of massage, the many ovarian tumours are also to be ascribed, because they were found in the broad ligaments of the uterus and had developed no marked pedicle.

In contrast to these acquired characteristics, Pauline Tarnowsky³ has been able to establish quite a number of supposed innate abnormalities. From these she infers a hereditary psychic disposition and a defective mental equipment which inevitably forces these unfortunate individuals into their depraved existence. She formulates the following propositions :

“ Habitual prostitutes are beings more or less tainted by a morbid heredity, such as alcoholism, phthisis, syphilis and nervous and mental diseases. They show indisputable signs of physical and psychic degeneracy, owing to which the majority of them could not be classed among sane and normal people. The psychic anomaly of prostitutes shows itself by a more or less obvious weakness of intelligence, by a neuropathic constitution, or by a notable absence of the moral sense. It is confirmed by the abuse of the genital functions as well as by the attraction which draws prostitutes to their profession to which they return voluntarily after having been set free from it.”

The exact facts in proof of these statements might, however, be set out here. One hundred and fifty habitual prostitutes were compared with 150 peasant women and 50 intelligent urban women. They were below both categories and especially the latter in respect of the circumference and main diameter of the skull, but surpassed them in the dimensions of the zygomatic arches and lower jaw. Of physical anomalies, there were observed in them abnormalities of the skull development (oxycephaly, stenocephaly and platycephaly), of the palate (saddle shape and cleft formations), of the teeth (atrophy, false position, etc.), of the ear (Fig. 532), of the face (asymmetry) and of the extremities.

15	prostitutes	had	each	1	anomaly.
34	”	”	”	2	anomalies.
35	”	”	”	3	”
30	”	”	”	4	”
14	”	”	”	5	”
6	”	”	”	6	”
4	”	”	”	7	”
1	”	”	”	8	”

So that among the 150 prostitutes, no fewer than 139 had the so-called signs of physical degeneration. If the first 15 are left out of the reckoning because they

showed traces of only one anomaly, then there still remains a proportion of 82·64 per cent. who are afflicted with marks of degeneracy. Corresponding to these, we have among the country girls, a proportion of 14 per cent., and among the intelligent women of 2 per cent. These figures appear to speak for themselves and to need no explanation.*

Recently, by comparing the finger prints of 100 Roman prostitutes with those of 200 honest women of the same social class, Ascarelli thought he could prove here too certain peculiarities in the form and arrangement of the skin markings which he is inclined to explain as signs of degeneracy.

An enthusiastic supporter of the views of Tarnowsky has sprung up in Lombroso.



FIG. 532.—Prostitute's ear showing degenerative stigmata. (A. Leppmann Collection.)

From his investigations, he comes to the following conclusions (which are really to some extent "imaginary"):

"The weight in proportion to the height is relatively higher among prostitutes (than among innocent women); the hand is longer, the calf more strongly developed; the finger part of the hand is less developed than the palm; the foot is shorter. The inner and outer circumference of the skull is below the average; the diameters of the skull are smaller; the face measurement, especially in the lower jaw, is greater than the average." Lombroso found hairy birthmarks (*nævi pilosi*) in 41 per cent. of the prostitutes and in only 14 per cent. of the controlled cases. Among the latter, he found the male distribution of pubic hair in only 5 per cent., but in 15 per cent. (234) of the prostitutes. Riccardi gives this proportion as 16 per cent., and observed in 21 per cent. an excessive development of pubic hair. The genitals in 16 per cent. showed a hypertrophy of the labia minora; among these, two showed excessive enlargement, and in six cases hypertrophy of the clitoris and the labia majora were observed.

* [I am not disposed to accept the conclusions believed to be based on the above statistics.]

As we saw above, Parent-Du Châtelet had already pointed out the change in the voice among prostitutes. Lombroso quotes the observation of another authority in this connection :

“Of 50 prostitutes, 15 had male voices with thick vocal chords and wide laryngeal cavity ; 21 had also full bass voices with occasional high treble sounds. The breadth of the ala of the thyroid cartilage and the width of the angle were very remarkable ; in the thick vocal chords, the *tuberculum vocale* is very clearly marked ; the whole voice resembles that of the male, as the skull and face of the prostitute approach the male type.”

Thus Lombroso comes to the conclusion that nearly all anomalies are more frequent among prostitutes, often many times more frequent than among women criminals. Nevertheless, both classes of socially abnormal women show more numerous signs of degeneration than are to be found in normal women.*

In an extended chapter Lombroso then discusses the “born prostitute,” an analogy with the type advocated by him, the “born criminal.” Among the former all kinds of physical and mental defects are said to drive them into their path of activity. Lack of family feeling and mother love, which contrasts strikingly with their marked love for animals and their attachment to the protectors who torture and exploit them, irregular fits of liberality and piety with mendacity, craving for drink, avarice and an inclination to crime, vanity, greediness, frivolity and laziness : these are the peculiarities which characterise them. Their intelligence is very low, often bordering on imbecility ; individual prostitutes, however, show an ability almost amounting to genius.



FIG. 533.—East African prostitute.

“Discussion of sexual feeling,” says Lombroso, “has already shown that among prostitutes sexual frigidity prevails and is at the same time allied to and in apparent contrast with a remarkably early puberty. Thus a confusion of contrasts is here apparent. A purely sexual profession is practised by women who are almost entirely without a proper sexual life, who with a scarcely comprehensible or perverse sexual feeling throw themselves into the arms of depravity at an age when, from a purely physical point of view, they are hardly capable of mating. What now is the origin of prostitution ? The psychological analysis will show us that it is to be sought *not* in sensuality but in moral idiocy.”

Lombroso then continues :

“The born prostitute shows herself without motherly feeling, without love for her relatives,

* [See A. MacDonald.]

scrupulously intent only on the satisfaction of her desires, and, at the same time, a criminal in the field of petty crime ; thus, she is shown to be quite of the type of moral insanity. The lack of modesty is the almost pathognomic sign of moral insanity in woman. The whole force of development in woman in the ethical field has been confined to creating and strengthening the sense of shame, and extreme moral depravity or insanity is the result of the loss of this sense. Thus the origin of prostitution is to be derived from a grievous moral defect."

However, Lombroso recognises that not all prostitutes are to be designated as "morally insane," but that there are also "chance prostitutes." What we have already seen in the case of the so-called criminal type is repeated here. A great number of the anomalies are such as are especially frequent in the proletariat and not only among prostitutes and criminals but also among innocent people who have never come into collision with the precepts of morality and decency. Important as Lombroso's discussions are, many more comparative investigations will be necessary before we can reach a conclusive understanding of these processes.

In the view that the inclination for prostitution is an inherent condition in certain women, that, in short, there are "born prostitutes," Lombroso is not without precursors. However, he himself had probably no knowledge of their existence. In the Japanese Encyclopædia : "Dai Nippon eitai setsuyô mujinzô" (Yeddo, 1849), a number of human forms are to be found with physiognomic explanations.

[The above discussions by Lombroso have been reprinted here mainly in order to illustrate historically the ideas which have been held in the past on controversial problems relating to women. It is clear that the basis on which Lombroso's statistics were founded is a faulty one. By selecting certain representatives (and those often of the lowest class) from the enormous number of women who "prostitute" their bodies it is doubtless possible to discover marks of degeneracy. Such methods are of little use and modern research has entirely discarded them. The idea of the "prostitute type" and the "criminal type" is not one which can be harboured except with such modifications as the study of heredity compels us to adopt.]

CHAPTER V
RELIGIOUS CREEDS AND SOCIAL CUSTOMS IN MARRIAGE AND
PROSTITUTION

1. PROSTITUTION AS A FORM OF HOSPITALITY

THE quite inapplicable name, which in German is *die gastliche Prostitution*, was introduced a long time ago. We understand by it the provision of the unknown guest with a female companion for the night. There are absent in this case the most important motives which we understand by prostitution, and, moreover, the surrender of the woman is an obligation of honour. According to primitive ideas, every stranger is really an enemy whom one should kill. When, however, a tribe or family (nomads) do admit him (often amid great ceremony) then, for the period of his presence, he has the rights of a member of a tribe or family, above all in some primitive societies, to access to the women. With this custom, however, is associated the name "prostitution."

A. v. Chamisso says very rightly :

"Chastity is a virtue only according to our precepts. In a state that is nearer nature the woman is, in this respect, bound only by the will of the man whose property she has become. Man lives by hunting. The man cares for his weapons and the catch ; the woman serves and suffers. He has no duty towards strangers ; when he meets one, he may kill him and appropriate his property. If, however, he grants the stranger his life, then he owes him further what belongs to life. The meal is prepared for all and man needs a woman. At a higher stage, hospitality became a virtue and the master of the house awaited the stranger by the wayside and took him under his tent or his roof that he might bring to his dwelling the blessing of the highest. Then he advanced very easily to the duty of offering him his wife : to reject his offer would then be an insult. These are pure unspoilt morals."

Often it is slaves but not infrequently daughters or even wives who are handed over to the guest. Chamisso was speaking about the South Seas : Bougainville says too that it is not a rare occurrence for the wife or daughter to be offered to the guest.

We meet this custom also in many other places. Biddulph reports it of the inhabitants of Hunza in the Western Himalayas. Steller and Krascheninnikow found the custom in Kamschatka, v. Middendorff among the Samoyedes. According to Middendorff, the custom is still in existence among several Siberian tribes.

However, we should be in error if we were to assume that among these tribes, whose women enter so little into our ideas of chastity, female fidelity is lost on that account ; the surrender of the woman occurs only at the behest of the husband, who exercises the right of possession over his wife, and for a short time, solely of his own accord, conveys her to another.

Amongst the established settled Chukchee and Koryaks, according to Georgi, it is considered an insult if a guest declines the wife or daughter offered by the master of the house.

The Oswegatchie are reported likewise to consider it their duty to prostitute

their wives and daughters to their guests. Schoolcraft reports similarly of the Comanche Indians; Hearne of the Tinneh Indians; also of the Eskimo it is reported :

During the night, men and women lie naked close together under a seal skin ; they make a place for the guest by drawing back a little, as Parry found. Also they offer the women to the guest for his use.

Moreover, here the women may be given, sold or lent, and they are far removed from being faithful to their husbands. According to Parry, they prostitute themselves in the absence of their husbands.

The Masai surrenders wife and house to the guest and it is considered no less than an affront for the guest to refuse the right (Merker) ; the husband then spends the night outside his own house.

Similar customs are reported even from Europe, both in the Netherlands, Russia and Norway.

And O. Schrader ⁵ says, in his book " Die Indogermanen " :

" In Greece, as well as among the Germanic people of Scandinavia, we still come upon traces of the so-called ' hospitable prostitution,' *i.e.*, the custom of admitting the honoured guest to the bed of the daughter or wife. The children born from such intercourse are regarded by the master of the house as his property, and since they are begotten by his will are certainly to be recognised as his."

2. PROSTITUTION AS A RELIGIOUS DUTY

The obligation of women and girls to surrender themselves in the temple of God on certain days of high festival, either to the priest or to other partakers in the ceremony, has been designated by the name of " religious or holy prostitution," and quite wrongly, since in one sense at least, it is not prostitution at all.

There was a " holy offering " among several peoples: in Babylon " prostitution " was practised in the form of a cult of Mylitta ; there, every woman was compelled once in her life to give herself to a stranger. This cult spread over Cyprus, Phœnicia and other countries of Asia Minor.

There was, however, a surrender practised by girls specially destined for it, which has been also falsely called " temple prostitution." One of the most wonderful archæological discoveries of modern times gives information about it. That is the law-book of Hammurabi, that great king who ruled in Babylon about 2250 years before the birth of Christ. From §§ 110 and 178-182, which I quote here in the form of extracts, many things can be learnt :

" § 110. If a priestess or a devotee opens a tavern or sets foot in a tavern to drink, then shall this woman be burnt.

" § 178. In case of a consecrated woman, to whom her father has made a gift and has drawn up a deed but has not stated in the deed drawn up for her that she can bequeath her inheritance to anyone she pleases, and has not given her, in writing, the right of free disposal, then, when the father dies, shall her brothers get her field and her garden and to the value of her share give her corn, oil and milk and establish her satisfactorily, etc.

" § 179. (Implies that she can bequeath her inheritance to anyone she likes if her father has left the statement in writing.)

" § 180. If a father has given his daughter, a bride or a devotee, a portion and then dies, then shall she receive a share of the paternal property as one of his children, and shall have the use of it as long as she lives. The property left by her belongs to her brothers.

“ § 181. If a father bequeaths a temple harlot or temple virgin to God, etc.

“ § 182. If a father does not endow his daughter, a priestess of Marduk of Babylon (dedicated to God), with a portion, etc.”

In connection with the explanations given by Winckler, various designations used in these regulations for inheritance may be observed which must be differentiated: the usual *puella publica* (paramour, *amelit zikru*) and the “dedicated” (sister of God § 110; the woman of Marduk § 182; literal translation of the expression in § 110 “a sister of God (?) one who does not dwell among the young women,” *i.e.*, who may not marry). For the *puella publica* as for the “dedicated,” marriage was forbidden. Among the “dedicated,” however, as is clear from the juxtaposition in § 178, both “temple harlots” as well as “temple virgins” appear to have been understood; only the former come under consideration here.

So much is certain in any case that the institution of a sexual surrender by maidens dedicated to it did exist in Ancient Babylon. According to Winckler there was nothing disreputable in the calling. B. Meissner³ proves further by two other documents that the priestesses, as the above-quoted paragraphs of the law show, by their alliance with God, forsook their family and, therefore, did not inherit with their brothers and sisters but had a claim only in the life interest of their share.

Among the Armenians, according to Strabo, the girls had to dedicate some time to Anaitis before their marriage.

The Greeks appear not to have known such a cult for their Aphrodite; yet we have too little information about the ritual customs of the Aphrodite Pandemos whether the priestesses had to fulfil their service only temporarily or whether their appointment was a lasting one. At a later date, the latter appears to have been the case, and Lombroso writes that prostitutes often held the position of priestesses of the temples of Venus or were attached to them in order to increase the revenue of the temple. According to Strabo, there belonged to the temple of Aphrodite at Corinth, more than a thousand of them who were regarded as dedicated to the visitors to the temple. Very often a number of very young girls were dedicated to Aphrodite in Greece in order to gain her favour; thus, to the Corinthian Aphrodite, Zenophon promised a hundred prostitutes before the Olympic games if he should be victor, and kept his promise, as Pindar describes in the Eulogies (*Frag.* 122).

Such institutions are still to be met with among the temples in India. Shortt reports in this connection that Hindu girls of every caste might be dedicated to the temples as dancers. They did not marry, but might “prostitute” themselves with people of the same or higher castes. There were two kinds of “prostitutes.” (1) Thassee, or dancing girl, attached to a Pagoda; (2) Vashee, or prostitute. The latter lived in brothels in big towns or near toddy or arrack shops or small Hindu temples. The former became the brides of the god of the temple as children; they came not infrequently from the highest castes if their father, because of a vow, had dedicated them to the temple. They had two dancing lessons and two singing lessons every day. The amount of their salary depended upon the importance of the temple. The instruction began at five years of age, and at from seven to eight years of age they were proficient, and until they were 14 or 15 years of age they danced six times a day. When they appeared, they were richly adorned with gold and jewels. They formed, as it were, a caste of their own with fixed rules for adoption and inheritance. They were held in great esteem, and at assemblies they sat by the men of the highest rank. As soon as the girl reached puberty, if she had not already been deflowered by a Brahmin, her virginity was surrendered for a suitable sum to a stranger seeking the honour, and from then onwards she led a life of continuous “prostitution” with strangers. Not infrequently children were picked up by old women for the purpose of being sold to temples at a great distance from their homes.

Warneck makes the following typically missionary report about these "prostitutes" of the Hindu temples :

"Every Hindu temple of any importance has a number of Nautch girls, *i.e.*, dancing girls (Fig. 513) who, next to the sacrificers, are held in the greatest esteem among the temple personnel. Not so long ago, these temple girls were almost the only women in India who were to any extent educated. They were instructed in singing and dancing, were also better dressed than their fellow women, and when the evangelical mission began to establish girls' schools, the idea occurred to them that they would educate the temple girls. These priestesses who are betrothed to the Gods from childhood are obliged, because of their calling, to 'prostitute' themselves to any man from any caste, and this surrender is so far removed from being considered a disgrace that even families of high rank regard it rather as an honour to dedicate their daughters to the service of the temple. In the Presidency of Madras alone there are about 12,000 of these temple prostitutes. Their service, however, is not limited to the temple. The dancing girls are often also in houses, at weddings, consecrations or other festive occasions ; hence, it is a fairly common custom to invite them when people have friends visiting them ; even Europeans or Americans invite them to their parties and load them with gifts."

Of another kind of "religious prostitution" as it is practised at certain special festivals by the whole female population, we shall speak in the next section.

3. RITUAL ORGIES AND EROTIC FESTIVALS

Not infrequently festivals of the Gods or of certain Spirits were connected with religious orgies, when the more profane side of the proceedings used on many occasions to become uppermost.

At the festivals of Isis in Ancient Egypt, very erotic ceremonies took place. Similar ones happened in Byblos on the day of mourning for Adonis ; in addition, here these women who had refused the one day surrender in the temple of Aphrodite, had their hair cut off as a punishment.

The festival of the *Bona Dea* in Rome was a typical women's festival which, however, in a general mingling of all social circles also degenerated into real orgies.

In other places too, we meet with similar occurrences. Thus, Stoll reports that on the days of the great sacrifice among the aborigines of Guatemala, orgies took place in celebration, and states that the intoxicated men indulged indiscriminately in sexual debauchery with their daughters, sisters, mothers and concubines, and even children of six and seven were not spared.

Of the ancient Peruvians, v. Tschudi relates :

"In the month of December, that is to say at the time of the approaching ripening of the fruit *pal'tay* or *pal'ta*, the participators prepared themselves for the festival by a five days' fast, *i.e.*, abstention from salt, *utsu* (pungent pepper—*Capsici spec.*) and sexual intercourse. On the day appointed for the beginning of the festival, men and women assembled at a certain place among the fruit gardens, all stark naked. At a given sign, they began a race to a fairly distant hill. Any man who overtook a woman during the race had coitus with her on the spot. This festival lasted for six days and six nights."

"This festival mentioned by the Archbishop of Lima, Don Pedro de Villagomez, in an extraordinarily rare *Carta pastoral de exortación é instruccion*, etc., was called *Akhataymita*."

Here it is a question of pagan tribes : but Christendom too has produced similar things. To it belongs the sect of the Nicolaitans which sprang up in the fourth

century " which made it a religious duty to renounce any ' sense of shame ' in sexual things and declared every debauchery to be right and holy " (Lombroso). Similar views were held by the adherents of Carpocrates and Epiphanius as well as by the sect of the Cainites, the Adamites and the Picards, likewise the Turlupins at the end of the fourteenth century. Fuller details of these are to be found in the works of Lombroso.

But, until recent times, such sexual debauchery which ostensibly took place to the honour of God, found enthusiastic supporters. This is proved by the sanctimonious sects described by Dixon in his " Spiritual Wives "; and also by the spiritual exercises of Eva von Buttlar and her associates and, finally, by the legal trials instituted in Russia among the members of the Skoptsy sect.

From modern India, too, such erotic festivals have been reported by Schmidt.⁹

" Thus, Vishnu worship has given a strongly erotic touch to Indian life. Krishna's love adventures with the milkmaids have continued even up to the present day to be unexceptionable examples for the great mass of the people, which endow the service of god and the festivals of the people with form and life " (Cf., Fig. 534).

Schmidt then quotes Lamairesse :

" In the Province of Bombay and in Bengal the worshippers of Krishna, especially in the country districts, have meetings at night where, in imitation of the doings of Krishna and the Gopis, they work themselves up to a frenzy of feeling and a licence without restraint."

Lamairesse also reports about a Bhāktā sect, the adherents of the left hand :

" The rites of the left hand unite the two sexes without distinction of caste. In the meetings, which are not public, the adherents, gorged with food and strong drink, worship the śakti in the form of a woman, mostly one from among themselves ; she is placed quite naked on a sort of pedestal and an initiate completes the sacrifice by the carnal act. The ceremony terminates with the general coupling of everybody ; each couple representing Siva and his śakti and becoming identical with them.

Of the Kānchulipanth, a Śakta sect, Schmidt⁹ writes :

" Occasionally at the celebration of divine service, the women and girls put their *julies* (bodices) into a box which the *guru* (the priest) has in his care. At the end of the ceremony, each of the male devotees takes a *julie* from the box, and the woman to whom it belongs, even though it be his sister, becomes his partner for the night in these dissolute orgies."



FIG. 534.—Krishna and a milkmaid. Ivory. (Mus. f. Völkerk, Berlin.)

In Togoland with the Jevhe cult is associated sexual licentiousness which takes place in the courtyards, places of worship enclosed by grass hedges or earth walls (see C. Spiess ¹).

As already stated, it is not only religious festivals which are attended by such orgies, but there have been and still are to-day many festivals of a secular character at which sexual intercourse between man and woman is represented, sometimes in pantomime, but sometimes also actually carried into effect.

Thus, Fr. Müller reports of the natives of Australia :

“ Remarkable and suggestive of the bestial state of the Australian is the fact that marrying and mating mostly happen during the hot season when by nature’s gift food is present in great abundance and the body is disposed to voluptuous impulses. In many cases cohabitation is celebrated in the hot season by a special festival which they call *Kaaro*. This begins after the first new moon after the ripening of the yams, and is initiated by an orgy of eating and drinking on the part of the men. For this purpose, the men smear themselves with ashes and wallaby grease and perform a highly ‘ obscene ’ dance in the moonlight about a hole which has bushes round it. Hole and bushes represent the vulva which they are made to resemble ; the spears swung by the men represent the penis. The men leap about with wild and passionate gestures which reveal their sensual excitement and while singing a song push their spears into the hole. This song, appropriate to the ‘ obscene ’ festival, goes thus :

‘ Pulli nira, pulli nira, pulli nira, wataka !
(No hole, no hole, no hole, but c—— !).’ ”

Matthews ² reports on the Mulyerra initiation ceremonies of the Kurnu Australians in New South Wales :

At the appointed time, the members of the tribe come from all sides to meet in the forest. The women and children have separate camping places. Of the night before the festival proper, when the boys have their incisors removed, he says :

“ On this night, considerable freedom between men and women is permitted, but it is limited to such persons as could marry according to the laws of the tribe.”

Among the inhabitants of New Britain, according to Weisser, the young girls were jealously guarded and a free intercourse with young men was not permitted them in the village ; however, at certain times, a specially clear-sounding drum was heard at evening from the bush, whereupon they were permitted to betake themselves thither where they then came together with young men.

Another report which treats of the same group of islands reads somewhat differently. From this, it is not impossible that Weisser was under a misapprehension. The report states that any woman in New Britain without living relations may give herself to whom she likes ; if, however, she is killed, her tribe need not avenge her. Should a man wish to marry her, then she has the same rights as the other women. If her father and mother are still alive, the parental consent to the prostitution is necessary and is indeed often given. Otherwise, the woman runs the risk of being killed by one or other of her relatives since she may possibly be destined for the wife of a prominent man or have already been bought by a chief. On certain nights a drum is beaten, and all the loose women run to the forest and are chased by the young men. This is called “ Lu-lu,” an expression which refers to the women themselves or to something else connected with this custom.

The Polynesians in Hawaii have a dance which, according to Buchner, is the most “ lascivious ” of all Polynesian dances and is called *Hula-Hula*. It is described as follows :

“ First the women dancers as well as the musicians sat in two rows on the ground with legs crossed, and raised an alternating song during which they now slowly now quickly and passionately moved the upper part of their body and their arms to and fro, and shook little calabashes filled with little stones so that a frightful rattling noise ensued. The melody was more complicated than that of the *haka* of the Maoris and the *Meke Meke* of Viti. The two women dancers wore a peculiar dress reaching to their ankles, a kind of bodice and short skirt : formerly the costume was limited to a short dress which was of use only for jerking upwards. After some time, they sprang up and with wild cries and rattling, made ‘ very indecent ’ movements with the buttocks. The native male onlookers took a lively share in the pleasure, laughed with delight, and made the same hip movements.”

Surgeon Major Wolff ¹ reported about the merry-making of the blacks in the Kuango territory (West Africa) :

“ The dance everywhere here consists mostly of sideways movements of the buttocks to and fro as fast as possible, whilst men and women stand opposite each other then go forwards towards each other and retire several times, and at last clasp each other. They stand still in this position for a little while and then again let each other go and recommence. In many villages in Madimba, in this embrace, they first make the most unequivocal movements, then afterwards, as if tired out, they stay still clasped together for a little while.”

In the darkness of night, J. B. v. Spix and C. F. P. v. Martius were present at a dance of the Pury in South America in the second part of which the women began to move the pelvis rapidly from side to side, and alternately to push backwards and forwards. The men too made the forward movements with the middle part of the body.

Kulischer thinks that by these means a kind of selective mating is performed. He quotes a series of examples which are calculated to confirm his assumption. The following may be quoted here :

“ The exercise of choice on the part of the women and the attention which they devote to the appearance of the men can be verified from a ‘ Kaffir ’ dance. Among these, relates Alberti, an optional number of men assemble, usually quite unclothed, close together in a straight line, while each links his raised right arm, a club in his hand, with his neighbour’s left. Close behind the men stands a row of women whose arms, however, are not linked. The men, still holding and without alteration, jump into the air simultaneously, whilst in the women one becomes aware of an outward convulsive movement of nearly the whole of the body, which consists chiefly of a bending backwards and forwards of the shoulders with a corresponding movement of the head. Then, from time to time, after a half turn, they take a walk round the men, following slowly in each other’s steps and take up again their first position. In all this they know how to give themselves a modest air by casting down their eyes. It is clear that by the casting down of their eyes the real purpose of the survey which the women make of the men is plainly shown.”

But in Christendom too, there were festivals at which there was no more trace of morality than among these pagans. Such were especially the fêtes of asses and fools, but church fairs and processions also led to great debauches. Certain dances also did not enjoy a very good reputation.

The Galliard dance was considered a whirling dance which was full of disgraceful, lewd gestures and indecent movements.

Spangenberg also says with moralistic pathos in his wedding sermons :

“ May God keep pious comrades from such maids as have a craze for evening dancing and like to twirl there and kiss indecently and let themselves be handled ; there must really be

nothing good in them ; there, one only incites the other to indecency and assists the devil. At such dances, many a woman loses her honour and good report. Many a virgin learns there what it were better she had never known. In short, nothing honourable, nothing godly takes place there " (cf. Fig. 535).

As we said, the feasts of fools also gave rise to great licence. A parody of a mass in masks and comic dress was held in the church, and there was playing and dancing and dicing and erotic songs were sung.

After mass, fresh acts of extravagance and impiety took place, according to Dulaure. The priests mingled with the inhabitants of both sexes, ran about, danced in the church, excited



FIG. 535.—Peasant wedding. Style of Pieter Bruegel I. (Germanic Mus., Nuremberg.)

themselves to every licentious action suggested to them by an unbridled imagination. No sense of shame, no modesty ; no check was put upon the outbreak of folly and passion. In the midst of the tumult, blasphemy and dissolute songs, one saw some stripping themselves entirely of their clothes, others giving themselves up to acts of the most shameful debauchery. Then the excess went further in the street. The most licentious among the laymen mingled with the clergy and in the dress of monks or nuns made lascivious movements, and took all the postures of the most unrestrained debauchery.

Similar orgies took place also at the feasts of Asses.

Kreuzwald reports of the Esthonians :

“ In the supplements to a Reval-Esthonian calendar (1840) it was related that 60 years before, in Fellinschen, thousands of men had gathered at the ruins of an old church on Midsummer day, had kindled a sacrificial fire and thrown sacrificial gifts in the fire. Barren women danced naked round the ruins, others sat eating and

drinking, whilst youths and maidens enjoyed themselves in the woods and indulged in much improper conduct."

Among the South Slavs, according to recent accounts of F. S. Krauss¹⁷ an opportunity for erotic fêtes is frequently found. This opportunity is given by the round dance, the *Kolo*, particularly after the harvest.

"The South Slav dance to outward appearance might even be called chaste, but it can also be danced in a wildly exciting manner. The main importance of the *Kolo* lies in the nature of the songs sung, and they are throughout lascivious in character. In the dance, modesty and decency for the singer are at an end for he or she enjoys complete freedom of speech and song. The dance is the place where one can express everything without reserve, without drawing upon oneself the censure of the listeners. The girls arrange the dance and at first dance alone. Each dance has a girl leader who is at the same time leader of the singing. The girls begin the round first with measured step, then more quickly and energetically, while, with the upper part of the body bent forward, their eyes on the ground, they sway their hips. The one who is best at moving her buttocks is considered the most skilful dancer.

"At first they dance with one another in order to show their maidenly possibilities. Young wives too who have not yet become mothers (but not girls who are pregnant) may take part and express their experience in love matters for the good of their single friends. If a circle of listening fellows has formed round the girls, they begin at once to shake their buttocks also and to sing enticing melodies. Now a lad breaks into the dance near a girl who inspires him with love and hangs on to her firmly so that he may dance with her; there begin, as is customary, duets between man and maid, and when each girl has the one she loves best by her side, the mixed dance is ready. The leadership then generally falls to a man.

"While the girls dance with joined hands, the youth seizes his girl by the body and dances with her loins pressed to his loins. The lad, much excited by desire, treads intentionally on his beloved's toes, bites her neck, breaks her necklace with his teeth and even snaps at her ears.

"These essentially sexual excesses among the young people are not, as should be mentioned, of continual occurrence, but take place chiefly at the time of the first harvest when the crops have been gathered in. It seems as if the male youth behaved as if mad with love for two or three weeks in the year. They dance whole nights through till they are exhausted and sing the most 'obscene' songs till they become hoarse."

However, it does not stop at these preliminaries, and sexual intercourse not only among the young people, but also with married people, is extremely widespread, according to all accounts. Another side of the question is as follows:

"The South Slav girl knows from early youth that she is destined for man's enjoyment of love; she takes it as a matter of course and finds it strange if a man does not make use of the favourable opportunity granted to him, and give pleasure to the woman."

Hence come about such conditions as have been described above.

Perhaps we have to interpret it as an after-effect in the ethnographic sense that although amongst young people we come across no longer the unchecked sexual intercourse, we still find in certain circumstances so-called immoral things freely permitted to be discussed with great mirth between youths and maidens.

This custom has not yet died out even at the present day, particularly in the country, and usually it is the eve of the wedding which gives occasion for it, when, earlier in the Middle Ages, even in the highest circles at the public consummation of the marriage of the young couple, the most ribald expressions were expressed without shyness. The spinning rooms also used not always to present an absolute moral purity in the talk. We find something similar also in one of the Turkish tribes in the West of Asia, the Kumuks, according to Vámbéry's report:

"Among other amusements of the Kumuks is the *Süjdün-Tajak*, i.e., love stick, which is

generally played at weddings and by unmarried people and at which the lovers, while they tap each other on the shoulder, exchange dialogues partly sarcastic, partly erotic in content."

4. CHILD MARRIAGES

Here we must allude to a further chapter, viz., the infinitely sad phenomenon of child marriages, letting girls enter into married life at a very early age. As everybody knows, certain peoples betroth their children while still in their mother's womb, but there are also examples enough of actual marriages with young children in the earliest years of life, being entered into on religious or social grounds. We find it among some Indian tribes ; it also occurs among the Basuto in South Africa, and likewise in Old Calabar. We found isolated cases of wives of from four to six years old (in China, Gujarat, Ceylon, Brazil, and especially in India, with its developed hierarchy), wives of from seven to nine years are not uncommon, and 10-12 is a very common age for marriage. [A detailed account of contemporary conditions in India with regard to child marriage will be found in the *Report of the Age of Consent Committee*. The evidence was published in nine volumes.]

Among the Eskimo of Kuskokwim, on the Lower Yukon, according to Nelson, marriages among children are frequent, the girls often being only from three to five years old. They then stay with their parents, and the young husband goes to their house (see below, mothers' rights in marriage). When the young wife has had her first menstruation her husband distributes gifts and now gets the same rights as other heads of families.

Naturally, such an early solemnisation of marriage does not involve, in most cases, the immediate commencement of sexual intercourse ; it is, indeed, frequently stated that that is not accomplished until the beginning of puberty. Thus, according to Krauss, it sometimes happened among the South Slavs that a 10-year-old maiden was taken home as bride yet a strict watch was kept to see that she did not share her couch with her husband before she had reached puberty. Among the Chinese, too, the marriage contract is sometimes concluded when the girl is only six years of age and the young wife goes at this early age to the house of her parents by marriage. But the marriage is not actually consummated before the girl has reached the age of 12 or 13, when she is also fully developed. According to Morache, it is not uncommon in Peking for the young wife to be kept in the house of her parents until she has reached puberty. According to Epp, among the Malays in Java, coitus is not permitted to a young wife before she is 10-12 years of age. In Guatemala, when a daughter was not fully developed before her marriage, her parents gave their son-in-law a woman slave as substitute ; her children, however, were never admitted to their father's rank though it is not stated that they remained slaves.

A second factor which must be taken into account in these child marriages is that among many tribes the girls have already reached womanhood at an age which, to our ideas, belongs to later childhood, and a marriage concluded with them is therefore not so monstrous as it appears to us.

In any case, it is sad to hear that many Europeans too do not scorn to enter into sexual relations with these scarcely developed girls. This takes place, for instance, in Celebes, where Europeans take as concubines 12 and 13-year-old girls, and this custom is said to be so common there that nobody finds anything objectionable in it. Moreover, Justinian, even at that early date, forbade unmarried men to have mistresses who were under 12 years of age. It must,

therefore, have occurred not infrequently at that time that such young concubines were made use of.

Unfortunately, it cannot be denied that among some peoples sexual intercourse is customary with young wives who are undoubtedly still at the age of childhood. About this we have first-hand reports. Thus the girls in Nubia are sold to be used in coitus before their menstruation has begun, and of the Guato Indians in Brazil, Rhode reported that :

The custom prevailed of marrying girls of from five to eight years old or, more correctly, of their parents selling them. In every camping place he saw little girls being made use of, and when he asked an Indian, whose eight or nine-year-old wife looked very miserable, how it was possible to treat such a child with indecency, he replied, " I do not do that, she only sleeps with me because she is my property and I shall make use of her as my wife only when she is twice as big." Rhode reports further that this was not true.

That early marriage among the Annamese was frequently very painful for the wives who were still in their childhood, we can gather from one of their songs, for the translation of which we are indebted to Villard. It runs thus :

" I bewail my great youthfulness ;
Taking a husband older than I,
I shall never endure his ardour ;
I prefer to go back to my parents,
And to tell them to return the bridal gifts."

According to Jacobs,² the girls in Achin, in Sumatra, enter into marriage so early that there is still no question of menstruation, and they have scarcely got their second teeth. To be sure the young husband is a little older, but there can still be no question of an *immissio penis*. However, they sleep on the same couch and zealously carry on a reciprocal masturbation. Then, when the wife has developed so far that coitus is successful, for the digital dilatations have been helpful, on the following morning the young wife receives a present from her husband, a body-belt of gold or silver made beforehand by the goldsmith and a gift of money besides, which she takes to her mother, who then knows what has taken place. The body-belt remains the wife's property even should there be a dissolution of marriage. The band which the Achinese wear round their ankles symbolises an aid to the climbing of the palm tree. It shows symbolically that the tree has been climbed and the fruit plucked.

We shall refer to further examples later.

Whilst in all the cases hitherto quoted the girl bride was still in her childhood and the bridegroom not always a child, but had frequently reached puberty, it happens surprisingly in one tribe that the bridegroom is still a child while the bride is already a fully-developed woman. Then, indeed, we find a rule for sexual intercourse which is opposed to everything that is customary among the races on the earth. Schmidt⁸ reports of the Vellalas in Southern India that : " the fathers take grown-up women as wives for their sons who are under age and beget children with them which are then given to the child husband. When the latter are grown up, they find wives for the children bestowed on them and so the custom continues."

This custom does not correctly come under " child marriage." It existed, for instance, also in Great Russia, and was usual in marriages within the family, including the grandparents.

In some cases we must acknowledge that the cause of the remarkably early conclusion of marriage, *e.g.*, among the Tartars, is the pecuniary embarrassment of the parents. In this way they are relieved of the worry of providing for their daughters and get besides the purchase money from the husband. That may also account for the fact that in many tribes the daughters of the poorer classes marry earlier than those of the rich. E. G. Polak states of the Persians :

“ In less well-to-do families, people endeavour to marry their daughters as early as their tenth or eleventh year ; indeed, I have known cases where, after having bought a dispensation from the priest, the marriage took place at the seventh year. In good families, however, the daughters are not established until the age of from 12 to 13 years.”

A further reason for this lamentable custom is that people fear abduction.

“ About the origin of this strange custom of child marriage,” says Schmidt,⁹ “ there can be no doubt. Among tribes which regard abduction as a legitimate method of getting possession of a wife, the parents, to protect their daughters from that, and to prevent their plans in this respect from being frustrated, can do nothing else but have recourse to child marriage. So that, where the custom exists, we are right in concluding that abduction *de facto* . . . was at an earlier date a part of marriage, even if there is now no trace of it.”

The third reason, however, is the most important : a religious one. In India, or among peoples with a conception similar to the Indian one, it is a great sin if a girl has one menstruation without her having been given the opportunity for impregnation. Fathers therefore marry their daughters as soon as possible so that they may be sure that the first menstruation is not near enough for them to be overtaken by this sin. There is a very interesting contribution in *Globus* (Vol. LXIV., 1893, p. 380), signed J. H., and runs thus :

Much has been written lately about child marriages in India, and the English have taken sharp measures against it (*cf.* the work of Dr. Ph. Lenz in *Globus*, 1891, Vol. LIX., p. 199). In a great many primitive peoples we find, at the present day, very early marriages : they are fairly common among the Jews in Eastern Europe, and Ploss, in his well-known work on Woman has set forth a great number of examples. That child marriages were fairly common in England in the sixteenth century (particularly in Cheshire and Lancashire), the English philologist, Furnivall, has shown lately in the evidence of witnesses in the Law Courts at Chester, 1561–1566, according to the ancient records which he published. Among the proceedings is to be found a series of divorce suits by married couples who were given in marriage by their parents in earliest childhood.

In one such suit, *e.g.*, Elizabeth Hulse states on oath that her husband George Hulse and she were married in the Chapel at Knotisford . . . when she was only three or four years old and she was married to him because her people thought she would be well provided for with him. But, after the marriage, George was apprenticed (to a shoemaker) for 10 years and after that time the said George came to her mother's house, but she could not bear him and did not like him, and would never be able to like him, and she says they had never lived together . . . and never had any carnal intercourse with each other.

In another case a Bishop in his own palace married his nine-year-old daughter to a somewhat older boy.

But the youngest among these child couples is a girl of two and a boy of three who, at the wedding, were both still carried in the arms of relatives. The divorce suit of the 15–16-year-old nobleman, John Somerford, was brought against the

14-15-year-old Jane Somerford, alias Brereton, in 1564. The first witness is the husband's uncle, John Somerford of Asbury, 28 years old. He states that he was present when John Somerford and Jane Brereton were married to each other about 12 years before in the parish church of Brereton. He said that he carried in his arms the said John who, at the time of the marriage was about three years old, and he (the uncle) had pronounced some of the marriage vows. John, on account of his youth, could not speak for himself, and he had held him in his arms the whole time while the responses were being made. A certain James Holford carried Jane in his arms; she was about two years old at the time, and he had made all or the best part of the responses, at the same time holding her in his arms.

In an amusing case, James against Anne Ballard in the year 1569, the age of the girl was not stated, but must have been about 10 years. She was obviously fond of the 12-year-old boy and, as a token of love, gave him two apples, so that he married her. They were legally married about 10 o'clock at night in the parish church of Colne (Lancashire) in the 12th month of the year 1560 by the curate, Sir Richard Blakey, who was reprimanded for this act by the Archbishop of York. James Hartley of Clitheroe stated upon oath that he was present on that evening at the house of Christopher Hartley, an uncle of the said James (Ballard) and saw how James was brought into the house about midnight by two lads who (as this witness supposed) had been present at the marriage. The following morning James Ballard, the youthful husband, declared to his uncle that Anne had enticed him with two apples to go with her to Colne and marry her. These, or similar words were uttered by James at that time in the presence and in the hearing of this witness. Further he states that immediately after the marriage, *i. e.*, on the following morning he, when he realised what he had done, repented of the wedding, and from that time he would have nothing more to do with her and had never spent even a moment in her company.

These child marriages were valid till they were legally dissolved by divorce proceedings, at which it had to be affirmed by witnesses on oath that the children, after their age of consent (boy 14, girl 12 years) had never given their consent, never kissed or loved each other, and never slept together. The sleeping together of the little children on the wedding night was of no account—a real example of English prudery.

John Andrewe, 23 years of age, in 1561 stated upon oath that "Ellen Dampart and he were married to each other as children under age; the witness was then about 10 years old and the said Ellen was under eight. To the question whether he had ever lain with her, he replied that the first night after they were married they had both lain in one bed, but two of her sisters had slept between them, and since that time he had never again lain with her."

Another child, Elizabeth Ramsbotham, who, for pecuniary reasons, was married to a boy John Bridge, against his will, states on oath that on the wedding eve "the said John would not eat and, when it was time to go to sleep, the said John wept and wanted to go home. But on the encouragement of his father and the persuasion of the clergyman, the said John went late at night to the defendant's bed and then lay still until morning, in such a way that the witness had ground for dissatisfaction with him, for he lay the whole night with his back turned to her."

When the non-consummation of the marriage was conceded, divorce, of course, followed, but there is no doubt that most of these child marriages became actual. The children were brought up together and later lived as husband and wife.

So much for these legal proceedings. An examination of the rest of the English

archives for similar proceedings which Furnivall urged, would certainly prove not only the common occurrence of child marriages in the whole of England at that time, but would give many an interesting contribution to the history of the morals of that period. The proceedings extracted by Furnivall from the years 1561-1566 have been published by the "Early English Text Society."

5. CHILD MARRIAGE IN ITS PHYSIOLOGICAL SIGNIFICANCE

We are quite without data about the course of pregnancy among these children or scarcely developed girls; nevertheless, we possess some evidence, rather scanty it is true, and to some extent contradictory, about the outcome of their confinements. One might presume at the outset that premature motherhood in general makes confinement very difficult. Thus it is reported by Robertson that the juvenile age of the mother in Hindustan is usually the cause of difficult confinements. As early as 1798 Fra Paoline da San Bartolomeo wrote from the East Indies: "Many Hindu women forfeit their lives when they have their first confinement." A German missionary, who was employed for a long time in the Province of Madras, disputes that, and maintains that there all women, and even women who have immigrated there, get through confinement comparatively speaking more easily than in Europe. In the Antilles, as Du Tertre reported in the year 1667, the daughters of the colonists also marry very early; he saw there a 12½-year-old woman who had already had a child, but she assured him that her confinement had not lasted more than a quarter of an hour and had not been very painful. According to Hassenstein, however, 30 per cent. of the wives amongst the Mensa in Abyssinia die in childbed, and this is certainly in part due to the marriages contracted before the proper development of the body.

Moreover, the answer in this case is not sufficiently exact, and later observations made by travellers in this district must state whether the young wives had become pregnant before or soon after reaching puberty.

It would further be interesting to know the condition of the offspring of these young mothers. What is the position with regard to the vitality of their children, and are the latter of normal size, or are they considerably below the average in size and weight? Since a number of travellers have reported that they have seen such mothers with their children, these offspring must undoubtedly have possessed a certain degree of vitality. In any case, all these questions are premature even at the present day, since we have too little material to go upon, and that material is still too inexpert.

Wernich¹ has instituted an inquiry into the question as to how far the age of the mother exercises an influence on the development of weight and height of the child. He found: (1) The weight of the new-born child increases with the advancing age of the mother up to 39; its height up to the forty-fourth year of the mother's life. (2) Every issue of a later pregnancy exceeds the preceding one in weight and height. (3) The age of the mother as well as the number of pregnancies produces the increase in weight and height and indeed each of these two factors progressively. A pregnancy which coincides with the medium age is especially favourable to the issue. Thus, the tables show that, *e.g.*, a woman in Bavaria will, other things being equal, give birth to her first most perfectly developed child in her twenty-fourth, her second in her twenty-seventh, her third about the twenty-ninth year. (4) First children, whose mothers have had menstruation very late are inferior in weight to the children of other mothers, especially of those who have menstruated very early.

Unfortunately, fuller evidence is lacking on the relative weight, vitality and health of those children who are born in the above-mentioned peoples of very young and, to our ideas, quite undeveloped mothers ; nevertheless, we should hardly be making a mistake if we imagined that there are not exactly giants and mighty heroes among these first-born.

As a consequence of the second kind of child marriage of the Hindus to be mentioned in the next section, among whom cohabitation begins immediately after the marriage ceremony, there is evidence, according to Fehlinger, of a growing degeneration of the race ; this is particularly noticeable in the interior, in the plains of the Ganges. The child marriages are not the origin, but one of the late products of this degeneration.

Comfort, who reports on the Dakota, the Algonquin and Navajo, saw a mother scarcely 12 years of age. Era mentions a mother of 14 years among the Indian women of the Sante Agency in Nebraska, and Marden among those of the Mescalero-Apache Reservation in New Mexico. The youngest Indian mothers seen by Montezuma among the Paiute and Shoshoni in Nebraska, and by Wray among the Yankton and Crow and Creek Indians were 15 years old. It is to be regretted that detailed evidence of the appearance of these young mothers is lacking.

In Germany, exceptional cases of pregnancy at a very early age occur. Thus, in Berlin, in the years 1889-1899, 37 girls under 15 years of age gave birth to children, and all but two of these children came into the world alive. But what has become of them and how long they lived cannot be gathered from the statistics. These mothers were rightly designated girls, for all these children were illegitimate. That is a matter of course since, in Prussia, girls may not contract a marriage until the completion of their sixteenth year. In the same period 560,823 children were born in Berlin ; from this we see that the number of these offspring born of children is infinitesimal.

What is the position with regard to the fertility of these mothers ? Does a second child usually come a short time after the first ? To this it must be replied that among the Shangalla, wives 12 years of age are said to have not infrequently given birth to several children. The possibility of a speedily repeated impregnation must exist. There is more detailed evidence as to the effects produced on the young female organism by such early sexual intercourse, especially when it results in pregnancy. It appears then, as we have already seen in an earlier section, to be established, first of all, that a premature sexual intercourse is able to accelerate the first appearance of menstruation. Also, certain experiments made on rabbits indicate that by stimulating the genitals the maturing and detachment of the ova in the ovaries could be accelerated. Now, what is the position with regard to the influences and reactions which this artificial and violently produced development exercises on the juvenile organism ? Let us again listen to the observer himself.

About the women of New Britain, Danks reports that the girls in many cases were married at a very early age. He had seen a fine healthy girl of not more than 11 or 12 years married to a man of 25 or 30. The effect of such an early marriage was frightful for the girl. If one could judge her sufferings from her altered appearance, then they must be very great.

Of the natives of the Mandated New Guinea, on the other hand, Pfeil says :

“ The earliest age at which a marriage is contracted is about 14 to 15 years for a boy and nine to 10 years for a girl. In contrast with India, where the consequences of marriage at such an early age are shown most clearly in the offspring, here the prevailing conditions seem to be the normal intended by nature.”

Bruce asserts that a pregnant girl of 11 years, whom he saw in Upper Egypt, looked like a corpse. Rhode, too, emphasises the miserable appearance of the little Guato Indian girl of whose undoubted married state he was convinced by her appearance. He also found, of course, for the same reason, that most of the women were weakly and their colour sickly.

Viré believes that the physical growth of the Kabyle women is arrested in consequence of their early marriage. He says :

“ The women are very small, although fairly tough. That is probably owing to the custom of marrying them between eight and 12 years. They have not time to develop. I have measured only one who could pass for a fine woman ; her height is only 1.51 m., and I believe that one could find scarcely any woman over 1.55 m.”

Leake, at an earlier date, maintained that early marrying in the female sex not infrequently occasioned lung trouble, and especially the disposition to phthisis in confinement. That cannot be deduced from our material, but it is certainly very probable.

However, a premature old age and an early cessation of fertility is emphasised by a fair number of authors as a direct consequence of child marriages. Thus Schillbach reports of the Mainot women that they look quite old at some 20 years. The Coroado Indian women, too, according to Burmeister, grow old quickly, and lose at an early age their capacity for reproduction. The widespread sterility of the Guato Indian women also, is, by Rhode, attributed to early marriages. Likewise, the women of New Caledonia age early for the same reason, according to de Rochas. According to Kügel, the Javanese women lose their generative faculty as much as 15-20 years earlier than European girls, for, in the second half of the thirtieth year a Javanese woman rarely becomes pregnant.

Jacobs² says of the Achinese women :

“ As a consequence of the women having their first child while still almost children themselves, at least not yet fully developed, they grow old very early. Hence, it happens that 25-year-old women, who have given birth to two or three children, are already reckoned as old women. The skin then begins to be tan coloured, dry and wrinkled ; the eyes lose their lustre ; the breasts also, because of long suckling, hang down limply ; and gait and bearing reveal clearly that their youth already lies behind them.”

Moreover, not a few of these who become pregnant at such an early age appear to die during confinement.

The negresses of Gaboon are already old women at 20. Tuke, likewise, was able to ascertain that early sterility was a result of early marriage among the Maoris in New Zealand. He also noticed a high rate of mortality, and, similarly, it is maintained of the Samoyede women that they seldom survive the thirtieth year.

Some very noteworthy facts about the lamentable results of premature marriage are further reported to us from India. We shall consider them very briefly in the following section.

6. THE CAMPAIGN AGAINST CHILD MARRIAGES IN INDIA*

India is well known to be the country which we Europeans are accustomed to regard as the classic home of child marriages. The reason for this lies in the fact

* [See *Report of the Age of Consent Committee*, etc.]

that we were acquainted with India earlier than with many other countries of the world in which, as we have learnt in the previous section, this evil custom is not less prevalent. Of no people do we possess such ancient confirmation of this custom as of the Hindus. We have already learnt above the views expressed in Sanskrit poetry. The overthrow of such an ancient institution is, it is true, a very difficult undertaking, and many years will pass before this campaign is crowned with a successful issue. But the beginning has already been made and has caused a great stir in the daily press of India.

As Lenz² states, a bill had been brought in at a meeting of the Legislative Council in Calcutta that the marriage age of the girl should be raised from 10 to 12 years. The occasion for it was given by the death of one such youthful bride who, on the bridal night, had died from the laceration of her genitals.* Lenz² states :

“ There are two kinds of child marriage in India. D. Ibbetson says : ‘ Wherever child marriage is customary, the bride and bridegroom come together only when a second ceremony, called *muklawā*, has taken place. Till then the bride lives as a virgin in her father’s house. This ceremony is separated from the real marriage by an interval of 3, 5, 7, 9 or 11 years, and the girl’s parents decide the time when it shall take place. Thus it happens that the earlier the marriage takes place, the later the married life begins. In the Eastern districts, for example, the Yats usually marry at the age of from five to seven years, and the Rajputans at 15 or 16 years or even later ; whilst, however, among the latter, the sexual cohabitation of the young couple begins at once, among the Yats the parents often find the growing girl so useful in the housekeeping that pressure has to be put upon them to make them give her up to the husband. And so the married life mostly begins later than among the Rajputans.’ ”

Now this certainly sounds very reassuring, and people will ask why such controversy has arisen. Why should one try to make the Hindus alter such harmless customs ? Lenz,² however, then reports further, that :

Already, in the United Provinces, in the three highest castes—the Brahman, Chattri and Kāyasth castes †—the bride was sent to the husband’s house immediately after the marriage whether she was *apta viro* or not. Of course, they usually prefer to wait till after the second ceremony, called *gaunā*, which can take place one, three, five or seven years after the first, and for which the appropriate time is chosen according to the physical development of the bride. In Bengal the rule is that the girls of better classes begin their married life at nine years of age and become mothers as soon as ever it is physically possible for them (see *Census of India*, 1901, I., 433).

Lenz² quotes also a report from Risley (*Census*, 1901, I., 434), which states that :

It is the general custom that husband and wife, without being authorised by the Hindu Scriptures, begin their sexual life immediately after the marriage. The parents assist the custom unconsciously ; indeed, they make it a necessity. On the second day after the marriage is the flower bed ceremony ; husband and wife, a boy and a girl, or, nowadays, usually a young man and a girl must lie together in the nuptial bed. Within eight days after her marriage the young wife must go to her father’s house and then return to her father-in-law, or she must not cross her husband’s threshold for a year. In most families, the eight-day term is observed from convenience.

The proportions which child marriage has assumed in India can best be gathered from a table which Fehlinger² compiled from the census of 1901 (Risley and Gait) ;

* [For an account of injuries during coitus elsewhere, see Jarnin for perineal tears, and Medina who reviews the literature.]

† More correctly, Kshattriya, Warrior caste, and Vaiśya.

in the year 1901. It gives the average distribution by condition of 1000 of the period 1901 by religions, Hindus, Buddhists, Mohammedans, Christians and Animists.

	♂		♀	
	Married	Widowed.	Married.	Widowed.
Under 5 years . . .	7	—	13	1
5—10 years . . .	36	2	102	5
10—15 „ . . .	134	6	423	18
15—20 „ . . .	334	16	777	44
20—30 „ . . .	686	39	868	92
30—40 „ . . .	847	66	765	214
40—60 „ . . .	816	135	484	503
Over 60 „ . . .	669	292	163	825

In Assam, Burma, Mysore, Cochin and Travancore, the proportion of married males under 10 years—even among the Hindus—never exceeds 3 per 1000. In the three last-named provinces, the Christian population is particularly strongly represented. Child marriages are most rare among the Buddhists; especially in Burma, where these form the great majority, they are almost unknown. In Hyderabad, Baroda, Berar and Bihar, 107–186 of every 1000 girls are already married under 10 years of age, whilst, in the case of boys, the proportion of the married at the age of 10 years and under exceeds 100 per 1000 only in Bihar (Fehlinger,² quoting from *Census of India*, 1901, I., 454, 440).

Brainerd Ryder published in Melbourne a special little work on the girl wives of India, and in it made a series of important statements from the writings of other authors. Thus he quoted a statement by Lyall, the Commissioner of Chittagong Division, which was capable of proof by fully detailed information, that the marrying of immature girls was certainly not very widespread among the Mohammedans, but common in Chittagong, as in Bengal, in all Hindu castes and classes. In individual districts and in certain classes, Hindu boys of seven or eight years are married to girls of still younger age. But a father also barter his seven or eight-year-old daughter for 20 rupees a month to a 48-year-old man who is well known for ill-treating his wife.

The consequences of these premature marriages are most alarming. A Bengal Medico-Legal Report records 205 cases of coitus with such juvenile wives: five of these ended in death, and 38 of these young girls had very severe injuries from it. According to Ryder, a gynæcologist, Dr. Mansell, presented a petition for the protection of these unhappy girls, in which the following cases were reported

- (1) Twelve-year-old wife, in labour; the child, owing to the immature condition of her pelvis, had to have craniotomy performed upon it.
- (2) Eleven-year-old wife, in consequence of the great violence, is a cripple for life; she has lost the use of her legs.
- (3) Ten-year-old wife, she is unable to stand.
- (4) Ten-year-old wife, in a most lamentable condition. On the day after her admission she was taken away from the hospital by her husband, as he said, “for his legitimate use.”
- (5) Ten-year-old wife, crawled to hospital on her hands and knees; since her marriage she had no longer been able to stand upright.
- (6) Nine-year-old wife, with completely paralysed lower extremities.

(7) Nine-year-old wife ; on the day after the marriage the pelvis was pressed out of shape and the left upper thigh dislocated.

(8) Nine-year-old wife ; dislocation of the pubic arch ; she is unable to stand or to set one foot before the other.

(9) A seven-year-old girl, living with her husband as his wife, died of extreme debility after three days.

These cases are sufficiently significant it is true ; but Ryder gives information of the report of a post-mortem examination :

A well-grown, 11-year-old girl had married a man of 45. She died of a hæmorrhage from the vaginal tear an inch long which extended into the abdominal cavity. The organs of the lower part of the body were all small and undeveloped and the ovaries showed not the least trace of ovulation.

Ryder continues that if one could see these sorrowful faces which were so thin and drawn owing to the injuries of the pelvis caused by brutal passion ; the children who were no longer able to stand ; the crippled limbs, which could no longer be moved voluntarily ; if one could hear the pitiful cries of the little sufferers who clasp their hands and beg to be allowed to die—then one would realise to the full the blessing of priestly domination !

Of course, these juveniles wives do not all die, nor do all of them have such severe injuries. Yet the description of others also sounds very distressing.

Ryder states that he would never be able to describe the grief he felt when he saw these half-developed wives, with their expression of hopeless suffering, their arms and legs as thin as those of a skeleton, and saw how they walked at the prescribed distance behind their husbands with never a smile on their faces. At 16 years of age the wives were not as big, as strong and as well developed as most girls of Europe of 10 and 11. A Hindu girl of 10 resembles our five or six-year-old children. The custom of child marriage admits of many Hindu wives becoming mothers at 14 years of age and bringing a dozen or more undeveloped, sickly children into the world. A 12-year-old Sudra wife gave birth to triplets and died with these three frail children a few hours after the delivery.

Also the enlightened Hindu Gopinath Sadáshivjee Háte appeals to his countrymen from Bombay High Court :

“ Our marriage customs contain evils of great significance, which are in urgent need of reform. They are opposed to morality and reason and form one of the most powerful causes of the physical decline of our people.”

Every friend of mankind can only hope that his note of warning will not fall on deaf ears : but, as already said above, a long time will still elapse before sound reason and deliberation on this long-established evil will at last gain the victory.

7. PRIMITIVE CONCEPTS OF IMPREGNATION

From this sphere of ideas proceed the most remarkable customs which are rooted in superstition or in social relationships. We intend to assemble a series, mostly forms of marriage, and to indicate a possible emergence of some general idea.

As the most remarkable form of these peculiar customs, we shall have to designate the contraction of marriage with objects or things, with flowers, fruits or plants, with vases, etc. A specially large number of reports on this subject have

come to us from India which, when not otherwise stated, come from Crooke² (*vide* Vol I., p. 527).

The Newars in Nepal must first be mentioned. Among them, every girl is, as a child, married to a bel fruit (*Ægle marmelos*) which, after this ceremony, is thrown into any sacred river. Then, when the girl has reached puberty, a husband is chosen for her. If this new marriage turns out unhappily, then the young wife can separate from her new husband in a very convenient manner. She need only put a betel nut under her husband's pillow and can then simply go away from there.

Connected with this marriage with the bel fruit is the fact that among the Newars, remarriage is permitted to widows. For, according to the ideas of this tribe, a Newar wife can never really be a widow since the bel fruit, to which she was first married, is always regarded as still existing.

Among the Kadva Kunbis in Gujarát, a custom exists whereby, when a girl is at a marriageable age and has not yet found a bridegroom, her parents marry her to a nosegay of flowers. Next day, when the flowers begin to wither, they are thrown into a stream and the bride of yesterday is now regarded as a widow. Since in this tribe no public annoyance is aroused when a widow remarries, the parents can find a husband for her later, to suit her taste.

In parts of Kangra in the Punjab, a betrothed girl can withdraw from her burdensome obligations by betaking herself to the woods and marrying any wild growth there, whilst she kindles a fire round it. Then her betrothal is null and void and this new and peculiar marriage is regarded as quite valid.

In the Lower Himalayas, it is customary for a boy or girl to marry an earthenware jug when the planetary constellation or the portent for a proper marriage is unfavourable or if, on account of any physical or mental defect, they find nobody who will marry them. The usual wedding ceremonies are then arranged. The neck of the jug is bound to the neck of the bride or bridegroom with the help of a string, and water from a bunch of five leaves is sprinkled over the pair thus joined.

The Hindus in the Punjab assist themselves over an inconvenience by one of these peculiar marriages. They cannot contract a third marriage; but, if they wish to take a third wife, then they get married to a babúl tree (*Acacia arabica*) or an akh-plant (*Asclepias gigantea*). Then the evil effect of a third marriage is avoided and they can now marry the desired wife because this marriage is now considered not the third but the fourth. All these customs are nothing but Indian sophistries of the dominant hierarchy, adopted in order to find a way out of the blind alley of senseless priestly rules and to gloss over the non-observance with ancient superstition and ancient religious teaching.

Wealthy Hindus in the Punjab who have no children frequently marry a *tulasi* (Holy Basil) to a Brahmin and regard the latter as their son-in-law, which is, of course, very advantageous for him. If, after this ceremony, the blessing of children is denied them, then they believe that an emissary of Yama, the god of death, will annihilate them on their way to the spirit world.

As Crooke² rightly observes certain other wedding customs appear to be allied to the peculiar marriage contracts described. Thus, among the Mundári Kols, the bride and the bridegroom are well smeared with tumeric and then married, not to each other, but the bride to a *mahua* tree (*Bassia latifolia*) and the young man to a mango tree, or else both to mango trees. They must dab the tree with red lead, then embrace it and are then bound to it.

Among the Kurmis too, the bridegroom on the wedding morning is first married to a mango tree. He embraces the tree and is bound to it for a time in a special way

by a thread ; then he smears it with red lead. The thread is then untied from the tree and used to fasten a few leaves of the tree to the bridegroom's wrist. The bride is married in a similar manner to a *mahua* tree.

Among the Kunnuvan, a mountain tribe of Southern India, and among them alone, and nowhere else, is to be found the marriage with the door posts (Dahmen).

"The girl sits on a small stool, called *manei*, near the door post. Her father then promises to give the inheritance to all her offspring and her paternal uncle's son puts a silver bangle on her left wrist, this bangle taking the place of the 'tāli.' Henceforth, the girl may consort with any man she chooses while her earnings go to her father." As at ordinary marriages, officials must be present here too. The reason given for this remarkable custom is the danger that a family may die out if only one daughter and no other children are in existence.

Regular marriages with animals also occur in India. Schmidt ⁹ reports on this :

"When in certain parts of the Punjab a man has lost two or three wives, one after another, he gets a wife to catch a bird and adopt it as a daughter. He then marries the bird, and, at the same time, pays the bridal money to the wife who adopted his bird bride, and from whom he now separates. Afterwards he can marry another woman who is certain to remain alive."

Among the Hurons and the Algonquins in North America, there was a custom in the seventeenth century of marrying young girls to the fishing nets so that the catch should be abundant. The ceremonies are much more formal than is usual in human weddings. The Indians told Lallemand, according to Parkman :

"The spirit of the net once appeared to the Algonquins in human form and complained that he had lost his wife, and warned them that if they did not find him one who was equally spotless they would catch no more fish."

This ceremony took place every year in the middle of March. Two girls were chosen as wives for the net, and since they had to be absolutely unsullied virgins, they were always innocent children. The net was held between the two brides and one of the chiefs made a speech to it, *i. e.*, to the spirit of the net, in which he exhorted the net to do its duty and to provide the tribe abundantly with food.

It is well known also that the Doge of Venice had to be married to the sea in a ceremonial sea-voyage.

However, a town too could get married, as we can gather from a song of the Mordvins, the German translation of which has been given by Paasonen.

"Where springs up Kasanj ?
Where doth arise Kasanj ?
At a crossing of seven ways,
At the up-bubbling of seven springs.
While it is building, it ever falls down.
While it arises, it ever collapses.
Let us, brother, meditate,
A meeting of the villagers we must convene !
What shall we promise Kasanj ?
What on Kasanj bestow ? "

First they decide to promise Kasanj a princely horse, but

"Still more falls down Kasanj,
Still more the town collapses."

The village chooses as a gift a silken fringe, but

"Still more Kasanj collapses,
Still more the town falls down."

At a fresh consultation they decide to apply to old Wassili in the village :

“ He is the breadwinner of seven sons,
 He is the guardian of seven sons,
 The eighth child is Marjuschka,
 The eighth a maid, a little daughter.
 Oh, pretty is the child Marjuschka,
 Pretty the maiden Marjuschka !
 'Tis she we must promise Kasanj.
 'Tis she we must give to the town.
 It will without man's raising, arise,
 Will without man's building, tower ;
 Now Kasanj adorned its head,
 Now the town was bedecked.
 Marjuschka adorned her form.
 Marjuschka bedecked herself.
 She drew on shoes and stockings,
 She put a fine bodice on,
 She tied a silk kerchief round,
 She put on a ring of silver.
 Then she repaired to Kasanj.
 Then she plighted her troth with the town.”

According to M. Bartels, in this form of peculiar marriage, we have to recognise a kind of building sacrifice tricked out as a fairy tale.

8. JUS PRIMÆ NOCTIS

It sometimes happens that where a society is specially favourable to men, it claims rights in the daughters of the country, and the latter are sometimes obliged to give themselves up to prostitution for a time. The opinion has been expressed that such a prerogative (seignorial right) was the original form of *jus primæ noctis*, a custom the reality of which recent researches have attempted to question.*

It was said by Boethius (Bk. III., fol. 34 (b) ff.) in the sixteenth century that King Evenus III. of Scotland, at the time of Emperor Augustus, introduced this right, which was only abolished more than a thousand years later by King Malcolm. Many French authors particularly, among them the encyclopædists, clung to this widespread opinion, although as early as the eighteenth century many, including a few German scholars, were in doubt about it. The historical accuracy of these statements, as of all similar statements, whoever may have been the first to promulgate them, is quite uneventual. In 1854, the dispute became more lively in consequence of a report given to the Academy of Science in Paris by Dupin. Louis Veillot in particular maintained in several essays and pamphlets that the so-called *droit du seigneur* had, in reality, never existed ; also a commission gave the Academy of Inscriptions their expert opinion in a similar negative sense. In a comprehensive work, Jules Delpit tried to refute Veillot's opinion ; numerous scholars from different countries ranged themselves with him, among the Germans, Weinhold,¹ Scherr, v. Maurer, Liebrecht, etc.

In Colmar, in 1881, Karl Schmidt occupied himself exhaustively with the matter, and examined with considerable precision all the details and all the state-

* [For a summary of the controversy, see Westermarck,¹ chap. V.]

ments scattered through literature ; he opposes the validity of the idea of the *jus primæ noctis* without ever becoming clear about the real facts. He wrote as jurist and ultramontane, neglecting all ethnographic questions. His "results" are given in the following pages :

Schmidt goes most closely through everything stated about the introduction of *jus primæ noctis* by King Evenus III. of Scotland ; yet he shows too that the tale is quite legendary. Then he investigates the grounds for the tale which cropped up in the Middle Ages, that a chief of the White Huns, by name Skorbot, at each marriage in the town of Harapa, asserted the privilege of the husband ; he finds that at the source the question was really only of "incest." Further, Marco Polo is said to have spoken of a *jus primæ noctis* in Cambodia ; Schmidt (p. 214) finds that Marco merely said the king chose for his harem any girls he liked : after they had been set free he gave them a dowry. The reports about the Brahmins in the East Indies are, for him, just as unreliable.

Quite uncertain also is the information from Germany that here, as Liebrecht maintained, the *jus primæ noctis* existed at one time. When v. Hormayer says the lords of Persen (South Tyrol) of Ravenstein and Vatz (Switzerland) were exiled because of it, authentic proof is lacking. Similar tales of a privilege of the lords della Rovere in Italy, the lords of Prelley and Parsanni in Piedmont, Schmidt follows up in like fashion quite in vain.

In France the prescriptive right of the canons in Lyons is said to have consisted in yielding the brides to them on the first night for the *jus coxæ locandæ*, and a document of the year 1132 is referred to in which an abandonment of this right is stated. However, the abandonment is confined solely to the remission of a tax on the wedding feast ; of anything further, there is no question.

Further, there was in France, until the seventeenth century, a *droit de braconnage*, e.g., among the lords of Mareuil in Picardy, who claimed, on the marriage of the daughters under their dominion, the feudal right to *braconner*. Schmidt interprets the word as "embrace," and not equivalent to *déflorer*. Thus, he examines closely the alleged rights of the abbots of St. Michel, of Count Guido of Châtillon, of the lords of Larivière-Bourdet, etc. ; everywhere proof is lacking. In France, e.g., in Gascony, existed the so-called *droit de cuissage* or *jambage* : that is, however, not the *jus primæ noctis*, but it was the right to put a leg in the bed of the bride. Likewise, there was a feudal lord's right to climb over the bride's bed, but Schmidt considers the latter a joking custom, in any case not identical with the *jus primæ noctis*. The statement that the natives of the Canary Islands had had the *jus primæ noctis* is quite unjustified. The informant says in this connection only that the chiefs generally deflowered the virgins, but they had not a special right to the marriage night. More difficulty was involved by Varthema's statement that in Calicut (East India) the Brahmins had the right not only to cohabit with any woman they pleased, but also with the young wife of the king on his marrying. In this case, where other travellers too have made similar reports, it is, according to Schmidt, a question of an institution of religious worship.

Finally, the author rejects altogether the legal decisions to which one preferably refers. In particular, he mentions that in the year 1812 an alleged document of the Grand Seneschal of Guyenne of July 13th, 1302, was discovered. Although the reason for the falsification is not clear, yet Schmidt indicates that there was a strong suspicion that it was undertaken by a supporter of the false doctrine of the *droit du seigneur* of the Middle Ages.

The only judgment from which the proof of a claim to the alleged *jus primæ noctis* could be drawn with a certain semblance of justification is, as Schmidt says, the arbitration decision of the Catholic King Ferdinand on April 21st, 1486. He, among other things in the 9th Statute, cleared away an abuse which consisted in this, that some landlords (from estates in Catalonia) on the marriage of their peasants, raised a claim to sleep with the newly-married wife the first night, or, as a sign of dominion over the wife, to step over her after she had lain down in bed. "But just because this document would stand completely isolated as proof for the *jus primæ noctis*, from the context of the document, the assumption appears to be justified that the right claimed was confined to the undertaking of a formality which was to denote a symbolical action, the dependency of the peasants on their landlords" (p. 306).

There were "marriage customs" which accorded with the spirit of the age, as, for example, the ecclesiastical custom of giving the blessing from one to three days after the conclusion of the marriage; but such strange things should not be brought into connection with alleged feudal rights. According to Germanic legal maxims, the consummation of marriage (in the presence of the marriage guests) was the method by which marriages were concluded. Even this custom has been used as a proof of the feudal lord's right to the first night, since, in a document of the year 1507, as a customary right or custom of Drucat, it runs thus:

"When a male or female subject of the district of Drucat marries and the marriage takes place, then the young husband can only spend the first night with his bride if he has had the permission of the said lord thereto, or if the said lord has slept with the bride." Schmidt explains this passage thus: that the permission was not necessary (which had otherwise to be sought by the presentation of an honourable gift from the wedding feast) if a person married who had had unauthorised intercourse with the landlord; in his opinion, there is here no question of a feudal right to the first night. All further documents which have been quoted, Schmidt declines to consider important as evidence.

Now even if we are willing to admit with Schmidt that not all the proofs brought forward for the former existence of a *jus primæ noctis* are valid, we must certainly assent to the conclusions which Pfannenschmid reached in his criticism of Schmidt's work. Later, on the strength of more reliable evidence as to the period of the Middle Ages in Europe, we come upon peculiar marriage customs which at this period may have been symbolical, but cannot have been so in earlier times. Symbolism is always an early stage, but not the origin of a custom. Moreover, everything indicates that what was once actually practised found expression later only symbolically and was fixed in writing in archaic diction.

It cannot be denied that many customs such as we heard of in the section on virginity are in a sense nothing else than a *jus primæ noctis* which, according to the people, belonged to the king, the chief or the priests. This fact, in spite of all the pains and learning bestowed on it, nobody will be able to explain away and the recorders concerned have also not seldom called this custom by the technical name. Thus F. v. Luschan and Petersen say recently:

"Moreover, among the Tachtadshys of Lycia, of which the religious chief, the *Dede*, possesses a *jus primæ noctis* even though not regularly used, and others among which he has the right to choose at the religious meetings, held annually, any woman whose husband shall feel really honoured by this distinction," etc.

This passage is also instructive in so far as it shows that the *jus primæ noctis* is, as time goes on, no longer regularly exercised by those to whom it belongs. Thus, it can easily be understood how, with advancing civilisation, it would gradually be loosened as it were, and finally fall into complete oblivion. Why should not something of the kind have taken place in Europe also? Yet investigations on these lines would prove very distasteful to the ecclesiastical authorities who appeared to tolerate at that time what they now call "abomination."

Among the Masai, according to Merker, the *jus primæ noctis*, following an ancient custom, is, even at the present day, exercised frequently, although not generally. There the right belongs to one or two old comrades-in-arms of the young husband.

"He who does not grant the *jus primæ noctis* when it is claimed, is insulted *ol alomōni* or *ol āmischo* (formed from *a-lōm*, i.e., refuses). He refuses to others that which is their right and must be on his guard lest, in the following days, they steal some of his cattle without his being

justified in bringing an action against them. He who does not wish to fall in with this ancient custom, in order to evade what is to happen, has his wedding take place without any celebration. The bridegroom merely hands over the price of the bride, whereupon the bride, without any ceremony whatever, follows him to his hut which has been prepared beforehand."

Therefore, Wilutsky, with justice, writes (Vol. I., p. 34): "We come now to the once so obstinately contested right of the bridal night (*jus primæ noctis*). With the wealth of material now at our disposal from all parts of the world, such a controversy would indeed be scarcely conceivable. This controversy arose from a failure to realise that it is not permissible to start the understanding of a custom from its latest developments in mediæval Europe. Every link in the chain of evidence must be followed in order to understand the most recent form of a custom."

9. SEXUAL INTERCOURSE WITH GODS, SPIRITS, DEVILS AND DEMONS

The opinion has been expressed that sexual intercourse is the mainspring which keeps the world in motion; and we have already seen repeatedly (see Vol. I., pp. 131 and 557, etc.) what an enormous part is played by the sexual relationships, at least among people at a low stage of civilisation, and, indeed, not infrequently from the years of childhood. Hence, it is no wonder that the imagination of the people is filled with these things, and that the slight stimulation of the genital organs which occurs at the time of puberty evokes by its reflex action on the central nervous system the well-known erotic dreams which, owing to a confusion of cause and effect, are taken for things that actually happened. Hence we find uncommonly widespread the belief that evil spirits of a certain kind had the power to visit both girls and young men in bed at night in order to copulate with them. These spirits naturally always appeared in the tempting guise of the opposite sex. In the dream, all this was fully and clearly experienced, and the next day the resultant feeling of exhaustion was ascribed to the spirits' power of draining their strength.

These demons, in the Middle Ages designated incubus or succubus, Ephialtes and Hyphialtes, or nightmare, were known and feared as little men and women of the night respectively among the civilised nations of Western Asia, many centuries before our computation of time. In the ruins of Nineveh, as is well known, were found a great many terra-cotta tablets covered with cuneiform writing, which have been recognised as part of the library of Assurbanipal. Some of them are chants, exorcisms and prayers in old Sumerian, and Assyrian versions are known. The Sumerians, however, were a non-Semitic people who occupied the whole or part of the Euphrates-Tigris country long before the Assyrians, and were first dispossessed by the latter. Some of the chants discovered on the clay tablets have an interlinear translation into the Assyrian language; but some of the Sumerian words they were, even at that time, no longer able to translate. Therein lies the incontrovertible proof that even then the Sumerian language was no longer fully understood even by the scholars, and from this their great age may be inferred.

Among the exorcisms, this passage occurs:

"Against demons, genii, rabisu, ekimmu, ghosts, phantoms, vampires,
Male and female spirits of the night, the female goblin,
And all evil that lays hold of man,
Arrange festivals, make sacrifices,
And let all gather together
That your incense to heaven ascend!
That the sun consume the flesh of sacrifice!
That Ea's son the hero with his magic
May prolong your life!"

The male and female spirits of the night are called in Sumerian, *lillal* and *kiel-lillal*, meaning "the conquering man" or the "conquering concubine." This name indicates the ways and means by which they overcame those upon whom they forced their embraces. The Assyrian name is *lilû* and *lilitu* (see Lenormant¹). The designations in both languages are reminiscent of Lilith who has an important place in the demonology of the Talmud (*cf.* Isaiah xxxiv. 14). She was a demon with whom Adam had a love affair before Eve was created.

In the sagas of European nations, too, as is well known, this sexual intercourse between women and all kinds of supernatural beings played a great part. Here the various children of Zeus may be recalled. The Merovingian Kings too, and above all, Merwich himself, are descended from a sea monster which, rising from the water, lay with the latter's mother who was asleep on the shore. In other cases, the spirits assume the form of the husband so that the wife is not aware of the deception until it is finished. The grim Hagen was begotten by an elf, King Otnit by the dwarf king Alberich, and the consort of King Aldrian conceived a child by an elf in the form of her husband (Schwartz).

Also, in the Babar Archipelago in Indonesia, evil spirits in the form of their husbands possess the power to get young wives with child, and when an albino is born on Nias, the wife, according to Modigliani, maintains that a devil is the father of the child.

From New Guinea, Kühn reports :

"Of a third idol, which stood in Ærfanas, I was told that he was very dangerous for young girls and wives. For, if they carelessly lay down to sleep in his vicinity, they might be sure that, after nine months, they would give birth to a little Papuan. The men of Sekar would have liked to have seen me take this fellow away with me. They had sent some of their members thither to fetch him for me, but they had not returned when the time came for my departure."

Kohlbrugge relates of the Tenggerese in Java that the young people consort with each other very freely "and yet a premarital pregnancy rarely occurs. If it does occur, it is ascribed to the devil."

Radde reports that among the Chevsur in the Caucasus "sexual intercourse takes place quite naked," for they believe that if they were clothed in their thick woollen shirts the devil might take part in the coitus.

We can assume the existence of belief in coitus with the God in all cases where we find the custom whereby the girl just arrived at puberty or about to enter into marriage is obliged to offer up her virginity in the temple. For the priest who undertakes this service doubtless is, or at least has been, at an earlier period regarded as the true incarnation of God. Here the statement of Herodotus (I., 81) about the Tower of Babel must be brought to mind.

This temple of Zeus Belus he describes as consisting of eight towers placed one above the other. In the last tower is a great temple ; in this temple, is to be found a great resting place with a comfortable bed, and by it stands a golden table, but no image is erected there, nor does any human being spend the night in it, except one woman, one of the natives whom the god has chosen from among them all, as the Chaldeans, who are priests of this god, assert. These, too, maintain this, of which I am not yet convinced, that the God himself comes to the temple and rests upon the couch just in the same way as in the Egyptian Thebes, according to the assertion of the Egyptians ; for there too a woman sleeps in the temple. Both these women have no intercourse with men, we are told. So, too, in the Lycian Patara does the priestess of the god Apollo act at the time of the oracles, for these do not always take place : but when they do, she is shut into the temple with the God on these nights."

The sacred goat at Mendes was also certainly regarded as a personification of the Sun God himself by the women who prostituted themselves to it.

We often find fabulous demonic animals mentioned as the ancestors of whole clans, especially among the American Indians and Polynesians, but also in India and in the Sunda Islands.

A very important part was played in the fifteenth and sixteenth centuries, and even in later times, by the belief in the so-called devil's love affairs, and Jean Bodin, who likewise believed firmly in them, has collected many examples in which



FIG. 536.—Witches on the Blocksberg, 1620. (Germanic Mus., Nuremberg.)

the women have known of their repeated unchastity, often continued for years and have atoned for it by being burnt at the stake.

Usually this sexual intercourse takes place at night ; but women have been found also who in broad daylight have had monstrous intercourse with the devil, and have often been seen quite naked in the fields. Indeed, at times, their husbands have found them lying with the devil, and thinking it was some lewd neighbour have struck blows at him, but, alas, hit nothing.

Jacob Rueff's "Hebammenbuch," of the year 1581, runs :

"Nobody shall doubt that the devil can turn into and be metamorphosed into human form and also talk to human beings. For since the devil can turn into the form of an angel (as St. Paul says), it is also possible that he can change into the form of a human being, which happens often and is known to be done. But whether the devil can sleep among men or have unchaste cohabitation with them and beget children by them, must really be decided. That the devil

can do such things, St. Augustine also bears witness, since he speaks of it. Many speak of this who have experienced and known of such things, also encountered them and heard of them that there are spirits called Sylvani which have done much harm to women, have often lain with them and done unchaste things with them. This was known not only to the ancients, but is experienced fairly often in our times. For, in this town, a common wench had such intercourse at night with the devil in human form that she became ill from that hour, and the front of her body was so consumed with mortification that no cutting away was of any use and before the ninth day she died. For she reached such a dreadful and pitiful plight that her entrails fell out."

Among scholars opinion was divided as to whether cohabitation with the devil could be fruitful or not. However, there were many who considered the conception of a "devil's brood" possible. Such were the changelings, who were marked by deformity or horrible gluttony. (This name originally indicated other creatures



FIG. 537.—The spirit world. H. Bosch v. Aken (1462-1516). (Germanic Mus., Nuremberg.)

begotten by demons, water sprites, the moon, etc.). The women who had intercourse with the devil all agreed in saying that they found his semen quite cold. That is quite natural since it was not freshly ejaculated, for it was stolen human semen: "the hyphialtes or succubi took the semen from human beings and in the form of the vampire made use of it for the women" (*cf.* "Malleus maleficarum," I., 3).

Rueff opposed these ideas:

"However, many people think and believe that the devil Succubus may in the form of a woman lie with a man, and receive the semen from him and retain it and afterwards change himself into the form of a man called Incubus and have intercourse with the evil women or witches promised to him, and pour the man's semen into them and make them pregnant so that children are born from them. Nevertheless, all that is contrary to Christian belief, contrary to nature, even contrary to all possibility. For even although the devil could retain the semen, however soon it was ejaculated, nothing living, good or natural, would be born of it, even if he came to a woman, because it would be cold, weak, with its strength made useless and altered and chilled by being carried hither and thither."

Rueff seeks to explain the tales of the devil's children in the following manner, for which purpose he brings forward the example of the devil's child, Merlin :

"That this Merlin, as his mother informed the king, was begotten by a spirit and born of her is nothing but a cheat and a deception and should be believed by nobody, since he is a real human being begotten by and born of human beings ; a proper and natural birth. For the mother, like the witches, was deceived by the devil, so that she thought she had, by a powerful dream, conceived Merlin by the devil in her sleep, during which she thought she had actually had the experience of intercourse with the devil. How Merlin's mother was brought to such error and deception, I will give you my own explanation. After Merlin's mother had given herself to the devil and consented to all his acts like all despairing women and witches who are thus allied to the devil, he had imbued her mind so completely with his image that she thought he had lain with her and in her sleep had all the sensations of coitus. The devil, also by cheating and deception, also craft, blew upon her body with air and breath, also other things so that she thought she was pregnant. And as soon as the time for the supposed birth had come (by the decree of God on account of her unbelief, she was left to it) he made pains and woe in her body and drove out the moist substances which she then had and soon he put under her secretly another child which he had stolen beforehand, which the duped mother then took and brought up."

That the devil had power to steal children Rueff has no doubt. He might exercise his power : "Especially upon those children who have ungodly parents, serving man or maid who give themselves to all knavery and unchastity, willingly bring up many children, but are greatly unwilling to bring them up in fear and decency. For soon after they are born and begin to whine and cry, then father and mother and even the maid servants curse and swear at them, and when they are put down or lifted up, be it day or night, they are addressed in the name of all the devils ; in the name of the devil they bring them up, which is quite unchristian."

According to a statement of the Faithful Eckarth, it was believed in Sweden in the seventeenth century that the witches had to take stolen children to the devil in Blockulle. There they had sexual intercourse with him and the children with other devils. They have a complete wedding ceremony there of which the form runs thus : "Cursed be those who being over six years old, have not had two or three men or women." They marry either a goat or a sow, with whom they have two, four to sixteen children. These are half as big as "Christian children and have faces like rats and as red as fire, but no hair. These witches give birth to them every month, every six weeks or every two months." The devil's children are cut to pieces immediately after their birth, boiled in a pot and a salve made out of the result "to be distributed later."

From time immemorial the forest has been regarded as the favourite setting for the demon's unchaste attacks on women, and the lustfulness of satyrs, fauns and the sylvani, is known to everybody. Among these are included the *dusiens* of the ancient Gauls and the forest and wood demons of the Germans. Even to-day the inhabitants of several Indonesian islands (Amboina Islands, Ceram), men as well as women, have to be very careful in their wanderings in the woods. For certain demons of both sexes dwell there, and compel the human beings who come near them to have intercourse with them. Anyone to whom this has happened dies in a few days, as the demon takes away the soul. On one island these wood demons are dangerous only to women and girls, so that when they go into the woods to gather firewood they must always be accompanied by a number of men for protection. According to Riedel,¹ on the Aru Islands the lewd wood spirit has power only over the women who are menstruating, who, therefore, dare not enter the wood at that time. (We have already heard of a similar superstition of the Macusi Indians.) But if they

do so, then the spirit cohabits with them and they get a stone in their uterus, or they must die soon afterwards.

Then, also, men changed into demons could indulge in sexual misconduct with women. Thus Krauss⁶ reports :

“Vampires are, according to common popular belief among Slavs, Lithuanians and Germans, dead people who, as mischievous spirits, haunt their surviving kinsmen in order to suck their blood. . . . Accordingly, the werwolf rises from the grave at night time, strangles the people in the houses and sucks their blood. . . . The werwolf haunts his wife among others, especially if she is young and beautiful, and lies with her ; people say, a child, the issue of such a union, has no bones in its body.”

In Herzegovina, the belief in the possibility of sexual intercourse with ghostly beings has helped many sensual young widows out of a difficult situation. There, people believe, as



FIG. 538.—Seventeenth century witches. (Germanic Mus., Nuremberg.)

Grgjić-Bjelokosić reports, that a dead man who was a wizard and died without confession becomes a *Vukodlak*, a kind of vampire, and can return from the grave at night. He then has the power to visit his wife at night and have intercourse with her. Such ghostly intercourse can even lead to pregnancy, and that affords a widow, who has the unpleasant surprise of feeling herself a mother, the possibility of declaring that the father of the child is the wandering ghost of her dead husband. Here, too, the vampire has to be exorcised by thrusting a spiked stake through the corpse. In Slivalj this is said to have happened, and the people of the village went to the Pope to achieve the necessary exorcism of the *vukodlak*. He had the woman brought to him and he affected her so much whilst he prayed that, in the end, she confessed to him that the ghost of the dead man was really a vital, strapping young fellow.

If this superstition is of a fairly harmless nature, there is, according to v. Wlislöcki, a superstition more serious for the social position of the wife, among the wandering gipsies in Transylvania :

“A childless wife is looked upon with pity and contempt, and her position with regard to her husband becomes, in time, quite untenable, for, according to the gipsies' popular belief,

a childless wife has had a love affair with a vampire before her marriage, and this is the reason for her sterility."

According to a statement of Glück, the childlessness of a wife in Bosnia and Herzegovina is attributed to her having had sexual intercourse with evil spirits.

The Saxons in Transylvania have also still kept their belief in coitus with supernatural beings. V. Wlislöcki⁴ says about this :

"The *älf* is above all the spirit which appears in bodily form to human beings and lets them feel his power. It comes in the night to the sleeping people and tries to suffocate them ; he even appears as a lover spirit (as incubus and succubus). . . . If he appears as lover spirit, he takes the form of a youth or virgin. Of a woman in Mühlbach who had already brought eight to ten still-born children into the world, the people say : '*Der älf hot se ämgestälpt*' (the *älf* has ruined her). People believe that, if a pregnant woman is used by the *älf ad coitum* she brings her child into the world dead."

With this might be placed an incidental observation of Höfler, according to which among the South Slavs indulgence in animals' hearts engenders unnatural fertility and pregnancy.

A belief of the gipsies, which also appertains to the sphere of demon-love, has already been discussed. Besides this, however, the gipsies consider that other unearthly beings are capable of having sexual relations with human beings. For this, also, v. Wlislöcki⁶ is our authority. He says :

"Besides these hereditary sorceresses, there are also those who do not acquire their art by blood transmission, but have learnt it from the *Nivashi* and *Pçuvush* people (water and earth spirits) while they had sexual intercourse with them. The act itself happened without the woman's knowledge ; she first became aware of the transformation on awakening and she was only reduced to silence by being at once instructed in the secret arts of the *Nivashi* or *Pçuvush*. If he does not at once copulate, or if the woman utters a cry, then he is lost, for his strength forsakes him for a few hours and he is unable to move from the spot so that he can easily be slain. Further scope for cheating and deception is, of course, afforded by this. Thus, there lived in Transylvania some years ago, a lovely 17-year-old gipsy girl who had already had three illegitimate children, none of whose fathers belonged to the gipsy folk. She, therefore, became the butt of the derision of her fellow tribesmen, was even exposed to their contempt, and was called by the insulting term *purne lubñi* (white prostitute) because of her love affairs with 'white people,' that is, non-gipsies. We told her often and often that she ought to turn her back on the band and settle elsewhere in order to escape this continual spitefulness. On one such occasion she replied : 'I shall not go. I shall become a sorceress ! You will see then how the people will love me !' She bade me then tell the band that I would spend the next night in the village. I did so, and then she besought me to stay for the night hidden near her tent and to observe the coming disturbance from a distance and unseen. In the night the troop was awakened by an ear-splitting shriek. They all ran to the tent of the *purne lubñi* who, trembling in every limb, declared to her fellow tribesmen that a *nivashi* had visited her and showed them the hoof marks visible upon the ground. She then threw herself on the ground, muttered incantations and appeared to fall into raptures. Next morning, I was told of the night's occurrence. When I asked the people how they knew that a *nivashi* had really visited the *purne lubñi*, they gave me to understand that she had proved it to them, and that I must no longer call her *purne lubñi*, otherwise I might come to harm. How she managed the exact proof of the correctness of her statement I must omit here for reasons of propriety. In short, she enjoyed great esteem among her fellows from this time onwards and is famous as a sorceress far and wide, even among the country population of Transylvania. She is called Ileana Darej !"

Now such views are surely peculiar enough, but, to our ideas, it seems surprising that even the saints were considered by the people to be capable of having sexual

intercourse with mortals. For instance, among the Magyars there are the treasure-seeking women who promise themselves *ad coitum* to St. Christopher if he will help them to find the treasure they seek. They have a special prayer to the Saint, of which v. Wlislöcki³ has given us the translation :

“ Faithfully I think of Thee every hour of every day, so that the spark of Thy strength which is in me may not go out but become now the glow of gold, now the glittering of diamonds, now of carbuncles that shall lighten us on the bridal night. Help me St. Christopher with the force of Thy hammer ! Amen.”

Likewise, the Moon or even the Sun, as Krauss¹² reports, may, according to the tradition of the Southern Slavs and other peoples (Peru, South Seas), be dangerous to women. Krauss¹² gives the following two reports on this :

“ If a female spends the night naked sleeping in garden, wood or field by the light of the full moon, she will be impregnated. . . . Children of such women are endowed with second sight. . . . Here and there it is maintained that a vampire was the father.” (Also in Germany.)

“ According to information only once vouched for, a young woman can, if she goes naked at midday through a field of waving corn in the full light of the sun, become pregnant unawares.”

According to the creed of our forefathers, however, sexual intercourse with a spirit could be quite legitimate intercourse sanctioned by church and state ; that is to say, provided that the spirit paying the nocturnal visit was that of the husband tarrying at a distance. Now we know that as late as the seventeenth century it was considered possible for the soul to leave the living body, fly about the world and return again to the body after a time. In the year 1637 the Parliament at Grenoble established as legitimate the birth of a boy who was born after his father had been absent for four years, since his mother confessed that “ although her husband had not come back from Germany for four years nor had she seen him or known him in the flesh, nevertheless it was only too certain that the presence and embrace of her husband had been manifested to her in a dream, and she had felt all the sensations of conception as well as impregnation precisely as she had felt the actual presence of her husband.” This kind of impregnation was designated as *Lucina sine concubitu* (see Sir J. Hill).

In Icelandic and Bulgarian sagas the discourse is of dead men who satisfy their sexual desires with certain girls (so-called “ living corpses ”). In Iceland, according to Arnason and Maurer, it was the girl's rejected lover who had to be exorcised by a courageous woman. The girl, however, had conceived a child by him and later gave birth to a son who then, when he grew up, had to be stabbed for the salvation of the community.

In the village of Orzoja, in Bulgaria, there died, as Strauss reports, in the year 1888, a girl whose death was believed by the people to have been brought about by the sexual intercourse which the souls of dead men had had with her.

Ehrmann states that the Japanese say of children who are not like their parents that they are devils' children. At the root of this expression probably lies the one-time belief in sexual intercourse between women and the devils.

Among the Japanese, however, the fox spirits play a great part. They can assume the form of beautiful women and have sexual intercourse with men. Now and again, however, they have to resume their original bodily form. Fig. 539 represents one of these spirits taken from a Japanese picture book. The ghost woman is leaving the house at night and the shadows which her head and hand, both already outside the house, throw on the wall, leave no doubt as to how the



FIG. 539.—Japanese fox spirit in female form. (Japanese coloured print by Yoshitoshi.)

form of the woman is really constituted. Her child, crawling after her, sees this with astonishment.

10. NUPTIAL ABSTINENCE

People are in general so convinced that a newly-married couple share the bedroom on the night following the wedding that it surprises us to hear that this is not the custom among all the peoples of the earth. There are certain tribes with whom custom ordains strict sexual abstinence for the young couple for some time after the marriage. The custom is very old, and is known by the name of "Tobias*, or chastity nights." We have already discussed some of the possible reasons for this phenomenon, and we shall revert to it again under "Marriage."

The institution of nuptial abstinence was known, for example, to the ancient Hindus. It was, as Schmidt⁸ observes, mentioned by several of their writers. For instance, it is written :

"For three nights, both shall eat nothing pungent or seasoned with salt ; they shall sleep upon the ground and preserve chastity. . . . On the fourth night, a food offering is to be made and the marriage consummated " (*Grihya-Sūtra*).

A few authors wish to extend this abstinence to 12 nights or even to a whole year.

Japanese tales of the gods also tell of abstinence for the first night :

"The god Yo-Chi-boko ('eight thousand spears') has wooed the Nuna-kabahime. She accepts his wooing and sings :

'When behind the green mountains
The sun goes down,
In the nuba-like [black] night,
I shall come forth.
When like the morning sun
Smiling and beaming, thou comest,
Then [shall thy] arms, which are white,
Like ropes of paper-mulberry bark,
Gently beating against [my] breast,
Soft as melting snow ;
And [against each other] beating and embracing
And the jewel arms,
The genuine jewel arms
Outstretching and [for each other] making cushions for the head,
We shall [with each other] sleep
With outstretched limbs.
Speak not to me of love longing
Over much
Thou Highness, god,
Of the eight thousand spears !
The tale also
of the matter,
This !'

"Hence they had no coitus this night, but in the night of the following day they had cohabitation as it was permitted " (see Florenz²).

Esthonia affords another example. Here neither the physical union nor anything approaching it may take place on the wedding night. In some districts

* [See the Book of Tobit and cf. Frazer,² I, 497 ff.]

of Esthonia they even take care that the husband does not touch his wife's breast because, otherwise, in later calmness, milk tubercle, inflammation and abscess of the mammary glands will result (see Krebel and Boecler and Kreutzwald, p. 25).

On the Kei Islands in the Banda Archipelago, the young married people may accomplish coitus only after the expiration of three nights; and to guard with certainty against a transgression of the prohibition, an old woman or a young child must sleep between them for the first three nights. This latter custom may not belong to this category, but is perhaps a means of protection against evil demons (see Riedel,¹ p. 351).

Blyth relates of the Fiji Islands :

“ When a Fiji Islander has married a wife, they remain in strict seclusion for three days. On the fourth day, the women of the same district assemble and lead the newly-married couple to a river to bathe, and the husband is now pledged to refrain from sexual pleasure for some time.”

According to Graafland, on the island of Roti, the newly-wed retire, accompanied by two old women. The husband must undo a girdle on the bride, the nine knots of which are covered with wax, and he must do so with only the thumb and index finger of the left hand. The old women watch this. Until the girdle is completely undone the husband must not enter into married relations with his bride. Graafland was told that often a month, or indeed, even a year, passed before it was accomplished.

Among the Tenggerese in Java, according to Kohlbrugge,² the newly-married couple do not accomplish coitus on the first night for the reason that the feast lasts till the next morning.

Again, a longer abstinence must, according to Maass,¹ be strictly observed by the Mentawai Islanders :

“ If a man marries, he has to hold in *xi oban*, a five-day *pūnān* (festival). Then he builds a boat and plants a *kladdi* garden. The period in which he has to achieve these things lasts for 22 days; only after this can he have coitus in his newly-married state.”

Among the Swahili in East Africa the bridegroom must not consummate the marriage on the first day. After gently destroying the hymen and expanding the vulva of his wife, he devotes himself to a woman slave for the purpose of coitus (see Zache).

Among the Bahutu and Batwa (Marangara Province, Ruanda, East Africa) there is, states Schumacher, a very extensive system of ceremonies which has to be fulfilled before it comes to a question of the actual union of the couple. After the marriage there begins a powerful resistance on the part of the wife which lasts for some time. This “ time of fear ” must precede the actual definite union, or the “ unveiling,” as it is called.

“ During the night the young wife goes veiled to the house of her husband which he has built in the domain of the parental dwelling. At the first light of dawn she must return to parents-in-law. The whole night through the husband and wife struggle fiercely, often even on the three or four following nights. The wife slashes and scratches the husband; the partition walls are torn down, even the house pillars, and everything is done without speaking a word. The parents, of course, hear the noise, but they say nothing, for it is the custom. After a month (with poor people about ten days) the wife definitely moves into the husband's house. That gives the opportunity for the ‘ unveiling.’ This ceremony is accompanied by a general carousal and the ‘ time of fear ’ concludes in the natural way.”

Another bridal night abstinence may be mentioned which plays a part in the Ragnar-Lodbrok saga, but which was, of course, not observed. King Ragnar-Lodbrok took to wife the Kraka, as she is really called, Aslang, Sigurd's and Brynhild's daughter. On the wedding night she tried to ward off his embrace and when he asked how long it was to continue, she said :

“ Three times after the wedding
Shall night find us chaste
Together in the hall,
Before we sacrifice to the gods.”

However, although she uttered this, Ragnar paid no attention to it, “ but did his will.” Kraka then gave birth to Ivar. “ But the boy was boneless and as though there was gristle where the bones should be ” (Edzardi).

11. THE CHRIST CHILD EMBRYO

In the religious thought of all mythologies, as is well known, social, as well as religious conceptions of the hoariest antiquity have been preserved. To these belong the Christian doctrine of the Immaculate Conception. Certainly at one time it was the common property of mankind—like the story of the stork with us. With it, of course, goes hand-in-hand the idea of the Christ child embryo. By the “ mythologising ” of Jesus of Nazareth one such old example has been kept alive among us. That the “ Virgin ” Mary had “ conceived,” that she was pregnant, and that she gave birth to Christ on Christmas night is taught by various passages in the Gospels, as everyone is aware. Many learned treatises have been written by the theologians on how all this happened, but that need not concern us here. Neither among the clerics nor the people could any doubt exist that Christ had really passed through embryonic life in the body of the “ Virgin,” and, consequently, He must have reached the uterus of the “ Mother of God ” in some form or other. It was only the ways and means, the how and when, that animated the dispute of the theologians. For our scientific consideration it is here only necessary to inquire how the artists of earlier centuries compromised with these difficult subjects. Their works of art had not only “ to construct the soul ” ; they had to serve at the same time as a kind of Scripture picture book for the illiterate and as what might be called a painted sermon.

In a few very early works of art it appears to have been sufficient for the old masters to represent the angel kneeling before the “ Virgin,” and bringing the news of the Saviour, as well as presenting the ovum of the child. Thus he delivered the Divine message without representing heaven.

This was without doubt by far the simplest conception of the scene, but it was not sufficiently comprehensible to the childish minds of the believers. What had to be presented before the eyes of the spectators was the part God Himself had taken in this miracle. Thus God appeared in the upper part of the work of art, usually as a half-length portrait looking out of an opening in heaven ; and now we are able to follow a whole scale of ideas ranging from the spiritual to a realistic conception almost grossly material in its content.

Below the hands of God, outspread in blessing, there fairly often appears the “ Holy Ghost ” as well, in the form of a hovering white dove. [The dove was sacred to Aphrodite and Astarte, and in the Cyprian worship of Adonis doves were burnt.

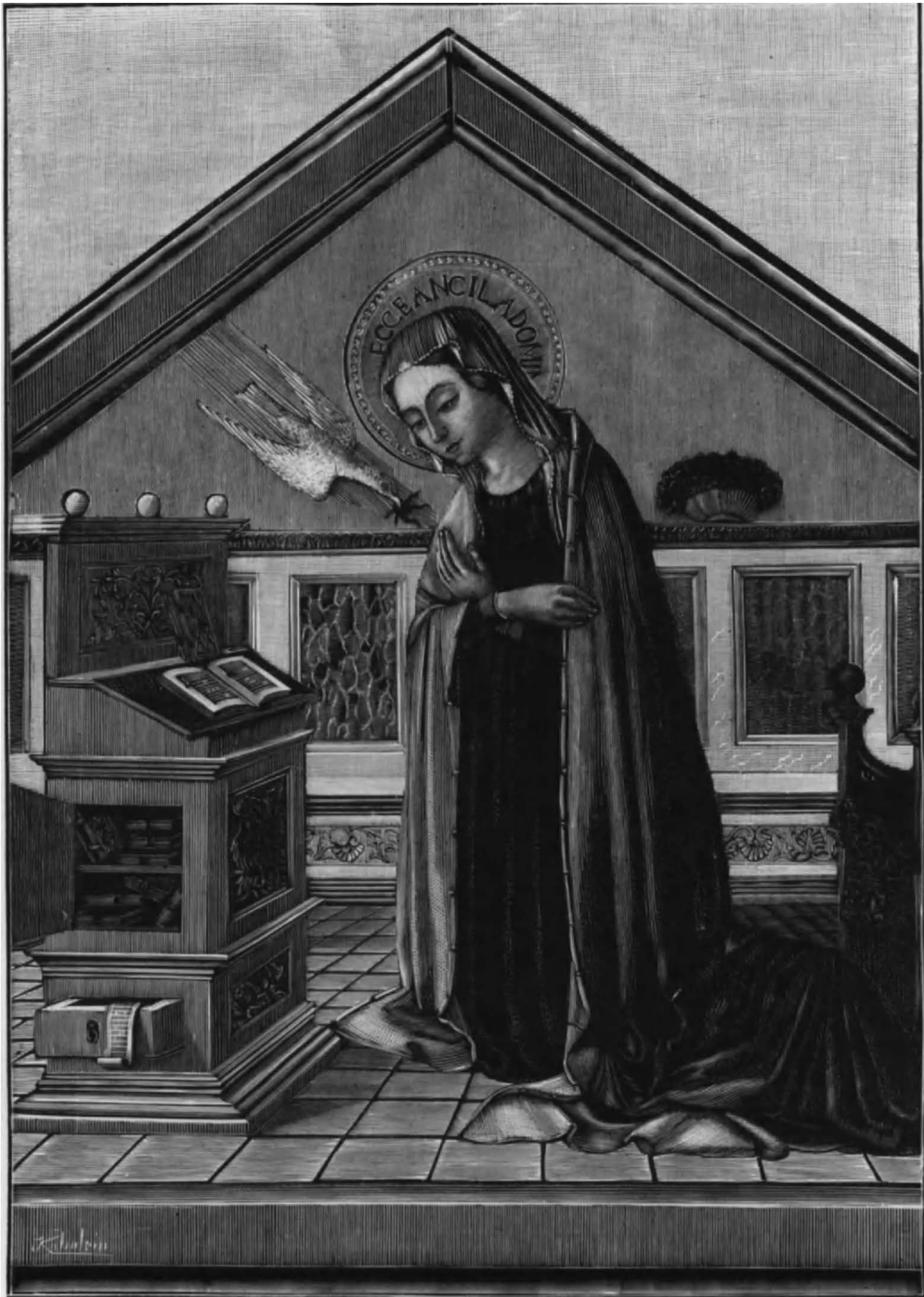


FIG. 540.—The Annunciation. Bonfigli. Fifteenth century. (Pinacoteca Vanucci, Perugia.)



FIG. 541.—The Annunciation. Oil painting of the Cologne School. c. 1400. (Utrecht.)

Frazer¹ suggests that the dove was a substitute or personification of the lover of the goddess.] Now, in order to present this mystery in visible form to the eyes of the onlookers, many artists add "golden rays" which descend from God to the kneeling Mary. In one or another of these works of art these rays take the form of golden drops, resembling the shower of gold in the form of which Zeus visited Danaë.

In a little painting of the fifteenth century by Bonfigli, which the Pinacoteca Vanucci in Perugia possesses, the Holy Ghost as a dove brings a remarkable object to Mary in its beak. (Fig. 540). This has the appearance of five worms, each curled into the shape of an S, which protrude symmetrically from the beak of the dove, two to the right, two to the left, and the middle one straight out, unmistakably towards the Virgin. It cannot be doubted that the artist intended to represent the transmission of the ovum.

We encounter the highest degree of reality in some works of art which have been preserved in various parts of Europe. Here the Christ is delivered to the Virgin Mary already as a little embryo. In a painting of the Cologne school by an unknown old master about the year 1400, and which is now in the Archiepiscopal Museum in Utrecht (Fig. 541), an angel is represented kneeling before Mary and holding a scroll. She is sitting before an open chest and is holding an open prayer book in her hands from which she looks up to regard the angel. From above there descends upon her a cluster of rays which terminate in her halo. Within the latter is the dove, the head of which is also encircled by a halo. It is flying with its beak downwards, which almost touches the top of Mary's head. Somewhat higher in the stream of rays one recognises the little embryonic Christ. Head forward, He glides down the rays to His mother; this affords Him the supernatural path exactly in the same way as in the songs of Homer we see Iris, the messenger of the gods, gliding down to earth on a rainbow. The Christ-embryo is quite naked. Thus we have the same idea as that concerning Tlaçolteotl, the Mexican goddess.

The Old Pinakothek in Munich possesses an Annunciation from the end of the fifteenth century which is ascribed to the anonymous old master of the Lyversberg Passion. In the upper part is God, surrounded by fourteen heads of angels, appearing with uplifted hands as if He Himself had been struck with the greatest astonishment at His own excellent miracle. Below, we see the Archangel Raphael and the Virgin Mary in whose halo hovers, with raised head, the dove of the Holy Ghost. Between God and the dove is traced, in the golden ground of the picture, a stream of rays, which is directed towards the Madonna. In them the naked Christ-embryo glides downwards with the head forward and the legs slightly bent at the knees and hips.

In the cloisters of Brixen Cathedral in the Eisack valley in South Tyrol, there is a fresco painting which probably dates from the fifteenth century. It likewise treats of our subject. Again we see the dove close to Mary's head. God looks out from an oval aureola. He extends both His hands out and discharges from them a small lengthening cloud which envelops the Christ-embryo. This cloud proves, it is said, on closer inspection, to be a cluster of angels. The little Christ again appears unclothed, with long outstretched legs, and the head, which has a halo around it, is directed downwards. The hands are raised as if in prayer. Between the head of Christ and the tail of the dove are to be seen a number of discontinuous rays.

A plastic representation in the pediment of one of the porches of the Marien-Kapelle in Würzburg is still more original. (*cf.* Fig. 542). The chapel was built between the years 1377-1479 and we must assume the production of this relief

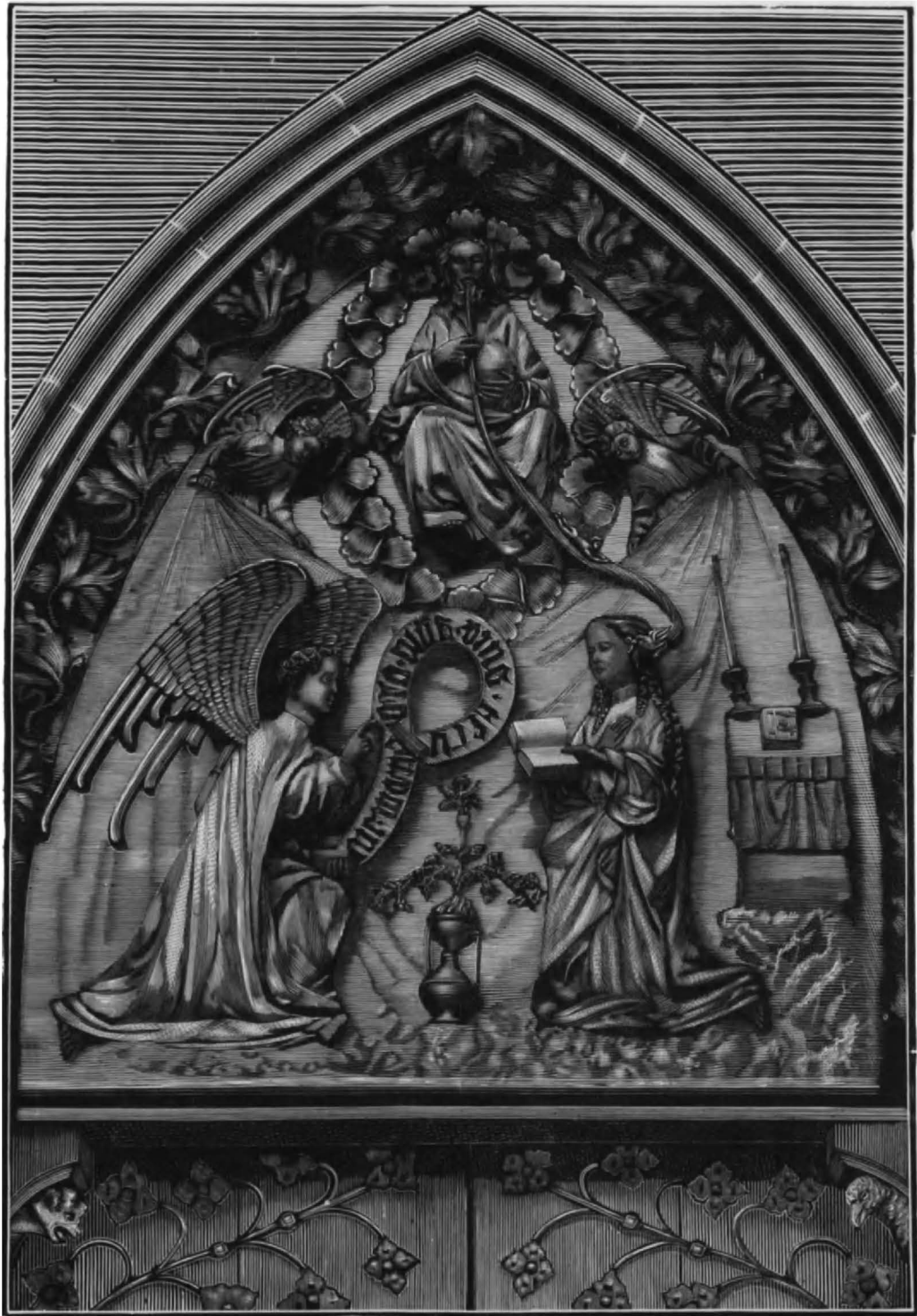


FIG. 542.—The Annunciation. Relief in the Marienkapelle in Würzburg. Fourteenth-fifteenth century.



FIG. 543.—Mary and Elizabeth. Oil painting of the Cologne School. c. 1400. (Utrecht.)

within this period. God sits upon His throne enclosed in the oval aureola. In the left hand, He holds the globe, whilst with the right He holds a tube to His mouth. This tube varies in diameter, and it flows in a sinuous line downwards to the back of the head of the Virgin Mary, who is kneeling below before the angelic messenger. The lower end of the tube, which touches the head of Mary, ends in the figure of a dove which inserts its beak into the ear of Mary.

It has been said that the representation was formerly more realistic ; the tube (or river) used to lead under the dress of Mary. It appears that some change was made in the cathedral porch, as can be seen from the following passage from Niedermeyer :—

On the river, the Logos, represented as a naked baby, comes swimming with the cross. The old master, judging from the words "*et spiritus supervenit super te,*" had a somewhat material conception of the representation ; perhaps he was thinking of Walter von der Vogelweide : "Through her ear received she then many sweet things." After all, the representation is by no means so grossly material as in those pictures where God speaks the logos into the ear of the Virgin, as in a carving on the organ breastwork at Hocheltern ; or where the embryo is *directed into the lap* of the Virgin Mary, as the representations in the Rödelsee Court and *at one time on the Cathedral porch (at Würzburg).*

In the chapter which deals with the pregnant woman in pictorial art we shall see that the artists also made the pregnancy of Mary, of which the Gospels speak, the subject of their representations. In general, they have been satisfied with indicating the enlargement of the lower part of the body, but some artists have gone considerably farther. There are, as is well known, mediæval statues of Madonnas which show the Jesus Child in the mother's body. At the appropriate part the drapery is replaced by a little glass window. A statue of this kind from the fifteenth century, which came from a church in Görlitz, is said to have been in the possession of Professor von Sallet.

A similar conception, however, is to be found in a picture painted by an old master of the Cologne school about the year 1400. It is now in the Archiepiscopal Museum in Utrecht (Fig. 543). Here, too, we find the Christ-embryo represented in the pregnant body of the Madonna, although the latter is fully clothed. The subject of the picture is the so-called visitation, the meeting of Mary and Elizabeth, and just as one sees the little Christ in the former, so also is the embryonic John in the body of his mother. In both women the embryo appears at the place within robes where there has been made an opening in the form of an oval aureola.

We see the little Christ-embryo sitting in his mother's body with his face turned towards Elizabeth.

CHAPTER VI

LOVE AND COURTSHIP

1. LOVE

It is for the most part an undecided question at what stage of civilisation that which we understand by the concept of love for the other sex makes its appearance, or whether, indeed, it is wholly lacking at the lowest stages of cultural development.

This concept has suffered the most incredible misuse. We should accustom ourselves to the fact that "love" always has a more or less "sexual," perhaps even "erotic" suggestion, and that it is always a result of chemical, or rather endocrinic, processes. On the other hand is the powerful sphere of mental harmony, that feeling of mutual attraction by reason of community of ideas, which, in one sense at least, is a psychological process. In this sphere, too, there is great linguistic absurdity, especially with regard to the combination of the concepts "love and marriage," which have really little to do with each other. Love is, as we have said, an endocrinic process; marriage is a sociological product, and if it is founded on love and friendship, then, of course, so much the better. These are, however, not essential to marriage. Marriage is an *economic* creation; the chemical processes leading to erotic sensibility are not absolutely necessary to it, but an *economic* basis is essential. It is of value, naturally, if the former are present in marriage. But since the chemical changes are not a permanent condition, but a condition predisposing to an ecstasy, which ceases when the stimulus which one party to the marriage exerts upon the other is lacking, love is also not the binding material for marriage. In general, it may be said that the results of chemical stimuli may be sufficient for a "love affair," but not for a marriage; the desire of our youth to marry for love alone is a lamentable error which is dying out, especially in Germany. France goes decidedly further; it is expected and, for the most part rightly, that the young couple shall "learn" to love each other, and this can be made easier by increasing the stimulus. If a marriage is to be a lasting one, the love passion must, as soon as possible, be accompanied and, finally, be replaced by *friendship* between the husband and wife. For this a mutual desire to meet each other half-way and to get used to each other is necessary, but, above all, no giving themselves. It is false to conclude: "This marriage is a lasting one; that is to say, the husband and wife will 'love' each other for ever!"

Absolutely false, too, is the idea that there is a lasting erotic *impulse* which supports the theory of monogamy. This error is even passed on by Vierkandt in the *Handwörterbuch der Sexualwissenschaft*. It is nothing but an attempt from the religio-philosophical point of view to support afresh the assumption of the "original monogamy" of the Christian Church of Father W. Schmidt, Wundt and Westermarck, and with very weak material; for, when one simply assumes an "instinctive impulse" as an axiom in order to save a concept, everything can naturally be proved for those who believe in it. We shall return to this later.

All these stages occur also among animals ; the animal also knows *love* (chemical stimuli), *friendship* (staying together because of community of interests) and *marriage* (social union). The same basic principles hold good here. It is quite false to speak of *love* for *things*, parental love and love of children, Platonic love, and love of friends, if we do not wish to think of a homo-erotic relationship. To this, too, we shall return. The dispute as to whether there is a "love or not "



FIG. 544.—*Hula-Hula* dancers from Hawaii. (Flashlight photograph by C. Günther, Berlin.)

among primitive peoples is thus quite purposeless. One could at best propound this question individually, but not ethnically. *Love*, in our sense, there must be ; heterosexual friendship certainly also ; but as an individual matter it is obvious that, with the progress towards civilisation, the points of contact are ever increasing. Hence it comes about that, among primitive peoples, one sees fewer cases of a so-called "higher love " than among civilised nations. We must not commit the old linguistic offence of trying to press everything into the same bureaucratic

category "love," which does not belong there. In the following pages, therefore, we shall understand by *love* only the erotic stimuli exercised by chemical processes, the "higher" feelings we shall designate as *heterosexual friendship*.

Among many uncivilised peoples the dance is an important means for arousing "love" in the opposite sex. The two sexes seldom dance together, but the men's dance mostly takes place before the circle of women, and when they have finished, then the women begin to dance and the men form the audience. The eyes follow the movements and forms of the other sex attentively; and it is plain that the dances very often express erotic motives. On the part of the women, turnings and twistings of the middle part of the body are quite customary. These movements are also to be found among female dancers in the South Seas as well as among African tribes. These swinging movements of the pelvis make a peculiar impression. Fig. 544 gives an idea of it. The photograph, taken by flashlight, shows three women dancers in Hawaii. By the fall of the folds of the clothes and the position of the hips, the rotation of the pelvis can be realised. They are dancing the *hula-hula* dance described in Vol. II., p. 123.

A lack of the concept "love," and especially of "heterosexual friendship," might also be mistakenly deduced from the fact that the uncivilised human being regards it as improper and an offence against his dignity to let his feelings and sensations be perceived or even guessed by others.

The Arawak in Guiana, according to Peschel, considers it intolerable to his manly dignity to appear sentimental towards his wife. When he thinks himself unnoticed, however, he shows himself very tender towards her.

It has often happened that a girl among the American Indians has hanged herself in consequence of an unhappy love affair, and authors, as, for example, John Tanner (p. 113) narrate cases of suicide even among Indian men for the same reason. Suicide, often caused by a slight marital discord, is more frequent with Indian women than with their husbands, and they, according to Keating (II., 168), often kill themselves from jealousy on account of a rumoured rival.

Of the Harari in North-East Africa, Paulitschke says:—

"The fondness of both sexes for each other is, in youth, both intense and noble; and in quite a number of love songs the feeling of the heart is often expressed in the most extravagant manner." Among the Galla and some Bantu-speaking peoples, it happened that women who were bought and did not like the husbands forced upon them, took their lives rather than conclude a degrading marriage alliance.

A high degree of heterosexual friendship and tender courtship is to be met with too among the unmarried inhabitants of the South Sea Islands.

Thus Moncelon reports, too, of the New Caledonians:

"There is a union without love just as there is elsewhere; but love exists, and I have seen suicides from love. The kiss is known; was this the case in earlier times? Nowadays it is appreciated among the young people who are eager for the most sensual one of all: that on the lip."

Moreover, where songs are sung like the one immediately following, one can have no doubt of the existence of tender sentiments. This song was likewise found by Parkinson among the Gilbert Islanders. He gives us the following version:

" People have heard about it :
 It is all over E'tnei
 And has caused much uproar in Arorai.
 Should I deny it ?
 It is breaking my heart.
 The oil he uses smells so sweet :
 He is so handsome and good !
 I love him so much,
 And he seemed to love me.
 Now he is standing under that tree,
 I will call him. Ngo, Ngo, Ngo.
 I must go where I can find peace.
 To the North over the deep water.
 Ngo, Ngo, Ngo !
 Now I see him standing on the shore ;
 He is taking his canoe and sailing away,
 Between Tarawa and Apalang.
 There he drops anchor : he has found her again.
 Oh ! there comes the bird to Kabane,
 Oh ! Kabane, Oh ! Kabane ! Oh ! Kabane ! "

Thus Ploss and Bartels, divining the connection, say very rightly : " One must probably admit many gradations of that which we are accustomed to designate as *love* ; but, presumably, there is no single people in which love is absolutely lacking, although its existence as we know it is hardly perceptible." They did not, however, distinguish clearly between the two different ideas.

2. THE LOVE SPELL

Once love has been awakened and has not met with the desired response then from time immemorial, supernatural means have been sought to gain it. If the response has been attained, then very often comes an anxious fear of again losing it and renewed magical processes must be used in order to help to preserve it.

Belief in such means is widespread among many peoples, and the particular means adopted vary according to the customs and ideas of each nation, and, as in so many forms of popular superstition, so in this sphere may be recognised many suggestions of ancient mythological ideas.

In the employment of the love spell, we must differentiate between various steps and methods. Sometimes, the method is purely " sympathetic," and practised from a distance on the person whose name is spoken by the spellbinder, or there are special mystic objects with which the person to be enchanted must be brought into direct contact ; or finally, the materials of the spell must be eaten by the person to be influenced, naturally without his knowledge. It must also really penetrate into his body. The idea of *Mana* plays here a part of some considerable importance.

To this idea must also be attached the *love oracle*, by which it is hoped to find out by whom one is to be loved. Further, it has to be discovered how to keep the love already won, how to regain a lost love, and finally, how to obtain freedom from the bonds of an irksome love.

We are able to obtain evidence of such magical processes from the earliest times. Thus, there was in ancient India a love spell by means of which the girl sought to influence the heart of the man she loved passionately. An example is to be found

in an incantation for the capture of a man and the ejection of a fortunate rival (Atharvaveda, "Charms," III., 18).

(1) This plant is born of honey, with honey do we dig for thee. Of honey thou art begotten, do thou make us full of honey !

(2) At the tip of my tongue may I have honey, at my tongue's root the sweetness of honey ! In my power alone shalt thou then be, thou shalt come up to my wish !

(3) Sweet as honey is my entrance, sweet as honey my departure. With my voice do I speak sweet as honey, may I become like honey !

(4) I am sweeter than honey, fuller of sweetness than licorice. Mayest thou, without fail, long for me alone (as a bee) for a branch full of honey !

(5) I have surrounded thee with a clinging sugar-cane, to remove aversion, so that thou shalt not be averse to me !

A whole series of formulæ of this kind for the kindling (*çuc*) of love in the heart of a man has been preserved for us in the Atharvaveda ("Charms," I., 34).

The following example in the translation by Bloomfield may find a place here :

(1) I dig up this plant, of herbs the most potent, by whose power rival women are overcome, and husbands are obtained.

(2) O thou (plant) with erect leaves, lovely, do thou, urged on by the gods, full of might, drive away my rival, make my husband mine alone !

(3) He did not, forsooth, call thy name, and thou shalt not delight in this husband ! To the very farthest distance do we drive our rival.

(4) Superior am I, O superior (plant), superior, truly, to superior (women). Now shall my rival be inferior to those that are inferior !

(5) I am overpowering, and thou (O plant) are completely overpowering. Having both grown full of power, let us overpower my rival !

(6) About thee (my husband) I have placed the overpowering (plant), upon thee placed the very overpowering one. May thy mind run after me as a calf after a cow, as water along its course !

The last verses suggest that, while this incantation is being repeated, some mystic manipulation of sugar cane stems is being carried out.

Schmidt⁹ gives a spell from the old Hindu erotic poets.

We find first of all the "spell of the ruling god of love," *Kameśvaramantra*. If one converses with a blossom of the *Butea frondosa* a thousand times and makes sacrifice a tenth part as often, then the spell of the ruling god of love is accomplished. He who, hot as the flame of a lamp, and with gushing shaft penetrates the vulva, then goes towards the lotus head and reaches the water-lily of love dripping with nectar.

If one thinks of this, he brings the beloved maid at once to the orgasm and makes her tractable. First comes *Kāma*, then the name of the woman to be gained is added in the accusative, then the words "Lead on, make pliable," finally, the sound *kraum*, and afterwards the sound *om*. Thinking of the mystic power, Kundalini, on the breast, brow and habitation of the love-god attracts a woman even of radiant beauty, makes her tractable and brings her to the highest pitch of excitement. When the man has murmured that 700,000 times, he becomes, in relation to his love, the god of love incarnate, in skill of speech, he becomes *Vôcaspati*, the ruler of speech and invulnerable to poison like Garuda, the sworn enemy of snakes.

Adolf Erman obtained a love spell of the ancient Egyptians from the great Parisian magical papyrus. One of the formulæ runs thus :

"My . . . to lay on the navel of the body of so and so to bring it (?) the . . . of so and so, and that she gives what is in her hand into my hand, what is in her mouth into my mouth, what is in her body into my body, what is in her female limbs, at once, at once, instantly, instantly."

The ancient Romans brewed love potions, to which were ascribed the power of making men and women who were earlier indifferent fall in love with one another ; or by which one hoped to inspire the object of one's worship with responsible love. Lucullus is said to have lost his reason, and finally his life, by such a potion. The poet Lucretius took his own life in the frenzy of love which is said to have been produced in him by a philtre, as a love potion is often called. Apuleius is said to have won the heart of the rich Pudentilla by means of a philtre which was brewed from asparagus, crayfish tails, fish-spawn, pigeons' blood, and the tongues of the fabulous bird Jyop (*Apolog.*).

Pliny (VIII., 42) relates wonders worked by the influence of the Hippomanes, a black skin, the size of a dried fig, which is said to grow on the brow of new-born foals and is burnt to powder, and to be used for the purpose of love enchantments.

The love spell was not unknown even to our Germanic forefathers. In the Scandinavian North, as Weinhold reveals, people sought to employ the mystic influence of the runes for arousing love. Besides several Norse sagas, which show examples of this power of the runes, we learn of similar means of begetting love in the songs of Siegfried. In Odin's rune-song (Rumatal) in the Edda * it runs :

“ A sixteenth know I, a fair maiden will I
In love and lust enjoy ;
The will of the white-armed maid will I change
That her whole mind is turned to mine.
A seventeenth know I, after which scarcely
Can the sweet maid avoid me.
These songs mayest thou Lodfavnir,
Long remain unknowing.”

In the Icelandic Egils saga which Asmundarson has recorded, there is mention of these magic runes. The son of a peasant in Norway aspired to the love of a maiden, and as she would not listen to him, he cut her runes in order to infatuate her ; but he did not understand it properly, and hence by this spell she fell into a long illness. Egil, who visited her father's farm, saw her lying miserably in bed, and her father told him in reply to his sympathetic question : “ She has had a long time of weakness and it was a severe illness. She got no sleep at night and she was quite beside herself as if her skin had been stolen.” Egil had the sick girl raised from her bed and examined her. There he found a fish bone on which the magic runes were scratched. He read them, cut them up, and grated them down into the fire. Then he burnt the whole fish bone and had the bed clothes taken out into the wind and the sick girl put into a clean bed. As this was being done, Egil recited the following verses :

“ Mankind shall scratch no runes,
Unless he knows how them to govern,
To many a man it happens
That in the dark, he muddles them.
I saw upon a fish bone chip
Ten mystic letters scratched :
These have caused Dame Lauchlinde
Long and deep affliction.”

Then when Egil, on his return journey, called upon the peasant again, he found the girl on her feet and recovered from her ills. This story dates from the year 951.

* [See *Edda*, p. 60.]

A brew blessed by a wealth of incantations, songs and runes was considered particularly powerful. Brother Berthold speaks of these superstitions :

“ Faugh, thou thinkest that thou could’st take a man’s heart from his body and put straw in its place ! ” Another time he cries : “ Many a woman goes about with wicked witchery imagining that she can charm a peasant’s son or a farm servant with it. Faugh, thou proper fool ! Why dost thou not charm a count or a king ; then thou would’st be a queen to be sure ! ” But not only by admonitions in sermons but with much more powerful means, the Church attacked such superstitions, and Weinhold cites the following : “ As the persecution of witches flourished, not infrequently a woman was brought to the stake for casting supposed love-spells, and many a girl’s attractiveness cost her her life.”

Popular superstition in Europe is, even to-day, enormously rich in ways for wooing love, methods which may descend from ancient times. First of all, certain magic incantations may be mentioned here. There is one of these used in Oberpfalz with which the girl turns her prayer to the helpful stars as soon as the lover becomes lukewarm, but the incantation is successful only in a waning moon :

“ God thee greet, dear star of eve !
Whom now and ever I love to view ;
May the moon shine in the nook
Where my dear love now lies in bed ;
Give him no rest, leave him no peace
Until to me he needs must come ! ”

The working of a love charm is represented in a painting of the Flanders School from the fifteenth century. It is to be found in the Leipzig Museum and is explained by Lücke ; an excellent copy of it is given in Fig. 545. In the middle of a room, provided with a fireplace and sumptuously furnished, stands an almost naked girl with a very thin veil covering the lower part of her body. Near her, on a stool, is a chest with open lid ; in this one sees a heart, probably in wax. In the right hand the girl holds a flint and tinder, in the raised left hand a steel with which she strikes sparks from the flint ; these shower down upon the heart, while from the tinder, too, sparks fall upon it. Through an open door in the background, a young man is entering the room.

There can be no doubt about the significance of this scene. Obviously, the action of a love spell is represented here in a form which was very common in the Middle Ages. It consisted in baptising with the name of the person for whom it was intended, an image in wax or some other material (in the form of a complete human figure or of a heart) and then in making it red hot or melt. By this operation, it was considered that the one whose name the image bore was magically linked to it with his being ; he was supposed to be on fire with love, whilst he suffered just as the image did. Jacob Grimm quotes the following passage from the poem of a wandering scholar :

“ With some wondrous objects
I did yesterday create
Of wax a real kobold
Wills she that he love her
She’ll baptise him in the brook
And lay him in the sun.”

As a rule, the magic image, instead of being laid in the sun, was put by the fire “ to grow warm.”

Among the North American Indians, also, an image of the loved one plays an important part. According to Keating (II., 159), the Chippeway girls make such an

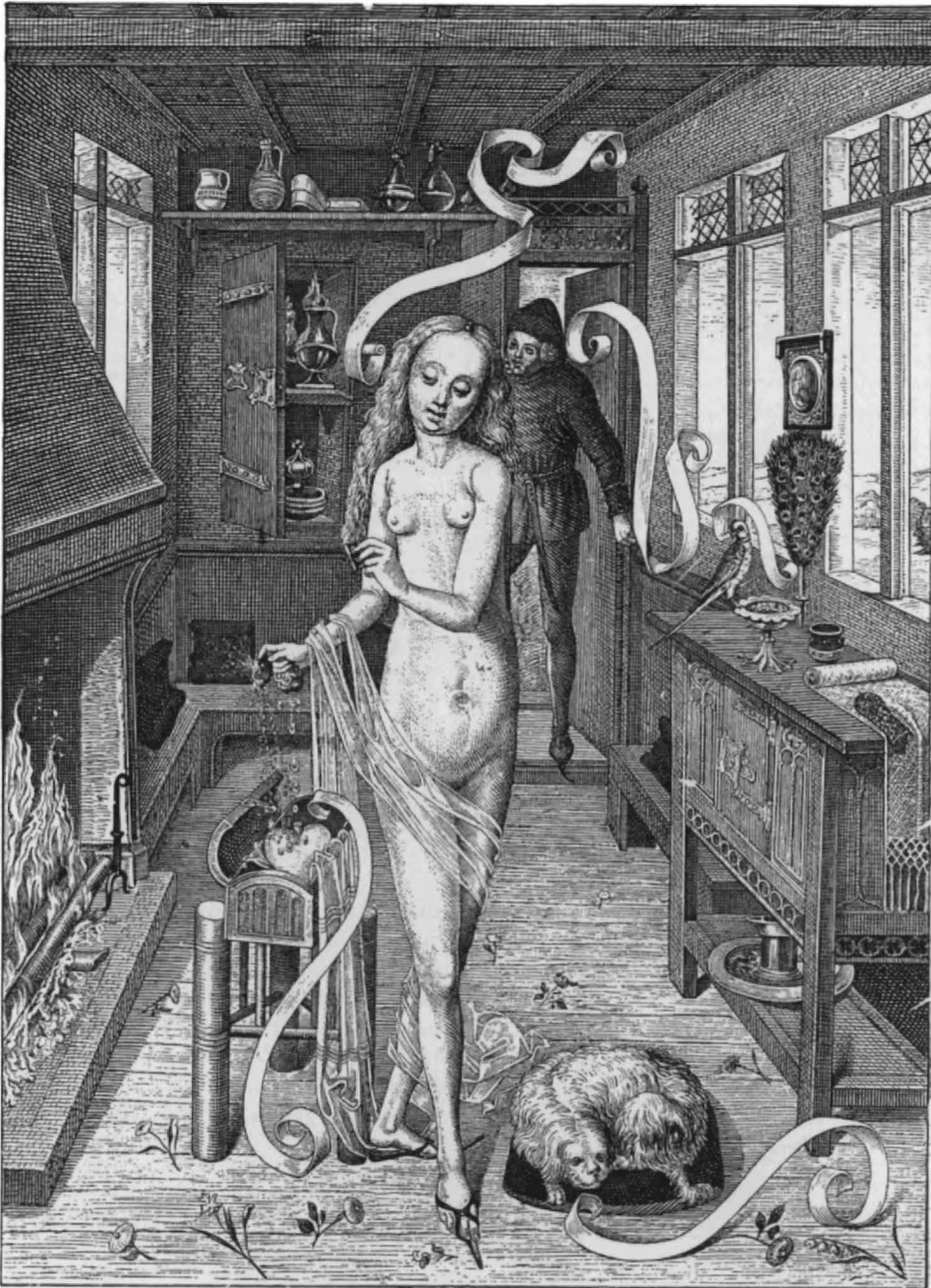


FIG. 545.—The love charm. (From an anonymous Flemish picture of the fifteenth century.)
(After Lücke.)

image of the desired man and sprinkle it with a certain powder in the neighbourhood of the heart. It is worthy of note here that, with these people also, the seat of love is located in the region of the heart.

A similar custom exists among the gipsies of Transylvania, according to v. Wlislöcki.⁶

If a maiden wishes to compel a certain boy to love her, she forms a human image out of paste with which she further mixes, if possible, hair, spittle, blood, nails, etc., of the beloved man. Then she puts his name on the image. The figure is then buried in the ground at the cross roads when the moon is waning, and the girl urinates on the place and says these words : " Peter, Peter, I love thee ! When thy image is rotten, thou shalt run after me, my dearest, as the dog goes after the bitch ! "

The belief that a charm of this kind, which compels the enchanted to betake themselves with all haste to the place where the spell is prepared, can really be effective, has a very natural reason, as is shown by the following case described by K. Fuchs, which is particularly interesting on account of the attempted explanation. He writes :

" In a Roumanian village in Hungary, lived about 50 years ago my honoured friend Professor Karl Weiss-Schrattenthal with his wife. Their Roumanian servant girl loved a Roumanian boy from the neighbouring village, but she was not noticed by the lad as he was attached to another girl. An old Roumanian woman promised the girl she would turn him towards her : she was to sit by the hearth on the evening of a certain night (I believe on New Year's night), and do nothing but think intensely of the lad ; he would then come to her. The girl did so. Towards midnight, somebody rattled at the door with terrible violence and demanded passionately to be let in. The door was opened ; the lad, who was insufficiently clothed, rushed into the kitchen to the girl and fell dead at her feet. It was ascertained later that the boy had covered the considerable distance from the neighbouring village to the farm in an incredibly short time, but what the old woman had done with him beforehand could not be discovered."

K. Fuchs describes this case, which is vouched for as having really happened, and refers to the description of similar love-charms among the Roumanians in Bukowina which Kaindl has given. The latter states that :

" If a girl wants to have a lad for her own for ever, or a lad a girl, then the following method is employed : first one procures three tokens from the person desired, viz., a piece of her chemise, for the sake of the perspiration in it, a few hairs from the top of her head and a piece of loam from the ground on which she has trodden. When one has these ' tokens,' then one takes also the plant ' Prychot,' which is very common in the pine woods, adds to it a certain magic fluid and puts the whole into a pot on the hearth, where one must be careful that the pot does not come near the coal because, otherwise, everything will then be spoilt. As soon as a woman touches this mixture, the person in question is brought through the air. Then she cries : ' Water, water ! ' . . . Now, as soon as the witch sees the flying man, she sends another woman quickly to the threshold of the house, who holds a knife with a deer-horn case in her hand and pushes it slowly into the ground. When the knife is in the ground up to the handle, the flying man stops standing at the threshold of the house and now belongs to the person who wishes for him."

K. Fuchs now tries to explain these cases as if it were a matter of hypnosis and poisoning by the fly-fungus (*Agaricus muscarius*), one characteristic of which is that the poisoned person falls into a state like intoxication, and hence may have the sensation of flying through the air.

These and other similar magic agencies are designated as *brewing magic*; also *seething magic*. If a piece of the clothes worn or some hair is boiled in a new vessel then love comes over the unloving person suddenly, and with such force that he or she is constrained to run to the place where the love charm is being boiled, and, indeed, all the quicker the faster the water in the pot boils ; and if the person cannot so run then he (or she) must rush to death : no obstacle in the way is so strong that it

cannot be overcome. Cases have been reported in which the persons who had fallen in love firmly believed themselves to be under the spell of some such magic.

Magic of this kind, however, is not limited only to European peoples. A statement of Riedel⁵ proves this :

“ Sympathetic means of arousing the illusion of love are often employed under the designation of *goleu laha* by the Galelareese and Tobelorese living on Djailolo and Halmahera (Dutch East Indies). The original method used by the Galelareese is enchantment by means of flowers. For this purpose, four *urunuru* and four *gabi* flowers are plucked three days after the new moon : they are placed in a white pot with water, put in the open air and the following incantation said over them, when the stars appear :

“ ‘ Dame Sun, thou bright shining lady, I shine like the sun which rises ; I shine like the sun which rises ; I shine like the moon which appears ; I shine like the stars in the heavens ; I shine like the fire which flames ; I shine like the sunflowers as they open, may X love me and think of me by day and night.’

“ After these words, face and body must be washed with the water in which the flowers lay.”

On the Aru and Tenimber Islands (Dutch East Indies) many men employ sympathetic magic methods to make a woman fall in love with them (*cf.* Riedel⁶). The like happens on the Ceram Laut and Gorong Islands. Here, when a woman or man wants to make somebody fall in love, then she (or he) goes *naked* into the water, sits down on the ground, holds up her hands on high and says :

“ In the name of the God of mercy, light of the firefly Mantara, look upon me, full moon, look upon me, sun, look upon me, the blessing from where there is no God as God, the blessing of Mohammed, God’s ambassador ; so and so look upon me who shines like the moon, look upon me full moon, look upon me star, look upon me sun, look upon me prophet Mohammed, the ambassador of God.”

Then one blows twice over both hands and makes one’s head wet with water three times.

The Arab woman in Sfax (Tunis) observes somewhat ceremonious prescriptions, as Narbeshuber² describes : The wife who wishes to turn towards her the love of another man, has first to procure from women neighbours (in whose houses she must never have eaten), the following nine things : coriander, wild caraway, mastic, chalk, caraway, verdigris, balsam, the blood of slaughtered animals, and, finally, a bit of an old broom which she has found in a churchyard. Now, at dead of night when everything is asleep, she undresses completely, goes out to a forsaken lonely place, lights a charcoal fire in a brazier which she has brought with her, and says, as she throws the things named, one after another into the fire, the following incantation :

“ Coriander : bring him here mad !
 Wild caraway : bring him to me insane, raving without a path !
 Mastic : arouse in his heart longing and sorrow !
 White chalk : prepare in his heart a restless night !
 Caraway : bring him here distracted !
 Verdigris : kindle fire in his heart !
 Balsam : prepare a horrible night for him !
 Blood of slaughtered animals : bring him here bawling !
 Churchyard broom : bring him to my side !

Then she continues in a different tone :

“ If he sits at peace, burn him !
 If he should forget, remind him !
 If he sits on the mat, chase him away !
 If he rests on the straw mat, roll him off it !
 If a maiden stands before him, turn her into a negress slave !
 If a man stands before him, turn him into a saucepan !
 If a woman stands before him, turn her into dirt !
 If a little girl stands before him, turn her into a spider ! ”

The second kind of love spell, in which the beloved being must be touched by certain peculiar things, is extraordinarily varied.

In Spreewald which, as is well known, has a Wendish population, they say, in certain parts, that, in order to win a maiden's love, the young man shall put a living frog into an ant heap and shall go away so far that he sees nothing and hears nothing ; then, after a few hours, he must come back and take a " hand " of the frog. He must then give a hand to the girl and, in doing so, press the frog's hand in her hand.

Elsewhere in Germany, too, the frog is an important agent of the love spell. In Swabia, Bohemia, Hesse and Oldenburg, the lad puts a tree-frog into a new pot, and before sunrise on St. George's day, fixes it into an ant heap ; then, if the frog is devoured by the ants, the young man takes out the bones on the following St. George's day (*i.e.*, after the lapse of a year !) and attracts the maiden to him with one of them (the thigh bone). In East Prussia, according to Töppen, one passes a needle through two mating frogs and, with this needle, one then fastens one's own garments to those of the loved one for a moment. In Oberpfalz, the lad must make a scratch which draws blood on the girl's hand with the feet of a tree-frog caught on St. Luke's day.

With the frog are associated the bat, the owl and the cock, and all the animals which have been destined to play an important part in mythology and in the black art from time immemorial. In East Prussia the girl secretly touches her beloved with a bat's claw ; she must, at the same time, murmur an incantation. Thus in Samland it runs : " Shoot an owl and cook it at midnight. Then take from its head two little bones which are shaped like hoe and shovel. Bury the rest of the owl secretly under the eaves. Now, if you wish to win a maiden, you must touch her secretly with the hoe and then she is firmly fastened." In Swabia, if a man pull out the tail feathers of a cock and secretly presses them into the hand of the desired maiden, then he has won her love. In Bohemia a man need only stroke the girl's neck with three feathers from the cock's tail in order to win her love.

Many plants, too, are peculiarly esteemed. In Franconia the girl wears lovage root, and in Spessart she wears lovage blooms in a bunch of rosemary in order to bind her beloved to her. It is said in Posen that the lad can never get free from a pure virgin if she sews a sprig of rosemary into his under waistcoat. And in Modern Greece, as in East Prussia and in the Oberpfalz, secretly slipping a four-leaf clover into the shoe is especially good for making a lover faithful ; elsewhere (in Bohemia, for example) a rose hip is put in the loved one's bed. Among the South Slavs, according to Krauss,¹ " the girl digs out the piece of earth on which her beloved has trod, puts the earth in a flower pot and plants in it the pot marigold (*Calendula officinalis*). That is the flower which does not fade ! Just as the yellow flower waxes and blooms and does not fade, so also shall the love of the man for the maid wax, bloom and never fade away."

In the Middle Ages nutmeg and cloves were much esteemed in Germany. An old incantation which, since 1534, has frequently appeared in print and is entitled the " Fount of Youth " or " Key to the Heart " (perhaps a roundelay) runs as follows, according to J. Sahr :

" In the garden of my love
There grow two little trees,
The one it bears sweet spices
The other cloves doth bear ;
Nutmegs they are sweetness
The little cloves are sharp,
These do I give my lover,
That he may not forget."

In Italy there is an infallible method for the girl to make the youth fond of her : she must " throw the powder " on him. " This comes from the lizard, a little animal otherwise generally respected in Calabria, for it carries water to hell to extinguish the fire ; however, in this case, there is no help for it ; love respects no law. So the girl takes the lizard, drowns it in wine, dries it in the sun and grinds it to powder. Of this powder, she takes a pinch and sprinkles it on the

man she loves. This is considered an infallible method of compelling love and from it comes the phrase : ' She has thrown powder on me,' *i.e.*, made me in love with her " (see Kaden).

Rather less pleasant is the method, much esteemed in the Province of Bari, for binding the loved one so firmly that he can never again separate from the girl. According to Karusio, the love-sick girl has to steal from a cemetery the bones of a corpse, which must then be baked into a loaf of bread without the baker's knowledge. The bread must then be pulverised and put under an altar stone so that the mass is read over it. With this powder, the beloved has to be sprinkled without his being aware of it.

Sympathetic magic methods are used in Huru to make men and women madly in love. For this *sirih-pinang*, or tobacco, is used. This, after an incantation has been said over it is then put in the *sirih* box. If the chosen man uses it, then he must love the enchantress with a lasting love. A still more powerful effect is produced if a piece of prepared ginger (*Zingiber officinalis*) is buried in the ground with incantations. If the chosen man walks over this spot, then the spell acts (see Riedel ¹).

In Central Sumatra also, as van Häselt relates, they have all kinds of magical methods for arousing love. Special fame is enjoyed by the sperm of the elephant which has been frightened by a human being just when he was in the act of springing upon his mate. It has then to be put on the body or clothes of the person whose love one hopes to win.

Among the Sulka in New Britain, where the girl, not the young man, is the party who makes the marriage proposal, there are various methods employed by the young men to make the girls they love propose, as Parkinson ² reports. It is essential in preparing the love spell, which usually takes place in the evening before a dance, that the girl's name be uttered ; the young man sprinkles his breast and back with some of this magic potion which consists of a decoction of plants, and then on the day of the dance he tries to touch the girl with his back, or he prepares a cigar from enchanted tobacco and get a relation of the girl to blow the smoke from this into her face.

On St. George's day, according to v. Wlislöcki, the Transylvanian tent gipsies bake bread flavoured with herbs which they divide among friends and foes. Mystic influences are also ascribed to this bread, and its power is said to be undoubtedly effective in love affairs. Many a maid, by means of this cake, robs the young man of heart and reason, and it is then that he sings in happy remembrance :

" 'Tis sure no woman bakes such bread
As my dear love offers me
In the forest at the feast
There upon St. George's day,
Kneads in flowers from the mead
In the dough and some fresh dew,
In it bakes the dearest love—
Her slave who doth devour it."

Especially good and successful is this bread if one succeeds in procuring secretly either something from the body of the beloved person, or if one can introduce something from one's own body. These latter are not by any means always very appetising. What one tries specially to get from the desired man is a few hairs.

Success will come if one can get three hairs from the head of the desired girl and can fix them in the cleft of a tree so that they grow with the tree ; or if the lad can cut three hairs at the nape of the girl's neck while she sleeps and carry them in the waist pocket, then he is assuredly the lover.

Similar love spells with hairs are known among the gipsies of Transylvania. About these v. Wlislöcki says :

" The girl steals a few hairs from the head of the fellow concerned, cooks them with quince-pips and a few drops of her blood, which she obtains from her left little finger, and makes a mess

which she chews, and then, looking at the full moon, she recites three times the following incantation :

“ ‘ I chew thy hair,
I chew my blood,
From hair and blood
Come love
Come new life
For us.’

“ Then she smears a piece of her beloved’s clothing with this concoction so that he may find peace nowhere but with her.

“ Among the derivations of the body itself which must be introduced into the other person in order to arouse responsive love the perspiration plays a prominent part. It is a well-known fact that the smell of the sweat is not always the same, and particularly in sexual excitement it alters in character ; further, it is not to be denied that the sense of smell has a sympathetic relationship with the sexual sensations, and it is, therefore, not to be wondered at that, in popular belief, the sweat and scent of the body itself has the power to influence the psyche of a fellow creature, especially of the opposite sex.”

Many examples have been brought forward to prove that close contact with the perspiration of a human being may be the first cause of a passionate love. Henry III. was suddenly stirred by violent love for Princess Mary of Cleves which lasted till his death, when on the day of her marriage to the Prince of Condé (August 18th, 1579) he happened to wipe his face with a linen handkerchief which the Princess, when heated by dancing, had shortly before taken from her perspiring body and put away in the next room. Henry IV., too, might never have felt a fiery passion for the beautiful Gabrielle d’Estrées if he had not at a ball wiped his brow with a handkerchief immediately after she had herself made use of it.

Thus in Samland the girl, when she encounters the young man she is trying to capture, as he is washing his hands, hands him her handkerchief or even her apron to dry himself. In Hesse a girl will pilfer a shoe or boot from the beloved, wear it herself for about a week and then give it back to him again.

Again, if one takes a flower to the evening meal and wipes one’s mouth with it after drinking wine, then the flower is able to bind the other person in a permanent love if he accepts the flower. Another method for a girl to arouse love easily in a man is for her to get her urine into his boots.

E. Köhler gives a very good classification in Halban and Seitz, *Biologie und Pathologie des Weibes*, Vol. II., Berlin, 1924, p. 242, etc., under the title “ Aphrodisiaca,” * from which we take the following :

The use of these specifics plays just as great a part in popular medicine as specifics for abortion. Aphrodisiacs are medicaments which are said to produce an increase in the sexual impulse either by central or peripheral stimulation (*hypercæmia* or *slight irritation* in uterus and vagina). Most of these things are really quite ineffectual. Thus, the *Radix satyri*, for example, has to thank its testicle-like bulbs for the faith in its effect. The working of the sea holly (*Eryngium campestre*) could have been done by wet sponges, etc., for it was put under the man’s bedclothes so that he should not forget his conjugal duty. Celery has an exciting effect ; asparagus is uretic and supposed to be exciting. Deadly nightshade (*Atropa Belladonna*) *Scopolina atropoides*, thorn-apple (*Datura Stramonium*) and mandrake (*Atropa mandragura*) have a stronger effect. They all belong to the nightshade plants and owe their reputation to the condition of intoxication which occurs after indulgence in them. Thorn-apple, like *Cannabis indica*, or cocaine, produces an insatiable libido and orgasm in women.

A real effect is connected with other specifics.

(1) *Cantharides* (*Litta vesicatoria*, *Spanish flies*) are a species of coleoptera which contain cantharidin, especially in the stomach, which produces a vigorous irritation of the kidneys and the lower urinal passage. Erections are caused in men and burning and itching of the vagina

* [Cf. also Hirschfeld and Linsert.]

in women. Most of the quack nostrums contain cantharadin, although it occasions fatal poisonings. Castoreum, asafœtida, etc., have a similar effect. The Slav peasant woman uses a small lizard (*Scincus marinus*) which she grinds to powder.

(2) *Yohimbin*, an alkaloid from the bark of the West African yohimbe. This produces an increase of reflex excitability in the sacral cord and consequently in the erection centre and leads to dilatation of the vessels, especially of the genital organs.

(3) *Muiracitin* from a Brazilian drug which produces *Muirapuma*, has an effect similar to that of yohimbin.

(4) A group of luxurious foods and spices which possess tonic properties, like eggs, oysters, caviare, alcohol : in the form of wine or champagne, and vanilla, as appetisers, and pepper, cloves, nutmegs as digestives.

Popular specifics also occur. Thus, in many places, the dust which falls when the horse is being brushed ; or an irritant powder (from hellebore) is strewn on dancing floors and is said to be extremely effective for promoting lust. The dancing makes the fine particles whirl upwards and act as powerful irritants on the lower parts of the body and the genitals.

However, such things seem to many people not sure enough. They consider the spell of full value only when they have actually incorporated the magic means in the person to be enchanted ; in other words, when they have been able to mix it in his food or drink.

Here we have, first of all, the love potions, the philtres of the ancient Greeks and Romans, of which we have already spoken ; and among the Germans and the South Slavs, as among all other people, they play a favoured part. The old magic is there apparent, and even down to the present time there are deluded people who believe in its power. A woman who dealt in love potions was taken into custody in Berlin in the year 1859 ; she had done a good daily business. In Franconia a love potion is made from the lovage plant, the mystic power of which was much prized. The Bohemians drop bat's blood into beer for the same purpose. Not by any means innocuous must be the frenzy of love which Frankish girls produce in the men they love, since they put in their coffee a decoction of Spanish flies, the heads of which they have bitten off beforehand ; for the cantharidin in the little creatures has an injurious effect on the internal organs, especially on the kidneys.

Generally speaking, love potions were much feared in earlier times, and according to the statement of old physicians, people were made insane by them, for example, Zacchia speaks of the " *pocula amatoria et philtrea* " which make men mad (Lib. II., tit. II., quæst. III., 16, p. 64).

A masterly description of the effect of one of these love potions has been given by Gottfried von Strassburg in " *Tristan*."

But here, too, we again come across the passion for administering something from one's own body to the other person. In Spreewald, states von Schulenburg, the youth makes the girl fall in love with him by cutting the little finger of his left hand and secretly causing the girl to swallow the blood from it. In Bohemia, also, they cut a finger in the last hours of the year, mix three drops of the blood in a drink and give it to the object of their love.

Wolf² states that a certain love powder is much prized by people in the Netherlands. They take a wafer which must not have been consecrated, write a few words on it with blood from their ring finger and then have five masses read over it by a priest. Then the wafer is divided into two equal parts, one of which one takes oneself and the other one gives to the person whose love one wishes to win. By this means, " much evil has happened and many a chaste maiden has been seduced."

Yet ordinary blood was not powerful enough for the uncultivated people. There had to be something special about it. And so menstrual blood was chosen for the magic food.

As early as the ninth century there were isolated cases in Germany (*e.g.*, in the Rhineland) of menstrual blood being used in men's food as a spell. In a passage of

Burchard of Worms, it runs : " Fecisti quod quaedam mulieres facere solent ? Tollunt menstruum suum sanguinem, et immiscent cibo vel potui, et dant viris suis ad manducandum vel ad libendum, ut plus diligantur ab eis. Si fecisti, quinque annos per legitimas ferias poeniteas " (p. 974).

Even to-day in Lower Italy in the province of Bari, Karusio says it is firmly believed that a piece of bread moistened with menstrual blood and given to a man to eat will infallibly make him fall in love with the girl from whom the blood comes.

In the same way, the South Slav women, according to Krauss,¹⁴ try to administer unnoticed some of their menstrual blood to the men they love.

Likewise, the gipsy women in Transylvania are of the opinion " that apple pips burnt to dust, mixed with menstrual blood and put in a youth's food will drive him mad with love." But this blood possesses still greater power if it has flowed on New Year's Night.

Menstrual blood from her own body and acquired on New Year's Night is, for the Transylvanian gipsy maid, an infallible means of arousing love. The man whose clothes she sprinkles with it finds it difficult to leave her. In the year 1884, Joane Gintare, a gipsy maid of the Leila tribe, was denounced to the police at Mühlbach (Transylvania) by her fellow tribeswomen for having made all the men of the tribe mad with menstrual blood which she got on New Year's day. The accusers, states v. Wlislöcki, with their accusation, were dismissed.

Again, too, the most prominent part is played by the *sweat*. In Samland one must bedew with perspiration the apple or roll which the other is to eat ; in Silesia, Bohemia and Oldenburg one carries fruit, especially an apple, or white bread or a piece of sugar, on the bare skin under the arm long enough for it to be impregnated with sweat and then it is given to the other to eat. The same thing occurs in Spreewald. But there, when a girl wishes to gain the love of a young man, she has at night to place on her vulva a pellet or roll or biscuit or an apple, let it get wet with perspiration and then give to the young man to eat ; after that he cannot part with her. Also, a silk handkerchief, wet with perspiration, burnt to tinder, pulverised and mixed into food, serves as a good love spell.

In the south of Chile girls also use sweat as an ingredient in a love spell. The young woman of Chiloé weaves cloths from threads of a certain colour. These she wears on herself for a time, then she manages either to put them among the beloved young man's clothes or she brews him a drink and strains it through the magic cloth. After drinking this he cannot resist her.

In Bohemia hairs from the armpits are powdered and baked in the cake ; and Captain Jacobson told M. Bartels that in Norway there was a well-known love spell which consisted in having finely chopped genital hair baked into bread and given to the other to eat. Elsewhere they smear the bread that the other person is to eat with wax from the ears. Even semen is, as in the early Middle Ages (*cf.* Wasserschleben), still mixed into a girl's food or drink in Bohemia according to Grohmann. Others taste a nutmeg, which is then secretly given to the beloved for him to eat. If anybody wants another person to be consumed with love for her she must swallow three peppercorns on an empty stomach and late, and after she has defæcated, the peppercorns must be got out of the dung, dried and ground to powder. This powder is then baked in a cake and given to the desired man or lad to eat. This, according to Krauss,¹ is done in the district of Varazdin.

Among the South Slavs the following are in common use : the droppings of a stork mixed with food ; similarly the blood or intestines of a bat, with and without the fat of a stork ; further, the fat of a snake, a bird, a dog, and a dragon ; further, an apple which has lain one night in the hand of the corpse of an illegitimate child (see F. S. Krauss¹⁴).

In the decrees of Bishop Burchard of Worms, we find : " Fecisti quod quaedam mulieres facere solent ? Prosternunt se in faciem et discoopertis natibus, jubent, ut supra nudas nates conficiatur panis, et eo decocto tradunt maritis suis ad comedendum. Hoc ideo faciunt ut plus exardescant in amorem illarum ? Si fecisti, duos annos per legitimas ferias poeniteas." Again,

“Gustasti de semine viri tui, ut propter tua diabolica facta plus in amorem tuum exardesceret ? Si fecisti, septem annos per legitimas ferias poenitere debes.” Or “Fecisti quod quaedam mulieres facere solent ? Tollunt piscem vivum, et mittunt eum in puerperium suum et tamdiu ibi tenent, donec mortuus fuerit, et decocto pisce vel assato, maritis suis ad comedendum tradunt, ideo faciunt hoc, ut plus in amorem earum exardescant ? Si fecisti, duos annos per legitimas ferias poeniteas” (973-974).

In the love potions used in early times there were, states Marx, the following ingredients : laurel twigs, the brain of a sparrow, the bones from the left side of a toad which has been devoured by ants, the blood and heart of pigeons, the testicles of the ass, horse, cock and, again, especially, menstrual blood. All these are used in Swabia.

In Morocco, according to Quedenfeld, the head of a vulture and of a big saurian are used, to be secretly administered as a powder to the husband, so that the love which his wife has lost may return to her.

From Tunis (Sfax) Narbeshuber² reports that there the so-called “May-sausage” is prepared for the same purpose by making a sausage from the entrails of a lamb slaughtered in May and into which is introduced a burnt mouse which has been ground to powder. There, they say proverbially of a man in love : he has eaten May-sausage. The egg of a black hen also which has been laid on a Thursday ranks as a magical material.

According to a notice in the *Yuen-Kien-lui-Han*, a Chinese Encyclopædia completed in 1703, which contains on fol. 9, b, tom. CDXLVI., a quotation from the *Tau-hwang-tsah-luh* which was written about the ninth century, in Nanhai (Kwangtung of to-day (?) in China), at one time, certain insects were used for the preparation of a love potion, in which Minakata, who discovered the notice, wanted to recognise the praying mantis.

“In Nanhai, there lives on the Manlan tree (*Canarium pimela* or *C. album*), a peculiar kind of bee (or wasp). It looks as if the leaves of this tree had grown arms and legs with which they grasp the branches and press so closely to each other that they cannot be distinguished from the foliage. Hence, in order to gather them, the Southern tribes used first to fell the tree and wait for the foliage to wither and fall, and only then were they able to recognise and take the insects which they use for a love potion.”

In Germany there are certain days specially favourable for the compulsion of love ; they are St. John's (June 24th), St. Andrew's (November 30th), and St. Silvester's (December 31st). On these days, special incantations are of great power. Thus, in Tyrol, a woman in love gives her lover Easter eggs to eat which have been boiled on Easter Sunday on a consecrated fire.

In Samland, according to Frischbier, the loved man can be compelled at least to think of his girl, if the latter cries the name of her sweetheart aloud three times where nobody can hear it.

Among the Japanese, a forsaken fiancée tries to revenge herself on her unfaithful lover by means of magic. Junker v. Langegg describes such a scene :

“At the second hour of morning, the ‘hour of the bull,’ she betook herself to the grove wrapped in wide, white drapery. Her bare feet were protected by sandals with raised wooden soles. Her hair was loose ; on her head, she had one of these earthenware tripods, which are used for holding the tea kettle in the brazier, fastened upside down ; on each of the three feet thus turned upwards was stuck a burning candle. In her left hand, she bore a straw figure of the man, in her right, a hammer. Between her teeth she held nails. On her breast hung a mirror. Her colourless eyes glittering cruelly, her features set in hate, she slowly approached a tree and crucified upon it the image of her hated lover. Now she broke her silence and implored

the god to avenge the desecration of his grove ; to save the tree, and to inflict his fearful punishment on him who was guilty of the crime. Painful sickness, slow, agonising death should be his." Fig. 546 represents this scene after the woodcut of a Japanese encyclopædia.

F. W. K. Müller informed M. Bartels that these ceremonies bore the name of *Ushimo-*



FIG. 546.—A forsaken Japanese bride seeks revenge by magic. (From a Japanese woodcut.)

tokimairi ; and that this means " at the hour of the bull (at two o'clock at night) to visit respectfully."

A woodcut of the famous Japanese painter Hokusai from about the year 1820 treats of the same subject, and is reproduced in Fig. 547. " It is a ghostly scene and the unhappy bride may well be fearful. The mystic bull, after which the hour is called, winds itself between the trees and has seized with his trunk-shaped, elongated muzzle, the end of the sash which the bride has tied round her waist. She is trying with both hands to free herself from the bull.



FIG. 547.—A forsaken Japanese bride seeks revenge by magic. (From a Japanese woodcut by Hokusai.)

She has taken hold of a hammer with her mouth so that she can use her hands. The upper part of her body is bent forward ; her hair flutters and the candle flames on her head flicker in the wind. Two tree trunks have each a Tengu or wood sprite clinging to them, with sparrows' wings and fantastic birds' heads. One of them seems to be producing with a fan the breeze which is making the candles flicker " (M. Bartels).

A woodcut (Fig. 548) of the Japanese painter, Kyosai, also shows us such a forsaken bride who has performed the annihilation spell against the faithless lover. " All kinds of horrors surround her, so that she has sunk on her knees in terror. The hammer with which she has nailed the straw model of her one-time lover to the tree has fallen from her hands, the mirror still adorns her breast, and the candles on her head are not yet extinguished. A demon cowers near her ; over her head hovers a skeleton and behind it rise tongues of flame, into which a devil is casting human shadows. A man and a woman with horrible gestures hover in the air. It is not possible to tell, however, what they signify. Is it perhaps the unfaithful man and the woman for whose sake he has abandoned his poor lady love " (M. Bartels).

Among the Battak in Sumatra, Römer states, the bride who has been deceived in love, tries to draw the faithless lover back to her. " The girl touches the marriage bed with the specifics and herbs which summon the *tendi* (soul), in the belief that the young man dreams everything that she does, and so his soul will come back to her."

The lodestone, the magic power of which we shall discuss in another place, also possesses the convenient property of being able to rouse to fresh flame the love of married couples which is growing cold. Volmar informs us of this in his "Steinbuch" (thirteenth century): "The woman whose husband cannot bear her should wear this stone on her neck, and on the third day he will love that woman like his own body, and if a woman hates her husband then he should do the same."

Also of a stone which the "head" carries on his stomach for seven years, Volmar says :

"And I will tell you more about it. Whoever wants to please her husband shall carry the stone on her."

Now a love spell is not only used by those who have already cast eyes on one of their fellow beings, for man has, from time immemorial, needed love, although he did not yet know whom he should make happy with his own. And there again, magic methods must come to his assistance.

In France a man becomes irresistible to ladies if he carries a swallow's heart about him. F. Krauss¹⁴ reports the following custom of the South Slavs (according to the information of a peasant girl from Dolori (South Hungary)) : "A big (fully-developed) girl who, as usual, cherishes the desire to make a man mad with love so that he follows her about as if blind, always carries a bat under the shoulder on the left side." The natives in the Eastern part of New Guinea, according to Comrie, believe firmly in a love spell which they imparted to him in the greatest secrecy. It consists in rubbing the face with a fragrant gum ; the other sex cannot then resist the person thus besmeared. The native name for this spell is *tübäl* (p. 109). The Keisar islanders believe that love frenzy can be produced by putting secret substances on the footmarks of men and women, or by stepping upon the places where they have made water and urinating themselves there (Riedel¹).

There is a simple method for Hindu men : they make, states Martin,¹ an ordinary little horse-shoe magnet : "if the possessor knows how to accomplish certain little spells with this, then no female heart is safe from him."



FIG. 548.—A forsaken Japanese bride seeks revenge by magic. (From a Japanese woodcut by Kyosai.)

“ Among the Dyaks in South-East Borneo,” Grabowski ¹ states that “ it is sufficient to be the fortunate possessor of a *djawet* (i.e., a holy vessel), to have luck in all things, but especially also in love.”

Women and girls need also to be on their guard against certain finger rings. Volmar gives information about this in his “ Steinbuch.”

A great many examples of “ love spells ” and “ spells for women ” are collected in Neuhauss’s work on New Guinea. It is interesting that a disenchantment also can be achieved. The missionary, Keysser, in speaking about the Kai, says :

“ If a man touches the wife of another, directly or indirectly, he conveys to her his soul substance and arouses in her desire for him. If the husband notices in the changed behaviour of his wife that she is unfaithful to him, and can ascertain who the man is who has turned her head, then he can make the seducer take back his soul substance. The latter must first touch the woman with a cigarette, and then stroke his own arms, legs and body with it. Then he must spit upon the cigarette as a sign that he has now turned aside from the woman. Now the woman must smoke the cigarette, so that she draws in along with the smoke the aversion of the man, by which means the former inclination is quite overcome.

“ Finally, the man must also, as a sign of contempt, step over the woman sitting on the ground. Here we have quite a complicated experiment in soul substance.”

3. LOVE'S HELPERS

Working spells is not everybody’s affair, and even in love matters many dare not work the spell themselves. They need the help of more strong-minded natures who have the necessary experience in the black art. Often it is an old woman “ who can eat more than bread,” as the popular saying goes, who gives the necessary instructions. Also the wandering scholars with whom, as abettors in such matters, we are already acquainted.

The sphere of action of the woman fortune-teller is not confined only to Europe. In Middle Sumatra it is the *doekoen*, who is something between a midwife and a woman doctor, and who gives the necessary help in this matter. According to van Hasselt, they sell a secret specific called *pākāsīē* there, “ which one mixes between food and drink for those whose inclination and love one wants to secure. The reader will let me off the enumeration of the unclean contents.” (Unfortunately, this author, like so many other ethnologists, places morality higher than science.) This “ *disgusting filth* ” is calculated to do harm to the people who come in contact with it.*

Among the Indian tribes of America this magic craft falls solely to the medicine men.

The ancient Peruvians, according to von Tschudi, had a special kind of magician chosen from among those who dealt in magic for the purpose of bringing lovers together. He writes :

“ For this purpose they made talismans from roots or feathers, which were put as secretly as possible into the clothes or camping place of those whose affection one wanted to gain, or from the hair of the person whose love was wanted, or from little brightly-coloured birds out of the primeval forests or merely from their feathers ; they also sold to those in love a so-called *kuyanarumi* (stone for being loved) of which they maintained that it was found only where lightning had struck (thunderbolt). They were mostly bits of black agate with white veins,

* [Cf. Leeuw, p. 221.]

and were called *sonko apatšinakux* (reciprocal heart-bearer). These *runatsinkix* (men-uniter) also prepared infallible and irresistible love potions."

Among the North American Indians there is for all kinds of sorcery a widespread confraternity, whose members bear the name *midē*. Only men possessing the highest degrees of this order, which are only attained with great difficulty, are qualified for the most powerful magic. They also make a love powder, concerning which W. J. Hoffman gives us information. It was a *midē* of the Chippeway Indians who made this powder. He had reached the fourth degree, the highest which could be attained in the brotherhood. This love powder, says W. J. Hoffman, is held in high esteem, and its composition is a profound secret; only for a high price is it made over to another. It consists of the following ingredients: vermilion, powdered snake-root (*Polygala senega* L), a slight trace of the menstrual blood of a girl who has her courses for the first time, and a piece of *ginseng*, which is cut from the bifurcation of the root and pulverised. These are mixed together and put into a little calico bag. The rule that it must be taken just from the bifurcation of the root probably refers to a supernatural connection with the genitals of human beings. The production of this philtre, however, is not so very simple; a

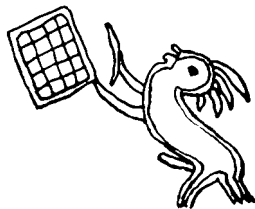


FIG. 549. — Music-board used for magical purposes in matters of love. Chippewa Indians. (After Schoolcraft.)

sacrifice forms part of it, consisting of tobacco, to the *Ki'tshi Man'idō*, which must be accompanied by a *midē*-song and with the sound of the magic rattle. If it is given up to another, then he must practise it in the camp of the person on whom the spell is to be cast.

The *midē* and an offshoot of the order, the Wabeno, have special small boards on which are hieroglyphic-like figures. These "*music boards*," which are similar to the magic drums of the Laplanders and Siberian tribes, form an aid to the memory of the medicine men. Each picture reminds him of the incantation which he has to sing and each individual design has its own special meaning. The love spell also occurs in these incantations probably made in the interest of a good paying client. Schoolcraft has described several such music boards, which probably originated among the Chippewa Indians. On one of them, among other figures, there is "a young man in an ecstasy of love with feathers on his head and with a drum and drumstick in his hands" (Fig. 549). He pretends to possess the power of influencing the object of his wishes. Here belongs the magic song:

"Hear my drum, although thou at the other end of the
Earth art, hear my drum."

On another board there is a representation of a woman:

She is represented as one who has refused many proposals. A rejected lover prepares mystic medicine and applies it to her breasts and to the soles of her feet. That puts her to sleep, during which he takes her prisoner and goes to the wood with her.

The song appertaining to it is not quoted.

In Thessaly and Epirus there are women who, like the modern Greeks, believe that they are closely allied to demons and spirits and make a lucrative business from it. Dossius states that "in ancient times the designation *Thessalian woman* was synonymous with sorceress. They know how to brew the love potions and philtres of the ancients, or they are in possession

of magic plants with which one has only to touch the man or woman one loves in order to make them complaisant."

"In Bosnia, too," according to Strauss, "the faith and trust in certain old women is very great. They are credited with practising sorcery by means of prophecies, salves and other things. It is they, too, whom superstitious women consult in many things, as well as in matters of love for advice and help. If a Mohammedan is unfaithful to his wife, she dare not murmur against him; she remains faithful and keeps silence—at home. But she then seeks the help of one of these artful women. If her position is such that a prayer can still be of avail, then the quack doctor is consulted as to what prayer and how often she is to make it daily, what food she shall cook for her husband, how she is to put the necessary *preškir* to the *ardes* (washing). The quack listens to the complaints as calmly and equably as advocates are accustomed to do with us. When the client comes to an end, a slight pause ensues, after which the sorceress fixes the fee for the prophecy and at once collects it and lays it aside and then only does she consider the means which are to be employed in this case. In unfaithfulness and adultery, beans are used with the older clients and peas with the younger. These have certain notches; when now the client has made her complaint (which usually consists in the fact that her husband is keeping



FIG. 550.—Sageawin (love-song) of the Ojibway Indians.

another woman in the neighbourhood), and when she has first paid the agreed fee, the old witch strews these beans or peas with a peculiar skill in the big cup which is on the carpet, then examines the position of the notches of the beans or peas and reads from them her interpretations which have been known from the earliest times to be infallible. She then states why the husband has been unfaithful, by what means the rival woman binds him to her, what is to be done to remedy the evil and much more of the same kind. But naturally she never forgets to order the client to come to her on a later day and to bring her gifts."

Among the gipsies the sorceress must help the lovers even after her death. v. Wlislöcki⁶ writes :

"If a woman dies who has been credited among the nomad gipsies of Transylvania with having been a so-called sorceress, then the maidens secretly rub the breast bone (as the seat of life) of the dead woman with a cloth rag, wear it for nine days on their naked body, then let a few drops of blood from their left hand fall on it and finally burn it. The ashes which remain they mix in the food of the person whose love they wish to gain by magic."

Other dead people, too, can be helpful, as we also learn from v. Wlislöcki :⁶

"Serbian gipsy girls cut their left foot with a bit of glass on St. Basilus' day (January 30th

O.S.) and collect the blood in a new dish when the church bells ring. This dish is then closed up and is buried with its contents in the grave of a man with the words :

“ ‘ All the love which this dead man had in life, come to so and so ; blood draw it hither so that I may give it to so and so ! If he does not love me then, dry up his life, as this, my blood, dries up ! ’ ”

“ After nine days the pot is dug up and in it a favourite dish of the lad concerned is cooked. Hence the expression : ‘ He has eaten blood.’ ”

How an abandoned bride in Munich managed is reported by Helene Raff, to whom she said :



FIG. 551.—Mandrake mannikin. The body is not of genuine mandrake but of long-rooted garlic. It bestows invisibility, brings wealth, heals every disease and acts as a lovecharm. (Germanic Museum, Nuremberg.)

“ Now I say a Paternoster every evening for the most miserable souls (*i.e.*, those who no longer get intercessions from anybody else) ; that they leave him no peace till he comes back to me again ” (typical egoism of “ love ”).

Here the wandering soul of a personality quite unknown to the forsaken bride acts as love helper.

4. MEANS TO AVERT LOVE

The desire to ward off love sometimes happens to people who have procured the love of another by magic. They are tired of the blessing, and would like to get free from the other's affection in proper fashion. That can, of course, only be done by a new spell.

He who shot the above-mentioned owl (II., p. 169) and clasped his maiden to him with the sacrum, also does well to keep the sacrum carefully. For, if he wants to get free from the girl again, he need only touch her with this bone.

Just as one wins love by bringing parts of one's own self to or into the body, so one can get free from her in an analogous manner. In order to do this one procures something from the other person, makes it dry up or pass away in the light of the sun or in smoke at night ; with it love then disappears, and not infrequently also the body of the person who was once loved. What love brings forth, it can, in other circumstances, make also to cease.

With this ranks also the malice which rejected love or broken faith devises or accomplishes in revenge. Among several other magic specifics which are qualified to destroy the mutual love of an engaged couple, Schönwerth quotes the following from Oberpfalz :

“ A revengeful being of this kind lights a candle at midnight and, after a preceding incantation, sticks a number of needles into it with these words : ‘ I pierce the light, I pierce the light, I pierce the heart which I love.’ Now, if the lover proves unfaithful later, it is his death.” Therefore, it is important to learn that a certain clover, which bears its tiny white blossoms about Easter, protects people from love potions.

A method more agreeable to popular taste is that which Paulini cites in his “ Heylsame Dreck-Apotheke.” He writes : “ When a wicked female creature has given a man something to make him love her, he should bestir himself only to get some of her dirt and put it in his shoe. As soon as the dirt gets warm and the stench goes up to his nose, he will be disliked by her.”

Ovid gives warning against such faith in magic.

“Therefore, whoever you are that seek aid in my skill, have no faith in spells and witchcraft” (“Remedies of Love,” 289 ff.).

Yet in his time such superstitions were widespread.

“If anyone thinks that the baneful herbs of Hæmonia and arts of magic can avail, let him take his own risk. That is the old way of witchcraft; my patron Apollo gives harmless aid in sacred song” (“Remedies of Love” 249 ff.).

Ovid renounces such magical methods, and he suggests more effective means to his *protégés* which are thus set forth:

“Under my guidance, no spirit will be bidden issue from the tomb; no witch will cleave the ground with hideous spell; no crops will pass from field to field, nor Phœbus’ orb grow suddenly pale. As of wont, will Tiber flow to the sea’s water; as of wont, will the moon ride in her snow-white car. No hearts will lay aside their passion by enchantment nor love flee vanquished by strong sulphur” (“Remedies of Love,” 253 ff.).

Ovid is so sure of his success that he cries to his disciples:

“Soon will you pay your dutiful vows to the inspired poet, made whole, both man and woman by my song” (“Remedies of Love,” 813 ff.).

But from the earliest times onwards there have been credulous minds, and many a protective amulet has had to preserve its possessor from love spells. Among the Germanic peoples such a belief is very ancient. We come across it as far back as the epic tales of the older Edda. The Valkyrie Sigrdrifa awakened from her sleep, gives Sigurd advice regarding the use of protective amulets and similar devices:

“Qlrúnar skalt kunno, ef þu vill annars kváen
vélit þik i trygð, ef truir;
á horni skal rista ok á handar baki
ok merkja a nágli Naup.”
(Sigrdrifumól)

5. MARRIAGE ORACLES AND PROGNOSTICATIONS

It must, indeed, be admitted that it is quite a justifiable curiosity for young people to want to know who it is really who is going to bring them love. In this the love oracles have to assist, but they cannot be merely employed when wanted, for they can only bring about the desired effect on special Saints’ days or nights.

On St. Andrew’s eve (in Königsberg) one pushes the lower end of the bed thrice with one’s feet and says:

“Bed of wood, I tread on thee
St. Andrew, I beg of thee:
Let to me in dream appear
This day my love, my dear.”

On St. John’s eve, in the Angerberg district (according to Müllenhoff), people scatter any seed they like on the ground and say while doing so:

“I scatter my seed
In Abraham’s name
This night, my dear love
In sleep I await.
How he walks and how he stands
As he goes along the street!”

Among the gipsies, according to v. Wlislöcki,⁶ St. George's night is important.

"If a maiden wants to see her still unknown husband, she goes to a cross roads on St. George's night, combs her hair towards the back, pricks the little finger of her left hand with a needle, and lets three drops of blood fall on the ground while she says :

" ' My blood I give to my dearest
Him I see, to him shall I belong ! ' "

"Then shall the drops of blood rise up in the form of the future husband and slowly dissolve in the air. The maiden must then get up the blood together with the dust and dirt and throw all into the running water, otherwise the *nivashi* (water sprites) will lap up the drops of blood and the maiden will, as a bride, find death in the water."

"Christmas night, too, possesses special magic power. The Magyar woman must stand naked before a mirror, then she will see in it her future husband" (v. Wlislöcki).

The Roumanians in Bukowina have quite a number of oracles which are mostly employed on St. Andrew's eve. Kaindl has collected some of them. They cannot all be mentioned here.

There is a shoe oracle, by which a shoe, when thrown over the cottage, shows the direction



FIG. 552.—Love-oracle on St. Andrew's night. A naked girl pokes her head into the oven door to find her future husband. (German engraving of 1709.)



FIG. 553.—Love-oracle on St. Andrew's night. A naked girl walks about in the dark to find her future husband. (German engraving of 1709.)

from which the bridegroom will come ; the counting of nine wooden plugs in the dark, where the character of the ninth plug indicates the kind of future husband, whether strong, bent and so on : the baking of nine cakes, according to special rules, any one of these cakes which a tom-cat allowed into the room takes will be the future husband, each cake standing for a certain youth. A proceeding similar to the German custom depicted in Fig. 553 is also practised. The girl lights candles at midnight and places them before the mirror, then she steps naked before it and combs her hair, whereupon the bridegroom appears to her (see Kaindl).

The most effective time, however, is the turn of the year. On New Year's Eve, in many parts of Germany, the girl places herself naked on the hearth at midnight and looks through her legs into the chimney or stove flue ; then she sees her destined bridegroom. Schmidt mentions this too in his "Rocken Philosophia," and depicts it in the engraved frontispiece (Figs. 552 and 553). The following verses refer to these scenes :

" You (the old witch) followed are by such maidens as naked seek the darkness ;
And eagerly St. Andrew for a bridegroom do entreat ;
Those who in the oven stove their heads do thrust
And unashamed their legs outstretched with buttocks all abominably bare
And will then hearken who will be their future love."

Among the South Slavs, according to Krauss, the girl catches a spider, puts it in a reed which she stops up at both ends. Before going to sleep she thinks of all the saints, makes the sign of the cross thrice over the pillow and says: "Oh, spider, thou climbest to the heights and to the depths, seek the man destined for me by fate and bring him to me as a dream picture. If thou dost bring him here, I will let thee free again in the morning that thou mayst go on through the land; if thou dost not bring him to me, then will I squash thee to death."

v. Wlislöcki relates: "On St. Andrew's eve or New Year's eve the gipsy girls of Transylvania go to a tree which they shake one by one whilst the following is sung in chorus:

" ' They fall, they fall, the leaves fall down
Where is he whom I hold dear?
Thou white dog bark and bark again,
My dearest comes to me with haste.'

"If a dog barks in the distance while the tree is being shaken and the chorus sung, then the maiden concerned will marry before a year has passed."

In Naples, San Raffaele, who has his church in one of the steepest and narrowest streets, is a matchmaker of very special significance. On the feast days of the saint the church is thronged from early mass till Ave Maria. For the most part, the visitors are young, well-dressed girls. Thereby hangs the following tale: San Raffaele is, according to Neapolitan popular belief, the patron saint of young girls, and is credited with listening to their pious prayers for a husband on his name day. The gay groups of girls going in and out of the church with their modest, almost ashamed bearing, are very picturesque, and are admired without impropriety by the young men waiting at the church doors. Now and then a sarcastic remark is passed when a virgin goes by who has obviously been making the difficult pilgrimage to the church of San Raffaele for thirty years. Near the church a fair is set up, where fruit of all kinds, especially pomegranates, Indian figs, also toys and images of saints are for sale. Nowadays the feast day ends with the ringing of the vesper bells; formerly the streets were brilliantly lighted when darkness fell and a band in the church square played alternately dances and Neapolitan folk music till late at night, to which strains the people of San Raffaele listened, and there appeared many hopeful couples believing in him.

The shoe oracle, so well known in Germany, is, in the district of Belluno, associated also with New Year's Eve, according to Sarovia as quoted by Bastanzi. When the hour of midnight strikes the parents must throw an old shoe at random down stairs. If it falls so that the toe points downwards, then the daughter is to marry in the course of the year. The girls of Belluno also, on January 1st, let flutter from the window a ribbon which has been in unused lye for 24 hours. If a young man passes at that moment, then he is the future husband. In Bari, however, if a girl keeps her house in disorder, then she will get a scabby husband (see Karusio).

All kinds of further superstitions are connected with these oracles. For example, one can judge which of two betrothed people is most anxious for marriage; one has to avoid certain days for the wedding, certain weather for the wedding day; certain encounters during the marriage procession foretell happiness or unhappiness for the future married life; and finally, one can, by taking certain sympathetic measures during the priest's benediction, be sure of the mastery in the future married state. We will give only a few examples of these here. In Belluno, Sarovia states, people make two straw dolls, which represent the newly betrothed

couple, and put them on the fire. The doll which catches fire first is the one who is most desirous of marriage.

“Nè de Venere nè de Marte no se sposo e no se parte,” say the people in Belluno and Treviso, according to Bastanzi. In the non-Catholic parts of Masuren, on the contrary, Friday is the day most favoured, according to Toeppen, only it must not be under the sign of Cancer. Rainy weather brings the married couple in Bari a life full of tears (Karasio), and to meet a funeral procession foreshadows in the same district mourning and sorrow.

During the ceremony in Soldau and Gilgenburg, in East Prussia, the bride must tread on the bridegroom's foot, or kneel on his coat, or when they hold hands, bring her hand on top, then throughout the marriage she has the upper hand.

The Buddhists in Tibet, according to Werner, consider it necessary for the bridal couple to learn with the help of an astrologer whether their marriage will be a happy or an unhappy one. The oracle sets free twelve animals, tame and wild, and by the manner in which they meet, whether friendly or hostile, the matter is decided. If they are friendly the astrologer is handsomely rewarded, for with these people the breaking of an engagement is very much disliked.

There is also a Japanese proverb which runs :

“In the year of the apes, one contracts no marriage.”

Commenting on this, Ehmman adds :

“They believe that such a marriage would not be of long duration, and for this reason, that the word ‘ape,’ *saru*, means also ‘go away’ (separate).”

As the ten Kate relates, women and girls in Japan determine from moles (*hokuro*) on the skin on the inside of the thigh whether they will have much sorrow in connection with their marriage.

In one of the Japanese works obtained by M. Bartels for his collection, the “Ehonkon-reite-bikigusa,” *i.e.*, “Illustrated Guide to Marriage Ceremonies” (of the year 1769), F. W. Müller found a section entitled “Words which must not be used on the marriage night.” These are the expressions : send back, be separated, go back, withdraw, forsake, disillusion, thin, give away, send away, part, send, have enough, return, see to the door, not to impregnate, not to like, to abhor, departure. We see that these are merely turns of speech *mali ominis* which the young couple have to avoid so that they may not bring on their young happiness the evil fate lying in these words.

Anyone who wishes to learn more of these things is referred to the treatises of Frischbier, Krauss,¹ etc., where he can follow the many forms of love oracle and marriage superstitions for himself.

6. COURTSHIP AND BETROTHAL

What we understand by the courtship of a bride is to many people an absolutely unknown idea. The wooing is, to some extent at least, a rape, and the marriage is by force. There are, however, many peoples at a fairly low stage of civilisation among whom it must be recognised that a regular effort is made to ensure the fondness and consent of the couple chosen to marry each other. In any case, we must approach the circumstances in these cases with quite a different standard from that which we are accustomed to apply to highly civilised nations. For it happens by no means infrequently that this wooing does not aim at a marriage

contract for life at all, but only at the attainment of regular sexual intercourse, which, however, if it should really lead to marriage later, makes necessary a further wooing in a different form.

In this sphere we come across very peculiar customs, which, if we were to follow them up completely, would take us far beyond the limits of this book. Only a few examples will be given here :

Riedel ² states that on the islands of Tenimber and Timor Laut, "the youth who will seek the favour of a maiden, goes to her house at night and knocks at the place where she sleeps. From motives of propriety, she asks who is there, and, when he has told her his name, what he wants. Thereupon, he answers : ' I have no *pinang*, please give me *pinang* with *sirih*, dry and broken in two.' If the girl is fond of him, she then says : ' Wait a little ; I will see if it is to be found,' and hands him the *sirih pinang* through an opening. In order to be prepared for this eventuality, the young girls are accustomed from the beginning of puberty to sleep with a basketful of *sirih* always beside them. The young girl then strokes the young man's hair through the opening, whilst he fondles her breasts, the only time that these things are done, for both are tabu. The following night they spend in a quiet place outside the house and meet by day in the bush, where the girl has to gather wood. After the first coitus, the girl takes away the young man's penis covering, his ear-rings or his comb, in order to compel him to be true to her and, in the event of pregnancy, to have evidence in her hands or, as they express it, as ' compensation ' for the *sirih pinang* given him. Thus, they live with each other for some time, and if their love is lasting, the young man, for form's sake, asks the girl, through an old woman, if she will marry him.

Similarly Hagen ³ reports that among the Papuans of Astrolabe Bay in New Guinea, if a young man wants to woo a girl, he rolls a cigarette in which he has entwined a hair of his head, one from his shoulders and one from his pubic region. This he smokes half-through and then gives it to his mother, requesting her to take it to the lady of his choice. Then, if she smokes it to the end, the suitor is accepted. Hagen ³ suggests that a love spell is concealed in this : in Neuhauss' work on New Guinea many similar spells are grouped together.

Kubary describes, obviously from personal observation, the wooing of a Samoan youth for the girl of his choice and her love for him. In Samoa, so peaceful by day, the young people of both sexes meet in the evening on the *malæ*. A young warrior, well practised in expression, stands by a group of young girls. " He stands upright and with arms raised gesticulates so that his whole head quivers. He stamps with his feet, he advances and retires, he stretches out his arm as if he had a spear in his hand, then again, he swings it round in a circle as if he were on the point of crushing the enemy with a club. Without doubt, he is a warrior relating his deeds, his conquests to his audience of beautiful girls. These are all eyes and ears." One sees what a powerful impression his narration makes on the young girls who cheer him enthusiastically. Then he calls some of his comrades to sing together : " Our narrator is the leader, all those present form the chorus ; however, the singing does not last long."

The warrior stands up and places himself opposite one of the most beautiful maidens. She hesitates ; indeed, almost unwillingly, she lets herself be pressed forward by her friends and drawn into the open by her beautiful dancer. Now she stands in the circle and with eyes cast down, smoothing the *lava-lava* which encircles her voluptuous hips, she is the very picture of sweet timidity. The chorus of dancers who are standing ready, changes the tune and begins a song in the beat of the usual dance, at first slowly and softly, gradually quicker and more loud. Let us observe our dancer.

He raises his arms and, making circles round his head, beats the time with his finger tips. His feet move without touching the ground ; he appears to wish to push it from him. He rises into higher supernatural regions still unaware of his girl partner to whom his side is turned. She, too, beats time softly with her fingers and, like him, her feet push away the earth. Both hover in a higher sphere . . . and here they become aware of each other. The expression of the man's face, every motion of his limbs, his whole body betoken surprise and delight. She, like a goddess, looks indifferent ; to keep off the invader, her mouth screwed up mockingly, she retreats out of his way. He fears to scare her and tries to entice her by supplication. He

stands motionless, expressing his prayer by every movement of his body. He stretches out his arms longingly, he moves them empty before his face, indicating absence, he presses his breast to keep it from bursting. He begs and prays and see! moved by such excess of feeling, the beautiful dancing girl smiles. Looking down with her head bent backwards, she holds out her arms to him . . . she yields. . . . The dancer intoxicated with joy does not believe his eyes. Bent backwards, gazing upwards, he stands motionless like a stone! Then he breaks into a chaotic network of leaps and grimaces like a fish struck by a spear. He is soon beside her . . . but the unforeseen happens! Instead of seizing the offered happiness, he begins to reproach the willing maid for her hesitation. He threatens her with his finger, he shakes his head, he turns away . . . and as he at last approaches her, to take hold of her, she escapes him like a mist scattered by the wind and flies smiling mischievously to the other side of the circle, to the endless delight of the lookers-on who cannot praise the enchanting seductress enough or rejoice enough over the misfortune of the clumsy wooer. The latter, of course, right down from the clouds, scarcely realises what has happened . . .

Painfully disillusioned, the dancer makes the most despairing grimaces, but he thinks of revenge. He again stands close to her, but not as the beseeching suitor. Every movement now breathes unconcealed mischief, pitiless mockery. With mocking finger, he threatens to pierce her through the back. He makes derisive grimaces, laughs jeeringly and makes a show at her back. The young girl cannot bear this for long. She will ward off the unworthy attacks face to face. But in vain does she turn round, mockery and teasing pursue her from all sides like a will o' the wisp. The poor thing feels beaten, she sinks her once proud head, she presses her hands to her heart as if she would keep off the entrance of pain. He shows repentance, he begs for forgiveness and mercy. The face of our seductress brightens. She is no longer unwilling, although she still wavers and is silent. The supplicator doubles, increases tenfold his efforts. He encircles her with the most graceful leaps, he accomplishes miracles of skill . . . he keeps on praying, and at last she lets herself be seized by the whirling figure. They dance together, opposite each other, with one motion and one breath. Ever more quickly, more passionately, more wildly. Their bodies seem to twinkle. . . . Their individual limbs can hardly be perceived. . . . It is a chaos in which both understand each other, a chaos which sets the whole assembly into the utmost delight. In their hearts, they all dance with them. They are all withdrawn from the earth and forget the cares of life. Wild shouts: *malie! malie! lelei! lelei!* (Oh sweet, Oh pretty), mingled with fervent hand-clapping, drown the choruses and the dance comes to an end in a general confusion of satisfaction and praise.

Meanwhile the time for evening prayer and the evening meal has approached and the circle scatters. . . . From all sides, in all directions, leave takings sound in the air: '*Tofí, tofí!*' and all go to their homes.

Anyone who was near the dancer in the scattering circle might catch a few significant words among the good nights. '*Tofá inga*' '*tofí soifúa*' are more than indifferent salutations and a quick '*tóro*' as answer would meet the ear of the listener.

The mysterious word *tóro* means sugar cane, and here beside the path we see a field of it. But what is that? Quite softly, scarcely audible sounds, the cry of the Samoan owl . . . from another direction comes to us another screech like that of the little gecko lizard. . . . At night . . . in this place, that is unusual! Suddenly we are almost afraid. Not far from us we see a head hidden among the waving stalks. We recognise our dancer. Now the pretty lizard will certainly not be far off. . . . And actually a form soon glides past us, quick and light as a dream. The heads, joined each other, they wavered, sank and disappeared, and in the distance, sounded really this time, the cry of a Samoan owl (*Strix delicatula* Gld).

A field of sugar cane is at night a safe hiding place for lovers. Nobody will disturb them here at the time of ghosts and spirits. Our little couple knows it, and, careless of a listener, one can hear them speak.

'You know, *Lilomajava*, my parents hate you; there is nothing but the *awánga* for us.

The *awánga*, the elopement is arranged: it is to take place on the third night.

On the shore of the neighbouring village, stillness reigns, but dark forms move on the white sands. A *toumalua*, the native travelling canoe, is pushed into the water. The dark forms have disappeared, an upright, three-cornered sail is unfolded and gliding along the shore it dis-

appears from view. Then, from a great distance, the muffled sound of a Triton's horn reaches us ; this sound accompanies the happy lovers along the coast and indicates to the inhabitants disturbed from their sleep that something strange is afoot. It goes on to Palauli where the lovers will wait till the parents' anger has passed.

Next morning, uproar in both villages. The friends of the happy bridegroom march through their village and shout : ' *Awánga, awánga !!* The pretty Tanatasi and the brave *Lilomaxava* are *awánga ! awánga !!*' The proud parents of the bride listen with sullen rage to the public proclamation which seals their daughter's fate. For some time there is bad blood on both sides. The old fathers avoid each other, the young men look at their clubs and spears, the chief part, however, is played by the youths.

After a few weeks, it all subsides and the parents send their daughter a white mat as a sign of their pardon. The couple who have stayed away till now comes back. The '*feiainga*' is undertaken and the white mat with traces of the worthiness of the bride is exchanged for a part of the bridal price. The other part is handed over at the first confinement.

If the pair do not marry for love, or if there are any difficulties in the way, then everything is arranged by their relations. In earlier times the *awánga* (elopement) was the order of the day in Samoa."

The wooing of the Hottentots in the neighbourhood of Angra Pequena is, likewise, original. The lover goes to the parents of his choice, sits down silently and, still silent, makes coffee. When it is ready, he pours out a bowlful to hand to the bride ; if she drinks half of it and gives the bowl back to the suitor so that he may drink the other half, then he is accepted. Without saying a word, the girl will empty the bowl if the suitor is a man of means and the parents are to receive a high enough price for their daughter. Then the emptying of the bowl signifies : yes, I will be your wife. If she leaves the drink standing, the lover does not grieve unduly ; rather he wanders on to another hut to try his luck again (Sigmund Israel).*

"If one of the Kamchadale wants to marry," reports Steller, "then he can get a wife in no other way than by winning her by serving her father. When he has seen a maiden whom he likes, then he goes and without uttering a word, settles down as if he had long been known there. He begins to take part in all the work of the house and tries to make himself more pleasing than others both to the parents-in-law and also his intended bride by strength, labour and hard service. Now although the bride and her parents become aware in the very first days of the object of his choice, because he works for her and takes trouble for her all the time and lies as near her as possible at night, nevertheless, nobody asks him until after one, two, four years of service, he succeeds in getting so far as to please not only the parents-in-law but the bride. If he does not please them, then all his service is lost and in vain, and he must go away without payment or revenge. If she gives him any sign of her favour, then, for the first time, he speaks to the father about his daughter and declares the purpose of his service ; or the parents themselves say to him : ' Now, you are a fine industrious fellow, go on and see how soon you can overcome your bride.' The father never refuses him his daughter, but he does nothing but say, '*Gwatei*, catch, seize her, then you will be free and the wedding take place.' However from that time onwards, while the suitor works and serves in the dwelling, he has the right to watch his bride while they work, to try whether he cannot take her by surprise. The bride, on the other hand, takes care all the time that she does not meet him alone, either inside or outside the dwelling, fastens her underclothes firmly, ties them with strong leather straps, and winds a fishing net round them. If he sees an opportunity, however, then he falls upon her immediately, cuts the net or thong in two with a stone knife, and as soon as the way is open, he puts his middle finger into the vulva. Then he takes off his neckcloth and puts it in the bride's underclothes as a sign of conquest. If, however, the others see this about to happen or hear the screaming of the bride, they all fall upon the assailant of virginity, strike him with their fists, pull him away from the bride by the hair and hold his arms. He had often to be beaten thus when making the assault until he was strong enough to succeed in putting his finger into the vulva ; then he had won. The bride herself at once announced the surrender and they all ran away and left the bridegroom and his bride ; if he did not succeed but saw that the attack

[*No reference is given.]

had been defeated, then he began to serve again as before ; nobody said a word to him, and he waited every day and hour for a fresh opportunity. If the bride was fond of the bridegroom, then she soon yielded to his will, was not too watchful and perhaps herself gave him the opportunity, so that he soon reached the point of success, though she had to simulate resistance all the time for the sake of honour and economy."

However, it is not always the youth who woos the girl, but sometimes the reverse, the girl who woos the youth.

Thus, on the island of Eetar in the Malayan Archipelago, a girl, when she is kindly disposed towards a man, sends him a snuff box made of intertwined koli-leaves and filled with tobacco, which is supposed symbolically to represent her genitals.

Among the Osage, too, according to Waitz, the girls wooed the famous warrior by offering a maize pipe without surrendering anything by so doing ; and the marriage was mostly concluded by this means, it being publicly declared by both parties at a festival that it was their intention to live as husband and wife. Then a hut was built for them by the combined forces of the community.

Among the Sulka in New Britain also the girl chooses her husband. "She sets her heart upon the man of her choice as one says literally" (Parkinson²) ; the father, or another near relation, chosen by the girl, then betakes himself to the chosen man and makes the proposal of marriage.

Of the Zulus in the North of the Zambesi, Wiese says :

"Among the pure bred Angoni, the woman has the right to choose her husband. The girl, after the festivity mentioned (*i.e.*, the puberty festival), accompanied by her girl friends armed with green twigs, betakes herself singing to the house of the chosen man and discloses to him in song that he is her heart's choice. If the man shows no readiness to accept the wooing, then they all go back to their home village, weeping loudly : but if the proposal is accepted they greet the news with tremendous jubilation ; and the girl, now considered a bride, is accompanied to her family amid a thousand manifestations of joy. Next day the chosen man presents himself to the girl's father, and then begin the extremely difficult negotiations over the price of the young lady who is to be paid for in cattle."

Now there is, however, evidence to hand that the young girl sometimes makes the choice yet, at the same time, reserves her decision. Thus we have reports from Chinese sources about the Hongsao tribe in Formosa, which have been translated by Florenz.²

"When a girl reaches marriageable age, she builds herself a house and lives alone. The savage youth, whom she wishes to obtain, plays a musical instrument, called 'beak-lute,' and remains standing (before her house). If this pleases the girl, she comes out and invites him in, whereupon they live together. This is called the 'sign manual.' After the passage of a month they each inform their parents and they present (the bridegroom to the bride, no doubt) gauze veils and blue and red cloth (Note.—Rich people use gauze veils, poor only red and blue cloth). The girl's parents bring meat and wine, gather their kinsmen together and receive their son-in-law."

This custom is alluded to in one of their songs, likewise given by Florenz² :

"In the night, I listen to the sound of a song,
I lie there alone and am sad at heart.
To the singing of a bird too, I listen and think that an old friend comes to visit me ;
I get up and run to look, but it is the voice of the wind blowing in the bamboos ;
All this is just because my feeling of longing for the (beloved) person is so ardent."

Of the savage Longkiau tribe in Formosa, the Chinese report, according to Florenz ² :

“ All the barbarians marry each other by themselves (*i.e.*, without intermediary) even when (the other party to the marriage) is the child of an elder or younger uncle. The *Tókwán* (chiefs) only do not enter into marriage with the (ordinary) barbarians. Men and women play the

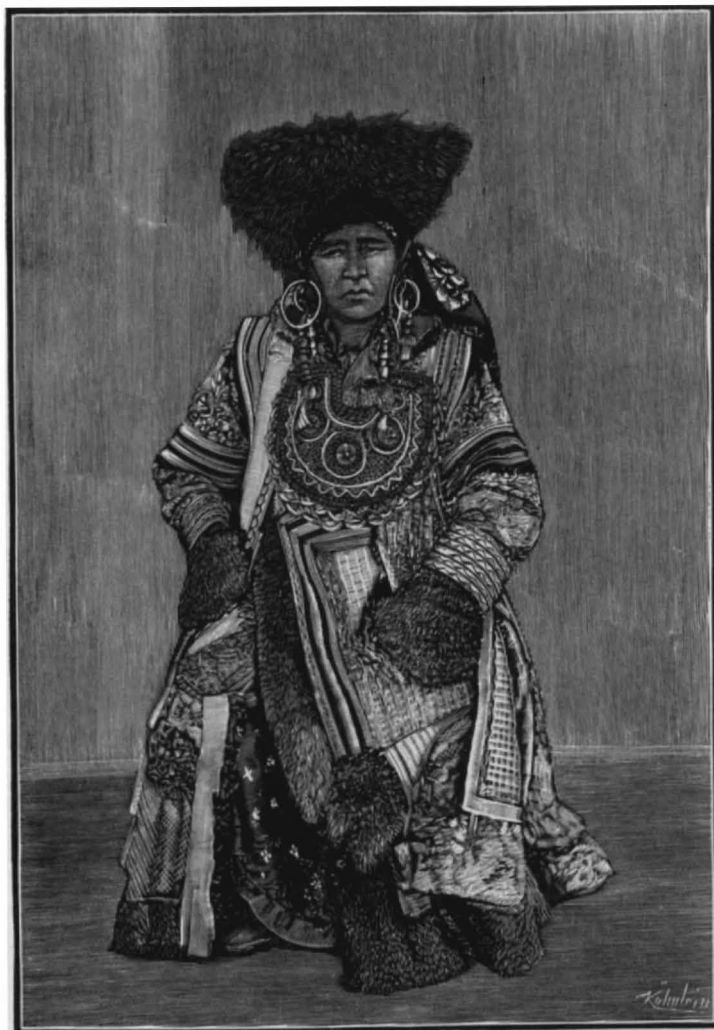


FIG. 554.—Marriage go-between among the Katschinzes. (Staatl. Naturhistor. Mus., Vienna.)

‘ beak-lute ’ in the mountains and sing songs together. When they find favour in each others’ sight, they have sexual intercourse and present each other with whatever they happen to have with them. On their return, they let the chief and their parents know. At a specially appointed time, they have pork and wine ready, gather together the chief and their relations and the young man enters as husband into the house of the wife ” (Florenz ²).

We have here either the youth, or, in exceptional cases, the girl in her own

person, as suitor, but it is far more usual to present one's suit through the agency of a third person. Whilst these matchmakers are of the male sex almost everywhere in the world, and are either the father or the friends of the bridegroom, we find in the islands of the Malayan Archipelago that it is the custom for the women to undertake the business of matchmaking; and they must themselves be married and be already somewhat advanced in years. The mother of the young man, too, may undertake this office.

The Siberian Turks (Tartars), according to Vámbéry, are betrothed when still children. The boy's father with a few acquaintances rides to the father of the girl for whom he wishes to propose, introduces himself and his companions, and, after the greetings are over, the match-making father says to the girl's father:

"If the floods rush before your house, then I will willingly be a protecting rampart for you; if the wind rage before your house, I will willingly be a protecting wall; if you whistle to me, I

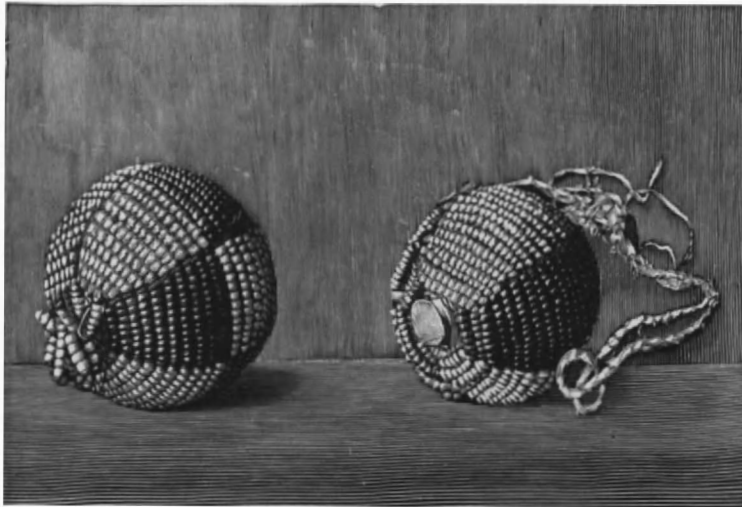


FIG. 555.—Basuto bridal snuff-boxes. A calabash is covered with pearls. Mus. f. Völkerk., Berlin. (Photo: M. Bartels.)

will be your dog, and run up to you and, if you do not smite me on the head, I will be glad to enter your house and be your relation."

Then the matchmakers take the full pipes from their mouths and lay them on the hearth. They then leave the house and return again after a short interval. If the pipes are not used, then the suitor is rejected and they ride home: if the pipes are smoked, however, the matchmaker is welcome. Then the bridegroom's father brings forth a dish and fills it with *airam*; one of his companions fills his pipe, and another takes a live coal from the hearth. Then they stand waiting. Now the girl's father gives his consent. He empties the dish, takes the offered pipe and has it lighted by the live coal held by the third. Then follows the entertainment and the discussion of the *kalym*, *i.e.*, the price of the bride. Among poor people, it is fixed at from 15 to 20 roubles. "The act of betrothal," Vámbéry continues, "ends with the bridegroom's father making a few presents to the father and nearest relations of the bride." The little bridegroom, provided with presents, has then to pay repeated visits to the bride's home, and often stays there for a long time. "He then becomes in work and play, the companion of his bride."

Among many tribes, the preliminaries for a betrothal are initiated by women intermediaries. One of these we see in her ceremonial garb in Fig. 554.

According to the interesting report of the missionary superintendent Grützner, the marriage proposal among the Basuto is a very complicated affair. "First of all, the youth himself tries to come to an understanding with the girl and to get his father's consent. The latter then repairs to the girl's father. They begin by talking of all sorts of indifferent things. At last, he brings out the real reason for his coming and says: 'I have come to ask you for a dog.'

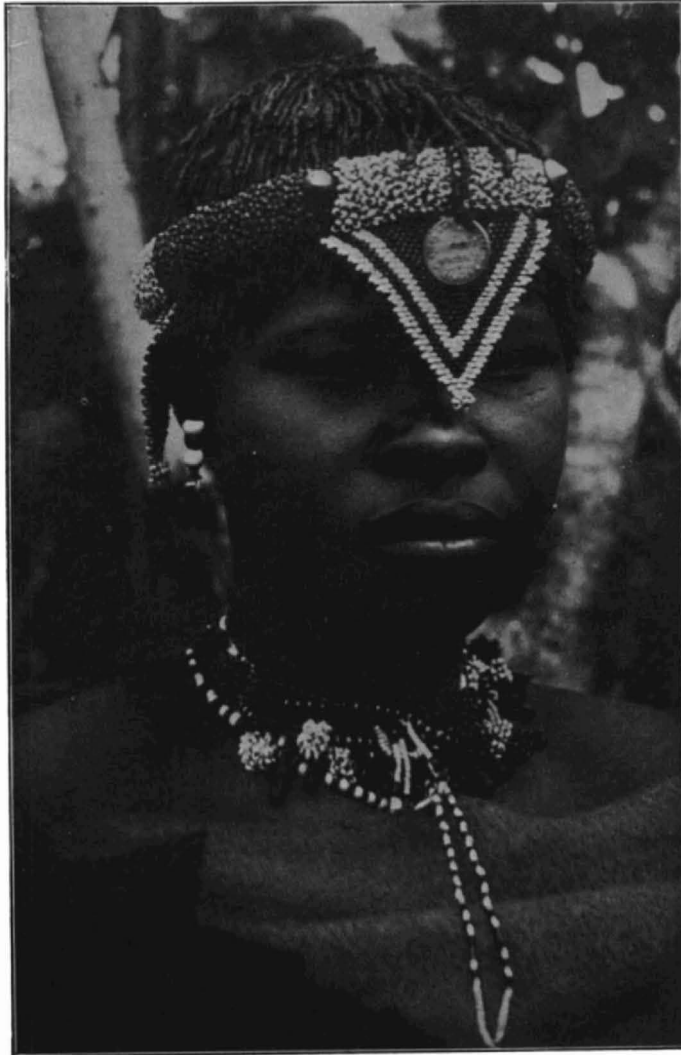


FIG. 556.—A South African bride from Natal. (From a photograph by the Trappists at Mariannhill.)

After a long pause and apparently deep reflection, the other replies: 'We are poor, we have no cattle; have you any?' The suitor then complains about the hard times, but at last, after much haggling, he at length comes to an agreement with the other about the price to be paid in cattle for the bride and returns home. Then a second ambassador, who bears the title '*mma ditsela*,' 'Mother of the way,' *i.e.*, preparer of the way, is sent to the girl's kraal, who has to say: 'I have come to ask for snuff.' The old women now begin to grind snuff (the tobacco



FIG. 557.—Bride from the Padang Highlands, Sumatra. (Photo : F. Schulze.)

is in the form of loaf-shaped cakes, hard as stone) and fill a calabash to serve as snuff box, which is then conveyed by special messenger to the bridegroom. He then summons all his kindred for the snuff ceremony. Only the husband of the bridegroom's eldest sister has the right to open the snuff box. He snuffs a good teaspoonful of the tobacco and passes on the box which is then ceremoniously snuffed empty. A few days later, an earnest of small cattle is sent

to the girl's father. The snuff box goes with it and is handed over to the girl. She adorns it with pearls and wears it always, or, at least, on ceremonial occasions, round her neck (see Fig. 555). That is her 'child,' as the Basuto say, *i.e.*, the sign that she is 'bought,' or, as we say, a bride. The box is first laid aside after the young wife has given birth to her first child; then she undoes the pearls and hangs them on her baby. The messengers who handed over the cattle say they were sent to ask for a 'little well bucket.' Thereupon the women utter a cry of



FIG. 558.—Norwegian bride from near Bergen. (After A. Friedenthal.)

joy which sounds 'as if a dozen cats had lifted up their voices.' Then beer is drunk all round and at night the three to four messengers sleep in a special house with from eight to twelve girls. Drinking and indecency continue for from three to six days. The second instalment of cattle is brought some time later by the bridegroom himself with only one companion, an office of honour for which all are anxious. They stay there from two to three months, during which time a similar life is led. They must never, however, take the food from the dish themselves; the girls of the kraal always sit beside them, take the stew out of the dish with little rods, and then

the two guests take it from the rods with their hands and convey it to their mouths. As often as the bridegroom brings a fresh consignment of cattle he may return. The taking home of the bride and the real marriage, however, takes place much later. How very far are these people from the ideal halo which surrounds a bridal pair among civilised people ! ”

Among many other tribes, also, the bride is recognisable by her special adornment. Among the natives in Natal she wears on her head an ornament with many pearls (Fig. 556 shows one of these “ Kaffir ” brides). The wedding garment (see Fig. 557) of young brides from the Padang Uplands in Sumatra appears very cere-

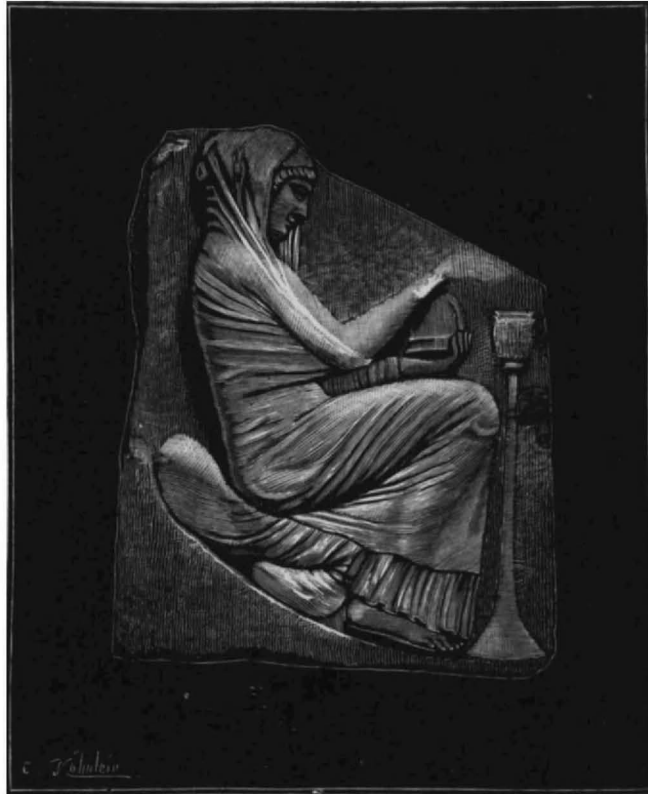


FIG. 559.—Grecian bride. Fifth century B.C. Marble relief in the Mus. Naz. delle Terme, Rome. (After Petersen.²)

monious. The enormous rings on her arms and the big tassels on her cape are particularly striking.

Among European nations, as is well known, the bride puts on a special wedding dress and special wedding adornment for the ceremony. The white veil and the myrtle wreath (originally rosemary wreath) in some countries ; and the wreath of orange blossom in the Roman and Alpine districts play their part. In the Scandinavian countries, among the Russian peoples, and, to some extent, also among the country population in Germany, the bride wears a more or less artistic crown made from all kinds of tinsel and artificial flowers. A bride from Norway thus crowned is represented in Fig. 558.

The bride of classical antiquity was recognisable by the covering of her head. We see a Greek bride of the year 5 century B.C. in the relief in the Ludovisi collection in the Museo Nazionale delle Terme in Rome (Fig. 559). The plaque, according to Petersen,² forms the companion picture to the hetæra represented in Fig. 511. It was the other side piece of the throne of the Eryxian Aphrodite. She holds an open box in her hand from which she throws incense on to the embers of the censer (*θύμιάτηριον*).

The remarkable custom of isolating the bride prevails among the Sulka in New Britain. Parkinson² reports of this in his "Dreissig Jahre in der Südsee."

This curious custom, too, is not without parallel. On the coast of Togo, as the missionary Spiess³ informs us, there has been in existence the custom that "the bride before she is considered really a wife, has to spend several weeks in a hut without being allowed to leave it during the day-time. In one district on the coast this time amounts to six weeks; elsewhere, only four; whereas in the interior, the custom has completely died out. Here the "kp^okp^oyi de h^ouse" (the leading to the bedroom) is not carried out (Fig. 560).

Very strange, too, according to our ideas, is the attention which the fiancé bestows on the menstruation of his future wife among the Ewe-negroes in Togo. About this, too, Spiess³ has given us some information. "As often as the bride has menstruation," he states, "the future husband buys twelve yams and gives her 2 marks 50 pfennigs in addition. These particular gifts are called 'gbelennw^ow^o' (menstruation gifts) by the natives. As soon as the bride is in possession of the gift she has to cook the yams for her bridegroom."

Many tribes hold the belief, or rather the superstition, that the bride assumes a peculiarly exceptional position towards the rest of mankind, and in this respect one sees sometimes the first glimmer of idealism beginning to dawn among nations still in a low cultural position. At the sacrifices of the Chuvash the flesh of the sacrificial animal is cooked, the entrails are burnt and head, feet and skin are hung on the trees. "Now each person lays a money offering in the hollow of a tree, whilst the women present hang a piece of handwork of some kind on the branches. But, during this ceremony, the woman must not say a prayer, only a bride is exempt from this prohibition" (Vámbery).

In German Switzerland a bride must beware of looking unkindly on a child,



FIG. 560.—Togo woman in bridal attire.
(After Spiess.)



FIG. 561.—Strange prologues to the marriage state, 1650. (Germanic Museum, Nuremberg.)



FIG. 562.—Marriage. the game of chance. Seventeenth century. (Germanic Museum, Nuremberg.)

because otherwise she gets wicked children. If, however, she so far forgets herself as to wish evil to a child, then she will suffer death in her first confinement.

The Magyar bride must be careful that nobody twists dead hair round her head when she is on the way to the marriage ceremony, she will otherwise soon get tired of her husband and turn her thoughts to other men (see Wislocki ⁸).

Our own remarkable custom of what has been called "buying a pig in a poke" (*i.e.*, the bride herself in her clothes without any preliminary medical examination) is not common.

The difficulties attending the choice are shown in Figs. 561 and 562.

Of the ancient Hindus, Sebastian Münster reports in his "Cosmography" as follows :

"One finds also certain Indians who have such a custom. If a poor man cannot give his daughter a dowry and she has yet reached marriageable age, he takes drum and pipe and repairs with his daughters to the market just as if he were going to war, and, when everybody runs up as to a public show or play, the daughter raises her dress at the back up to her shoulders and lets herself be seen from behind; then she raises it to her breast in front, and lets the front of her body be seen also, and then the one whom she pleases takes her for his own and does not buy her blindly."

Münster has illustrated this offering of a full-grown virgin in marriage in a picture, which is reproduced in Fig. 563.

We must resist the attempt to engage in a detailed discussion of all the formalities which traditional custom demands in the wooing of the bride among the various races of our world. Similarly, we are compelled to pass by the multifarious wedding ceremonies which are customary among individual peoples. The ceremonial in this connection prevailing among the different races of the earth is so extensive that even a superficial survey would go far beyond the bounds of this book.



FIG. 563. — An Indian girl displays her charms. (After Seb. Münster, 1548.)

CHAPTER VII

MARRIAGE

1. DEVELOPMENT OF THE INSTITUTION*

It is often said that the first and highest object of marriage is the procreation of offspring. The fact, however, that marriage is by no means necessary for the fulfilment of this purpose is one which scarcely needs further argument. Much more difficult to decide is the question, how marriage came into existence ; and how what we call marriage at the present day existed in the primitive state of mankind. In modern times many anthropologists and sociologists, especially, have been occupied with these important questions of cultural history. The idea that in the primitive state of mankind women were common property, and that an unrestricted mixing of the sexes prevailed is not new. The ancient writers, Pliny, Herodotus and Strabo, wrote of peoples in their time who lived in this or in a similar state ; and concerning this, the opinion of French philosophers of the seventeenth century might thus be expressed : “ Reason alone would suggest rather the communal use than the exclusive possession of women.” Doubts were, of course, soon raised against this theory. Thus Virey wrote : “ If ever this complete, absolutely communal possession of women and goods existed, it could only exist among groups of people who lived like savages on the benefits of uncultivated nature, *i.e.*, in very small numbers on a great stretch of country. If the women were common property what man would burden himself with the child of which the paternity was doubtful ? Since, also, the woman was not in a position to provide for her child by herself alone, then the human race would not have been able to maintain itself.” With these words of Virey, and by other similar objections, the matter was by no means concluded ; rather it was the business of anthropology and of the history of civilisation to make a closer investigation, for the objections mentioned, were so childish that they cannot be seriously considered. First of all, we must hope to arrive at the answer by observing the family relationship as it exists still among many primitive peoples. It has long been known that in not a few tribes, all family rights are derived from the mother and not from the father. Connected with this is the nephew’s right of inheritance, and from these and similar phenomena a so-called *matriarchy* was affirmed which it was assumed had preceded the *patriarchy*.

It was Lubbock,² first of all, and then McLennan, Lewis, H. Morgan, Post, F. v. Hellwald and Wilken, who advanced the opinion that, originally, no actual marriage and, consequently also, no families existed but only tribal societies and tribal fellowships in which communal marriage existed. In this all the men and women belonging to this little community would have regarded themselves as married uniformly to each other. These peculiar conditions in the tribes of primitive mankind, Lubbock designated *hetæris*m.

* [The following section illustrates the views of those who do not hold the generally accepted ideas relating to primitive monogamy, matriarchy, etc.]

Giraud-Teulon, Kaltenbrunner and others considered the following forms of marriage typical :

(1) *Undivided family (famille indivisée)* : a group mostly of persons related by blood in which the women and children do not belong especially to one definite husband and father but more or less to all of them together ;

(2) *Segmentary families* : the head of the family possesses his own wife, the brothers have theirs in common and the sisters belong collectively to the same husbands (Hindustan, Toda) ;

(3) *The individual family* : in which there is no longer any question of collective possession but of personal, separate families ; each man has one or several wives (monogamy, polygamy), or one wife has several husbands (polyandry).

Bachofen endeavoured to defend the idea of the original type of tribal society as the cementing of a group of blood relations through their tribal mother. Following Strabo, he designated this as *gynæcocracy* ; and he collected examples from Greek and Roman writers to support his view. Also, among the very different North and South American tribes ; among numerous communities of the South Seas ; among Hindu primitive peoples ; and in many African tribes, are similar conditions to be found. In this connection Tschernischeff says :

“ One of the most prominent positions among the survivals of marital communism belongs to the phenomena in which the free sexual intercourse of the girls appears in conjunction with the restricted intercourse of the married women. Such phenomena were observed in many tribes. We encountered them among the South African natives, in New Guinea and Mayumbe ; among the hill tribes Garo and Laos in the Province of Arakana ; in the Andaman islands ; on the Poggi and Nassau islands ; in Wadai and Darfur ; on the Marianne, Caroline and Marshall islands ; among the Chibcha in Colombia, the Ranquele, Patagonians, etc.”

We can also add the Balto-Slavic peoples to this long list, about whom the Arabic writer Mas'ūdī, writes :

“ The Slavic women, after they have entered into matrimony, do not commit adultery. But if the virgin loves anyone, then she gives herself to him and satisfies her passion with him. And if a man marries and finds his bride a virgin, he says to her : ‘ If there had been any good in you, men would have loved you and you would have chosen somebody who would have deprived you of your virginity.’ So he drives her away and renounces her ” (Wattenbach).

Lippert, who tries to prove that mother-right preceded father-right, supports his hypothesis on the ground that female predominance was the first cultural step in a number of phenomena in tribal life which scarcely admit of a definite conclusion from prehistoric conditions, that is to say, from a generally prevailing condition of women's rule. The probability is not to be denied that so long as settled marital relationships had not developed, and even beyond that time, maternal government was in advance of paternal government over a wide area. Among many living tribes even now, the former remains unchanged in power.

In a lecture to the Berlin Anthropological Society Adolf Bastian well expressed his views on the development of the various forms of marriage and on matriarchy and patriarchy. In mother-right and in the matriarchy, it is not a question of *preference* for the woman, but rather of that profound contempt for the weaker sex when under the domination of the stronger. We have to take into consideration the primary state of primitive communities where the contrast between the sexes is so decided that they are hostile to each other. Not *liberorum quaerendorum causa* does a chance encounter take place, but the causality lies in the violence of the sex impulse and here the women, as the passive element, may preserve, by the power

appertaining to refusal, a kind of superiority, so that among the Papuans, for instance, every cohabitation had to be specially paid for with shell money. Among the Ashanti, as the king rules over the men so his sister rules over the women.

According to von Reitzenstein who, since 1908, opposed the idea of primitive monogamy, the evolution of marriage must be considered in relation to sexual phenomena among the primates. In his article "Hochzeitgebräuche" in M. Marcuse's *Handwörterbuch der Sexualwissenschaft* (1926), he says :

In investigation at the present time, there are two sharply opposed opinions. The one assumes an original monogamy and sees in the other forms of sexual life a degeneracy ; this opinion is supported chiefly by religious circles or by those who are closely connected with this view of life either on sentimental or political grounds. It is true that Wundt has, curiously enough, taken up this point of view, and, in recent years, by virtue of the " authority " he has gained in other fields of knowledge, has gained an *apparent* victory for this conception. Likewise, the work of Westermarck which, in this connection, is to be read with great care, belongs to this circle of opinion. The other group takes up the view agreed upon among themselves that marriage can also be explained in accordance with a conception of life from the point of view of the history of evolution. This group, therefore, to which we belong, does not admit true marriage for primeval times, and considers it only as a cultural phenomenon, for, up till now, we have been unable to find in the works of our opponents any reason which could cause us to depart from the standpoint of the theory of transmission by descent. We notice rather, even if corrections must be made here and there, an almost daily confirmation of our views. According to this, man was not created, but evolved. Thus we can certainly take inherited instincts in him for granted. Now there are actually animals which, if one wishes to use this comparison at all, live monogamously, and there is evidence that among them are to be found some highly developed apes, such as the gorilla. The present-day representatives of the gorilla are not gregarious animals as man has been from the very earliest times, for this attribute alone is, no doubt, due to the "*evolution of man.*" The care of the offspring can thus not be facilitated by the *herd* ; it requires the cohabiting of male and female for this very purpose. We will take as a comparison a few points from the life of the chimpanzee and the gorilla as recorded in Brehm's *Tierleben* (" Säugetiere," Vol. XIII., Leipzig, 1922). The following note, pp. 653, etc., represents approximately the picture of a tribe :

" It cannot be said," reports Savage from New Guinea, " that the chimpanzees live gregariously, since one rarely finds more than five or at most ten of them together. I can with certainty, however, maintain that they occasionally assemble in greater numbers in order to play. One of my informants assures me that on one such occasion, he saw not less than *fifty* who enjoyed themselves with shouting lustily, shrieking and drumming on old tree trunks."

More recent information about wild life is given us by H. v. Koppenfels and this is particularly valuable as his statements are based on his own observations : He states that " the male chimpanzee passes the night in a fork of the branches *close under the nest of his family . . .*" Pechuel-Loesche also reports that chimpanzees in the territory of Loango " in many places, for instance on the Kuilu and at the estuary of the Banya (Yumbo), must, to judge by their cries, which are to be heard on every side, *be extraordinarily numerous. They live together in bands and families. . . .*"

J. v. Oertzen one evening watched a female chimpanzee which was lying on its back in the freshly made nest whilst a young one scrambled over its mother.

The old one seemed to be very sleepy, for now and again it pressed the little creature to itself to make it be quiet. Finally, as twilight advanced, the little one grew tired and lay down beside the old one with its head in her breast.

Next morning, when Duke Adolf Friedrich v. Mecklenburg shot down a young animal from another tree used for sleeping, the bush became suddenly alive, and fifteen steps away appeared the head and the gnashing teeth of an old male. These often accompany families to some distance, but keep themselves aloof. He showed an evil desire to attack, but he also ended with a bullet in his breast within a few minutes. In spite of this, the herd did not vacate the field; the shaking trees and bamboos showed the hunter for some time longer the presence of the angry animals, who gradually dispersed.

In their wild life, the growing, immature chimpanzees of both sexes form the bigger bands, which go through the virgin forest with much screaming, whilst the adults keep more in *little family groups under the leadership of an old male*, who is accompanied by his mate and her little sucklings. This gregarious impulse of the young animals is shown at once by the newly arrived inhabitants of the station for anthropoid apes at Teneriffe. When they were let loose in the great grass plot, they *at once formed a tribe under the leadership of the biggest male*, which gave warning by excited or warning cries of the approach of any human being, whilst a *big female, keeping careful watch at the back, formed the rear guard*. As the animals became tame and trustful, they did not continue this custom.

Not only the mother but also the old male protected the young. As v. Oertzen with his men were pursuing a young one which apparently had lost its mother, it uttered anxious cries; then, through the bush broke an old male with ruffled hair and left them in no doubt that it would assault the pursuers.

It is not generally known that the female chimpanzee belongs to the few animals who, when in danger, cast off their young, which are thrown to the ground. The male animals usually have two or three females with which they cohabit.

v. Koppenfels is the first European who demonstrably observed gorillas in the wild state and killed them single handed. He says that "the gorilla (including the hypochondriac old male), lives in *narrow family circles*, and, because of the great consumption of food, wanders about from place to place, spending the night *wherever he finds himself* at the onset of darkness. Thus, he builds a new nest every evening, and sets it up on sound, slender trees (not much more than 0.3 metre thick) at a height of from 5 to 6 metres. It is made like a stork's nest from green brushwood in the twigs of the stronger branches. The young ones, and if these still need the warmth the mother also, use the nest for their rest at night, but the father spends the night crouched at the foot of the tree with his back against the trunk, and thus protects his own from the surprise attacks of leopards.

Herr v. Koppenfels killed his first gorilla on Christmas Day, 1874. He had taken up his position not far from an iba tree, of the fruit of which gorillas are very fond, and where he had seen some pieces freshly bitten. "Looking out from behind my tree trunk," he writes, "I saw a family of gorillas carelessly busy with the fruit. They consisted of the two parents and two young ones of different age. Judging by the age of human beings, the elder might have been six years, the younger one a year old. It was touching to see with what love the mother tended the younger one. The father, on the contrary, was concerned about nothing but appeasing his own hunger. The best fruits would have been devoured had not the female climbed the tree with extraordinary speed and shaken down the ripe fruit."

On the Ayno-swamp, near Akoafim, in the South Cameroons, v. Oertzen counted,

on an "old farm" (abandoned farm?) not less than sixteen gorilla sleeping nests, nine of which were on the ground, and seven in the branches of a shady tree at a height of from 3 to 4 metres. He concludes from this that there were probably ten head in one horde, even granting that several perhaps did not come back to rest in the first nest which they had erected. These gorilla hordes, however, can never consist of so many members as those of the chimpanzees because the gorilla is, on the whole, much more rare.* Unfortunately, the hunters, who for the most part are our informants, are not sufficiently well grounded to keep distinct the difference between the terms hordes, families, groups. Hence, a far closer investigation than these hunting experiences is required in order to draw more far-reaching conclusions.

Man, however, appears to us from the very beginning as a *gregarious* animal: his inherited instincts in regard to woman must, therefore, correspond with those of gregarious animals, and, as everybody knows, there is no question either of "monogamy" or of "monogyny" there. It is really absurd to assume a *monogamous instinct* in mankind, and above all in man, and it is preferable to believe that in the gorilla, too, it does not exist, for it is very questionable whether the gorilla in reality feels attracted to one female only (which would be the effect of a monogamous instinct) or whether he *remains* with one female solely on account of the care of the offspring, just as in the case of birds. Then, in the gorilla, etc., also, the cause of the monogamy or monogyny would be no impulse in itself but an *inherited* instinct.

On close observation, we can see that every form of "marriage" conceivable among human beings occurs among animals and that all of them are dependent upon the care of the offspring. Man, however, has learnt just as little as the animals of the relationship between *cohabitatio* and *conceptio*. The satisfaction of desire with him had just as little regard for the child as is the case with the animals. Inherited instincts will influence animals living *individually* in such a way that the male will stay by the female for her protection while she is rearing the young, but this is not the case with gregarious animals. With them, the essence of self-preservation lies in greatest possible multiplication of the troop and their young are reared and protected by the "herd" itself. Just as erroneous is the assumption of an "*enduring erotic impulse*." It exists no more than does a monogynous impulse. We even see plainly that the mode of life of primitive man urged him less towards rearing the young by pairing than towards the tribal or "horde" form. Gregarious animals, however, never live a monogynous life. The sexual impulse is not the *cause* of marriage, but rather the wish to possess a woman, and, above all, to have her children as workers, and later as supporters and instruments for sacrificing to the shades. The lasting impulse might have been assumed as a makeshift in a period when people knew nothing of the results of the investigations into the internal secretions. An "erotic impulse" exists in the man just so long as a woman is able to effect a chemical "erotic" process within him. Hence, it depends for the most part on a contingency. Fundamentally, *jealousy* has just as little concern in it. When it is said that prostitution knows no jealousy it is not easily explicable, for a greater jealousy is hardly known than that which is accustomed to appear in these relationships. The urge for *companionship*, which has an erotic foundation, is present wherever a similar phenomenon is to be met; it is nothing else but the *instinct* for rearing children. Since we can find *nothing at all* for man except biblical tradition which, however, can be taken into consideration in sociological-scientific

* This is not the reason [v. Reitzenstein.]

research just as little as the Zend-Avesta (which would justify us in giving him the position of an exception among the gregarious animals), so there remains nothing but to leave him one of the chief characteristics of the gregarious animals, *agamy*, *i.e.*, the state without marriage. The objection that isolated so-called "very primitive" tribes, the pigmies, etc., are "monogamous," is nothing but a very cleverly produced deception. The "pigmies" might well be conceived as a very primitive human survival, but not culturally; in their case, they have really *sunk* from a higher stage of civilisation, indeed they have, for the most part, lost even their own tongue and assumed that of the peoples on whom they are dependent. They mostly live in the greatest penury and usually with *one* wife. R. Virchow says rightly: "If, among the Veddas, neither polygamy nor polyandry is *observed* (in itself no proof for such an important matter), this may be explained by the lack of numbers and the isolation of the families." Moreover, the Veddas have no "marriage made in heaven" for they permit marriage with the younger sister. In general, they resemble the gorilla in respect of sociological conditions and thus naturally approximate to its form of rearing the young. Besides, we must remember that with the almost equal numbers of both sexes (*i.e.*, the slight preponderance of women), only a few men could have more than one woman in marriage (as is the case in Islam), and that a wider extension of polygamy is, of course, possible only to very warlike or energetic peoples, and thus, under these conditions, the whole question assumes a different aspect.

Gradually there took place a kind of separation of the horde into classes according to age, which we saw above typified among the chimpanzees and gorillas. The rule of the stronger became too predominant. By reason of such beliefs as that in *mana*, only older men could get power and authority and the social relationship was displaced in favour of mental culture, which appeared as the rival of physical strength. From the rule of the mentally stronger, it follows that the old are more cherished as the more powerful by virtue of *mana* and especially honoured because of their power. Here, predispositions towards culture may already be traced, whilst in the state of savagery only the physically strong ruled. From the fact that in one tribe practically only "single marriages" could be proved as existing, it cannot be concluded that the tribe is "monogamous" or even "monogynous," much less can the original form of sexual intercourse in primeval times be judged. If in such a tribe there were a great surplus of women, then these would certainly not be left unfertilised by the men. Since these pigmy tribes are just the least able to create a surplus of women, they live in "monogamy," *i.e.*, in a *particular kind of polygamy*. This monogamy is rightly designated *necessity-monogamy*. From these conditions, it is just as difficult to draw conclusions about primeval times as from the animal kingdom, for nothing can be concluded from necessity-monogamy about inherited instincts and the impulsive force of human beings. Thus, we may say that the period in which it was the fashion to speak of an original monogamy of human beings, is past. It was from one point of view an episode cleverly dragged in, the loss of which will, of course, be much regretted by the Church and by certain groups in our "women's movement"—for political reasons. A section of the supporters of this belief in tales of paradise cling to it only because it is now so much more "modern" to investigate this authoritative belief from its actual content and its starting point.

On the other hand, if man was a gregarious animal, we have the right to keep to his primeval organisation in *hordes*. These "hordes" are combinations of fifty or more individuals of both sexes who defended a common hunting ground and believed that they derived descent from a common first being or ancestor. In

death they return to him, and from him reissue the seeds of the new human beings. In this horde, which did not know the existence of individual possession, the women were thus also common to all. The children, since an individual father did not come into consideration, were born to the horde ; in them was again incorporated a part of the ancestral spirit. For this period only, fertility rites, and those of the age-classes can come into consideration ; but not yet any actual marriage ceremonies (see later). As a matter of course with collective management, hunting and careless farming, the hunting ground soon became unproductive and the tribe was forced to wander further afield. As we see among present-day primitive peoples, first the old people and the women were killed, and besides these, a general slaughter of the girls was carried on. Now, if they came again to new, favourable and fertile grounds, then the want of women was felt, especially by the young men. The elder men would appropriate the women, choosing, of course, the attractive ones, that is to say, the younger and more seductive. The next younger age-class of males who, although physically and mentally temporarily weaker, feel the fermenting sexual desire more hotly, are thus in a difficult position since, if any women at all are left, they are at best repulsive and worn out. Hence, they come to the point of abducting women from a neighbouring tribe or rather seducing them, which leads to corresponding raids for revenge on the latter's part. Of course, this invasion of the rights of another tribe was reparable by some kind of atonement (revenge by blood or *wergeld*). The final solution used to be found in the establishment of an *epigamy*, and with this mutual understanding about *connubium* and *commercium* fell the first ray of light of future civilisation into the night of rude barbarism. Then it became customary to marry from strange tribes ; from this follows *exogamy*, which strictly forbids the marrying of two members of the same tribe of the same totem, etc. (beginning of the actual cultural development of mankind). The ruling castes meanwhile continue with endogamy, *i.e.*, with marriage among members of the same tribal family in order to keep the " noble " blood unmixed. That, moreover, may reach as far as marriage between brother and sister. This was the case in the Eighteenth Dynasty of the Egyptian kings and, in conscious imitation of this example, among the Ptolemies ; we find it in the dynasties of the Incas and the Achæmenidæ, we find it again among the Veddas in Ceylon, whilst the Bedouins were satisfied with the right between cousins. Of a period of " marriage by abduction " as such, *i.e.*, as a *form* of contracting marriage, one cannot, of course, speak. The woman was released by means of this *wergeld* from the social circle to which she had hitherto belonged, and now had to be separated also from her ancestors, since it was believed that any misfortune which she encountered later was caused by them on account of her action. The young man appeared either alone in person or with companions, according as to whether he was wooing the woman for himself alone or for his companions along with him. If he wanted to possess her for himself alone, then these companions had to be indemnified. A number of connecting links with these customs have survived (see later). The horde now had no claim upon this woman since the compensation (*i.e.*, *wergeld*) generally consisted in *work* done by the " abductor." Consequently, the children of these women did not belong directly to the tribe but to the possessor, and in a sense, the usufructuary of the woman. In this way there arose two new concepts : the " *one wife* " who, in contrast to the tribal wife, belonged to one man only ; and the *family*, for it was also possible now to get slaves, etc., who were originally included in the concept " family." The stress originally lies not in the concept " wife," but on the concept " *man* "—*working power*. *This* was necessary, and next to him in importance were the

children born to him, who, in their turn, represented working power. The origin of marriage, therefore, does not lie at all in a "regulation" of sexual intercourse, an idea which our morally debased period first put into it—for primitive peoples do not possess that morbid degree of sexual sensitiveness like Europeans; it is a purely social institution in which sexual intercourse happens to play a part. From the *wergeld* arose the "*purchase price for the woman*," i.e., the origin of this compensation was forgotten, and it was understood as a purchase. All the fundamental ideas of marriage may be explained at this stage, for the "one-woman" is the forerunner of the later marriage of which one can first speak only from that moment when certain ceremonies were performed, which we designate precisely as rites on joining and leaving a tribe. The man in question could now woo as many women as he could get and redeem. Monogamy and polygamy are thus not to be separated in principle, and the difference between them is one of number. Talents, impulses, instincts, have no concern in the matter in this sense. Polyandry, too, may be explained as originating likewise from the same foundations. If compensation for the raiders was not possible, then the one woman remained common to those who had taken part in the raid. Therefore, since single wives and families became more important than the tribal life, the tribe was broken up and dispersed. There arose from it, either clan-families or separate families.

The economic stage which corresponded with these conditions was essentially that of the hunting people in which the wife was active as the food gatherer. To explain the further development, we do not need any particularly complicated examples. When these tribes and families found themselves on favourable ground, they must have taken to *agriculture*; whilst if they found themselves on steppe land, etc., they must have had to develop more or less into *nomad cattle breeders*. These courses of development are now of the gravest significance for the development of marriage. We cannot here go further into the matter than to mention that the woman came into consideration chiefly as the discoverers of agriculture; the man, more as hunter and discoverer of cattle breeding. If they were on fertile ground, then the greater part of their food was obtained by the former method, and the woman played a great part in it. She was the chief supporter of the household, and had the greater rights. It was different when they were on steppe land, etc. The man, as cattle breeder, was the supporter of the household, which he carried on with the help of slaves. The woman sinks to being a kind of plaything, and the tolerably rich man can have as many wives as he pleases.

We see then that two clear strata lie over one another:

(1) An older one which is connected with the "tribal wife" and belongs to the period of communal women. This is a period in which the connection between *cohabitatio* and *conceptio* was unknown, and the child was conceived to be a reincarnation of part of the soul of an ancestor. There exist then only rites connected with the age-classes (especially with the puberty classes), and such rites as were supposed to increase productivity.

(2) A younger, which is connected with the "wife of one's own," the object of marriage. To it belong the initiation rites of various kinds. From the first stratum, the fertility rites in particular were taken over; later these various ceremonies were divided into two groups: into betrothal and marriage, although both are very often the same.

To the tribe from which a woman has been taken, a compensation, or, in other words, a "buying price" has to be paid. The children, therefore, everywhere among primitive tribes, belong, not to the father, but to the mother; and the former can

even be required to pay a fine if a child of his dies. For, by this death, the wealth of the mother's tribe is diminished. Hence, among the Dualla, a payment is made in advance for the children which, in the event of childlessness, is paid back again. Thus we find marriage by purchase the most widespread, and so long as the children belong to the mother, they turn to their mother's brother as the natural protector. With the father, the children have nothing more to do, and just as little with the tribe in which they live as, of course, they belong to the mother's tribe. And hence it may happen that in time of war between the two tribes, the children are obliged to fight against the tribe in which they were born.

Giraud-Teulon states that "in Australia, when war breaks out between two tribes, it is the signal in each for the departure of a great number of young men, who go to join the tribe of their maternal parent, so that it is not unusual to see father and son in opposite camps."

Stevens found matriarchy also among the Orang Lâut in Malacca. But he sees in this no preference for the female sex, for in this tribe, particularly, the women are very badly treated.

Among the nomad gipsies in Hungary, maternal government still prevails. H. von Wislocki writes thus :

"In general, however (apart from relationship with Voivode families), the relationships on the father's side remain completely in the background. This is an unusual and peculiar circumstance, and the reason for it is that the tent gipsy, as soon as he takes a wife, must join the clan to which his wife belongs ; further, that after his marriage, he is still reckoned as a person or unit among the kinsfolk or clan to which he belongs by birth, but he and his issue belong only to the kinsfolk of his wife. For instance, when Peter of the clan A marries Maria of clan B, then he belongs to clan B, but, until his death, is counted as a member of clan A ; his children belong to clan B, are not regarded as near relations by clan A, and can marry back into it, only they must not take their father's sisters to wife. Probably the reason for this peculiar relationship is to be sought in the circumstance that the young husband gets the whole outfit of a gipsy 'household'—tents, wagons, horses, tools, etc.—from his wife, whose relations watch carefully that he who has married into their troop does not waste the 'wealth' of his wife. He has, accordingly, to travel with his wife's clan, and if necessity requires it, has even to separate from his nearest relations by birth, whom he then meets only sometimes in the common winter quarters, *i.e.*, in the places where the whole tribe happens to be spending the winter."

In the transition (urgently required in the interests of civilisation) from matriarchy to patriarchy, it has been possible to trace a few phases of ethical development. The decisive motive lies in the father's awakening sympathy for the children of his own flesh, even although merely because, on settling down to farming, they were born into the house as fellow workers. Since it was disadvantageous to send them away from it again they were therefore detained on their native soil with a view to having a right to succession. Sometimes, also, there are conflicts with the uncle about jurisdiction, and among the Navajo it happens that the father in his life time gives his property to his own children in order to cheat the strangers to whom it would legally belong. We have to recognise also in the remarkable custom of the couvade a symbolical form of the discharge of maternity by the father. A conquering tribe, moreover, which takes its wives by force from the conquered, will establish paternity without more ado. And thus we come to the united family with the hallowed domestic hearth and with the father as patriarch at the head.

Besides endogamy and exogamy, of which we have already heard, the former

as marriage from the same tribe, the latter as marriage from a strange tribe, we have a few other designations to mention.

“Polygamy” literally means multiple marriage, although it is generally used for multiple wives (polygyny), *i.e.*, matrimonial union of *one* man with several women. In the form of multiple husbands (polyandry), “polygamy” was, and is, much more rare. According to the number of individuals who are united in marriage with one person of the other sex, polygamy is called also bigamy, trigamy, etc. Polygyny is spread over the whole of Africa, and is permitted by religion and morality among practically all Asiatic peoples; but in America, on the contrary, it is rarely encountered among the Indian tribes. According to the evidence of several passages in the Bible, polygamy occurred among the ancient Hebrews as well as among many other Semitic peoples in ancient times: The Koran (*Sura* 4) expressly permits the Mohammedans to marry several wives. In Turkey, polygyny is permitted, but it occurs far more rarely than people in Europe suppose. Only wealthy people can support several wives, for a well-populated harem causes great expenditure. For instance, officials who may be transferred from one post to another, rarely live with more than one woman, because the wives are not compelled to follow their husband to his new post, whilst, on the other hand, the husband is obliged to support, in accordance with his position, even the wife who remains behind.

The Persian, according to law, may not have more than four lawful wives at the same time, with whom he has contracted a permanently binding marriage. Vámbéry voices his opinions as follows:

“In the Mohammedan countries—I am not afraid to make this bold assertion—among thousands of families there is at most one where legal permission for polygyny is claimed. Among the Turkish, Persian, Afghan and Tartar people (*i.e.*, among the lower ranks) it is unheard of, even unthinkable, as several wives necessitate also greater expense. It occurs just as rarely, and only in quite isolated cases among the middle classes. In the higher classes, and in the highest of all, this social evil is, of course, terribly rampant.”

v. Maltzan, on the contrary, found that in the towns of Arabia, there were as a rule several wives in one house, and that of the Arabs in Jerusalem, even the very poorest had two.

The Germanic peoples, too, had polygyny. Adam of Bremen tells of the Swedes that they were temperate in everything except in the number of their wives. Each had two or three, or even more in proportion to his wealth. The wealthy and the princes had no limitations as to number; and these were genuine marriages, for the children from them had full legal rights. As well as among the Scandinavians, polygyny occurs rather late among the distinguished Franks: Clotaire I. took two sisters as wives; Charibert I. had many wives; Dagobert I. three wives (and innumerable concubines). These were real marriages contracted by purchase, betrothal and “leading home,” alongside which among the Germanic people, concubinage existed, but in this case the concubine had neither the rank nor the rights of a legal wife.

Concubines were neither bought nor married, but mutual affection concluded an informal alliance by which the woman had not the position or rights of a wife, and the children had not the claims of legitimate offspring. However, according to Nordic Law, the concubine had an advance in position by prescriptive right. The Gulathing book ordained that after a concubinage had lasted publicly for 20 years the children should rank as heirs.

Concubinage continued to exist among the richer classes during the whole of

the Middle Ages, without public opinion being opposed to it. Finally, there existed among the Slavs also until the introduction of Christianity, a polygyny without legal restraint.

When, however, Hindu law prescribed monogamy, this concerned only the Sudras, the lowest caste, the poor people whose want of means had naturally led them to monogamy : the Vaisya caste might take one or two wives ; the warrior caste two or three ; the Brahmins were even allowed four ; hence again, we have clearly social motives and no supposed erotic " impulse."

The difference between polygyny and the concubinage which exists along with it among the Masai is interesting. Merker reports as follows :

" The married man has altogether from five to six wives ; rich men have besides a few mistresses to whom they are not legally married. The mistresses are usually widows who may not remarry, or who have not married again, and see in their position as mistress a permanent or temporary support."

Judaic Law ordained that a concubine whom anybody kept in his house for three years should become the legal wife.

Polygyny has, however, long since been prohibited among all Christian nations both by Church and State ; the Mormons alone permit it by their law, and even consider it an institution pleasing to God. It is true that in Germany also many disciples of polygyny have appeared at different times (*cf.* Anabaptists at Münster, 1533). Thus in the seventeenth century, Joh. Lyser, Lorenz Berger, etc., tried to defend polygyny by their writings, the latter especially at the instigation of the Elector of the Palatinate, who took two wives. However, it is generally recognised among civilised nations that the moral order is decidedly averse from polygamous marriages, and that especially in consideration of the East and of the Oriental Royal families, polygyny must be designated as a grave social evil. The early development of the girls and the lasting vigour of the men are advanced as reasons for the prevalence of polygyny among many nations.

Polyandry is the union of one wife with several husbands. It is most widespread among the tribes in Ceylon, in India, especially among the Todas, the Nayar, and other tribes in the Nilgiri hills ; further, also, in Tibet ; among the Eskimos, Aleuts, Koniago and Tlingit ; also this custom was found among the aborigines on the Orinoco, as well as among the Australian aborigines, in the Marquesas Islands and among the Iroquois. In Ceylon, and among certain tribes at the foot of the Himalayas, the husbands of one wife are always brothers. In Kulu (Kangra district) in the Western Himalayas, v. Ujfalvy came across marriage associations where from four to six men lived with one wife. The men were always brothers. The children speak of an " elder and younger father," and as soon as one husband catches sight of the shoes of one of his brothers before the conjugal chamber, he knows that he must not set foot in it. Similarly, A. Brandeis reports from the South Sea Island Nauru, that there polyandry is rare, only it sometimes happens that several brothers have one wife together. In Cæsar's time, almost the same conditions existed among the Britons. Ten to twelve men (*et maxime fratres cum fratribus parentesque cum liberis*) had a wife together ; the children were considered the issue of the one who first brought her home (*De bello Gallico*, v. 14).

Among several of the peoples mentioned, considerations of economy seem to keep the custom of polyandry in existence. In the same way, poverty is the cause of the occasional occurrence of polyandry among the Herero in South Africa.

Also in Ladakh and among the Spiti in the Himalayas, polyandry has been reported.

Concerning Ladakh, v. Ujfalvy says :

“ In order to prevent the breaking up of their land, and perhaps also from motives of economy, it is the custom there for a girl who has entered into marriage with one man to take as husbands as many other men as she pleases ; yet they all form one family together. However, the husbands chosen later are mostly the brothers of the first and hence one often hears the children speak of an ‘ elder or younger father.’ Nevertheless, the women in Ladakh are permitted to choose a further husband from a different family whom she, without fear of opposition, may introduce into the marriage community. Meanwhile, cases of polygyny also occur ; now and again, too, it happens that a wealthy girl gives her hand to one single man of her choice ” (see Ujfalvy and E. F. Knight).

About polyandry among the tribes of the Valley of the Upper Indus, Rousselet says :

“ The marriage of several men to one wife is probably the type of the oldest social organisation of the natives of the Indus and the Western Himalayas. The great age of this custom is shown by the circumstance that we find it still prevalent among various tribes separated from each other by wide districts peopled by disciples of polygamy. Thus, we see polyandry among the Nayar in the extreme south of India, among the Baigās, among the Garrow on the borders of Indo-China, and, finally, in the Western Himalayas in Ladakh, Rapshu and Kulu. . . . As a rule, when the eldest brother marries, all his brothers become thereby husbands of his wife. The children who result from this alliance do not belong to anyone singly, but give the various husbands of their mother the title of father without distinction. Thus, a woman sometimes has four husbands at once ; but the number is not limited in any way. Besides this regular form of polyandry, the wife has also the right to choose one or more husbands (not lovers) in addition to the group of brothers. The result of this remarkable custom is that the population remains stationary ; yet it does not diminish. Among the polyandrous people in Kulu the wife forms the head of the community. She manages the property which is worked by the husbands and the income from which they hand over to her. She alone establishes the children and bequeaths her property to them.”

“ Once a girl of the Dafia tribe (northern frontier of Assam) fled to Indian soil and put herself under English protection, for her father had wanted to marry her to a neighbour living polygamously. She was granted the right of domicile ; she at once adorned herself and brought her seducer from some hiding place, but introduced to him two men as her husbands also. It turned out that among her countrymen, polygyny was exceptional and polyandry the rule. There polyandry is not as in Tibet, limited to brothers, but follows inclination without restriction ” (Schlagintweit).

Granted that in Southern India marriages are concluded by a number of brothers and several sisters, and among the Polynesians of Hawaii this custom (*pimula*) of brothers possessing their wives, and sisters their husbands in common, is prevalent, yet Peschel observes quite justly in regard to this that it would be very bold to designate these isolated cases as necessary steps towards a stricter marriage. Among many Polynesians the so-called “ blood friendship ” is regarded as a peculiar custom. According to this, two men after they have concluded a friendship based on a mutual defence and offence alliance, pledge themselves to communal wives.

In one people we do not always find only one definite, homogeneous form of marriage to be customary. Among the Malays in Menangkabau, in Sumatra, where all kindred relations derive from the wife, and the property of the wife is inherited through her, there are three forms of marriage. Marriage by *djudjur* is a complete purchase of the wife ; she and the children become the property of the man, and after his death fall to his heirs. In the marriage by *semando*, the man

gives a certain present, the couple are on a footing of equality, and have equal rights in the children and inherited property. In the marriage concluded by *ambil anak*, the man is of no account and takes a subordinate position in his wife's family : he has no rights in the children. Along with these main forms, there are also several transitional forms. To name only one instance, we may mention that in Persia, marriage is either *akdi*, *i.e.*, permanently binding so long as no valid ground for divorce can be made ; or *sighei*, *i.e.*, only for a stipulated time. The *akdi* corresponds exactly to our wife ; the Persian also may not legally have more than one at the same time. *Sighe*, *i.e.*, the woman married by contract, is married on payment of a certain remuneration and of a settled sum on the appearance of pregnancy ; during this stipulated time, she enjoys the full rights of a legal wife : on the expiration of the contract, however, she is forbidden to the man by law.

Nikolskj describes a peculiar form of marriage of the Chukchee. He writes :

“ There exists among others the custom of entering into a so-called ‘ exchange marriage ’ ; two or even more form an alliance, so that they all have an equal right to each others’ wives. The right is exercised at each meeting of the parties concerned, *e.g.*, when visiting each other. An unmarried man, also a widower, can contract such an exchange marriage if he lives at one and the same place as a married man. Such a marriage is virtually polyandry. The women are very kindly disposed to this custom ; even the Russian women who marry Chukchee being willing to submit to it. On the other hand, however, there is evidence that the Chukchee women take their own lives if their husbands force useless ‘ conjugal cohabitants ’ upon them.”

The ancient Hindus (see Manu, III., 24) have as many as *eight* different forms of marriage ; the *brāhma*, the *daiva*, the *prājā-patya*, the *ārṣa*, the *āsura*, the *gāndharva*, the *rākṣasa*, the *paiśācha*. The first-named is always considered the best. For the explanation of the ritual, the information of Schmidt,⁹ v. Reitzenstein²⁰ and Winternitz,¹ should be consulted.

The foregoing analyses [mostly according to v. Reitzenstein] will no doubt be sufficient to give the reader an approximate idea of the manifold character of the forms under which woman was confined to a more or less permanent companionship ; and here again the comparative study of ethnology and sociology has been able to give us the necessary explanations and complete understanding of many customs which, at a first glance, seemed absurd and paradoxical.

It now remains for us to cast a glance at modern relationships from the point of view of sexual science.

So far as our marriage is concerned, we must bear in mind above all that male and female sexuality are quite different, that there is thus of necessity “ a double standard of morality ” as the political catchword expresses it. So long as there are two sexes, there must be, in one sense, a *double* morality. If it did not exist, it would have to be created. It is exceedingly significant that all politically active women (that is to say, the female portion of the human intermediate grades who constitute at least a quarter of humanity), become enraged if it is not thought their catchword “ double morality ” is justified. A great many politically well-informed men follow this group because their party has inscribed this opinion on their banner. They also want to abolish the “ double standard of morality ” and run their heads against the rock of nature. The chief aim of State hygiene must be to prevent as far as possible the formation of an intermediate sex (“ male ” women and “ female ” men), a purpose which cannot be carried out by laws but by education.*

With regard to political parties, and their activity in the life of the State,

* [This view of Frh. von Reitzenstein does not appear to me to be acceptable. *Ed.*]

in our case, it must be borne in mind that laws should not be made according to party opinion or political policy, but only in accordance with scientific results ; and it has had to be borne in mind that in itself female thought is, generally speaking, guided by impulse. In woman, "mother love" takes up at least half of the "love sensations," and we may even assert "of the altruistic sensations" also. In women, to be sure, as we have already indicated, a percentage of "perversions" are tolerated—even socially—which to men are denied, prohibited by law, and punished. The polygamous impulse exists more strongly in man than in woman, for his love-life is primarily the result of "the chemical eroticisation process," and thus falls, if we leave "cultural" suppressions out of the question, to the woman who has the strongest erotic effect on him, a circumstance to which prostitution (which to be sure represents the continuation of the original love-life so long as it was not based on sociological motives) pays very careful attention ; marriage, however, does not. Therein lies the deep gulf, therein lies the cause of the contemporary strong dissatisfaction with marriage, the very cause of unhappy marriages. Marriage must not be eliminated (especially so-called monogamy), and with it the family (although in special cases, polygamy should be permitted, and here, as everywhere, we should avoid being dogmatic), for it is without any doubt the best solution of the question of a common sexual life. So long as our wives understand how to keep their attraction for their husbands, marriages will be happy ; on this subject, our wives could learn from the prostitutes. The difference between them is most clearly shown by a feminine characteristic : *love of underclothes*. The better prostitutes and the Frenchwoman of good position love beautiful linen, and have very good taste in it. They also, however, use it consciously as a sexual stimulus. Quite different is the German "Gretchen" ; with her the urge for cleanliness has become a neurosis and erotic sensation has been repressed : she cannot *look* enough at under linen, she plays with it as a child plays with a doll, but she does not *put it on*, either from economy, false morality or prudery, in order to please her spouse, but keeps it in the linen cupboard to show it to friends and guests. So long, then, as the male approaches nearer and nearer to the female, the more unhappy will marriage become, since, as we all know, in this as in everything, similarity offers no attraction.

It is often said with approval that "love" is the provision for marriage. Naturally, a certain degree is necessary, but it is more important for us to realise that "marriage" and "sexual partnership" are not the same thing. A *passion* is just sufficient for a more or less lasting *physiological love affair*, but not for "the social tie of marriage." If passion is not replaced by "*friendship*" which depends upon "*community of interests*," then the marriage is ruined. At the present day, the preparations for marriage are favourable in France ; but in Germany—of present day Russia I will not speak at all—they are most unfavourable.

In France, they do not aim at "love affairs," but the parents choose the partners for *social* reasons, and they have to *learn to love each other*, which they generally succeed in doing, especially as the young Frenchwoman, in her education, has learnt some of the arts of the accomplished courtesan.

The Frenchwoman thus unites training both in economics and the arts of love ; she thus generally remains the valued sex-partner of her husband. It is otherwise with the German "Gretchen." She begins with a love affair, and obtains the consent of the parents. The couple then go through some mad honeymoon weeks ; the wife satisfies her passion, finding, generally therefore, the man with a "past" more interesting, and finally she becomes a mother and—remains one. The man has lost his "*lover*," he seeks to reawaken his earlier happiness, and soon finds a

woman who attracts him physically. The man will then either become a solitary eccentric who returns to his old bachelordom, or an adulterer, a truly feminine designation for this result of the "double standard of morality," without taking into account the fact that marriage is a social institution that cannot be broken by a "physiological act," but only by an act which strikes at the foundation of marriage. That, however, is not "passionate" love, but a union being built up on the economic community of interests. Only when this is destroyed, is the "marriage" broken, otherwise it is only the ecstasy of the honeymoon weeks which, however, is generally gone with the arrival of motherhood, and which is never called a "breach of marriage." Thus Sadger says: "It can hardly be held as a matter of course that mother-love is quite selfless and without sensuality. It is true that she does not long for ordinary, coarse satisfaction through the genitals, but all the more eagerly for cutaneous sensations, for the pleasure in nudity, and thus it can more easily be passed off as non-sexual than a single genital satisfaction. Anyone who has seen the sparkling eye with which a mother suckles her children (like the ceremonious act of sacrifice performed by a priest), knows how far an unconfessed sensuality is active." Children know quite well that the mother gets pleasure from undressing them. If they are annoyed with her for any reason, then they withdraw this privilege, *i. e.*, they will not let themselves be undressed by her.

Least of all is mother-love quite *selfless*. It gives the woman sexual pleasures which are otherwise suppressed and despised. It surrounds her with a halo and demands as price only complete devotion to the child. It is probable that without the above-mentioned extra-genital satisfaction, there would be much less mother-love. If, for example, the genital sensation is more highly valued than the revived childish love, then the woman does not want any children, and even if this "blessing" does come, she is a bad mother. Such women often declare beforehand that they want no family so as not to spoil their beauty. They prefer to keep to other compensations which give pleasure to themselves in order to be their husbands' lovers, but not mothers.

In sharp contrast to this attitude is the famous "*cry for a child*," *i. e.*, the assertion of many women that they would like to have little ones if only the man were not necessary. . . . In so far as this cry is an honest one and not a cloak or pious deception for unadmitted sensuality, there are girls whose genital libido has become weaker than that we have designated above as extra-genital. That is to say, there are two types of women: mothers and mistresses. When once a "mother" gets her child, then she will at best continue to tolerate her husband's embraces, without its ever again being what it once was. The child, of course, now assumes the place her husband formerly filled in her heart. Henceforward, she is solely and only a mother, and no longer in any sense *a lover*, a change to which many husbands find it difficult to adapt themselves. Some there are who yield to the situation and resign themselves to playing the part of father and supporter of the family. Their life then is nothing but toiling and working for wife and children. Others, again, look elsewhere for the happiness which they can no longer find with their wives. And there are "sensible" tolerant wives who let their husbands have complete freedom "if only the home remains clean," especially if fear of another child is always increasing and preventive measures reduce desire to nothing. To their motherly feelings, the man with his sensual desires is simply wearisome. Hence he may seek elsewhere the gratification for his "animal needs," so long as he does not disturb her in her own love-life. They are so tolerant because they unconsciously feel guilty in another direction. That is to say, their love is only for

their own son. And many say frankly that they would have left their own husbands long ago or been unfaithful to them "if it had not been for the children."

Thus, the essence of marriage and of the so often quoted "adultery" is clearly set forth. The gist of the matter is that in all judgments physiological sexual gratification and the social institution of marriage should be dealt with separately; then we might hope to get practical, legal regulations.*

2. THE LEVIRATE AND THE ḤALIZAH

The reader will perhaps have noted the omission of a peculiar form of marriage which has won great importance among the Jews, *i.e.*, the so-called *levirate*. By this is understood the marriage of a widow to the brother of her deceased husband. This marriage is ordained in Deuteronomy xxv. 5, etc.

"If brethren dwell together and one of them die, and have no child, the wife of the dead shall not marry without unto a stranger; her husband's brother shall go in unto her, and take her to him to wife, and perform the duty of an husband's brother unto her. And it shall be, that the first-born which she beareth shall succeed in the name of his brother which is dead, that his name be not put out of Israel."

This regulation was later made law, even when the brothers had not dwelt together, "and when she is many thousands of miles away, the aforesaid brother must come to his dead brother's wife."

In the Mosaic Law, there is nothing said as to whether the brother-in-law pledged to the levirate must himself still be unmarried, and whether, in case he already has a wife, he is absolved of the duty of the levirate. Now, of course, it is so; but, at an earlier date, the circumstance that he was already married did not protect him from marriage with his sister-in-law. A pronouncement of Rabbi Gerson first limited the duty to the unmarried brother-in-law; for he commanded:

"That no man should any longer have two wives both to avoid the quarrelling and dissensions which generally ensue from polygamy and because at this time, the wives are difficult to maintain" (see Jungendres).

The narration of the remarriage of Ruth (Ruth iii. and iv.) appears to show that sometimes another relative could take the widow to wife.

In this case, it is Boaz who (*ch.* ii. 1) is designated as "the kinsman of Naomi's (Ruth's mother-in-law) husband, of the family of Elimelech." Since the latter is the husband of Naomi and the father-in-law of Ruth, Boaz stands likewise in a certain, though distant relationship to Ruth. He says to her then, when they consider the plan of the marriage (*ch.* iii. 12): "Now it is true that I am thy near kinsman; howbeit, there is a kinsman nearer than I." However, the nearer kinsman gives up his inheritance before witnesses and draws off his shoe (*ch.* iv. 8). Boaz can redeem the inheritance and take the widow to wife. This takes place by a solemn declaration before the elders (*ch.* iv. 9): "Ye are witnesses this day, that I have bought all that was Elimelech's, and all that was Chilion's, and Mahlon's, of the hand of Naomi. Moreover, Ruth, the Moabitess, the wife of Mahlon, have I purchased to be my wife, to raise up the name of the dead upon his inheritance, that the name of the dead be not cut off from among his brethren, and from the gate of his place: ye are witnesses this day." In this case, of course, there is really no *levir*, for the brother of Ruth's dead husband is also dead; who is actually the next legal heir is not mentioned. In any case, one thing emerges clearly from the narrative

* [The views of Frh. v. Reitzenstein, as set forth above, are of some interest at the present time when opinions both on marriage and prostitution are undergoing many changes. For a French and American view, see Anquetil and Borden.]

that with the transference of the inheritance the duty of marrying the widow was indissolubly bound. So that Boaz can say to the nearest legal heir (*ch.* iv. 5) : " What day thou buyest the field of the hand of Naomi, thou must buy it also of Ruth the Moabitess, the wife of the dead, to raise up the name of the dead upon his inheritance."

Further restrictions which are to be found in the Talmud, are, according to Preuss,² etc., if the woman is afflicted with a malformation of the genitals, which precludes propagation ; or if the widow is related to the brother-in-law so that the kinship debars them from marriage ; or if there are reasons which, in an already existing marriage, would substantiate the claim of the wife for divorce, as, *e.g.*, leprosy in the man, or a trade of such a kind that a woman cannot be expected to cohabit with a man who follows it as, *e.g.*, the trade of tanner.

Now even in ancient times, force could not be used upon a surviving brother-in-law in this connection. However, if he refused to take his widowed sister-in-law to wife, then she had to take him before the elders and then the proceedings were as is set forth in Deuteronomy xxv. 9, 10) :

" Then shall his brother's wife come unto him in the presence of the elders, and loose his shoe from off his foot, and spit in his face, and shall answer and say : So shall it be done unto that man that will not build up his brother's house. And his name shall be called in Israel : The house of him that hath his shoe loosed."

In the course of time a peculiar ritual has developed from this which is called the ḤaliẒah, which means the release. Jungendres describes it as follows :

" And this release happens thus : The chief rabbi sends for six jurists and other rabbis to come who are to be present at the ceremony to be engaged upon and who give permission for ceremonies to be performed. He has the head of the woman in question covered with a black mantle ; she is then placed three ells from the table where the aforesaid rabbis sit and the brother of her dead husband must take off his stockings before entering the chamber or room and wash his feet clean, then put them on again and take his place, with a black cloth or linen sack over his head so that he can just see a little. The chief or the rabbi's servant puts his shoes on, on which is a longish thong, which must be 12½ ells long on each side, and the aforesaid thongs are knotted together with 139 knots."

We can gather from another passage of the report that it is only the *left* shoe which is put on the brother-in-law. About the shape, the kind of leather of which it was to be made, etc., there were such strict and irrefragable regulations if the ḤaliẒah was to be valid, that the rabbi usually had such a shoe in readiness as a model. Moreover, there was the decree that both brother-in-law and widow must come fasting to the ceremony.

The latter now crouched down before the brother-in-law and began to untie the knots in the shoe lace. For this, however, she had to use only the thumb and forefinger of one hand. The information varies as to whether it had to be the right or left hand. When she had undone all the knots and taken the shoe off her brother-in-law's foot, she spat before him and the rabbis then cried three times : " the shoe is taken off ! " The ceremony closed with a blessing, and the widow received a certificate in writing. Now she could at the end of her period of mourning marry whom she liked. Jungendres adds :

" Although such cases are not so rare nowadays, yet in olden times less was known about them ; hence Leon Modena, in his book on the ceremonies of present-day Jews, says on just such an occasion that it would indeed have been much more praiseworthy for him to have married his sister-in-law than to set himself free from her : now, however, since the wickedness of mankind has increased, they try to get rid of her for material reasons, so that they may marry

a prettier or richer woman. The lowest, especially among Italian and German Jews, want to act in this way. To which Antonius Margaritha adds further that the woman often had to give money in addition so that she could get rid of the surviving brother of her dead husband by means of these ceremonies; also that the fathers were obliged, for the sake of their daughters, to make it a condition in the marriage certificate that, in such a case, the surviving brother must set them free without payment."

From this it appears that the brothers-in-law had made it a very lucrative business. The ceremony of the Ḥalizah is represented in Fig. 564. To the left of the picture, we see the brother-in-law washing his feet, whilst in the room at the side, he is seen in the presence of the assembled rabbis with his foot extended towards the

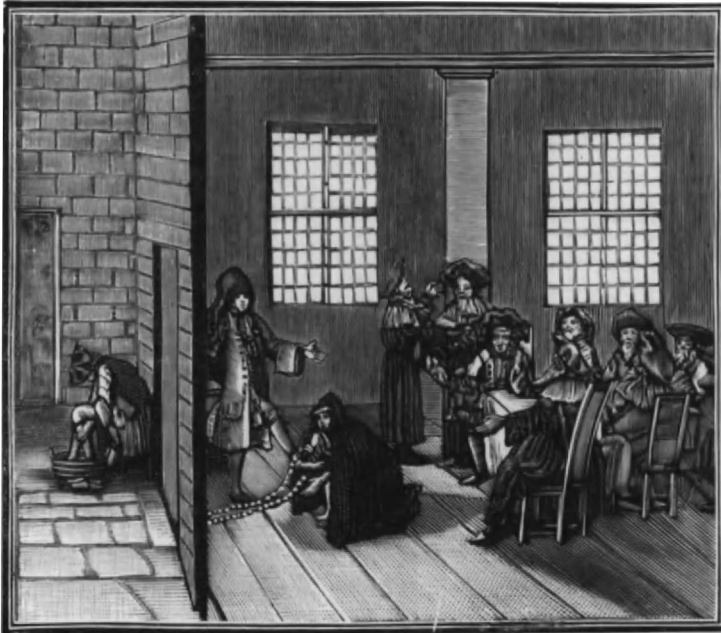


FIG. 564.—Ḥalizah release from the obligation of marriage. On the left the brother-in-law washes his feet. On the right the widow takes off the shoes of the brother-in-law in the presence of the rabbis and other witnesses. (After Jungendres.)

widow, so that she may untie the 139 knots in the shoe lace and take off the shoe. The picture likewise is taken from the much quoted work of Jungendres.

The levirate occurs in this or other forms among a great many other nations of the earth, even among those who have certainly never stood in any relation at all to the Jews.

The object of this strangely exacting arrangement is to be found practically always in the intention to provide an heir for a man who has died without issue (only for such a man, as expressly prescribed in the classic passage of Deuteronomy, or, as Luther's translation puts it, "to resuscitate" an heir); such an heir is absolutely necessary for the souls of the departed, as otherwise, the services for the dead cannot be carried out. In many cases, however, there is simply the intention of providing for those left behind.

As we shall see, however, arrangements similar to the levirate among other

peoples show many variations and peculiarities, *e.g.*, that the younger brother must marry the widow, whilst this is absolutely forbidden to the elder (India, Tenimber and Timor Laut islands), or that only the husband's half-brother can really marry her (Masai), etc. It cannot therefore be assumed without further details that the same reason prevails everywhere. In this field we need much more extended material.

3. TRIAL MARRIAGES

Another form of marriage must be taken into account here which may be called *trial marriage*.

It consists in the peculiar custom of a betrothed couple living a regular life of sexual association for a certain time, sometimes even for several years, the marriage being definitely concluded only if, during the trial period, the fiancé succeeds in making his intended bride pregnant. If there is no impregnation, it is assumed that these two people are incompatible and they then leave each other. Not infrequently the girl forsaken in these circumstances very soon finds a fresh suitor, who willingly goes through a new trial period with her. For a man to leave a girl whom he has made pregnant in such a trial marriage is considered particularly shameful, and he is subjected to the contempt of everybody.

G. v. Bunsen reported in 1887 that in several parts of Yorkshire the trial marriage existed. The abandonment of the girl after she has become pregnant is most severely punished by the neighbours. "The solemn words of the fiancé on entering upon such a trial relationship run thus : 'If thee tak, I tak thee [*i.e.*, if thou dost conceive then will I take thee].'"

Similarly, M. Bartels heard in the year 1864 that in Masuren (East Prussia) the so-called trial year was quite a common custom among the peasant population. Here, too, the marriage is not really concluded until later when the girl becomes pregnant. F. C. J. Fischer states the same thing of the Black Forest, where a distinction is made between the *visiting nights* and the *trial nights*. The former always precede the latter, and the young girls begin with them as soon as ever they reach puberty. "The country people find this custom so innocent that it often happens when the clergyman in the district asks a peasant how his daughter is, that the father tells him with perfect frankness and with parental pleasure that she is well-developed and is soon to begin to hold her *visiting nights*."

The young fellow does not enter the house by the door, but has to choose the way through the window to the bedroom of his love, a course which sometimes makes some breakneck gymnastics necessary. In the room he finds the girl lying in bed fully dressed, and all his efforts and trouble bring no other advantage than that he can chat with her for a few hours. "As soon as she has fallen asleep, he must at once go away and only gradually does their intercourse become more lively." The visiting nights gradually turn into trial nights. "In due course, the girl gives her lover, amid all sorts of bucolic jesting and teasing, an opportunity to get acquainted with her secret charms ; she lets him surprise her lightly clothed and, at last, grants him everything with which a woman can gratify the sensuality of a man. Yet even then a certain gradation is observed. Very often the girl refuses to grant her lover his final wish until he uses force. This always happens when there are some doubts of his physical strength." Fischer continues :

"A breaking apart after a few trial nights not infrequently takes place. The girl is in no danger of getting a bad reputation from this, for another soon appears, who is ready to begin the romance from the beginning again. Her name is exposed to ambiguous remarks only if she has had the trial period several times in vain. The village population considers itself quite justified in this case in suspecting hidden imperfections in her."

This custom still existed in 1912 in South Germany, as Pastor Höhn² testifies. By "little window" is understood in many places something quite harmless, in fact merely an evening visit. In Württemberg, appointed days are often customary on which the man makes his visit; Saturday evening is a special favourite, when the girl is longer in the kitchen. In Trossingen (Tuttlingen) the lad goes visiting on Tuesday and Thursday, on Saturday only "shoe polish hawkers" come there. These visits at night, however, often lead to quite intimate intercourse. A sign, a whistle, or a knocking with a pole on the bedroom window, reveals the lad's wish that his love may let him in (Tuttlingen; Oberndorf; Hall; Crailsheim). There is also climbing up ladders or hay poles, and then follow gentle knocking and the call: "Open!" (Calw). Here and there, the girl also opens the house door (Hall; Crailsheim). For these visits, too, certain nights are customary in some parts. Thus in some places Saturday evening, which is there called "visiting night," is chosen (Weinberg; Chringen; Mergentheim); in the Black Forest (Rottweil; Nagold; Calw), likewise, it is Saturday or Sunday evening, and also the evening before feast days (the latter in Nagold). The common people have various expressions for this more or less intimate intercourse of the sexes. Thus they say that the lad "is going to his friend," even of quite harmless intercourse; elsewhere "he is knocking" (Tuttlingen); or "goes knocking" (Oberndorf), etc. Even if this intimate form of intercourse is often only secretly possible, so that the parents and especially the father of the girl may not notice it (report from Nagold), it is also tolerated here and there and is actually the prevailing custom (*e.g.*, Blancheuren and in parts of Franken). In Calw, as in many other places also, the girl's bedroom lies, as a rule, "out at the back," which actually suggests an invitation for a nocturnal visit. But, in any case, whether this free and easy intercourse is tolerated or not, it takes place frequently, if not to-day commonly before betrothal: this is indicated by the oft-heard, half-jesting proverb: "One does not buy a pig in a poke." The wedding cannot always be concluded when the lovers wish it, since the peasant must consider money very carefully. "Among people in Franken, the tenderness and faithfulness of the love-life suffers from the prevailing economic conditions. The girl has often to wait a long time with one or several illegitimate children before she can be married, whilst, in places where the will of the lovers decides the question, the lad, as a rule, marries the girl of his choice before a child is born."

It is highly probable that in many other parts of Germany, also, these trial marriages, although perhaps not exactly common among the rural population are, at any rate, fairly usual. The pregnant girl later seeks lucrative service as a wet nurse, and, at the end of her service, returns to her home, and is then usually married. Here, too, it is usually regarded as a great breach of faith if the former lover now refuses to lead the girl to the altar (Spreewald, Wenden district).

Many examples have been brought forward by Fischer² from which it will very probably be claimed that this custom of the sexual trial before marriage was most likely in common use formerly among high and low alike. In conjunction with this, he cites the custom of the ceremonial public consummation of marriage and seeks to support his contention by the fact that even in regal marriages *per procuram*, the appointed representative of the Crown had to go through the consummation of the marriage with the royal bride, of course, clad in armour on the proper half of the body. Pope Alexander III. issued the decree that of two brides, the real wife was she with whom the betrothed man had already had coitus; and the fifty-second Lex Alamannorum notifies that he who has broken off his engagement with a woman must swear "that he had neither put her to the test from suspicion of any physical defect nor had actually discovered anything of the kind in her" (*Mon. Germ. Hist., Legum sectio I., V., 1, pp. 110-111*).

The oldest reports about Slavonic marriage show a condition approaching what we have termed "agamy." There is first and foremost a passage from the so-called Nestor Chronicle (eleventh century). There it is said of the Serbian Radimich, Viatich and Severs that "before parents, daughters-in-law and brothers,

they had no modesty ; also they had no formal marriage, but they arranged merry pastimes in the villages where they met to sing and dance and play the devil's games, and then each carried off the woman with whom he had once been." In North Dalmatia, there existed, and may still exist at the present day, according to A. Mitrovič, the trial marriage, or, as he calls it, the period marriage (*Zeitehe*). The object of it here, too, is principally the assurance that the aim of a matrimonial union, namely, the production of children, is attainable. As Mitrovič says : " The lad cannot or may not, for various reasons, be married at once, before he has taken home the bride. He wants to test her, first of all. He wants to see and be convinced whether she will give birth to children or not. If she brings children into the world, especially if they are boys, then he marries her, if he himself does not die beforehand. If she brings no children into the world, she can and must leave the man's house."



FIG. 565.—Dalmatian women at a "trial-marriage" meeting. The woman in the centre between the five in the foreground is a widow. (After F. S. Krauss, *Anthropophyteia*, iv.)

In summer they prefer to meet under the lime trees, or actually in the girl's dwelling place. Two or three of the lads go at about 10 o'clock at night to a girl in the kitchen. She lights a fire, and they stay until the grey light of the dawn appears. Sexual intercourse takes place. Now, if the girl becomes pregnant she indicates one of her admirers as the father and he has to marry her. Similar meetings are reported at the treading of the millet or at the flax-brake. The girls, however, often get two or three children before they are married.

Another survival of a kind of trial marriage is the so-called *period marriage* (cf. Fig. 565), which was perhaps first considered as a trial marriage. In Dalmatia, the mothers take their marriageable daughters to the annual fair. They are known by their head-dress and a girdle (*gjendar*, *gendar*, on which a sort of "dowry" hangs). The lad comes, dances with the girl, and, should opportunity offer, arranges what is to follow. Later in the night they go together to the house of his parents and sleep together. If the girl does not conceive, she is considered worthless, and can go,

whilst the dowry is often used and quite often is the cause of a lawsuit. But if she conceives, then marriage follows. Many girls live in this way with several lads one after another.

In Germany, this custom, at which present-day hypocritical morality would shudder, was at one time common, even in the highest circles.

Thus Count Johann IV. of Hapsburg had a trial marriage for half a year with Herzeloide von Rappolstein, but was dismissed by her in the end because she came to the conclusion that the necessary virility was lacking in him. Neithart von Reuenthal tells in verse a similar tale :

“ He gave to me in my own hand
A golden finger ring,
Which was of his good faith a pledge,
As it is too of mine.
So I will this whole summer long,
His sleeping comrade be.”

These words indicate that these relationships were arranged for a definite period, and, like marriage, were confirmed by a ring. It is idle to discuss the value of this idea to our own time owing to the crazy notions of modern morality ; nevertheless, it is of interest to know that recently there have not been wanting proposals that not only should the compulsory preliminary medical examination of people about to marry be introduced, but that a “ trial marriage ” should be permitted (*cf.* Lindsey and Evans).

“ It is highly surprising,” says O. Schrader,⁵ “ that such trial nights were held in ancient Greece, as we have learnt from a recently discovered fragment of the poet Callimachus (*The Oxyrhynchus Papyri*, VII., p. 25) : and the virgin already slept with the youth ; for the law commanded that they should sleep together before marriage.”

Hence the custom of trial marriage dates back to a respectable age ; and it already existed as Ebers has shown, among the ancient Egyptians. We shall have to speak of this later.

We have already seen in earlier chapters that, among peoples of a lower stage of civilisation also, many suggestions of these customs prevailed. Evidence of this is given by Hans Meyer of the Igorrote in the Philippines. He says :

“ If two lovers have their parents’ consent for their marriage, then a feast takes place at which roast pig and rice play the chief part and, during the feast, the couple to be married are shut alone in a hut, where they stay, provided with food, till the end of the feast—four or five days. After this trial period, either of the parties is free to abandon the marriage. If the man withdrew, he had to present the girl with a dress, a piece of feldspar, a cooking kettle, a bracelet and ear rings, and he had to bear the cost of the feast ; if the girl withdrew, then the cost of the feast fell upon her. But if the girl became pregnant as a result of this trial marriage, then the man had to build her a hut and give her a pig and some fowls.”

The Hurons (Wyandote) in the seventeenth century must also be mentioned here. Of them Parkman quotes from the reports of the Jesuit missionaries :

“ There was also a period of trial marriage which lasted a day, a week, or longer. The sealing of the contract consisted merely in the acceptance of a present of wampum (pearl money) which the suitor made to the object of his desire or whim. These presents were never returned at the dissolution of the union. As an attractive and enterprising young lady could enter into 20 such marriages before her final marriage, and frequently did so, she collected in this way a wampum ornament with which to adorn herself for the village dances.”

Likewise, in certain parts of the Inca Kingdom, the custom of trial nights was to be found to the "annoyance of the missionaries" (Friderici).

Here it may be convenient to mention the description Niessen gives of the custom of "May fees," which was in fashion until the last decade in various parts of the Southern Rhine province in the neighbourhood of Bonn, in many villages in Eifel, on the lower Saar, etc. The young men used to meet annually in spring on May 1st, at Shrovetide or before the parish fair, and choose a girl to dance with for one year at the parish fairs. The girls were offered ceremoniously, sometimes for money (which was then spent in common), or by a kind of plebiscite: "He and she are to be a May couple. Is everyone satisfied?" Then the lad is the protector of the girl for a year. Niessen now continues: "Of course there is no question here of sexual associations. The girl is very mindful of her virtue. If in the course of the year the girl were ruined, and it was proved by a simple calculation that when she joined in the dance round the village lime trees at the last fair she lost her virtue, then this lime or the rail that may have been round it was washed and scoured clean, and the paving round about was dug up and renewed."

[Apart from the various forms of "trial marriage" mentioned above, there are certain customs which, on occasion at least, led to pregnancies and subsequent marriages. Such are the various courtship customs which go by such names as *bundling*, hand-fasting, queesting, night-running, etc. In principle they are much the same. The young man visits the girl at night and is received by her fully dressed, even when they pass the night in the same bed. *Bundling* seems to have been introduced into the United States from Holland where the custom was called *kweesten* or *queesten* (see Dale, Hexham, Sewel) and was well known on the West Frisian islands such as Texel, Vlieland and Terschelling (see Weiland). In the rural districts of the United States (see Stiles), where it was commonly practised among the farming folk, pregnancies were not unknown as the Groton records (see M. C. Crawford, p. 199) suggest. Generally speaking, however, the couple remained chaste during the time they were together, if we confine the word to describing the avoidance of sexual intercourse. Attempts seem to have been made by the girls to prevent too much liberty on the part of the young men, for occasionally, we are informed, they tied their skirts to their ankles (see Janson); yet their virtue was not usually credited, Irving going so far as to state that "to this sagacious custom is to be attributed the increase of the Yankee Tribe" (p. 175). Apart from numerous exaggerations of this sort, the custom, when practised by the local inhabitants and not carried out by intruders from without, was not productive of any great increase in illegitimacy, since conception was often followed by marriage. Similar practices have been reported from Wales (see Barber; Bingley); Scotland (see Sutherland); and elsewhere (see Potter).]

4. IMPEDIMENTS TO MARRIAGE

We have just learnt that, in certain circumstances, the conclusion of marriage is dependent upon the *occurrence of impregnation*. Hence, as it happens, we come upon an *impediment to marriage*, and of these there are many variations among different peoples. They may be divided into two classes, those which make the conclusion of the marriage quite impossible at the outset, and those which, when they come to light afterwards, at once dissolve the marriage which has just been concluded. To discuss all these thoroughly would go beyond the limits of this book.

That in nearly every nation there exist *differences of rank* which may, in certain circumstances, be an impediment to marriage is sufficiently well known. We also pass over here the impediments which have their roots in certain *consanguineous* relationships. A special section will be devoted to these.

We shall take first, however, some forms of what might be called *artificial* consanguinity, which likewise make it impossible for the parties concerned to unite in marriage. To this belongs, among some tribes, the fact that the parties were both suckled by the same woman; foster-brotherhood, *e.g.*, among the Armenians, and in Dardistan, where a marriage between foster-children is regarded as incest. Among other peoples, as, for instance, the Southern Slavs and also among the Wanyamwezi, it is blood-brotherhood; further, too, and indeed spread over the whole world, is the relationship to the same family group, to the same *Totem*, as it is called, for example, among the American Indians. Each family, however, among these peoples, falls into individual groups which are distinguished by special names. Often it is the name of an animal which each group bears; this animal is then their protector, and it must never be killed or eaten by them. This animal is called, among the American Indians, the *totem* of the group. Precisely similar conditions are to be found in Australia, in some of the South Sea Islands, and elsewhere. Relations of the same totem must never marry; the other party must always have sprung from another totem. This is a survival of the so-called exogamy, echoes of which may still be traced even in Europe. For instance, v. Wislocki reports that among the tent gipsies of Transylvania, the husband must always go over to his wife's family group, and the children belong to this group but may marry back into the father's group. The extraordinary inviolability of such impediments to marriage is shown very clearly by a fact reported to us by Danks, from such island groups as those of the Duke of York and the Bismarck Archipelago. Here, the natives are divided into two groups which are subject to the laws of exogamy, and if anyone is accused of adultery or harlotry with a person, and he can prove that she belongs to his group, this circumstance alone is enough to prove his innocence.

It is sufficiently well known that marriage with *virgins dedicated* to the service of the gods or of kings is forbidden, and such are to be met with among very many races.

Gutmann reports about a peculiar form of impediment to marriage, the impediment *fâ—die!* of the Wachaga in Tanganyika.

“This *fâ* is a conditional curse, of a dying man, which is said to be effective when a certain thing happens, which in this case is if a member of his family should marry a girl from a certain family. This prohibition of any ancestor to enter a matrimonial alliance with the other family is handed on from generation to generation; and as soon as it is observed that, in spite of it, forbidden relations are being formed, a family gathering is at once called, which forbids the betrothal.”

Among those things which appear as obstacles to marriage, in the sense that they can immediately dissolve and render invalid a newly concluded alliance, we have already come across one in an earlier section; that is the demonstrated loss of the hymen (Vol. I., p. 36; and II., p. 39 & ff.). But physical defects of all kinds belong to this group, and most important of all is impotence. Post says on this subject:

“It is, as a rule, considered as a tacit condition of the legal betrothal contract that the girl be free from physical deficiencies. If the father conceals any such defect, he is liable to punishment for it. The betrothal form in Icelandic law says that the father betroths his daughter

legally without physical deficiency to the man ; and, according to Hindu law, the girl's father must point out any defect in her to her intended husband, otherwise he will be punished and the contract can be broken. In Burmese law, if any existing defect is concealed at the betrothal, the engagement will be broken." According to Southern Slavonic prescriptive law, impotence and other serious physical defects, *e.g.*, a rupture, blindness, bad breath, etc., are impediments to marriage ; on the other hand, imbecility is not (see Krauss).

It is somewhat different in the Hindu law. Here impotence and the beginning of mental diseases can certainly form a ground for not entering upon the promised marriage ; nevertheless, if the marriage is already concluded, then it cannot be dissolved on these grounds.

A custom difficult to place is that of the pagan Ovambo tribes in West Damara-land, South-west Africa, of which we learn through Brinckner. When all the formalities of the betrothal and, as we should say, of marriage are duly settled, then the young people go together to establish their new household.

" But the actual marriage is often not solemnised until after 10 years, that is to say, when the man has become independent ; and further, it has no object but for the master of the house to provide at last the delayed feast. During this time, the children born to them may not grow up in the *cũmbõ* of the parents, but must stay with relations till the marriage is held."

Hence the celebration of this final ceremony is indeed of great significance. For it does appear that the children are not allowed to be with the parents because they are regarded as illegitimate and consequently not due to the parents, who are not yet, in the sense of tribal law, legally married.

5. MARRIAGE BETWEEN BLOOD RELATIONS

In the foregoing section, it has already been indicated that in many nations one of the most important reasons for preventing a marriage is the consanguinity of the parties concerned. We shall now learn the various ideas which prevail among individual nations on this point. Now, if we call to mind what has been said above about the development of marriage and the various forms of it which exist at the present day, then we shall easily understand why, on the one hand, we meet the custom among certain peoples that the closest kinship not only does not prevent entering into a matrimonial association, but even seems rather to favour it ; whilst, on the other hand, among other tribes, certain relations must on no account conclude a marriage with each other between whom, according to our modern ideas, there can really be no question of any relationship at all. The one is really an offshoot of exogamy, whilst the first represents an endogamy pushed to extremes. It is well known that among Protestants first cousins are permitted to marry ; and, in this case, it is the same whether they descend from the father's side or from the mother's. Among Catholics, on the contrary, strict regulations are in force. For the Dyaks in Borneo and the inhabitants of the Amboina Group the marriage of first cousins is strictly forbidden, whilst in New Britain only the marriage with maternal relatives is strictly prohibited. On the Aru islands in the Dutch East Indies, marriage with the children of an uncle is forbidden, but the children of an aunt, on the other hand, they may marry (Riedel ¹). Precisely similar is the custom in Sumatra according to Marsden.

Among the Papuans in British New Guinea, according to Chalmers,² it is forbidden for cousins or brothers and sisters to marry. On the other hand, the father may take his stepdaughter and even his own daughter to wife.

Parkinson reports of the Gilbert Islanders that a strict watch is kept that no prohibited degree of relationship exists between persons who are to be married. According to Krämer, the Samoans feared that if relatives married, they would give birth to a blood-clot or mole which, as we shall see later, can create all kinds of evil. Among the Maori in New Zealand, on the contrary, it has been reported that marriage between near relatives and even between brother and sister is permitted, and even occasionally occurs.

Among the Wanyamwezi in Africa, of whom we have heard already through Reichard that marriage with the children or the wife of a full brother is considered as incest, marriage, or even sexual intercourse between first cousins, as well as between parents and children, is regarded in the same way, and the observance of this law is fairly strictly maintained.

Among the Wahehe (according to Nigmann), marriage is not permitted : “ (1) in the direct line : mother—son, grandfather—grand-daughter, etc., *i.e.*, only the actual mother ; on the other hand, the adult son takes other strange wives of his father for his own, but not his proper mother and her sisters. (2) Between brothers and sisters, stepbrothers and sisters, indeed all the children of a polygamist. (3) Marriage of *Wahadsa*. *Wahadsa* are cousins, the children of two brothers or two sisters. *Wahidsi* are cousins of whom one is the child of a brother, the other of a sister. Thus marriage between children of brothers (or sisters) is not permitted, but marriage of cousins, when one is the child of a brother, the other the child of a sister is, on the contrary, permitted.” *Wahidsi* marriages are extraordinarily frequent.

Among the Macusi Indians, it is most strictly forbidden for the uncle on the father's side to marry his niece, as this is considered the next degree of relationship to that of brothers and sisters, and this uncle, like the father, is called “papa.” On the other hand, any man is permitted to marry the daughter of his sister, the wife of his deceased brother, or even his stepmother after the death of his father.

Stoll reports of the early inhabitants of Guatemala :

“The wife, when she married, entered her husband's *chinamit* and was so completely assimilated by it that her children did not regard as relatives their maternal grandparents or any of the rest of their mother's relatives. This had, as a result, that entering into legal marriage with the relative of the mother was permitted as not running counter to the principle of exogamy. Thus the son of a woman could marry legally his half-sister by an earlier marriage of the mother, since the idea of relationship only extended to the male line. It even happened that a man not only married a sister-in-law, but even his stepmother.”

According to Garcilasso, the Incas in Peru had the right to marry their eldest sister who was not derived from the same mother, in order to keep the blood of the son pure in this way.

Among the Chin in India, we again come across the prohibition of cousin marriage, although the Mohammedan ritual has no objection to such a marriage ; also the uncle may not marry the niece, and in Buschkar, not even the daughter of the niece. It is perhaps not unnecessary to recall the fact that until a short time ago in Germany it was permissible for the uncle to marry the niece and the aunt the nephew ; whilst, however, the former could take place unopposed, a matrimonial alliance between the nephew and his aunt, regardless of whether she was the father's or the mother's sister, had to have the consent of the sovereign.

The English Church differentiates many degrees of kinship within which there may be no marriage. The Englishmen who wanted to enter into one of these

marriages used to go to Denmark or to Duisberg on the Rhine to be married, for, according to the laws of his own country, a union thus consummated was an "accomplished fact." In July 1896, however, the House of Lords passed a Bill by 142 votes to 104, according to which a man is permitted to marry his deceased wife's sister. It was adopted by the Commons in 1907.

The Tungus, Samoyedes and Lapps abhor the marriage of blood relations. The Hebrews were forbidden by Mosaic law (Leviticus xviii.) to marry: (1) the father's wife, whether their own or the stepmother, or whether the marriage still existed or had been dissolved by the death of the husband or by divorce; (2) the full or half-sister; (3) the grand-daughter; (4) the father's sister or the mother's sister; (5) the daughter-in-law; (6) the mother-in-law or the wife's stepmother; (7) the brother's wife (Preuss²). On the other hand, if the deceased brother had had no son by his wife, then the Hebrews (as also the ancient Mexicans and other peoples) were not only permitted but even obliged to marry the widows. This, as is well known, was called the levirate (*cf.* p. 215). As Preuss² informs us: "To these marriages forbidden in the Bible, the Talmudists added other more distant degrees of kinship, the so-called *sch' nijjoth*. These Sopheric prohibitions extend partly to the whole lineage without distinction of degree, partly to a degree beyond the kinship forbidden in the Bible."

Among the Unaligmuit Eskimo, on the Bering Straits, the marriage of cousins or other kin is liked because it is assumed that in a famine these would share the food with their husbands, whilst a wife from a strange family, as they believe, would steal the provisions from the husband (Nelson).

Among the Battak (according to Junghahn), the daughter of the maternal uncle is chosen for marriage, whilst among the Arabs it is often the paternal uncle (see Schiller-Tietz).

The ancient Hindus had strict views in this connection. In a passage quoted from Schmidt¹ it runs:

"The young man shall choose a maiden as wife 'who is the issue of a man who is not of the same name or of the same family, and who on the mother's side is five degrees removed from him and on the father's side seven.'"

Here it is interesting to note that too close a relationship with the father is more to be feared than that with the mother. The regulation that the father-in-law may not bear the same name, recurs among the Chinese, where people of the same name may not marry even if they are not related to each other at all (Mantegazza⁶).

With the Romans, too, marriages between ancestors and descendants was forbidden, as well as marriage between all persons who stood in a similar relationship to each other; for instance, step-parents and step-children, parents-in-law and children-in-law, adopted parents and adopted children. On the other hand, in Athens and Sparta, half-brothers and sisters might marry each other.

Amongst many peoples, however (Persians, Phœnecians, Arabs, the Greeks in Cymon's time and others), we see matrimonial unions entered into even with full sisters; and it is certainly very interesting in this connection that among the Veddass in Ceylon only the younger sister is involved, whilst they may not marry the elder.

Concerning this, R. Virchow writes:

"If among the Veddass, neither polygamy nor polyandry is observed, this may be explained by the sparseness of the population and the isolation of the families. Perhaps, too, one may

explain in this way another very striking custom which has been vouched for by different travellers, that is to say, *marriage with the sister*. Moreover, marriage with a *younger* sister only, whilst marriage with the elder ones is considered indecent. According to Hartshorne, even marriage with a daughter was admissible, hence it is probable that here actual and not legal relationships are treated of. Knox also tells of a king of Kandy who had a child by his daughter but none of his subjects appears to have considered this an admissible circumstance. Bailey is inclined to see an old survival in the marriage with a sister. He recalls the fact that Wijayo, the founder of the Sihala dynasty, was the issue of a marriage with a sister in India ; and that again later the (twenty-third) son Jiwahalto, by a Yakkho princess in Ceylon, married his sister, and was the ancestor of a particular family, the Pulindah. Later this custom was practised also in the Singhalese royal family. One can admit that these arguments are noteworthy, but it is difficult to regard these old myths as actual historical facts. They appear to prove only that a custom which existed both in Persia and in Egypt was, in early times, tolerated in Ceylon : the reason everywhere will have been the same in royal houses as among the naked Veddas : the want of suitable women or of any women at all. In any case, it is not immodesty and looseness which bring the Veddas to such a matrimonial union."

Still closer degrees of kinship, according to our ideas are, in certain tribes, no impediment to marriage. Thus, among the Phœnicians, also among the Persians, according to Kraus (*cf.* the genealogical table in v. Reitzenstein's *Liebe und Ehe in alten Orient* (Stuttgart, 1909), p. 125), the mother could marry the son as well as the father the daughter. Among the ancient Arabs, the law enjoined on the son the duty of marrying his widowed mother, even as an especial privilege. Among the Kalangs * in Java, also, sons are said often to live with their mothers as man and wife ; there even exists a belief that such unions are blessed with good fortune and riches (Schmidt⁹). Likewise, it is told of the Lubu in Sumatra that men often take sister or mother to wife (Schmidt⁹).

In civilised countries in recent years, much attention has been devoted to the question of marriages between blood relations from the point of view of health, and it is generally true that in all cases marriages between first cousins have been understood by this. Indeed, there will hardly be a doctor in practice or an observant layman to whom matrimonial unions of this kind are unknown, from which delicate or actually diseased children resulted, and many authors have been engaged in investigating this question thoroughly.

From early times such consequences of marriages between near kinsmen (see Huth) have been well known, as early as the *Capitularia Regum Francorum*, these have been forbidden with the argument that from them "came the blind, the cripple, the bent and bleary-eyed, or those afflicted with similar defects" (*Cf.* Schiller-Tietz.)

George Darwin, the son of the great philosopher, made particularly careful experiments to clear up the matter. The outcome of his painstaking statistical enquiries is that the injurious consequences apprehended for the offspring from marriages between first cousins cannot be proved by the figures. However, he himself admits that these figures are not yet reliable, and that, when it is possible to get incontestable statistics, instead of this negative answer to the question, we may get a positive one. Against his negative results stand the very important statements and assertions of experienced doctors who observed that deaf-and-dumbness, blindness, polydactylism, or other such infirmities, are accustomed to appear with particularly great frequency in the descendants of first cousins. They recognise that these unfortunate facts are not an absolutely necessary consequence in the descendants

* [See A. B. Meyer,⁷ *Die Kalangs*.]

of such marriages. On the contrary, there are quite a number of cases where the children of such unions are thoroughly healthy and have remained intact in the sense specified throughout their lives. However, not infrequently the defects mentioned have come under observation later in their own children, and thus these have had to atone for their grandparents' mistake in the choice of conjugal partners.

Now it would be going too far if the infirmities mentioned were represented as an absolutely certain and inevitable consequence of such marriages up to the second and third generations. If the parents are strong, healthy people who come from quite normal parents, then they can produce quite healthy children in spite of their near relationship. Yet those cases in which the said infirmities have come under observation are not to be denied because of this. And as Mitchell, Mantegazza² and other authors found in the lunatic asylums and homes for mental defectives, a proportionately great number had parents who had been first cousins. Moreover, since, according to J. Scott Hutton, among 110 deaf and dumb children in the Halifax (Canada) deaf and dumb school, not less than 56 were the issue of marriages between near relatives, then we shall certainly agree with George Darwin when he says that "such a general agreement with regard to the evil consequences of marriages between first cousins must undoubtedly have much greater weight than my purely negative results."

In full agreement with this is the conclusion which Kraus reached in his thorough critical treatment of the recognised facts: "From the foregoing facts and reflections," he says, "nothing has resulted which would oblige us to see, in the results of consanguineous marriages, anything more than the aggravation of the *effects of heredity* by consanguinity. The mere omission of strange blood as the unassisted cause of degeneration of the offspring has not been convincingly proved."

The common people in Germany have the proverb :

"Marriage of kin
Seldom does good ;
Dying, wasting
Or else no heirs " (Simrock,⁴ Scherbel).

Recent results have been set forth by H. W. Siemens in M. Marcuse's *Hdwb. der Sexualwissenschaft* (Bonn, 1926), in the article "Consanguinity," p. 71. There we read that individuals are described as consanguineous when they spring from a common ancestor. Such individuals have, according to the degree of consanguinity, a greater or lesser probability of possessing corresponding hereditary predispositions. If these hereditary predispositions or characters are recessive, then by the marriage of consanguineous persons the probability is increased that in procreation, similar recessive characters will combine in a homozygous hereditarily predisposed couple, since, in homozygosis, recessive hereditary predispositions become manifest, and recessive hereditary attributes (and diseases) appear particularly frequently among the children of consanguineous parents. Expressed conversely, this means: "Persons with recessive attributes (or diseases) are particularly often encumbered with consanguinity of the parents," and it is true that the rarer the recessive hereditary predisposition is the more often is found parental consanguinity; for a man with a widely diffused recessive predisposition has a proportionately great probability of uniting in non-consanguineous marriage with a partner with the same recessive hereditary predisposition."

By marriage among near relations (so-called *in-breeding*) then, recessive hereditary predispositions become most often manifest. In a really healthy stock, in-breeding is free from such harmful consequences (see East and Jones).

Many experiments have been made in which it has been possible to propagate animals (*e.g.*, mice, guinea-pigs) and plants through fifty or more generations by in-breeding, sometimes even by the union of first cousins without the appearance of so-called degeneration phenomena. Still, on the whole, the consequences of the marriage of near relations have often been very much over-estimated. For recessive morbid characteristics are not, in themselves, a very common evil.

[Their existence, however, is now well-established. Hogben mentions, for example, albinism, the familial type of retinitis pigmentosa and amaurotic family idiocy. It is possible that, in England and Wales, one in seventy individuals who are not albinos carries the gene for albinism. The chance that an individual who carries the gene should marry an unrelated individual who is also a carrier, has been estimated at one in seventy. On the other hand, if the individual marries his cousin the chances are about one in eight. In sex-linked recessive diseases, Hogben states (p. 23) that sterilisation of all such individuals halves the proportion of persons affected in every generation.]

In cases where a recessive condition is uncommon, a considerable proportion of the persons manifesting it are the children of consanguineous parentage. There is no doubt that such matings encourage the appearance of lethal types, which, as Hogben points out, are normally protected from selection by the small chance that one carrier has of meeting another. The risk is therefore considerable, and should be avoided.]

6. AGE AT MARRIAGE AND THE FIRST-BORN AMONG CIVILISED PEOPLES

In this connection the early appearance of the sexual impulse has a marked influence, yet the moral laws are not dependent on scientific facts, but, like "fashion," rest for the most part upon superstition. Certain peoples are known among whom sexual maturity is certainly awakened early, but subsequent development is checked, at least in regard to the marriage age.

In general, one may say that the lower the stage of social culture of the people concerned, the lower the age of the girl at marriage. "Refined" customs raise the esteem for and the value of the woman; companionship with her is more for the *mental* need of the man; he awaits psychic maturity, and only seeks her later, as among ruder peoples, in marriage. Thus it appears that among our modern civilised nations, the independence of the man which, unfortunately, often comes very late, delays the founding of a home of his own (frequently enough, against his wish and will) and that, in consequence, the girl chosen by him for his wife has often to wait several years for the conclusion of the marriage.

The superstition that one "must woo in vain for seven years" is known to everybody. It prohibits the unmarried person from doing certain innocent things (*e.g.*, to cut the butter; to put on a head covering of the other sex, etc.). But among civilised nations, the State also and its laws specify a minimum limit for the marriage age. The views of statesmen and legislators, however, do not always agree on this subject for, at one time, they think they have to take mental maturity more into consideration, at another physical maturity. That makes it seem desirable that we should try in an ethnographical survey of the age of girls at marriage, to

explore the various customs. First of all, however, we must acquaint ourselves with what, in civilised countries, must be considered the legal age.

If we compare the peoples of the older civilisations with those of the younger, we find that with the higher civilisation the marriage age of girls is substantially postponed.

Among the ancient Hindus, girls seem to have been married early, according to the law of Manu, for a man of 24 a girl of 8 is fitting ; for a man of 30, a 12-year-old girl (Duncker). Among the ancient Medes, Persians and Bactrians also early marriages of girls were arranged, yet, as appears from *Vendidad* XIV. 66, the girls were not to be given in marriage before their fifteenth year. Celibacy from choice was, in girls, even when it lasted only till their eighteenth year, threatened with the longest punishment in hell ; and girls were ordered when they had reached their eighteenth year to ask their parents for a husband. There were, according to the decrees of the Avesta, only three kinds of uncleanness for which any atonement and purification were an impossibility, either here upon earth or in the life beyond, they were : (a) if anyone ate of a dead dog ; (b) if anyone fed from a human corpse ; and, lastly, (c) if a girl up to her twentieth year had not yet entered into the married state. Böhtlingk quotes a few passages of Sanskrit regarding Hindus, which have a bearing upon this subject. One of them says : " In whosoever's house a daughter menstruates without being married, the fathers shall go down to hell even should they be, for their merits, in heaven."

Another runs :

" The mother, as well as the father and also the eldest brother, shall all three go to hell if they let a girl menstruate (before she is married)."

However, the girl herself is also severely harmed by it : Thus, a passage quoted by Schmidt ⁸ gives the following warning :

" As many menstruations as pass in her without her having a husband, so many of her offspring is he made guilty of putting to death, he who should give her in marriage and does not do so."

" Of a girl who perceives her menses while still unmarried in her father's house, it is said : that she shall be from then onwards the lowest sūdra whom no one may ever marry."

This last, however, has a kind of limitation in the following passage :

" If, however, a girl is marriageable, she is permitted to give herself to a husband according to her own desire. Therefore, shall a girl be married, as Manu, the son of Svayambhu, has declared, while she is still immature."

Whilst, among the Greeks, Lycurgus forbade the young men to marry before their thirty-seventh year, Plato desired the man to marry in his thirtieth year, and the woman at twenty years. With the Romans, the girls were married between their thirteenth and sixteenth years. A woman who had reached twenty without being a mother, incurred the punishment which Augustus had inflicted on celibacy and childlessness (see Eisendecker). Hence the age of 19 was the uttermost limit for the conclusion of marriage. The Roman jurists fixed the twelfth year as that of puberty (*cf.* Marquardt), and for the conclusion of a valid marriage, the same year was ordained. Yet in later times, even earlier marriages took place. Friedländer and Rossbach show from tombstones how young Roman women were when they had children. In Ulpianus, it is said : " *Justum matrimonium est, si inter eos, qui nuptias contrahunt, connubium est, et tam masculus pubes, quam femina potens sit.*" Dion Cassius relates the following concerning the Emperor Augustus among others : " Because some were betrothed to children merely in order to be able to claim the reward as married people without really furthering the ultimate object of marriage, he ordered that no betrothal should be valid unless the actual consummation of the marriage could take place after at least two years ; hence the bride had to be at least 10 years old for her betrothed to be qualified for the reward at 12 years, which was reckoned as the age of full development for the consummation of marriage." (LIV, 17.)

The less civilised peoples of Europe, especially those in the southern parts,

have still the custom of marrying the young girls early. Cleghorn writes of the island of Minorca :

“The girls mature early and age early. They marry at the age of 14 years.” In Southern Spain, marriages take place at the age of 12 (Virey). Among the Mainotes, in Greece, the girls marry as early as their twelfth or thirteenth year. At the same age, as Paget reports, the girls of Wallachia marry ; but according to Csaplovics, as early as 12 years, and the same author has seen 12-year-old mothers among the gipsies. It is also stated of the Hungarian gipsies that with them, there are mothers of 12 and 13 years of age. Moldavian women also marry very early, and it is not unusual to see girls of 15 already blessed with children. This fact, it has been thought, may perhaps explain that slight increase in the population, since so many children are born who are unlikely to live. In Bosnia and Herzegovina, girls are likewise married at 13 or at most 15, or according to Milena Mrazovič, at the age of from 13 to 17. Their physical charms fade quickly and, by the time they are 35, they are generally reckoned as old women (Roskiewitz). Of the Southern Slavs, Krauss¹ reports : “In general, the girls marry at the end of their sixteenth year, when the breasts begin to swell.” To the question : at what age is a girl fit for marriage ? a little old woman answered : “as soon as she can take a thorn out of her heel herself.” Older girls also are often married to quite young lads. According to Csaplovics, the Ruthenian girls in Hungary are accustomed to marry as early as their twelfth year, and in earlier time, it was much worse, for according to Szirmay, girls of five or six were betrothed and taken to the dwelling of the boys intended for them, where they slept with their future mother-in-law until they reached maturity.

It is quite different in Northern Europe. Esthonian women, for instance, seldom marry at a very youthful age. In the years 1834–1859, the figures in the Esthonian urban community were only 4·5 per cent. ; in the rural, only 11·5 per cent. ; and in several parishes 15·6 per cent. of all the marriages were concluded before the end of the twentieth year. We find here a ratio between rural and urban dwellers which indicates that the kind of occupation has an influence on the age at marriage. Different work, different fare and a different code of morals have a different effect on one and the same race in the same climatic conditions.

Wappaeus, in 1859, reckoned as the average age at marriage of all women married :

In Sardinia	24·42
In England	25·96
In France	26·07
In Norway	28·05
In the Netherlands	28·88
In Belgium	29·14

Of 10,000 young women married there were :

	In England.	In France.	In Norway.	In the Netherlands.	In Belgium.*
Under 20 years	1339	2030	504	791	959
From 20—25 years	5388	4009	3799	2962	2883
„ 25—30 „	2069	2229	3469	3550	3144
„ 30—35 „	695	970	1406	1649	1614
„ 35—40 „	282	422	475	636	780
„ 40—45 „	135	271	195	246	373
„ 45—50 „	57		98	106	159
Over 50 years	35	69	54	60	88

* In Belgium and the Netherlands under 21 years and from 21–25 years.

For the whole of Austria and especially for Styria, Ploss found that of every 10,000 there married :

Women.	Austria.		Styria.
	1860.	1865.	1860—1865.
Under 20 years	1656	1873	791
From 20—24 years	2534	2647	1908
" 24—30 "	2995	2783	3180
" 30—40 "	3065	1770	2890
" 40—50 "	600	581	1033
Over 50 years	150	166	228

In all civilised States, the legislation acted upon the principle, which was by no means unjust, that an arbitrary custom, harmful to the common good of the population, must be prevented by legal regulations. The Church, following Roman law in these matters of marriage, declared girls to be fit for marriage at 12 and boys at 14 (see Gitzler and Westermarck, III., 387).

We find, in the Middle Ages, the same age limit in Lombardian, Frisian and Saxon Law ; and in the Swabian Code of Laws also is to be found an analogous decree. In Common Law too, in Prussia, 12 is decreed as an admissible marriage age for girls ; whilst, according to the Civil Code of the Brunswick ecclesiastical and matrimonial regulations in the Grand Duchy of Baden, girls might marry at 14, and men at 18 years of age. On the other hand, at the time of writing (1927) 20 is fixed as the minimum age at marriage for men, and 16 for women for the whole of Germany.

Some of the crown lands of Austria decree 15 as the earliest age for marriage for girls, and 19 for youths.

In Sweden, there exist prohibitions against contracting too early marriages, although marriage is permitted the Lapp girls as early as the seventeenth year, corresponding to their earlier development.

Napoleon I. postponed the marriage of girls from 13 to 15, and that of young men from 15 to 18 ; for it was asserted, that as only for a few is marriage at 13 or 14 not accompanied by overwhelming injurious consequences, it is not fitting to authorise a whole generation to enter legally into marriage at these ages.

In the former Russian Empire, there was a law which forbade marriage with girls before they were 18 on pain of banishment to Siberia (Häntsche). The Russian virgin in Astrakhan marries at from 16 to 19 years of age. The Kalmuck girl, according to Meyersohn, at 16. Among the Chevsurs in the Caucasus, according to information from Prince Eristow, the girl is certainly betrothed as a child, but the marriage does not take place until she is in her twentieth year.

Usually the Tartar women in Astrakhan, according to Meyersohn, marry at 20 at the earliest, and the men at from 24 to 30. Many poor Tartars, however, with whom it is the question of the purchase money for the bride, marry their children almost in their infancy.

[In Great Britain (excluding Northern Ireland) marriages between persons of either sex who are not 16 years of age are void. This measure (passed in 1929) does not in Scotland affect any right or capacity of legitimation *per subsequens matrimonio*. In England and Wales in 1932, 16 bachelors of 16 married 16 spinsters ; 251 bachelors of 17 married 251 spinsters ; and a total of 13,403 men under 21 (one a widower) married. On the other hand, 758 women of 16 married, of whom seven were married to widowers. The choice of partners is interesting. Of the 16 men of 16 years of age, four married women of 16 ; four, 17 ; five, 18 ; two, 19 ; and one married a woman of

22. On the other hand, women of 16 married 130 men between 21 and 22, the number of men then diminishing till between 45 and 50 we find only two married to such women. In England and Wales the mean age for marriage in 1932 was 27·34 for bachelors and 25·48 for spinsters.]

Robertson,³ writing on this subject, states that in England, Germany and the rest of Protestant Europe, early and premature marriage is rare. On the other hand, early marriage prevails among those uncivilised tribes which wander about in the Arctic Zone. In particular, girls are accustomed to marry early in all the states of Europe in which superstition and ignorance prevail. In Roman Catholic Ireland, early marriage is the custom from preference. In European Russia too, a specially early marriage was customary. Thus, early marriage is in general dependent upon the lack of culture among the people, and not upon the climate. Also in the parts of the Orient in which early marriage occurs, this custom is under the influence of moral and political conditions. Now, however, instead of ascribing early marriage, which is indigenous to Asia, to premature puberty, we should more than ever take legal and moral measures against the custom.

7. AGE AT MARRIAGE AND THE FIRST-BORN AMONG SAVAGE PEOPLES

We have already discussed the fact that among peoples of a low degree of civilisation we come across extraordinarily young married couples, and, as we have also seen, premature sexual indulgence has been thought by some to hasten the arrival of maturity. But there also appears to follow a rapid decline. This is corroborated by Schomburgk, in the case of the Warrau (Guarauno) Indian women in British Guiana where the girls enter into matrimony as early as their tenth year.

Schomburgk frequently saw mothers who could scarcely be 10 or 11 years of age, and yet who already possessed children of one and two years. Among the Wapiana Indian women also, he found a 13-year-old mother who already had two children. In Surinam also, according to Stedman, 12 is the age of marriage; and the Guarani girls likewise marry as early as from 10 to 12, according to F. de Azara.

Other Indian tribes in Paraguay have a relatively late age at marriage; thus, among the Guana, the conclusion of marriage is delayed till the nineteenth year; and among the Abipones, Dobritzhoffer rarely met a girl who had sought for a suitor before she was 19 or 20. On the contrary, a century earlier, Och the Jesuit priest found that 13-year-old girls in New Spain not infrequently had sexual intercourse, sometimes even with men of 50 or 60, and bore a child the following year (v. Mürr). The Cayapo Indian women also marry very early, according to Kupfer; and among the Guato, at the confluence of the Rio São Lourenzo and the Rio Paraguay, Rhode even found girls married at from five to eight years.

The Smoo (Ulva) women in the Mosquito territory (Nicaragua) marry at from 10 to 13; the Chayma, according to v. Humboldt at 12; the "Coroado" women, according to Burmeister, and certain girls of Buenos Ayres, according to Mantegazza, at 14. Many girls in Jamaica become marriageable earlier, and fade more quickly than in the northern districts; some are married very young and become mothers at 12. Similar conditions exist in Trinidad, according to Dauxion Lavaysse; and in Cuba also, many 13-year-old wives were already mothers, and continued to bear children until they were 50.

In Brazil, v. Spix and v. Martius found 20-year-old wives who already had four children. Among the peoples of the older civilisation in America, in comparison with the present-day tribes in the same southern districts, a considerable difference is shown in regard to fixing the age at marriage. At the time of the discovery of America, among the Mexicans the age for marrying was calculated as from 20 to 22 for men, and 16 to 18 for women (Clavigero). In the Inca Empire of Peru, Garcilasso states that the girls were obliged by law to marry when they were from 16 to 18 years of age (IV., 8).

Robertson gave the following tabulation of 66 North American Indian women. Of them, there was born the first child :

At 10 years of age	1
„ 11	„	,	.	.	.	5
„ 12	„	„	.	.	.	11
„ 13	„	„	.	.	.	11
„ 14	„	„	.	.	.	18
„ 15	„	„	.	.	.	12
„ 16	„	„	.	.	.	7
„ 17	„	„	.	.	.	1

Schoolcraft also states that “ the Sioux and Dakota Indian women bear children at a very early age ; they themselves rarely know how old they are ; observers of their customs, however, report that they are confined at the early ages of from 13 to 15 years.” Among the Delawares and Iroquois, the girls are generally married at 14, states Loskiel ; and among the Indians dwelling in the northern territories of America, it often happens that the man of 35 takes a 10 or 12-year-old girl to wife. In consequence of this premature marriage, the Indian women in the north are less fertile, and cannot go on bearing children so long as in the southern parts (see Samuel Hearne). John Franklin says : “ The Indian girls in the forts, especially the daughters of Canadians, must marry very early ; one often sees wives of 12 and mothers of 14 years of age.” Among the Indians on the North-West Coast of America also, the girls are married very early, often immediately after birth, but the marriage is in reality only concluded when they are from 10 to 12 years of age. Likewise, among the Eskimo of Cumberland Sound, boys and girls are chosen for each other in early childhood. The boys marry when they are about 17, and the girls about 14. The marriages are not blessed with many children, for, according to Abbes, one seldom meets a family with more than two. Of the women of Tierra del Fuego, Giacomo Bove says : “ The desire for a man is felt at an early age with them, and the interference of the mission in these matters is regarded as the greatest tyranny of civilisation. The marriages of the Fuegians are, therefore, in general, contracted at an early age : at from 10 to 12 the girls are already looking for a husband, but they do not become mothers until they are 17 or 18. The men marry at from 14 to 16 years of age.”

Early marriages are customary also in Oceania. Thus, girls among the aborigines in South Australia get married when they are from 10 to 12 years of age, and live with their husbands. From eight years of age onwards, they practise coitus. At about 16, they become mothers ; then, according to Hersbach, they no longer regard themselves as public property, but live peaceably with their husbands. According to Wilhelmi, however, the wives in Australia seldom bear children before they are about 18 or 19, although they are mature at from 10 to 12 years of age.

The women of New Caldeonia are said, according to de Rochas, not to marry till they are 16 ; while others maintain that they do so when they are 13. Tuke is of opinion that Maori girls in New Zealand often marry at 12 and 13, and in all probability have lost their virginity at an earlier period. In another passage Tuke writes : “ The period of fecundity commences sooner in Maori women than among white, but the development of the native girl occurs proportionately earlier. It is very difficult even to approximate to the age of Maori women—those that you suppose to be about 40 or 45 being actually no more than 25 or 30 ; but I have no doubt that child-bearing ceases sooner than amongst women of our own race ” (p. 725).

English travellers assert that they have seen mothers of 11 years of age among them. Usually the first wife of a young chief was much older than he ; on the other hand, old chiefs were seen wooing very young girls (Wüllersdorf-Urbair). On the Gilbert Islands, according to Parkinson, the girls were married at about 14.

In Asia, we come across premature marriage by no means only in the tropical parts. Among the Samoyed, many wives were married when they were only 10, and at 11 and 12 they became mothers. Likewise, the Tungus girls, according to Georgi, entered into matrimony when they were 12. The wives of the Ostiak, too, sometimes marry at 10 years of age, and often bring

children into the world when they are only 15. Quite different are the Votjak women who hardly ever marry before they are 22 or 23 ; for the girl must follow her husband to his house, and if she is married earlier, her father would lose a worker too soon ; even then the young man has to pay very high earnest money (see Buch).

According to Vasiliev the majority of Kirghiz women marry at 17.

The age of marriage of the Chinese is 15, according to v. Möllendorf ; among the Japanese, according to Hureau de Villeneuve, the wife is often expected to be a mother by the time she is 15.

In Cochin China, states Crawford, the women of the lower classes marry when only seven years of age ; often, however, not until they are 20. Mondiere ¹ says of the women inhabitants of Cochin China : " Of 440 Annamites who were confined, the first child came at 20 years 6 months ; of 15 Chinese women at 18 years 10 months ; of 40 Min-huong, at 20 years 9 months ; and of 45 Cambodian women, at 22 years 6 months."

According to Isabella Bird, most Malay girls on the south-west coast of the Malay Peninsula were married at the age of 14 or 15 ; whilst the Javanese women at from 10 to 12 years of age. Of Java, Walbaum states that " when a girl is seven or eight years old, she can enter into marriage at any time ; and if the girls are beyond this age, perhaps 14 or 15 years old, they are already considered old maids." In Taluk, in the interior of Sumatra, most young girls marry at the age of 15, and give birth to their last (seventh) child when they are 30 ; the age of 40 is seldom exceeded. In consequence of early marriage and child-birth, the women fade quickly.

The Banjanese women in Borneo marry when only eight or nine, but they soon cease producing children ; it is an unheard of thing that at 30 a woman should still become pregnant (Finke). Among the Malay population on Celebes, the marriage of girls takes place at 14 or even earlier. Jagor reports that among the Bicol (Philippines), the women seldom marry before their fourteenth year ; 12 is the legal limit. In the Church register of Polangui, he found recorded a marriage where the wife was only nine years eight months old when the marriage took place. The Mincopi of the Andaman Islands appear also to marry off their daughters early. To a Brahmin convict, who fled to them in the year 1858, and brought back the first information as to their mode of life, an Andaman gave in marriage his daughter of 20, and her daughter aged nine, that is to say, his grand-daughter, both at the same time. Mother and daughter accommodated themselves willingly to their duties !

Among the present-day Parsees in Further Asia, who still follow the teaching of Zoroaster and the Avesta, there are in different parts of the country various customs in betrothal and in the accomplishment of coitus. In Gujarat, where Hindu customs prevail, three-year-old children are betrothed to each other, but are kept in their parents' house until they are six, when they are put together. Meanwhile, the marriage is not consummated until the girl begins to menstruate. In Kirman, children are betrothed at nine years of age, but the marriage is not consummated before the twelfth year, and then the girl is handed over to the young husband if menstruation has begun ; yet, when the daughter has passed her thirteenth year, she must live with her husband whether she has menstruated or not. To send a girl to the marriage-bed before she is in her thirteenth year is considered a great sin, but it is considered a greater crime if the parents are guilty of not listening to the desire of their daughter that they should marry her. For the Parsees, according to Du Perron, believe that a girl who has deliberately remained unmarried and dies after completing her eighteenth year has gone to hell.

In Ceylon, as Robert Percival reported at the beginning of the eighteenth century, the girl is accustomed to enter upon marriage in her twelfth year, and this early marriage is regarded as the reason for the women fading so quickly. An extraordinarily early marriage takes place also among the Hindus. There the marriage is concluded when the boy is from seven to ten, the girl, according to Roer, from four to six ; or, according to some, eight years old. After the marriage ceremonies, the bride returns to the house of her parents and only after some years, when menstruation appears, a public festival is prepared, and the girl joins her boy husband. Then they dwell in their parents' house. Thus, there have been examples, as Roer assures us, of cases where in one and the same school father and son sat in different classes. These particulars apply to Deccan. In Lower Bengal, on the other hand, as we shall see later,

according to Robertson,⁴ sexual intercourse takes place before the appearance of menstruation. In Calcutta, as Allan Webb reports, the custom prevails among the Hindus generally, of marrying the children early, and it is considered a crime on the part of the father as analogous to child murder if the daughter menstruates in her parents' house. The children are married, therefore, at from eight to ten years of age. In a minority of cases, however, (28 in 80 of those observed) the wives bear children before they have reached 14 years of age. In Madras, it is a convention in the higher castes not to woo any girl who is older than 14. Now, if a girl is 15 or 16 years old without a suitor having been found for her, then she dedicates herself to the service of the temple of the Kali or holy mother (Bhawani); she becomes Moxli, a female priestess, and she is then dedicated to ritual prostitution.

Among the Vedan (South Indian slave caste), the men are usually 15 to 16 years old at marriage; the girls seven to nine; they have sexual intercourse, however, with their husbands before puberty is reached.

The Afghans are accustomed to give girls in marriage in their fifteenth or sixteenth year, states Elphinstone, yet one frequently meets also 25-year-old virgins. On the other hand, among the Durani, a tribe which inhabits the mountains of Afghanistan, the girls marry when they are 14 or 16; whereas among some of the tribes in Hindu Kush, the marriage age of the girls is between 15 and 20. The wild tribes of Central India (*e.g.*, in Busthar), marry their daughters, according to Glasfurd, at from 15 to 17, their sons at from 14 to 24.

Religious institutions, which show their effect together with the climatic influences, may be not without effect on the custom of early marriage in the Orient. Marriage belongs to the religious duties of Mohammedans, and all Mohammedans are permitted to enter into matrimony at 10 years of age, *i.e.*, at about 9½, according to our reckoning. Mohammed, who wanted to increase the number of his adherents at any price, thought, first of all, only of the Arabs in this connection. He did not know that puberty is reached later in other countries than there. The Arab women, however, are said to mature earlier even than those who live in Africa. "An Arab woman," says Bruce, "gives birth to children even in her eleventh year, but ceases child-bearing when she is about 20; her period of fertility, therefore, amounts to seven years." Later, he adds that the men on the African Coast of the Gulf of Arabia prefer Abyssinian girls whom they purchase with money, to the beautiful Arabian women, because the former go on bearing children longer.

The Chevsur women in the Caucasus do not marry before they are 20 and, according to Radde, the first confinement, as we shall see later, could not take place until after four years.

The early marriage of girls is also customary in Persia. Polak reports from his own observation that in Teheran the girl is usually a mother by her thirteenth or fourteenth year; and in Schiras this is frequently as early as her twelfth year. Legally, the girl may only marry after menstruation has appeared and the pubic and axillary hair begins to grow, that is to say, when puberty is reached. Nevertheless, the poorer classes do not abide by this, but buy a dispensation from the priest. Girls are married with the menses not yet apparent, and with quite flat breasts; both, however, develop quickly in marriage. Of North Persia, in particular of the province of Gilan, Häntzsche reports: "Although more than half of the girls marry at the time of puberty, *i.e.*, at 14, yet a great many girls are married between 10 and 14." The Kurd girls also marry early, according to Wagner between 10 and 14.

The common assumption that in Syria, girls reach puberty earlier than with us is declared by some authorities (see Robson) to be an error. The reason for the error is that the girls marry earlier; an event that happens before puberty is reached; 13 to 14 being the customary age at marriage. It is considered improbable that a child will be born in the first years of marriage because of the youth of the bride; and usually from two to four years pass before the young wife brings a child into the world.

Oppenheim says of the Turkish women: "They menstruate when they are 10, marry when they are 12, are very prolific, lose their courses in their twentieth year, wither and age early." The same is true of the women of Asia Minor. In Isaurian, as in Asiatic Turkey, marriage is generally early; the boys at 18, the girls at 14 years of age. They are specially desirous of producing a son early, who, when he is grown up, has to maintain his father. A young man with whom Sperling became acquainted, was only 33 years old and already a grand-

father. The authoress Friederike Bremer, in her travels in the East, visited some harems in Jerusalem and saw a boy of 18 years who was already the father of a family, having been married at 14. Also Titus Tobler knew a woman in Palestine who had given birth to a child in her thirteenth year, and another, an 11-year-old Jewess who had been menstruating for two years, and had been married for one and a half years. Among the Samaritans, boys usually marry in their fifteenth or sixteenth year ; girls in their twelfth, or still earlier.

We find similar customs again among the peoples of North Africa. Egyptain women, according to some authorities, marry at from 12 to 13 years. The Copts, however, marry their children as early as their seventh or eighth year ; and one often sees among them mothers who are only 12 years old. In Upper Egypt, girls seldom get married after their sixteenth year, according to Bruce, and a few he saw who were pregnant were, according to their account, scarcely 11 years old ; in their sixteenth year, they appeared as old as many English women of 60. Klunzinger reports that in Upper Egypt, boys of from 15 to 18, and girls of from 12 to 14 marry. He adds that these marriages, which to us are too early and, moreover, of which 75 per cent. are concluded between first cousins, exhibit no evil results in the offspring.

The Fezzan women, according to Captain Lyon, have children when they are 12 or 13 and at 15 and 16 are like old women. In Tunis, according to Giovanni Ferrini, sexual intercourse takes place too early and too frequently, and this is one reason among others for the decreasing population. The Beni Mezab in the Sahara often have 12-year-old mothers ; and among the Kabyses,* the girls are betrothed at six, and married between 10 and 12 years. According to Brehm, the Mensa girls very seldom marry before their fourteenth year.

The women among the Schangalla, who are said to have borne several children by the time they are 12, rarely have children after their twentieth year, and are more wrinkled than a European woman of 50. Among the Agau, a tribe in the south of Abyssinia, the girls reach puberty in their ninth year, generally marry in their eleventh, but cease to have children by the time they are 30. The Abyssinian women are, as a rule, married extraordinarily young ; Rüppell even reports of a 10-year-old wife. The age of the husband is never taken into consideration in any marriage, and very old men very often marry quite young girls. In Keradif, which lies in the interior of Abyssinia, the missionary Stern found an unusual commotion : an order had suddenly been made that all boys over 14 and all girls over nine should be married within 14 days ; the transgression of this law was to be punished by a fine or by strokes of the whip if need be. The whole population was consequently holding great wedding feasts, and everywhere little brides and bridegrooms were to be seen.† According to Munzinger, the marriage of girls in the Habab and Bogos country takes place sometimes when they are 12, but as a rule, later ; in Massaua, girls marry in their twelfth, youths in their seventeenth year ; the Sudanese girls, according to Brehm, in their twelfth to fourteenth year ; and the Somali also have their daughters married from their thirteenth year.

On the Gold Coast, marriages are concluded at a very early age (Cruickshank). Among the M'Pongo on the North Guinea coast, girls, according to Hecquard, are accustomed to marry between 10 and 12 ; whilst Büttikofer believes that the Vei negresses of Liberia do not marry before they are 15, and among the Egba, a Yoruba tribe, according to Burton, marriages rarely take place till the girls are between 18 and 20.

On the Sierra Leone coast, among the Mande-Mandingo, etc., girls are betrothed before they are born, yet the marriage is never consummated before the fourteenth year. Winterbottom does not remember ever having seen a pregnant woman in this part of Africa who had not already attained this age. An early betrothal of girls takes place also in Old Calabar, especially among the higher classes, sometimes only a few days after birth, and not infrequently to middle-aged or even older men. When she is seven or eight, the girl is fattened in preparation for the marriage at a farm at some distance from the town ; then she lives in freedom for a few years more among the husband's wives. Du Chaillu found that the Ashira in West Africa do not even wait till the age of puberty is reached before marriage.

Among the Ama-Xosa, the youth in his fourteenth year is already beginning to seek a

* Probably Kabyles.

† [No reference is given.]

girl whom he can marry. The young Ama-Xosa girl is ceremoniously declared fit for marriage when she reaches puberty. When the festival is past, she enjoys the privilege of living with one of the mates chosen by her for from two to four days.

As soon as the Basuto children have reached their fourteenth year, the parents, states Casalis, think of a marriage. But the girls do not marry as early as might be expected considering the southern climate. In the first place, in their mountainous country, it is not so warm as in the rest of Africa, and the fathers like to go on offering their daughters in order to achieve a bigger price (Holländer). Other Bechuana girls are declared ready for marriage at the ceremonies which take place at their first menses; 12 or 13 is quite a usual age for the marriage; yet this age is seldom stated exactly. Among the Ovaherero, the girl must not be more than 12 for marrying (Damberger). The girls of the Bushmen are often married when they are seven, and are sometimes mothers at 12 or even at 10 (Burchell). The Boer women in South Africa, likewise, marry very young, at a time when their body has scarcely had time to develop; thence they have, on the average, according to Fritsch,³ a very short term of life. In Madagascar, according to statements of Hieronymus Megiser in the year 1609, the native girls enter into marriage in their tenth year, and the boys likewise at from 10 to 12 years.

8. ADULTERY

We have already spoken above of the nature of what we conceive to be true adultery in contrast with the teaching on adultery inculcated by Christendom, and have shown that the general idea of separation is false. If, in the following section we represent as adultery what people generally understand by it, *i.e.*, a breach of the love relationship, it is done so as to avoid ambiguity.

There can be no question of *adultery* where the husbands themselves, whether from some exaggerated feeling of hospitality or from mere desire for gain, resign their wives to other men for sexual intercourse, for *volenti non fit injuria*. It is the wrong done to the husband, the suppression of and the encroachment on the right granted to him alone which is always what we must consider when we are supposed to be speaking of an infringement of marriage.

Tacitus gives a very appreciative description of the conception of marriage on the part of wives of the ancient Germanic peoples. It is well known that the descriptions of Tacitus, who had himself no actual knowledge, did not correspond with the real circumstances but presented an ideal picture which the Roman wished to present to his fellow countrymen; somewhat as the late eighteenth and the nineteenth century writers did for the South Seas. As in most primitive peoples, the unmarried girl among the Germanic people was fairly free so long as she was not regarded as the property of her guardian (free intercourse of youth). The married woman, however, was undoubtedly restrained. Every encroachment upon marriage was perhaps not considered as immoral, but as an invasion on the property of the owner of the wife. If it did not happen with his knowledge, then it was liable to severe punishment, and only for this case does the description of Tacitus hold good.

Tacitus says :

“No part of their customs can be more highly praised : with such a populous race one seldom had to mention cases of adultery happening among them. When they get a husband they are one with him in mind and body ; they have no thought beyond him and they have no desire beyond him ; and if they do not love their husbands, they love the married state ; they believe that they must live and die with their spouses, and they do not despise his counsel but pay attention to his answers.”

However, the punishment of the adulteress in the days of our forefathers was terrible. We can determine fairly well, and on good authority, how punishment was inflicted on the guilty

wife in ancient times. Concerning the ancient Germans, we read in Tacitus (Ch. 19) : " Adultery is very rare with this populous nation. It is followed by immediate punishment which is executed by the husband ; in the presence of relatives the husband drives the wife out of the house naked and with her hair cut off, and whips her through the whole village." In addition, we have the report of Boniface on the Saxons (" Monumenta Moguntina," ed. Jaffé, p. 172) : " Sometimes a whole crowd of women assembles and they lead the woman (adulteress), who has already been flogged, round the district, whilst they strike her with switches and tear off

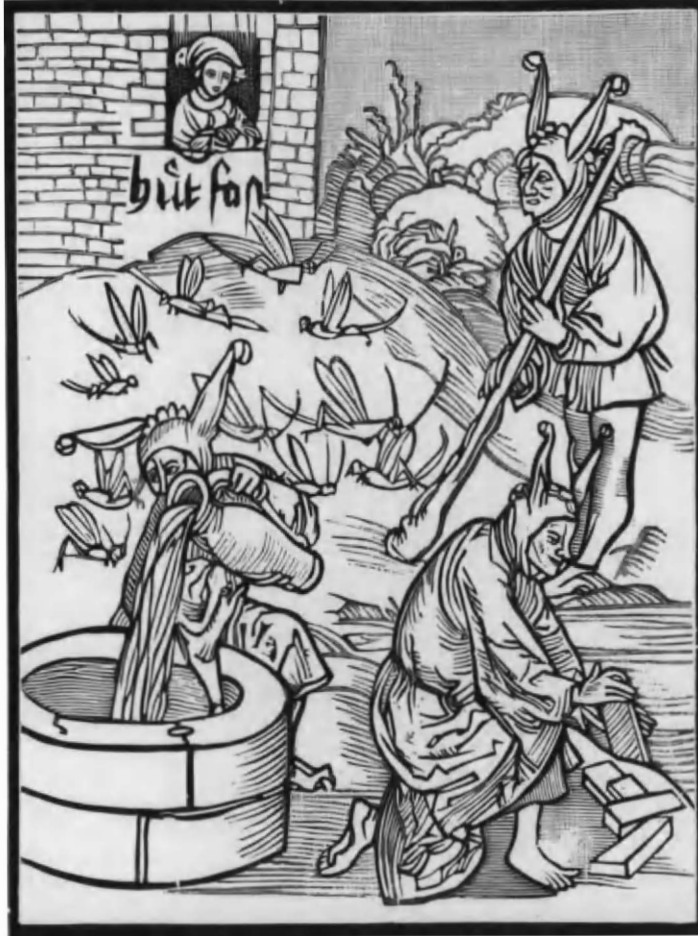


FIG. 566.—Female protection. Sixteenth century woodcut. (After Seb. Brant.)

her clothes to the waist. With their knives they thrust at her and chase her from village to village till she is lacerated and bleeding from little wounds. Fresh scourgers keep on joining them till they leave her lying dead or half dead, so that the rest shall fear adultery and licentiousness."

What Maxim Gorki relates of modern Little Russia is almost like a paraphrase of these descriptions dating back 1500 years : " On the village street, between whitewashed cottages, moved a strange procession, howling savagely. A crowd of people go along close together and slowly—it moves like a great wave, and before it goes a little horse. . . . In the front part of the wagon is a little naked woman, almost a girl, with hands bound by a rope. She holds

herself sideways so strangely, her head, with its thick, twisted fair hair, is held up and bent slightly backwards, the eyes are wide open and gaze somewhere into the distance with a dull, vacant look in which there is nothing human. Her whole body is covered with red and blue marks, round and long, the firm left breast is cut open, and from it trickles blood. . . .

“And on the wagon stands a portly peasant in white shirt and black lambskin cap, under which, in the middle of his brow, hangs a strand of dark red hair. In one hand he holds the reins, in the other the knout, and methodically strikes with it now on the back of the horse,



FIG. 567.—The adulteress. Sixteenth century woodcut. (After Seb. Brant.)

now on the body of the little woman, who has already been cut about till she has lost all human form. The eyes of the red-haired peasant are bloodshot and glittering with savage triumph. . . . And behind the wagon and the woman who is bound to it, rolls the crowd, shrieking, howling, whistling, laughing, yelling, mocking. . . . That is called *vyvod* ('execution') Thus do the peasants punish their wives for adultery. This is a picture from life, and illustrates prescriptive law. I myself have seen it on the 15th July, 1891, in the village of Kandybovka in the Crimea." *

* [No reference is given to the work of Gorki in which the above passage appears.]

At a later period, many German moralists made loud complaints about the infidelity of wives and the indifference of their husbands towards it. Sebastian Brant discusses the impossibility of restraining them in his "Ship of Fools."

" He that his wyfe wyll counterwayte and watche
And feryth of hir lyuyng by his Jelowse intent
Is as great fole, as is that wytles wratche
That wolde kepe flees vnder the son feruent
Or in the se cast water. . . ."

In another section, "Of auoutry, and specially of them y^t ar bawdes to their wyues,



FIG. 568.—The adulterers' bridge, 1650. (Germanic Mus., Nuremberg.)

knowynge and wyll nat knowe, but kepe counseyll, for couetyse, and gaynes or auauntage," Brant tells of

" A fole blynde, forsoth and wytles is that man
Whiche thoughe his wyfe openly defyld be
Before his owne face, yet suche a chraste he can
To fayne hym a slepe, not wyllynge it to se
Or els he layeth his hande before his iye
And thoughe he here and se howe the mater gose
He snortynge slepyth, and wyll it not disclose."

Pictorial representations of adultery are not uncommon. Besides Brant's own woodcut (see Fig. 567), Jost Amman has chosen such a scene as a picture for a playing card in his

book of card games. This picture is reproduced in Fig. 569. A naked woman with a voluptuous figure is in the act of getting into a bath tub, and she is, at the same time, endeavouring to pull into the bath with her a clown who is still dressed in a long coat and fool's cap.

However, we find a very strong conjugal faithfulness also among many peoples which allow girls an unrestricted sexual intercourse with youths. As soon as the girl has entered the married state, adultery is unheard of.

We have already had to touch upon the sphere of marital faithfulness in the



FIG. 569.—The adulteress. Playing card by J. Amman.

section on chastity in women ; and the examples quoted there will not be cited again here where we shall discuss only the consequences of adultery.

Among the Apache Indians, the husband puts the adulteress out of his house, but first he cuts off her nose and has his purchase money paid back (Spring). The tribes on the Orinoco, however, punish adultery with death ; sometimes, it is true, the wife is pardoned, but never the seducer. We have seen above how lightly the Sioux Indians regard adultery. In ancient Peru, if a woman went away with another man, both adulteress and seducer were punished with death, but the husband could propose a milder punishment (Garcilasso). Likewise in Mexico, before the coming of the Spaniards, conjugal unfaithfulness was severely punished.

Ideas with regard to the punishment of adultery on the islands of the South-east

of the Malay Archipelago have changed if compared with earlier times. Whilst formerly the husband could immediately kill the seducer and his unfaithful wife (or the latter alone), now the affair leads generally to separation along with which usually the purchase price of the bride must be refunded by the wife's parents, while on Leti, Moa and Lakor, the adulterer is besides obliged to pay a fine to the deceived husband. The Keisar (Makisar) islanders content themselves with the payment of this fine and retain the wife; adultery is, however, a great rarity with them. On the Babar Islands, even to-day, it is said that the husband may kill the adulterer. If he does not do so, then he goes out armed along with his kinsmen and kills pigs and other livestock of the village dwellers, while the relatives of the adulterer try to oppose them and make good the damage in order to avoid war. Then if the adulterer has paid a fine the wife is free and can marry him without his paying a dowry. At a public meeting, the new husband gets the old one to swear an oath that he will not try to have sexual intercourse with his wife again. This happens with special ceremony, after which the first husband fetches his things from his wife's house and the divorce is regarded as having taken place (Riedel¹).

On the Marshall Islands, the man concerned in the adultery is not punished, but the wife is punished by being ejected. In Samoa, Tonga, the Hawaiian and Marquesas Islands, however, adultery is severely punished, and in Ponape (Carolines) it is frequently punished with death.

On the other hand, in the Mandated Territory of New Guinea, adultery is regarded merely as a rudeness; it meets with a benevolent reprimand, and is meanwhile fully atoned for by the payment of from three to five strings of *dewarra* (shell money) (Pfeil). Sometimes the husbands pretend to know nothing about their wives' "conjugal aberrations" (Neuhauss); but if the affair comes to light, then the husband uses the spear.

Of the Bukaua (Mandated Territory of New Guinea), the missionary Lehner says:

"Every wife has her lovers and every husband is known outside his own house. The wives carefully keep their earnings from adultery under lock and key, for if the husband catches sight of them, his wrath is unbounded. On such occasions the wife gets many a burn and cut. If shameful intercourse can be proved against a woman then the relatives protect her from the ill-treatment of her husband; whilst otherwise it happens that, for groundless or continued rough treatment, the wife is taken from the husband and the purchase price refunded."

The punishment which is meted out to the adulterer and the adulteress in New Britain is, according to Danks, extraordinarily severe. The wife is transfixed with a spear immediately and without mercy. The man, however, falls into an ambush prepared for him by the husband and his friends. They fall upon him, beat him with great force with a stick and twist his neck as violently as they can. Then they leave him lying in terrible agony in the road where he can help who will. He can no longer speak. He is parched with thirst for a few days, whilst his tongue swells to a great thickness, and he dies a frightful death.

The Bhutia, in Nepal, according to Mantegazza,¹ lay no great stress on the chastity of their wives, a tolerance of which the latter make the most extensive use. Among the Limbu in India, also, absolute chastity before marriage is not at all necessary, and the girl's male children are maintained by the father, the female by the mother.

Among the Berulo Kodo (Vocaligaru) in India, the custom of the women of which we heard through Fawcett of having a joint of the ring finger and the little

finger amputated when their eldest daughters' ears are pierced, is unintelligently considered by them a "chastity oracle." Only a woman who has remained faithful to her husband can bear the amputation well : on the unfaithful wife's finger stump, a nail will grow again as a sign of her unchastity.

The uncivilised Veddas in Ceylon consider conjugal faithfulness a matter of course, and even merely touching of the wife can make the husband kill the offender (Sarasin). Adultery is not heard of among the Veddas except where an attempt has been made to civilise them. Among their neighbours the Singhalese, adultery is widespread (Virchow ⁵).

In the Pelew Islands, the deceived husband simply sends away an unfaithful wife (Kubary) ; in the Marianne Islands, however, if the husband was adulterous then the women flocked together and fell upon his property and destroyed it utterly.

Conjugal faithfulness is in a peculiar position on the Gilbert Islands as can be gathered from Krämer.² In itself, the obligation of keeping faith with a person bound by a love or marriage tie is exceedingly strict. Yet the man is favoured to the extent that by the marriage, *eo ipso*, he gets the right of disposal of all his wife's sisters. In addition to this, if either of the married couple wants to take a false step, it is not considered at all bad ; only permission to do so must first be obtained. It is said to occur frequently, also, that devoted wives, if for some reason conjugal intercourse is impossible for them, bring women friends or relations to their husbands ; further, it is the rule that during the wife's pregnancy, which she spends in the house of a relation and away, he lives with another woman. Hence one sees, says Krämer,² that it is only a secret unfaithfulness which is despised.

The women of the Orang-Bélenda in Malacca, according to Stevens, have a peculiar method of keeping their husbands from adultery. They fix some cotton wool to a thin rod and put it into their vagina *post cohabitationem* in order to absorb the semen. Then the cotton wool is dried and carefully kept, and, so long as it remains dry, the husband cannot have sexual intercourse with any other woman. If the wife no longer cares for her husband, she throws the cotton wool away, and as this becomes wet, so the husband's fitness for intercourse with other women returns.

The men, however, also possess a means of keeping their wives from getting upset when they go away with other women. They put a piece of a certain plant under their wife's mat when they have coitus with her ; then they become so repulsive to her that she remains quite indifferent to adultery on her husband's part.

If, as very rarely happened, the wife committed adultery, then her husband bound her hands and feet and laid her on the ground at some distance from the cottage, whilst he, armed with three bamboo stakes, lay concealed in the underwood. The unhappy wife got neither food nor drink, and had to remain lying there until she died of exhaustion and the bites of ants. First, however, the guilty man had to try to cut her bonds and to take her back to her husband's house. If one of the husband's spears killed him while doing so, then the latter could let his wife die there or send her away, as he felt inclined. If the seducer succeeded in setting the woman free, then the deceived husband could do nothing more to him, but his wife he had to send away. If the lover refused to try to attempt this, then he had to pay a fine which the deceived husband himself fixed (Max Bartels ⁷).

R. Martin ⁵ states of the pure inland tribes of the peninsula of Malacca (the Senoi and Semang), that adultery is punished with death.

Among the Kalmucks, adultery is atoned for with from four to five heads of cattle ; among the Persians, adultery was a ground for divorce, yet here, too, the

husband could kill his wife if he succeeded in confirming the unfaithfulness of his wife by evidence.

Radde, in 1878, relates that the Chevsurs in the Caucasus punished the wife's unfaithfulness by cutting off her ears and nose, thus

In the village of Blo "one can, even now, see a woman who has been mutilated in this way. Cutting off the cheeks, too, is customary for this sin."

The Law of Mohammed against the adulteress is very strict. The Koran commands that the woman who is convicted of adultery by three witnesses shall be



FIG. 570.—Stoning of two women, 1685. From the *Book of the Parrot (Tuti-nameh)*. (Bayr-Landesbibl. Munich.)

imprisoned in the house till death sets her free or God puts a means of deliverance into her hand. Later the woman was given the choice between imprisonment and stoning (*cf.* Fig. 570). The severity of the law was mitigated by four witnesses being necessary to prove the adultery. Anyone who accuses a woman of this offence without being able to produce the proof of it, receives eighty lashes of the whip. The husband can substitute a five-fold oath for the four witnesses, and it is, however, open to the wife to clear herself by the same oath; if she does so, then the marriage is dissolved.

Of the Chinese, von Brandt ² reports :

"Adultery gives the husband the right to kill one or both of the guilty pair. He remains exempt from punishment if he exercises this right on the pair when they are caught in the act.

Among the common people there is a widespread idea that the husband, in order to go free, must kill both adulteress and adulterer ; this idea is erroneous and is probably founded on the fact that where the husband kills the adulterer, the woman is sold as a slave, and the price got for her goes to the public exchequer. As a public sale of this kind is naturally a great disgrace, hence it happens that, although the husband has suffered no physical personal punishment, the



FIG. 571.—Punishment of adultery in Japan. (Japanese woodcut, *Wakan-Sansaidzuye*. Yedo, 1715.)

law continues to exist in the popular consciousness in the above-mentioned form. Moreover, cases in which only the adulterer is killed are followed by lengthy investigations, since, in isolated cases, there exists a well-founded suspicion that the wife has been used as a decoy, and, in this instance, the matter is not that of punishing adultery, but of the murder and robbery of an innocent man."

In Japan, also, it appears to have been customary in earlier times for the husband to take his revenge on the "violator of his conjugal honour" with the

sword. This has been shown in a Japanese encyclopædia dating from the beginning of the eighteenth century, from which Fig. 571 is extracted.

In later times, a money fine was imposed instead of death, and even to-day there exists a jesting saying: "The price of adultery amounts to seven and a half gold pieces." According to Ehmann, it was used to give a jesting warning against intimate relations with the wife of another man.

Of the remarkable troglodytes of the Matmata mountain range in Southern Tunis, Traeger reports that the husband may kill the wife without her family having any claim for revenge, if he catches her in the act of adultery (likewise the adulterer); if he knows of his wife's unfaithfulness only from reports, then he can only send her away. We learn of a similar position from ancient Babylonian law.

Huguet relates that an Arab of the Sahara cut off the nose, lips and labia majora of his wife for unfaithfulness, and afterwards boasted that now she would have a wholesome fear, so that he was sure of her faithfulness.

Of the Wamakua, Adams (in Fülleborn²) reports that wifely unfaithfulness is branded by a vertical slit being cut through the middle of the upper lip, and the seducer is made a slave or sentenced to death.

Among the Konde (East Africa), the hair of the adulterer's head and the penis itself is burnt or singed, according to Fülleborn,² and the wife's genitals are burnt with fire. The cutting off of the ears, which Merensky mentions, but of which he was doubtful, Fülleborn² confirmed from having personally seen a wife thus mutilated. Another severe punishment, according to Merensky (in Fülleborn²), consists in the adulteress being compelled by her husband to bury alive the child conceived in adultery, and the mother herself has to put it in the grave.

The Angoni, a Zulu tribe in the north of the Zambesi, punish adultery by death, even in the case of members of the royal family. If the offence has been proved, says Wiese, then the man is sentenced to death by the highest chief, is removed to a distant spot, and is clubbed to death in the presence of the adulteress. The woman, standing with her hands at her back, is bound to a tree. Round her neck is put a sling which is tied behind the tree, and into this sling a club is fixed which serves as a gag, so that by twisting this, the delinquent is strangled. After both executions have been performed, the corpses are given back to their families, which are, nevertheless, most strictly forbidden to engage in any mourning ceremonies.

For manifest adultery among the ancient Israelites, the death sentence was passed on both adulterers, but the decision was given by the judge and not by the injured husband. Even the mere suspicion of unfaithfulness committed by the wife was severely punished. If the suspected woman denied it, then she had to submit to a judgment of God; if she confessed, then she was sentenced judicially and was deprived of her husband's wedding gift which was due to her. The Mosaic Law, which gave full licence to the arbitrary action of a jealous husband, was later limited by the Talmudists. The husband then appears as plaintiff only if he had forbidden his wife before two witnesses to have intercourse with a certain man, and she still, according to the testimony of two witnesses, continued such intercourse.

The kind of judgment of God to which the suspected woman had to submit is described in Numbers v., etc. The husband brings his wife before the priest who sets her before the Lord. Then he puts water into an earthen vessel and puts in dust from the floor of the temple. The priest uncovers the head of the woman and adjures her, and charges her by oath (see Numbers v. 19 ff.). The priest then writes the curses in the book and blots them out with the bitter water. This water he causes the woman to drink, and then follows the offering. If the woman is innocent, then she remains uninjured. According to the Talmud this test is only effective if

the husband has also kept conjugal faith. Johanan B. Zakkai, states Preuss,² therefore did away with this test altogether.

The code of Hammurabi decreed in § 129 :

“ If any wife is caught in the act of lying with a second man they shall be bound and thrown into the water. If the husband is merciful to the woman who is his wife, or if the king would save his slave (he may do so).”

If the adultery could not be proved, then § 131 came into force :

“ If any wife is accused by her (own) husband, but she is not caught in the act of sleeping with another man, then she shall swear in God’s name and return to her house.”

An Anglo-Saxon law decreed in case of adultery that the offender refund the wergeld of the wife and buy another wife for the injured husband. In German common law, however, the rule is as in the case of abduction of a betrothed person, the Frankish claim for the restitution of the abducted woman as well as the money fine being paid.

Among European peoples there are two nations especially where the wives do not enjoy a very enviable reputation with regard to conjugal faithfulness. These are the French and Italian. In the case of the former, dramatic literature and novels have done much, especially in Germany, to obtain for them such a reputation, which is not in accordance with the facts. In Italy, *cicisbeism* was once so generally known that an Italian lady, although probably quite wrongfully, used hardly to be imagined without such a companion.

If in earlier times it was good form for the married woman to be waited on or accompanied by such a male friend, who came to her in the morning to get his instructions and plans for the day, then it was the same as if a man were to take a young girl to attend on him ! This also applies to the “ friend of the family.” For the wife, however, such conduct is much worse than for the man, because it is a continual menace to the social foundations of marriage.

There are many signs by which unfaithfulness can be recognised.

The inhabitants of the Amboina Group have an unmistakable sign that a woman has had intercourse with more than one man. It is a custom there for a woman to take the placenta silently to the shore and throw it into the sea. If it floats on the water, then the woman is obliged to tell the husband of the woman who has been delivered, who thus knows that his wife has been unfaithful to him (Riedel¹).

The Mentawai islander can find out that his wife has been unfaithful to him if he himself falls ill during her pregnancy. Then the child which lies under her heart is not by her husband (Maass¹).

Later we will discuss a kind of divine judgment, which is undertaken in Uganda with the remains of the umbilical cord on the christening of the child ; this is to discover even subsequently a possible lapse of the mother and the consequent illegitimacy of the child.

We have already learnt from v. Brandt above that with the Chinese, the injured husband may kill both adulterers. He then goes on to say that the Chinese have a very peculiar method of deciding with certainty whether both had actually committed adultery. He reports :

“ In order to discover whether the two who have been killed really had committed adultery, a very peculiar test is often applied even by officials. Their heads were cut off and put into a big vessel filled with water, and the latter was set moving round very quickly by means of a

stick. When the water came to a standstill, if the heads touched with the faces, as if they were going to kiss each other, then their guilt was proved ; but if the faces were turned away from each other, their innocence.”

The Germans in the Middle Ages could, by a very simple test, establish whether a wife had been faithful or not. We find the instructions for this in Volmar's *Steinbuch*. This was set down in writing at about the middle of the thirteenth century. It runs thus :

“The real magnetic stone,
Hear what power it hath : . . .
Where any woman hath
Another to her let,
Hath him been told for true
Yet doth not know the truth
If it be true or false,
That he can find with this :
So that he goes to sleep at night
And with him takes his wife
By him in bed to lie.
So shall he 'neath her pillow
The stone then put beneath her head.
The truth then he will get ;
Has then no other man
Ever to her so won
Will she in all haste
Her own man then embrace
And press him to her breast
And nestle in and kiss.
In her sleep she this doth
If she be free from shame :
But if then that be true
Of which she is suspect,
Then she makes a great start
From the bed upon the floor
So very quickly down
As if he'd pushed her there.

This belief prevailed in ancient times, and Fühner, in speaking of the lodestone, quotes the following passage from the *Orphic Lithica* :

“But I warn thee again to examine thy wife whether she has still kept holy her own bed and her body from another man. Bring it (the lodestone) here and hide it under the bed ; hum a bewitching song lightly to thyself with thy lips ; and however deeply she may slumber in the sleep of love, she will put her arm about thee and desire to nestle against thee. Yet if she arouses the goddess Aphrodite with wanton lusts, after that she will fall out and lie stretched there on the floor.

Pliny (*Nat. Hist.*, VII., 4), too, reports a peculiar sign of adultery.

In Africa lived, according to Agatharchides, a similar people, the Psylli, so called after their king Psyllus, whose tomb lies at the side of the greater Syrte. Their bodies contain a poison deadly for snakes by the smell of which the latter were translated in sleep. Among them prevailed the custom of throwing the most dangerous snakes to new-born children and in this way to test the chastity of their wives : that is to say, if the snakes did not flee from the children then these were conceived in adultery.

The time of confinement, in which the mind is filled with fear and anxiety, is generally the right moment also for the guilty conscience to be moved. Thus, at the beginning of delivery, the Samoyed woman feels constrained to report to an old woman every single case in which she was unfaithful to her husband ; for only after conscientious confession can the birth proceed smoothly and without disturbance. We find a similar state of things among other tribes. Even the sins of the forefathers, however, came to light at this critical time. This is proved by a peculiar custom which prevails on the Luang-Sermata islands. If the labour pains are long in coming, it is considered certain proof of illicit sexual intercourse (Riedel¹).

v. d. Steinen³ exhibited to the Berlin Anthropological Society in 1905, a Peruvian twig oracle consisting of the twigs of a *Euphorbia* tied into knots which had been found by A. Weberbauer at Huariamasga (province of Huari in Peru) on steep slopes at a height of from 2500 to 2900 metres ; Weberbauer found at the place indicated scarcely one example which was not sown over with such knots. He writes, " the Indian who passes this place on far journeys is accustomed to tie a knot in a young twig of the *nunumsha* bush on the outward way. If he finds the knot dried up on his return, then his wife has been unfaithful during his absence, but if the knot has not withered, then the conjugal fidelity has been preserved." The mule driver, too, made one of these knots when he thought himself unobserved.

Nunumsha, the native name of the *Euphorbia*, is connected with a word, *nunu*, likewise belonging to the Quichua language, also *nũnũ* = female breast, udder. v. d. Steinen³ has already indicated that obviously the milk that might dry up made the thought connection between wife and plant ; he declared it desirable to establish whether this custom, which Weberbauer found not very extensive, was an ancient Indian or an imported one. Since it must be quite impossible for the man who ties the knot to find his own again among the immense number of similar knots, it appears to me not improbable that it might rather be a question of a charm than an oracle, a binding of the woman ; if the knot dried, then the charm would have been ineffective.

9. DIVORCE

Not every marriage corresponds to the picture of matrimonial union which the Minnesinger Reinmar von Zweter * has sketched :

" One courage, body, mind and heart
And one in well kept faithfulness,
Where fear doth flee, no shame appears,
And two have quite as one become
Where love with Love's united :
There I believe no silver, gold or jewel
Their pleasure hath o'ergilt, where offers sparkling eyes,
There where two hearts which love hath bound,
We find beneath one cover.
And where one with the other joins,
There well may be the home of bliss."

The " home of bliss " is not to be found everywhere, and although the marriage service in the Protestant Church contains the formula : " Whom God hath joined, let no man put asunder " yet civil law has found itself obliged to establish a number of cases in which the marriage tie made for life can be dissolved again by judicial

* Quoted by Scheer,² p. 133.

verdict. And even the Catholic Church, which regards the marriage once concluded as indissoluble has, nevertheless, had to recognise that there are situations in life when the holy bond must be absolutely severed. It is, in any case, a great mistake in our legislation that adultery is, in most cases, the only ground for divorce, instead of a marriage that has totally failed.

We have already seen above that among the Persians, the North African Mohammedans, and also among isolated tribes in South-east Africa, the absence of the hymen discovered on the wedding night is, in the eyes of these people, as well as the loss of virginity before the conclusion of the marriage, sufficient to dissolve the marriage again without further trouble. The reason is not moral, but the possibility of illegitimate offspring.

The Mohammedan, however, at any moment he likes, may decide on divorce without stating any reason. He must then, of course, hand over the dowry of his wife, and allow her maintenance for the *iddah* period, *i.e.*, the period of three months during which she may not remarry, or until her delivery. But this protective regulation has little importance for, if the wife has brought about the divorce by disobedience, or if the man fears that "he is unable to fulfil the laws of God" if he remits the dowry, then he may keep a part of it or even the whole.

The idea that the wife can press for divorce is absolutely foreign to the Koran. It is true that Moslem law has some regulations to meet the case: the wife can demand divorce in the case of certain offences of the husband, or where there is hopeless matrimonial discord; but then she has to indemnify the husband or give up all claim to the dowry. Divorce once pronounced is considered irrevocable if it is attested by witnesses; many a wife has been freed from an oppressive slavery because the husband, in the heat of anger, has pronounced his: "Thou art divorced." For this statement is sufficient to dissolve the marriage. In Egypt, however, this statement must be made three times.

The Mohammedans are allowed to separate from a wife three times, and to marry her again after the divorce. After the third time, however, remarriage is forbidden, unless the wife has, meanwhile, entered into marriage with another man, which bond must, of course, also first be severed.

Among the Persians, it is customary for adultery to lead to divorce; but, as a rule, the divorce results only if the wife remains childless, and this, moreover, can be proved to be her fault; secondly, if she is a loose woman; and thirdly, if the husband believes that with her entry into the house bad luck has come upon it. Then she is considered an evil omen. The Persian, too, can take back a divorced wife, but only if after the second divorce she has, meanwhile, married another man, and got her divorce from him. In the case of the *sighe*, *i.e.*, when he has married a wife for a time, there is no question of divorce, as the contract with her expires of itself after a certain time.

Among the present day Abkhasians, a dissatisfied wife may leave her husband without further ceremony and return to her family without the husband's having any right to complain (Serena). The Naya-Kurumba in the Nilgiri Hills, consider marriage binding only for so long as it pleases them (Jagor). Among the Samoyedes, the marriage tie is very light; trivial causes can bring about divorce; the husband then loses the purchase price, and if a wife runs away, then her parents are obliged to refund the purchase price.

Among the Sumerians, as is expressed on some cuneiform tablets which were discovered and which were read by Lenormant, the husband could separate from the wife, but not the wife from the husband.

“Legal decree : Has a wife injured her husband, has she said to him : ‘Thou art no longer my husband,’ then shall she be cast into the river.” An attempt at divorce on the woman’s part was thus punished with death. The man, on the contrary, could cast off his wife without ceremony if he had not already had intercourse with her : “If a man has married a woman and *subigendo eam non compressit*, then he can choose another.” But if the marriage was already accomplished in this sense, it was still open to him by paying a fine to cancel the marriage. Again, “If a man hath said to his wife ‘thou art no longer my wife,’ then shall he pay half a silver maneh.” Certain offences on the wife’s part, of which unfortunately we have no details, gave the man the right to cast her out in great disgrace. It may be supposed that adultery on her side must have constituted the cause for this. “He pronounced her divorce on the threshold and sent her back to her father. . . . He handed over to her his deed of divorce ; he fastened it on her back, and then cast her out of the house. In every case, the husband was allowed to keep his child with him, but he could not worry his wife further.”

Among the ancient Israelites, while the temple was still in existence, there were the following grounds for divorce :

The husband could go to law if the wife had physical defects which hindered sexual intercourse ; if she offended against Judaic law in her conduct of the household or in any other way ; if she led an immoral life, or was found guilty of adultery ; if she insulted her husband’s parents or refused her conjugal duties ; finally, if she remained childless for 10 years. On the other hand, the wife could go to law if the husband refused his conjugal duties ; if he treated her tyrannically ; or was seized by repulsive or infectious disease ; or had taken up a pursuit that was held in contempt ; if he became a fugitive owing to some crime ; and in conclusion if he showed himself incapable of conjugal duty.

About the Jews in Fürth at the beginning of the eighteenth century, Kirchner says :

“Divorce is not unusual among the Jews. The causes, however, must be both important and serious. They consist chiefly in the following points : If she is considered a pure virgin and afterwards proves to be the opposite ; or as a widow had not behaved well, and had been a whore ; or if an evil smell came from her mouth ; or if she had a running sore on her arm and had concealed it from her husband ; or if she did not keep the Judaic laws, for instance, if she did not keep her 14 days of warm and cold baths, in which she washed and purified herself, neglected the cutting off of a piece of dough as was proper (that is, of each lump of dough be it great or small to cut off a piece the size of an egg and throw it into the fire) ; or she forgets the due lighting of the ten candles over the table for the coming of the Sabbath ; or if she is bid and commanded to do something and has to be told two or three times after each other ; or she is rebellious in word or deed ; is defiant and would refuse the marriage bed ; also if she speaks or plays cards with strange married men or bachelors without her husband’s will and knowledge ; or when she repeatedly gives her husband spoiled food. In brief, if she behaves badly in her married life, so that her husband considers it impossible to continue the marriage, then may her husband without any hesitation give her a letter of divorce.”

We see that these children of Israel need not be at a loss for a reason for getting free from a wife who has gradually become burdensome. The matter is, however, made somewhat difficult for them by the strictness and punctiliousness of the procedure prescribed for divorce. The letter of divorce which is given to the wife and in which her husband formally renounces all rights in her, must be copied by a professional scribe in the presence of both parties and of the great Rabbi, or even the chief local Rabbi, and four other Rabbis. The Rabbi generally tries to put off the appointed time as long as possible, and when it gets too far then he makes urgent attempts at reconciliation. If it is all in vain, the scribe then performs his office. In doing so, however, no line must be longer than another, no letter must

protrude beyond the other, no punctuation marks must be missing, or otherwise the piece of writing is invalid and the work must begin all over again. If, however, everything is done in conformity with the regulations, the Rabbi then takes the letter of divorce and calls upon one of the witnesses present to set himself before him in order to receive the letter.

“The witness must put both his hands together and hold them up in the air, first apart when above, and then close together below. The Rabbi first performs a ceremony, and after that the wife takes up her position near her witnesses, with a black cloth over her head, and with downcast eyes. The Rabbi then throws the letter quickly through the aforesaid witnesses’



FIG. 572.—Jewish divorce. Eighteenth century. The Rabbi is in the act of throwing the letter or bill of divorce. (After Jungendres.)

hands, and if it falls on the bench or the table or, worse still, on the floor, then all the work has been done in vain, and all the ceremonies performed have to begin over again” (Jungendres).

The witness has therefore to catch the letter, and the Rabbi tries to distract his attention so that the letter may fall to the ground through his hands. Fig. 572 is from an etching of Jungendres, and shows us this ceremony.

The procedure was different when it was a case of a wife who had been married to a minor. In the *Bērākhōth* treatise of the Babylonian Talmud, it runs :

“Any daughter under age who has lost her father early and has been married by the mother, can at a riper age, refuse to stay longer with this husband, and can leave him and marry another without its being necessary for him to give her a letter of divorce because the marriage which was arranged by the mother is considered invalid. Otherwise, when the father has married his daughter under age, then in the case of refusal, a letter of divorce is necessary” (see Pinner).

The Chinese regulations about divorce were, according to the rules of Confucius, as follows :

“ Disobedience to the husband’s parents, sterility, adultery, dislike or jealousy, serious disease, garrulity, theft of the husband’s property. In three cases the husband could not divorce the wife : (1) if her parents, who were still alive at the time of the marriage, are dead ; (2) if she had worn mourning for three years for her husband’s parents ; (3) if she had been poor and lowly and is now rich and respected.”

Hering reported that by a decree of the Council of State of May 5th, 1873, the wife had for the first time the right to bring an action for divorce before the judge under protection of her father or a relation. . . . He writes, “ According to official statistics, there were in the year 1884 for every hundred marriages, 38·2 divorces ; 1885, 43·7 ; 1886, 38·3. It is, of course, possible that the statistical figures are not quite correct. But they seem to us to be rather too low, as marriages are usually reported very late, and therefore, many marriages have been dissolved before they were reported as having taken place ; thus they are not taken into account in the statistical tables.”

Among certain tribes in Formosa, too, the dissolution of marriage appears to be a very simple matter. The Chinese report on this :

If (the married couple) is on friendly terms, the man marries another wife, while the woman takes the child and enters upon a new marriage.

The Japanese can separate from his wife without any special reasons, and he may afterwards marry as often as he likes, but not his wife’s sister or the sister of a former wife.

A Japanese saying runs : “ A wife leaves (the house of her husband) in seven ways.” According to Ehmann, this refers to the seven grounds for divorce which, according to the Taihō code, a law book drawn up after the Chinese pattern which appeared in A.D. 701, refer to the husband. These grounds are : childlessness, adultery, disobedience towards the husband’s parents, gossip, theft, jealousy and hereditary disease. “ To give the wife three and a half lines ” means to give her the deed of divorce which invariably consisted of three and a half lines of text. Later Civil Codes were somewhat different (see Westermarck,¹ III., p. 305).

On the Marianne Islands, a marriage lasts only so long as both husband and wife want it. If the husband is not submissive enough, then the wife leaves and goes to her parents, who then are accustomed to fall upon the husband’s property and destroy it. On the Pelew Islands, if the husband wishes to separate from his wife, he simply sends her away. The children, who inherit the position of their mother, follow her (Kubary). On the Gilbert Islands, if the young husband treats his wife badly, then her adoptive father can ask for her back again, and the marriage is then dissolved (Parkinson).

Since on Samoa, according to Krämer, marriages are seldom contracted from love, it often happens that they last only for a few years. The married couple “ then sit down together and discuss the situation as regards their children, rub noses in farewell and separate. The only lasting evidence of the union are the children to whom, especially if their mother was of higher birth than the father, respect must always be shown.” It is open to both parents to marry someone else.

On the south-eastern islands of the Malay Archipelago, of which Reidel has given such excellent description, very varied customs prevail with regard to marriage. On Buru no divorce of any kind takes place, and if the wife leaves her husband her relatives are obliged to take her back to him. On most of the other islands the chief

ground for a dissolution of marriage is unfaithfulness on the part of the wife, or also on the part of the husband. Ill-treatment of the wife also constitutes a reason for divorce, and what is more, the husband, in contrast with the previously mentioned causes, has no claim upon a repayment of the marriage portion. On the contrary, he must return the presents which he received from the bride's relations upon his marriage; he must repay them the costs which the wedding incurred (Amboina), and in Leti, Moa and Lakor he has even to pay them compensation.

On Tenimber and Timor Laut, the wife may take for herself all that she has earned during the marriage, and the children remain with her if the marriage is dissolved; whilst in the Aru Islands, the children followed the father. Divorce can be pronounced also in case of continual domestic strife (Amboina, Leti, Moa, Lakor). The women in the island of Ceram may apply for divorce in case of impotence of the husband or if the latter lives in continual strife with his wife's parents. On Leti, Moa and Lakor the divorce is pronounced by the eldest of the family, in the Ceram Laut and Gorong Islands, by the head men and the priests. On the latter islands, they then give the deed of divorce, divide the property and the children, but they do not grant the divorce unless the grounds are very important. A remarriage of a divorced woman may not take place before the 135th day and until that time she still belongs to the husband and must be maintained by him.

Marriages can be achieved in Java without great difficulty. A divorced woman, however, may remarry only after three months and 10 days. If a divorced couple wanted to reunite later, this can only be done legally if the wife has meanwhile taken another husband, from whom she must get divorced. If she is pregnant by this husband, then she must wait for her confinement and can remarry only after this (see Raffles, I., 320 ff.).

Among the natives of South Africa, divorce is common, and is often set in motion for trifling causes (Merensky). Among the Bechuana, also, the husband can easily get a divorce, but he has to provide for the divorced wife, if she was not found guilty. Among the Wanyamwezi, according to Reichard, divorce can be obtained through the chief if there are sufficient grounds for it, *e.g.*, if the wife gets no children on account of syphilis, or if the married couple cannot bear each other, or if the wife leaves her husband with evil intent. In all cases, however, whether husband or wife is the guilty party, the purchase price of the bride must be refunded.

Among the Masai, according to Merker, "a divorce can be accomplished by the husband casting off the wife, or the wife may run away from the husband and refuse to return. In the first case, a family council precedes the divorce. The wife must then go to her mother for the time being and the husband has the right to state definitely, in the course of the following four or five months, whether he will have the wife back again or not. If he desires her return, she has to obey; in the other case, she may remarry after the expiration of the period mentioned. (In another place, however, Merker states that this is excluded if she has sons alive; she can then only become a concubine.) The parents must then pay back the full price of the bride to the divorced husband, whereupon the latter must refuse to accept it, with the judicial result that all the children which the wife may yet bring into the world belong to him."

On the Gold Coast, a woman must colour her head or her arm with white earth as a sign that she is divorced (Vortisch²).

The Eskimo know divorce. The following report is from v. Nordenskiöld.

"Sometimes the marriage is dissolved six months or even a whole year after the wedding. In such a case, the husband goes away from his wife in the evening

without saying a word to her, whereupon she betakes herself back to her parents on the following morning and appears to be gay and in a good humour. If the man afterwards comes to her dwelling-place, she likes to show herself to him for a few moments in gala dress. The newly married wife, also, sometimes leaves her husband in all seriousness, especially if she has taken a dislike to one of the women in his neighbourhood. But after a child is born, especially if it is a boy, no divorce can take place."

CHAPTER VIII
THE PREGNANT WOMAN

1. GENERATION AND REPRODUCTION

It hardly needs special mention that, for the preservation and propagation of the race, more important demands are made upon woman than upon man. While the latter communicates to the young germ of the new individual in a short single act only the capability of development and hereditary traits, the woman gives it protection within her body where it can grow and reach a certain degree of maturity ; and supplies from her blood the materials necessary for its growth, and finally, when after months of concealment the child sees the light, she presents it with the most important product of her body, the milk which for a long time is to be its exclusive food. All these important functions take place at the period of fullest physical strength, and at the height of the development of the female, at least in normal circumstances ; and almost two full years elapse, sometimes, indeed often, more, for the complete cycle of events to take place. It is also quite a common thing for fresh impregnation to take place almost immediately after the birth of a child.

Herein lies the eternal, unalterable division of labour of man and woman, for this work man cannot do, whilst woman can only *apparently* take over the work of the male. Hence, it is quite in order that, in this work done by woman, a thorough consideration should be given to the circumstances and activities concerned.

Only since Leeuwenhoek, Huygens and Swammerdam (1685) has it been known that contact of the ovum with the male semen is necessary for impregnation.* Moreover, the union of the spermatozöon with the ovum was not observed till 1843 by du Barry (see F. J. Cole).

Among bisexual creatures, the semen must, in general, come to the ovum if it is to develop further. In the lower animals it is possible for the semen to come in contact with the ova outside the female body, but among the higher animals, it is necessary for the process to take place in the genital organs of the female. The process itself is called procreation. It falls into three sections : coitus or cohabitation, conception and fertilisation.

Let us first consider coitus.

It is necessary for the genital organs of both to come into contact. This act normally presupposes erection in the man and is accompanied by tumescence in the female. These phenomena are sometimes called the first copulation reflexes. When the sexual sensation, which is accompanied by sensual phenomena, reaches its highest point, then the orgasm takes place. With it the second copulation reflex is connected, which manifests itself in the man by the ejaculation of the semen, and in the woman by muscular contractions and secretion of mucus, which consists of secretions from the glands of Bartholin and elsewhere. Thereupon the curve of the man's desire declines rapidly, whilst that of the woman slowly dies away. The semen, or at least part of it, now lies in the upper end of the vagina, and the second phase begins, which may or may not lead to ultimate conception.

* [For the history of embryology, see Needham ; Bilikiewicz.]

As the theory of procreation, even to-day, still contains many problematical points, so from time immemorial procreation was considered among all peoples as a mystery which could scarcely be solved. What share has the man and what the woman in the production of a new individual? How are both able to transmit physical and mental characteristics to their offspring? That has been the question from the beginning of time. And, wherever a primitive science or the first attempts at philosophy and natural science began to appear, men tried by consideration and by the weaving of theories to get upon the track of this problem. It is not surprising

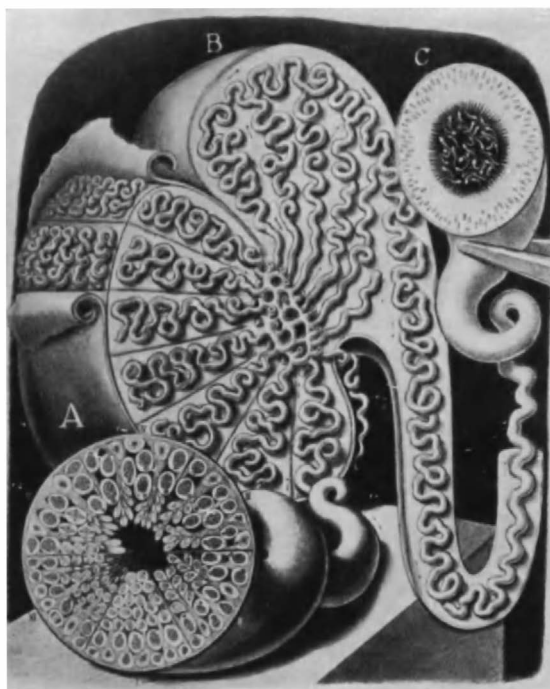


FIG. 573.—Schematic representation of the human testes. A, Testis; B, Epididymis; C, Ductus. (After Kahn, *Leben des Menschen*, I.)

that many peculiar ideas emerged. Of these the belief in the reincarnation of the vital substance and the creation of the soul are typical examples.

Before we enter upon the discussion, we wish to interpolate briefly a few conceptions which were diffused in different lands and at different times.

The ancient Maya tribes of Central America seem to have imagined an actual immigration of the child into the maternal body. We shall return to this point later.

According to the idea of the Talmudists, there are three factors which are concerned in the formation of the embryo :

The father provides the *white* semen from which the bones, the brain, and the white of the eyes originate ; the mother supplies the *red* semen for the formation of the skin, flesh, hair, and the iris ; the breath on the other hand, the *pneuma*, on which are dependent the expressions of the face, sight, hearing, speech, movement, understanding and perceptive faculty are then added by God Himself (see Kazenelson ; Macht).

Some of the views of the ancient Hindus were transmitted to us by Suśruta. They may be summarised as follows :

At coitus, the *évépyeia* leaves the body through the *vayu* (the breath) ; it is then discharged by means of the union of the *évépyeia* with the *vanu* of the male semen into the female genitals and is mixed with the monthly blood, whereupon the nascent embryo, through the union of the *Agni* (god of fire) with the *Soma* (moon god as procreator), reached the uterus. With the embryo, the *soul* also goes into the uterus endowed with god-like and demonic attributes (see Vullers).

From the scientific books in Tamil, we learn also the Hindu physiology (called *tatva-sâstra*) (Schanz) ; among the five organs of activity, the last of them, the genitals, were considered as the organs of secretion and procreation. According to a mystic conception, everything that was to be found in the macrocosm, *i.e.*, in the



FIG. 574.—Spermatozoa in an ejaculation. (Microscopic view, after Nürnberger.)

world, was reflected also in the microcosm, *i.e.*, in the human body, of which the middle region was represented as a lotus flower.

A Hindu myth declares, according to Schmidt,⁸ that “procreation is the desire for reunion as man and wife of two originally connected halves of the same being which had been split asunder by Prajâpati,” who was conceived as the “lord of the creatures.”

According to Hippocratic ideas, fertilisation in the uterus proceeds by means of the mixing of male and female semen without the menstrual blood having any share in it. When fertilisation has taken place, however, menstrual blood enters the uterus, and what is more, not monthly but daily, and becoming flesh, assists the child to grow (see Needham, I., 57).

According to these notions, the woman as well as the man forms semen. The germ originates when the male semen meets the female, and the resemblance of the creature produced originates from the circumstance that the semen supplied by all parts of the body is a kind of representative extract of the latter. This theory,

already in force before Hippocrates (according to Plutarch in Pythagoras) was contested by Aristotle. He himself, however, maintained that the man gives the impulse to the movement, but the woman gives the substance. Aristotle regarded the menstrual blood as the element which the woman contributed to creation, and, as is well known, he drew a parallel between the flow of blood and the secretion of mucus, which was observed in animals in heat. He compares procreation with the curdling of milk by rennet, in which the milk supplies the substance and the rennet the principle of the curdling (*cf.* Needham, I., 70). Hippocrates, therefore, believed that the semen contained both the dynamic and the material principle. Aristotle, on the other hand, claimed for it only the dynamic principle (see His).

Galen contested Aristotle's view, but "the perusal of his treatise," says His, "in spite of many excellent observations and comments, leaves the painful impression which is experienced when important material which is based upon fact is presented to us in an artificial connection."

The Arab physicians, in their theory of procreation, went back to Aristotle. One of them, Averroes, who died in Morocco in 1198, regarded the ovaries as the woman's testes (II., 35); in procreation they do not participate, but represent vestigial organs like the breasts in men. The embryo is formed by means of the menstrual blood; its form, however, depends chiefly upon the male semen through its aerial spirit (*cf.* T. Schroeder). Therefore, he did not doubt that a woman could become pregnant in a bath in which, shortly before, a man had had an emission. This latter assertion was, as late as last century, the subject of a discussion in forensic medicine in England.

In the religious worship of various peoples, procreation plays a mystic part. Thus, in Śaivism, procreation itself is considered a partial or total destruction, hence Kālī is at once the goddess of lust, destruction and death. In Lamaism, all organic beings have a dual soul: one of these is called the *thinking soul*, the other *life*. The former has no definite seat; it wanders through the limbs and comes into human beings only at birth; the life, on the other hand, enters at conception. According to the ideas of the Kandhs in India, on the other hand, four souls are situated in human beings: the first is the soul fit for eternal bliss which returns to god (Boora); the second belongs to its own tribe upon earth, wherefore the priest has to state at birth of each child which member of the family has returned; the third has to bear the pains inflicted as a punishment for sin; the fourth is that which dies at the dissolution of the body (Macpherson, pp. 91 ff.).

With us, there is still a widespread idea in country districts that, for a pregnancy mutual pleasure is absolutely indispensable because, only in this way can the male "nature" come into contact with the female, and when twins are born to a man he is, because of his sense of his own male vigour, willing to be teased for having been "as vigorous as he was industrious." According to popular belief, the greater the excitement, the greater is the prospect of a baby. Although not wholly without foundation, it is well known that even without excitement, the woman can become pregnant.

Among the Australian aborigines in Queensland, the girls, as is often the case among primitive peoples, have regular sexual intercourse long before they have reached puberty, without any resulting pregnancy. They used to assume that the child originated from the spirit of an ancestor. The children are fully formed, but, on their passage into their maternal home, they assume the form of a rainbow if it is a girl and a snake if it is a boy. When once the child is inside the mother, it reassumes the human form. When the blacks hear the cry of a rain bird in the

night, they exclaim "there is a child somewhere outside." The husband and wife search vainly through the leaves and stones for a snake: it cannot be found, and then that is unmistakable proof that the wife is pregnant. At Cape Grafton, the natives believe that the child already perfectly formed is brought to the mother in a dream by a kind of pigeon (von Reitzenstein¹).

In whatever way they have received the child, when it appears, the acknowledged husband accepts it for his own without protest.

Of the inhabitants of the Mandated Territory of New Guinea is a similar state of affairs reported by Neuhauss,² who says that "most of them certainly know the connection between sexual intercourse and birth, but not all." "Isolated women deny in all seriousness the connection between sexual intercourse and pregnancy," reports Keysser.* When the missionaries came to Kai-land, the Kai, in order to improve themselves in every respect, wanted to discontinue sexual intercourse with women because they regarded it as something bad. They volunteered to lodge the women in special villages. When it was pointed out to them that they then would have no offspring, they asserted: "The women will, of course, bring children into the world."

Neuhauss² states that according to the ideas of the Papuan, the performance of the man in sexual intercourse is of secondary importance. The woman remains the actual creator of the child, and on this is based the widespread mother-right. The Tami says the father merely pulls away the child, as one pulls off the shell of a coconut. According to his idea, the child is fully formed in the mother's body, and is only freed from its bonds by means of coitus. Therefore, the pertinent question is not who has the same father, but who comes out of the same place.

That the penetration of the male sperm into the genital organs of the woman is a necessary requirement for procreation, most savage peoples know nowadays, and even many of them who are at a very low stage of civilisation. It is erroneous that they take precautions to prevent conception. This was formerly considered to be the aim of the *mika* operation which certain Australian tribes perform on their youths and which consists in cutting open the urethra from the glans to the scrotum with a flint knife and preventing it from reuniting. In sexual union, the discharge of the semen then takes place outside the female genitalia.

Recently, however, Klaatsch has shown that the purpose of this operation is to be explained otherwise. Klaatsch learned from some missionaries on the North-West Coast of Australia among the Niol-Niol, that the *mika* operation is supposed to make a kind of homosexual intercourse possible. "The man with the incised penis acts as woman to the still unoperated boy, who manages to have coitus in the artificial opening." Dr. Roth⁶ (p. 180), in a letter to Klaatsch, dated December 18th, 1906, says that, among the Boulia (in Queensland), the operated people are called "possessors of vulva" (v. Reitzenstein). For further details, see Basedow.

At the orgies, which are accustomed to take place between the young men sent for the wooing of the Basuto girl and the friends of the prospective bride, the girl, on yielding herself, always utters this request: "Do not ruin me," *i.e.*, guard against an impregnation; and Thomson states that among the youths of the Masai, who have free intercourse with the girls (among whom, however, a pregnancy would result in inevitable death), it is customary to withdraw the penis *ante ejaculationem*, although Merker makes no mention of this.

How hard people have tried to get behind the secret of pregnancy is also shown by the idea of the Syryenians, a Finnish tribe, according to which a pregnancy might

* [Cf. the reports of the Trobriand Islanders in Malinowski.²]

result as a kind of infection. We have already discussed the harmful powers of the *pež*, the contaminating property produced by sexual intercourse, of which the carrier is, in the first place the wife, but which is sometimes ascribed to the husband (see Nalimov). The same author states that the woman can do harm to men, animals and things by touching or stepping over them, and so on ; likewise, also, can the man at times. " Young girls take particular care that men who indulge in sexual pleasure do not step over them. They are afraid of infection and disease ; formerly they probably feared becoming pregnant." And even nowadays one can, though but seldom, hear it said : " If a man after intercourse with a woman steps over a girl that she can also become pregnant " (cf. the belief among the Baganda that stepping over a woman is equivalent to cohabitation (see Roscoe,³ p. 357)).

To a special group belong those ideas where the appearance of pregnancy

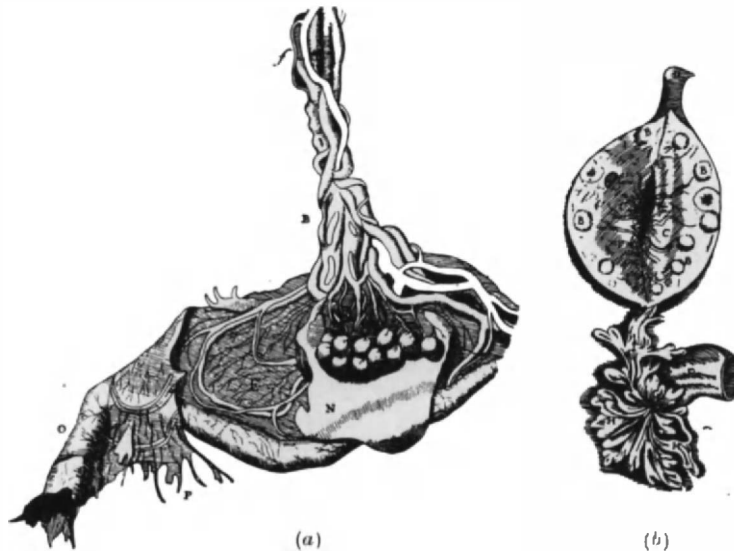


FIG. 575.—(a) Ovary with ova, from Swammerdam's *Miraculum naturae*, 1762 ; (b) Ovary with fimbria ovarica, from R. de Graaf. (After Weindler.)

follows in an unnatural way, without its being evident that, as in most examples of sympathetic magic, it is a question merely of favourable means for impregnation. To this group might belong the Hindu belief that if girls expose themselves to the rays of the sun during their menstruation, they may become pregnant by this means (Schmidt³), an artifice used by barren women to cure their sterility (cf. Croke,⁴ p. 35).

Again, Römer states that, according to the popular belief of the Battak in Sumatra, it may happen that a woman is suddenly made pregnant by contact with a floating fruit in the bath, as was, moreover, also believed in ancient Peru (see v. Reitzenstein¹).

2. CONCEPTION AND FERTILISATION

Last century the theory was established by the physiologist Bischoff that at each menstruation, one fully developed ovum detaches itself from the bursting follicle of the ovary and reaches the Fallopian tubes. If impregnation has taken place it will

there encounter the semen. This process precedes *conception*, i.e., the penetration of the spermatozoon into the egg-cell. There can be little doubt, in spite of some conflict of opinion, that the cervical plug facilitates the upward passage of the spermatozoa. At the same time, a relaxation of the os uteri sets in, which takes place in several convulsive movements, so that it produces a sucking action. One may call the process the third copulation reflex. It is known that the spermatozoon has a motion of its own (about 2-3 mm. per minute). Now the vaginal fluid is acid, and acid substances have a deleterious effect on the sperm, whilst alkaline mucus has a beneficial effect. The cervical mucus is alkaline. Further, the muscular system of the vagina has a downward action. There is no doubt that these factors annihilate a great many, indeed, millions of spermatozoa and only the few survive. These are now transmitted to the uterus by processes which are not wholly clear. It is, however, of interest that the ciliary epithelium of the uterus and of the oviduct act downwards, therefore the spermatozoa adhere to the walls and are carried upwards by peristaltic action (see Parshley, and cf. G. H. Parker). Weak ones, of course, are retarded by this so that another repressive factor is apparent. They now reach the tubes or oviducts. It has been suggested that the ovum which lies in the oviducts has a chemical attraction or, as we say, a chemotactic influence. This ovum, as we have seen, comes from the ovaries whence it has emerged from a burst follicle. By the ciliary action of the peritoneal epithelium it is propelled to the tubes, the fimbriæ of which are situated outside that part of the ovary at which the follicle bursts. With the ovum pours out the follicular fluid which helps to wash it into the funnel. It has also been reported that the fimbriæ of the funnel set up a motion like that made by sea anemones. We may assume that the encounter of ovum and spermatozoon takes place in uterus, tubes or ovary. Only one spermatozoon penetrates and accomplishes the third part of procreation, namely fertilisation (Fig. 576).

We have mentioned above, ova and spermatozoa.

Let us now observe the germ cells more closely. The female ovum is the largest cell in the human body. It is just visible to the naked eye and has a diameter of $\frac{1}{3}$ mm. Its size is due to the yolk embedded in it which serves as food. As

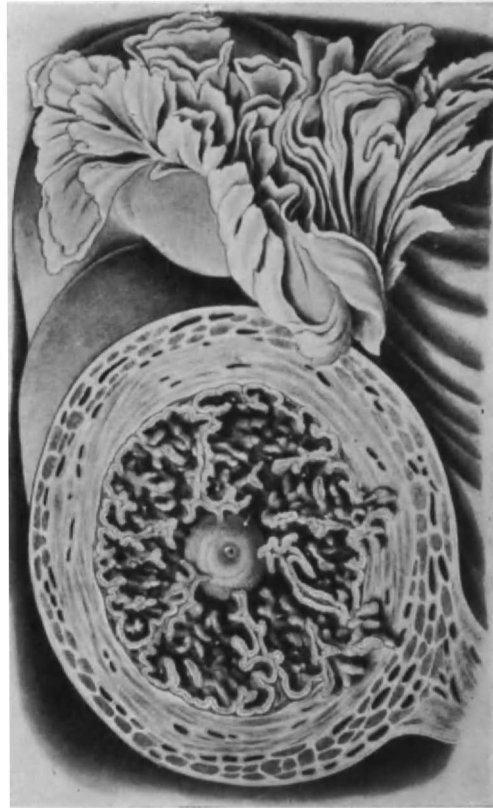


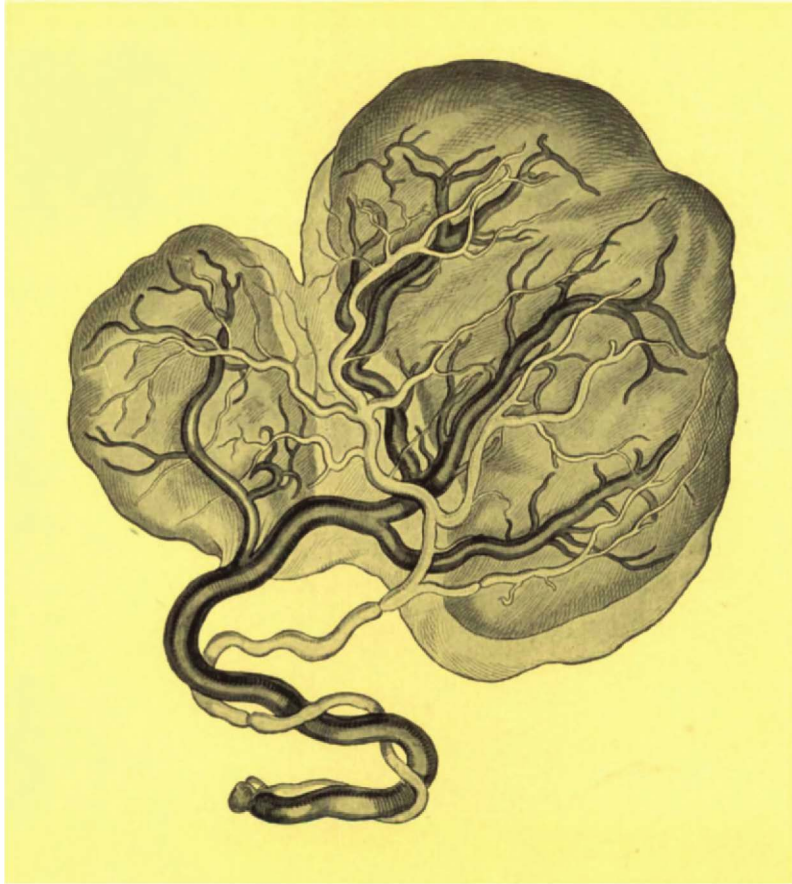
FIG. 576.—Fertilisation of the ovum during its passage through the Fallopian tube. The Fallopian tube, which begins with a fimbriated extremity, is lined with mucous membrane covered with ciliated epithelium which propels the ovum towards the uterus. (After Kahn.)

this yolk-nourishment, as we shall see, lasts only a short time in man, the human ovum is thus small compared with a bird's egg where the product is developed in the egg until completion, whilst in human beings the ovum very soon embeds itself firmly into uterine mucosa, and thus makes it possible for the nourishment of the embryo to be undertaken through the circulation of the blood of the mother. Normally, in a woman who has reached puberty, an ovum is set free every month, and awaits fertilisation. The male spermatozoa, on the other hand, deviate from the normal form of the cell. They somewhat resemble a basting ladle, in which the head is formed by the nucleus of the cell, whilst the very small protoplasmic mass is joined to it as the tail. The part next the head is called the neck: in it are the anterior and posterior centrosomes. In the upper part of the tail is a spiral filament which assists the spermatozoon in making its snake-like motion. The spermatozoon belongs to the smaller cells of the human body: it is only 0.05 mm. long, and its head 0.003 mm. wide; thus, about 330 spermatozoa must be laid side by side before they are 1 mm. broad. In a cubic millimetre of semen, about 60,000 spermatozoa are contained. Since a man at one coitus ejaculates about a dram (3.7 c.c.) of semen, he transmits to the woman about 230,000,000 spermatozoa.

R. Goldschmidt,² in his work on heredity, states that every kind of living being possesses a characteristic number of chromosomes in the nuclei of their cells. In fertilisation, two such nuclei are joined together. If they also had the typical number, then, after fertilisation, there would be double the number in the cell. All the cells of the descendants, that is to say, including the sex-cells, would now harbour a double number of chromosomes, and if they again were united in impregnation, then the next generation would get a fourfold number, and so on. If that is not the case (and, as a matter of fact, the number of chromosomes is constant), then the constancy can be attained only one way: viz., an arrangement must exist which causes the number of chromosomes in the sex-cells to be reduced by half before their union. As a matter of fact, there is such an arrangement consisting in a special reduction division which each sex-cell must undergo before it is capable of fertilisation; this reduction takes place in a special way so that half the chromosomes are removed from the cell. Thus, every single sex-cell capable of being fertilised contains only half the normal number of chromosomes.

In the process of fertilisation ovum and spermatozoon come together, each with half the proper number of chromosomes, so that the impregnated ovum again has the specific number of chromosomes.

The spermatozoa approach the ovum and swarm round it. The most active will first reach it (*cf.* Fig. 576) and, on its union with the ovum, impregnation depends. Now there are cases in the animal kingdom where ova attain full development without fertilisation: this process is called "parthenogenesis." The question is whether this is possible in human beings also; *i.e.*, whether a woman can become a mother without sexual intercourse. Experience says no. It is conceivable that a further development of the ovum, even without fertilisation in human beings, may occur, forming, not a new individual, but an ovarian-tumour. Thus, for normal development of the ovum, the penetration of one and only one spermatozoon is necessary. In a few minutes the head penetrates the oolemma, and immediately a membrane forms round the ovum, so that a second spermatozoon cannot penetrate. In the place where the spermatozoon approached the oolemma, the latter swells and forms a cone of attraction. The nucleus has now entered the ovum and has brought with it the centrosome, and physico-chemical changes are set up within the ovum. The nucleus of the spermatozoon now approaches the female pronucleus on which it



Placenta : fetal surface. (Spalteholz Preparation. Hygiene Museum, Dresden.)

finally rests like a little cap. The centrosome then divides into two asters and the male pronucleus swells under the attraction of the substances which it absorbs from the ovum to from ten to twenty times its former size, so that it is as big as the female pronucleus. Since both ovum and sperm have been prepared by losing the two sets of chromosomes, the full number is again attained on union, so that now the total number of chromosomes in the fertilised ovum is again that of the rest of the cells of the individual.

The ovum, after fertilisation, is subject to precisely similar processes of division to those which we have been able to observe in cells generally. This process is designated *cleavage*. Yet there is a difference. The daughter cells of the ovum never reach the same size as the original ovum. Since the cells are laid close together, there must, in time, arise a formation which resembles a mulberry (*lat. morus*), and is, therefore, called a *morula* (Fig. 578). This cleavage is conditioned by the character of the egg with respect to yolk. How the further evolution of the

ovum continues we cannot observe in itself for, up to now, it has not been possible to find and examine a fertilised ovum of the first day. The youngest ovum yet known to us is that of Miller (about 12 days), which Streeter has described. Then follows the better known ovum of about 12 to 14 days reported by Bryce and

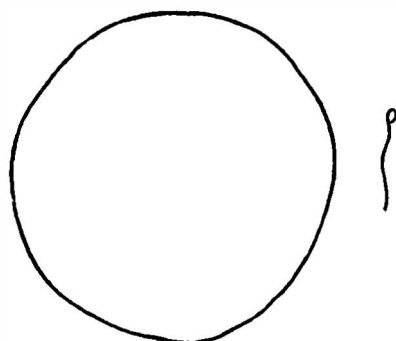


FIG. 577.—Comparative sizes of ovum and spermatozoon. Magnified about 200 diameters.



FIGS. 578, 579.—Origin of the foetal membranes and umbilical cord as the embryo comes to occupy the centre of the amniotic space. In (c) the embryo lies flat between the amniotic cavity and the yolk-sac. In (d) the trophoblast has formed many folds or villousities by means of which the maternal and foetal blood vessels are brought into intimate contact. In (e) this is seen at a later stage, when the yolk-sac has practically disappeared and the embryo is attached to the placenta by the umbilical cord. (After Kahn.)

Teacher, obtained in a miscarriage 16½ days after copulation, in which, however, the embryonic forms are not well preserved.

Since the beginning of the development and the subsequent processes are parallel in the animal kingdom, we may perhaps assume that the first 14 days also correspond. In accordance with this, a central cavity appears in the morula due to the changing position of the cells and the segmenting egg becomes a *blastula*. The cells of the blastula wall then become thin scales which lie close to the zona pellucida of the ovum. A very important transformation must take place later, namely, the

gastrulation, which is reached in very different ways in the animal kingdom, the simplest being invagination. A blastopore (or primitive mouth) arises, and two cell-layers are formed. In human beings, this process consists of an inner cell-layer being split off from the thickened blastula wall. Thus, an external germinal layer or ectoderm forms and also an inner, called entoderm. This tubular invagination constitutes the embryonic intestine or archenteron. The embryonic body-cavity is presumably filled with quite a loose connective tissue, whilst the enveloping layer (trophoblast) is called the chorion when the mesoderm is added, and is provided with branching villi, which will also be of interest to us later (Fig. 578). The gastrula now undergoes a general transformation to a further form by the addition of a cylindrical rod of cells which is called the notochord, and which represents the first form of the vertebral column of the embryo.

Let us now consider in greater detail the first ova known to us. We see that the cells have been divided into the chorion and the inner cell mass. We see further,



FIG. 580.—Implantation of the ovum into the uterine wall. Schlagenhauer-Verocay ovum. Magnified ten times. (After Grosser.)

however, that here are already two cavities, the amnion-embryonic cavity and the yolk sac. The amnion cavity is surrounded by the amnion and is filled with a whitish fluid, the amniotic fluid. The yolk-sac contains an orange-yellow fluid, the tube connecting it with the intestine being called the yolk-stalk. Between these two cavities is the embryonic shield from which the embryo is developed. Thus we get a modified gastrula formation, for the layer of tissue which forms the trophoderm and the amnion belongs to the ectoderm, and the membrane which forms the intestinal yolk sac to the endoderm (Figs. 579, 580, 581). Now, since the outer skin of the body with its cutaneous glands and so-called nervous system is evolved from the ectoderm, it is also called the epiblast, and since the intestinal organs and their glands are formed from the endoderm, it is also called the intestinal gland layer, or hypoblast. We observe, also, in the first human ova known to us, another germ layer, the mesoderm (mesoblast), which does not appear until later. From it are formed the muscles, blood-circulation and bone system, etc.

Before all these processes are finished, however, the ovum itself undergoes a highly important alteration. In the oviduct, as we saw above, it does not remain at rest, but, by the motion due to the ciliated epithelium and probably also by

peristaltic contractions, it is propelled to the uterus. This propulsion lasts for several days, and we assume that it arrives almost in the gastrula form. On the

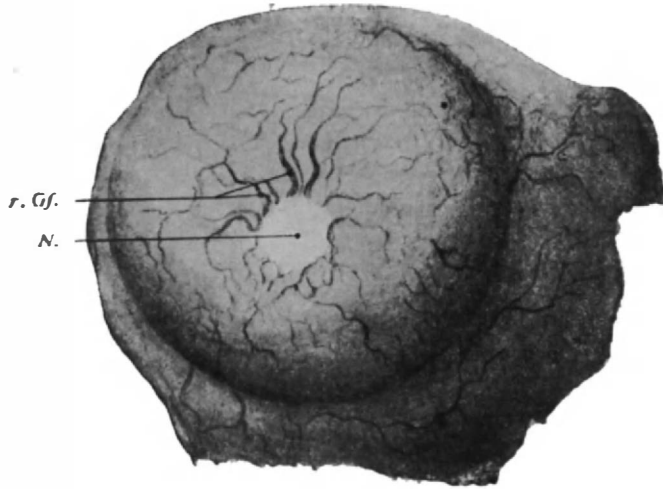


FIG. 581.—The P. Mayer (1924) ovum after attachment to uterine wall. *r. Gf.* radial vessels of the capsularis. Magnified ten times. (After Grosser.)

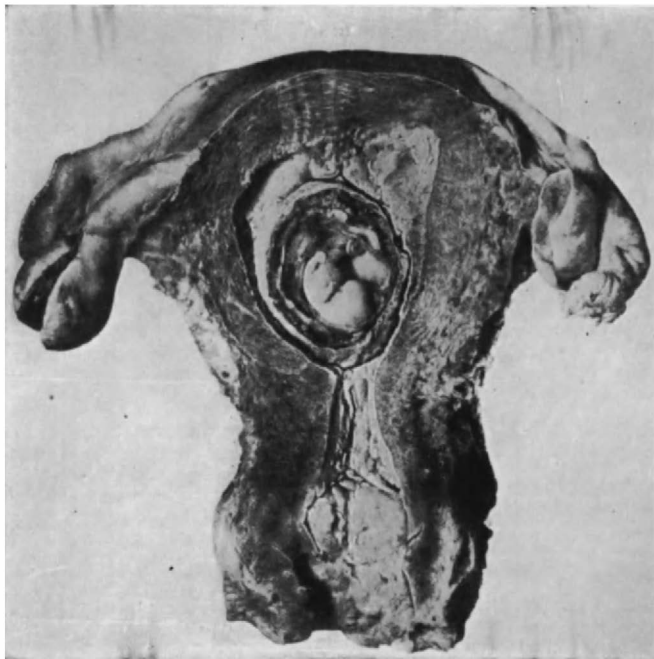


FIG. 582.—Pregnant uterus with carcinoma of cervix. Ovum implanted. Embryo 18 mm. long. Two-thirds natural size. (After Grosser.)

way it has lost the zona pellucida, which was replaced by the chorion. The nourishment of the developing germ takes place up to now by means of the yolk. Now, as soon as it reaches the uterine mucosa, which has become hypertrophied during

menstruation, the area of the trophoblast next to the mucosa proceeds to grow and to throw off proliferating masses which eat their way into the mucosa, the spot being then closed by a fibrin plug. In the Bryce and Teacher ovum, this spot in the decidua was $\frac{1}{10}$ mm. wide. This very important process is called nidation of the ovum. At the site of nidation, the placenta is then formed in which the embryonic and maternal blood supply meet. The hypertrophied mucous membrane of the uterus, which is called the decidua, is differentiated into three parts. The part immediately surrounding the ovum is called the *decidua reflexa*; that lining the

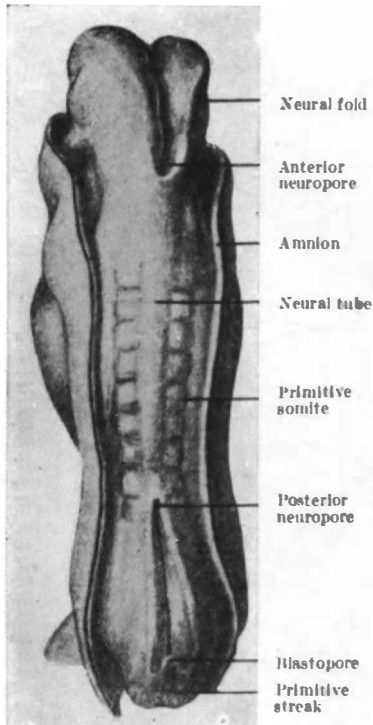


FIG. 583.—Human embryo (Eternod).
Model by Ziegler. (After Merkel.)

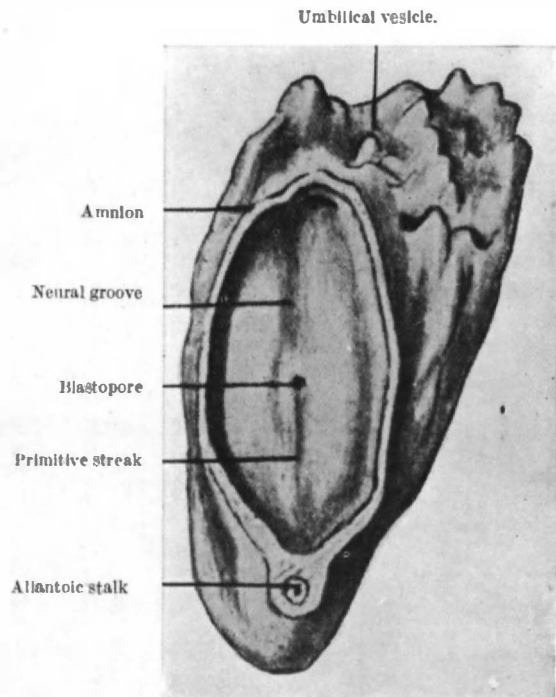


FIG. 584.—Early human embryo.

rest of the uterus being called the *decidua vera*, and the part to which the ovum becomes finally attached the *decidua serotina*.

The further course is shown very typically by the so-called ovum of Spee. We see the embryo connected with the chorion by the body stalk, and recognise the transparent amnion above and the yolk-sac below. In the cavity of the amnion can be discerned the further developed embryonic shield. At the rounded end of the primitive streak (upper surface of embryonic shield) rises an elevation known as the primitive node, from which an ingrowth is apparent called the Head Process. At the anterior end of the streak there appears the neurenteric canal, and the ectoderm is differentiated into the neural plate forming the rudiment of the medullary groove. The primitive mouth opens inwards to the archenteron, and thus connects the latter with the neurenteric canal. The ectoderm of a part of the germinal area becomes thickened, forming the neural or medullary plate, the lateral margins of which grow unequally and form the neural groove. The raised margins of this

groove form the neural folds, finally joining to form the neural tube, from which develop the brain and spinal cord. The anterior end of the neural tube becomes larger (head formation). From the end of the primitive streak springs later the tail bud into which the streak disappears.

One formation which is of great importance in different animals which form no placenta (*e.g.*, the fowl) is the allantois. In the chick it is a store-place for kidney excretion, and its surface being applied to the eggshell becomes a kind of foetal lung. In the human embryo it is an outgrowth into the body stalk and the covering of the allantois is mainly responsible for the vascularisation of the chorion.

Towards the end of the fifth week the embryo possesses the beginnings of all the important organs. In the skeleton the membranous foundation of the vertebræ begins early in the second month, whilst ossification commences in the third month. In the digestive system the archenteron is divided into the mid-gut, the fore-gut and the hind-gut, and by the sixth week the various parts are well differentiated.

The detailed development of the embryo cannot be discussed here. Further information can be obtained in any of the standard text-books of human embryology. The term *embryo* is usually employed up to the end of the third month and the *fœtus* from that time on. We will now summarise a few of the more important points in their chronological sequence.

1st Month. The disposition of the bodily organs is laid down. The embryo possesses a clearly-marked tail.

2nd Month. Parts of the umbilical vesicle atrophy and disappear. Arms and legs are short and stump-like. The tail has reached its greatest length. The rudiments of the genitals appear, but give no clue to sex.

3rd Month. The outline of the embryo is finished, the ossification has begun. The anus is appearing and the tail is diminishing. The umbilical cord is 7 cm. long.

4th Month. The head is covered with thin down; the sex is clearly distinguishable; the placenta has an approximate weight of 80 gm.; the umbilical cord is about 19 cm. long; spasmodic movements are beginning.

5th Month. The umbilical cord is about 31 cm. long. The skin of the fœtus is covered with the *vernix caseosa*; the movements continue; the eyelids are about to detach themselves; meconium in the rectum.

6th Month. The movements are perceptible to the mother. The hair covering the whole body is thick and downy. The fœtus can be born. It is covered with wrinkles.

7th Month. The fœtus can, if born, now often be kept alive; a covering of fat is apparent. The eyes are open. The testis is passing through the abdominal wall on its way to the inguinal canal.

8th Month. The cornea of the eyes is transparent. Fat and hair are well developed, but are disappearing on the face. The testis has almost reached the fundus of the scrotum.

9th Month. The fœtus is usually born.

10th Month. The woolly hair disappears and also the reddish colour of the skin. In the gut is meconium; in the gall-bladder, gall; in the bladder, urine.

When impregnation has taken place, then menstruation ceases, because the loosened mucous membrane of the uterus, the decidua menstrualis, now forms the decidua of pregnancy. As regards the association of menstruation and ovulation, Beigel and others maintain that orthodox Jewesses are very fertile, although they are forbidden (according to Leviticus xv. 18, 19) to have sexual intercourse during menstruation, and although it is reckoned as a mortal sin (according to the Mishnah,

Niddah 7) to have intercourse with their husbands in a shorter time than seven clear days from the cessation of the flow of blood (see Baumberg, 43 ff).

Yasodhara quoted by Schmidt,⁸ is of the opinion that the period directly after menstruation is especially favourable for conception.

Suśruta, on the contrary, asserted :

“The time of procreation is the twelfth night after the appearance of the menses.”

The Greek and Roman physicians, likewise, connect conception with the time of the menses.

Hippocrates (*de Genitura*) says :

“Hae nempe post menstruam purgationem utero concipiunt.” Aristotle: ‘plerasque post mensium fluxum, nonnullas vero fluentibus adhuc menstruis.’ Galen: “Hoc autem conceptionis tempus est vel incipientibus vel cessantibus menstruis.”

In the book, *De morbis mulierum*, Hippocrates goes more closely into the matter :

He states that women become pregnant especially when they have had their monthly purification and it makes the semen more powerful if they give themselves up to sexual pleasure at the right time ; that of the man mingles easily with it, and when he makes his influence felt the tender union is accomplished. For, just at this time, the orifice of the uterus is open ; it is, as a rule, in a state of expansion, and the veins draw in the semen. Whereas, in the time preceding the menses, on the contrary, the os uteri is more closed up, and then the blood-filled veins do not draw on the semen so well.

Soranus says that the time after menstruation is the most favourable for conception, for, shortly before, the uterus is too heavy with menstrual blood ; however, he does not deny that women can conceive at another time.

The Talmud (Israel) supports this view : that if the state of the genitals or even the quality of the semen make ejaculation impossible, coitus in respect of conception must be regarded as unsuccessful. A coitus with the usual erection, however, may effect impregnation even although an immissio penis has not taken place in the vagina. Also, it is possible for female individuals, even without having had coitus, yet to become pregnant if they take a bath, if it should happen that there is in it some freshly emitted semen. A virgin's first coitus, according to the Talmud, never results in pregnancy.

Among the Fiji Islanders, we met with a similar view, for Blyth reports that they are of the opinion that one coitus is not sufficient for impregnation.

But in ancient Japan, too, that must have been believed (M. Bartels). Florenz translates the following passages from the mythological record, *Nihongi*—“The Age of the Gods” :

“Afterwards Kamu-Ata-Ka-ashi-tsu-hime saw his august sovereign's grandson and spake : ‘Thy maid is pregnant with a child of the grandson of heaven. It is not fitting that it should be born in secret.’ The august sovereign's grandson spake : ‘To be sure, I am the child of a god of heaven, but how could I make a woman pregnant in a single night ? Or is it possibly not my child at all ?’”

The pregnant woman was very angry about this and burnt herself in a box. Thereupon, three children were born who did not burn, and were thus proved legitimate. The mother, too, remained uninjured. The story goes on :

“He answered and said : ‘I knew from the beginning that they were my children ; nevertheless, since there cannot be pregnancy in a single night, I thought that there might be doubters

and wished to reveal to everybody one and all that they are my children, and further, that a god of heaven is able to cause a pregnancy in a single night.' ”

The possibility of pregnancy from one coitus during menstruation was recognised by the Talmudists. Conception takes place one, two or three days after coitus, and usually shortly before the beginning or soon after the end of menstruation. That coitus performed in the standing position was considered unproductive, we have already seen above (see Wunderbar).

Among the Nayar in Malabar, the fourth day of menstruation was considered especially favourable for conception: in many Hindu castes, the husband must cohabit with his wife on this day, and he commits a sin if he omits it (Jagor). This is an echo of ancient Hindu customs.

In this respect, too, we find a similar idea in quite a different part of the world. The Maori in New Zealand designate menstruation generally as *paheke*, but the second and third days as *kæro*. These two days, according to Goldie, they consider specially favourable for conception: if a woman does not want to conceive, she avoids cohabitation during the *kæro* period, otherwise pregnancy is sure to set in.

According to the assumption of the Japanese physician Kangawa, the woman is capable of impregnation during the first 10 days after the menses, afterwards this possibility is past (see Miyake).

Hureau de Villeneuve states that the Chinese physicians say that the semen, which they call *tsir*, penetrates to the receptacle for children. The latter, called *tsé kong*, is probably the ovary, for here the sperm encounters vesicles which are to be regarded as germinal. One of these germinal products comes into contact with *tsir* and is fertilised and then begins to develop.

The Yakuts, states Sieroshevski, believe that in procreation the greater share falls to the wife. A man whose wife had borne him a deformed child ceased having sexual intercourse with her.

In various parts of Germany and in Frankenwald, it is believed that to achieve conception, great excitement is necessary which, however, must arise on both sides at the same time; and, according as the excitement is quick and violent or slow and weak, they differentiate hot and cold temperaments and say they do not suit each other. Here, too, as almost everywhere, it is known that the interruption of coitus before ejaculation is a safeguard against impregnation. Anxious girls in Frankenwald often are repeatedly bled as a remedy for pregnancy, for an actually existing one, as well as for one that is feared. It is also believed there that coitus during the menses, as well as during lactation, will not bring about pregnancy, and only the idea that coitus during this period is harmful to the man prevents a more general disillusionment (Flügel).

The Sinaugolo in the Rigo district in British New Guinea believe that conception takes place in the breasts, by which they recognise, as we shall see later, the beginning of pregnancy. Only later, in their view, does the child fall into the lower part of the body, without their knowing any particular organ there in which the embryo might then stay. Seligman,² who reports this, is of opinion that this idea is caused by their seeing the wallaby, a beast of prey much hunted by them, with its incompletely formed young hanging at its teats.

Among the Asá and Wanderobbo, in the Masai country, Merker several times came across the idea that pregnancy is more or less connected with a particular season of the year, and indeed in this way: that either conception takes place at the time when the poisonous tree, *Acocanthera abyssinica*, is in bloom, or the delivery when it is ripe.

3. CLIMATIC, SEASONAL AND SOCIAL INFLUENCES ON CONCEPTION

In the process which is shown in the female body by menstruation, ovulation, *i.e.*, the setting free of a ripe ovum from the ovary, and by conception, physiology has found so great a similarity with the process appearing in animals which we are accustomed to call heat, that they can be considered in many respects identical.

In the regular seasonal return of heat, there appears to be an essential difference from the usually uniform monthly recurrence of menstruation in woman. It will, therefore, be of some value to examine some statistics to discover whether in conception, also, the influence of the seasons can be discerned. Here, however, it must be taken into consideration that the change of seasons will not only influence the female organism but also the male, and that the latter will, in consequence, show a greater or less *appetitus cœundi*. Thus the increase or diminution in conception in accordance with the seasons, will find its explanation at least to a great extent in the sexual excitement of the male part of the population.

In the previous century Wargentin was commissioned to prepare statistics of the population of Sweden. In his report he indicated the regular annual recurrence of a maximum and minimum fertility in certain months. Then Quételet¹ proved that there was a maximum of births in February and a minimum about July: his observations embraced particularly the Netherlands (1815–1826) and Brussels. He also showed that this influence is more clearly marked in the country than in towns. The maximum conception in May corresponds, according to him, with the increase in vitality after the coldness of the winter: in the country, however, he thought the population had less protection from the inclemency of the weather than in the towns.

Villermé, likewise, found that in Europe the birth maximum corresponds to conception taking place in May and June, February and March, and that this increase may, in each case, be ascribed to the influence of spring. Now, in order to show that the unequal distribution of births over the different months is quite obviously a result of the influence of the annual course of the earth round the sun and the consequent great changes of temperature, Villermé did not confine himself to the European countries, but extended his investigations to the southern hemisphere. In Buenos Aires the same influences proved to affect the birth frequency.

According to Villermé the times at which marriages are most frequent, and those at which they are fewest, have no visible influence on the distribution of births according to seasons. On the contrary, the influence is shown to be that of those seasons that are regarded as the time for rest and recreation, and the season that is distinguished by abundance of food and increased social life. The seasons of heavy work (harvest time), when provisions are dear and when there is strict observation of fasts, have a lowering effect on the birth rate. Villermé comes to the conclusion that the conditions which strengthen us, increase our fertility, and those which weaken us, still more those which undermine our health, diminish it; nevertheless, it can by no means be deduced from this that health alone regulates fertility.

Wappäus, in his investigations in 1859, which extended to Saxony, Belgium, the Netherlands, Sweden, Sardinia and Chile, found the following:

“The first general increase shown in the birth rate in the months of February and March, corresponding to the greater number of conceptions in May and June, is to be ascribed to the influence of the season. This physical influence is, however, intensified in Catholic populations by the existing special manners and customs arranged in connection with the Church. From the maximum of this first increase, the monthly birth rate quickly decreases again till, in the months of June, July and August, it reaches the minimum. This decline, likewise, has a predominantly physical reason: it is caused partly by the gradually increasing exhaustion of the general natural productive power which begins in the height of summer, partly by the more or less dangerous epidemic diseases produced by the heat of summer. This natural influence, however, is intensified especially towards the end of this period by the influence, also prejudicial

to conception, of the very strenuous work of harvest time, which often permits of very little rest at night. Both causes act together so that the first decline in the curve is the lowest. The minimum is reached later in the north than in the south, partly because in the south the general exhaustion of natural vitality sets in earlier than in the north, partly because in the north the strenuous harvest-time labour falls later than in the south. From the middle of summer onwards, or in Sweden, from August onwards, the monthly birth rate rises again, and everywhere reaches its second maximum in the month of September. The causes of this second increase are decidedly not of a physical but of a social nature. The second rise is in the south, and in Catholic populations very small in proportion to the first in the north; however it exceeds the first, so that in Sweden, the month of September presents the absolute maximum of births. The reason for this remarkable phenomenon is that in the north the characteristics of life in winter favourable to reproduction are much more prevalent than in the south, and perhaps also that the strict observance of the ecclesiastical decrees of the Catholic population of the south restrict the productivity of the month of December. After this second rise there now ensues a second fall to November or December; yet not so low as the first in summer, and in the Protestant north less deep than in the Catholic South. The generally effective cause of this decline is without doubt to be found in the transition from winter to spring, which is everywhere more or less unfavourable to health, and this influence on the conceptions in February and March in the Catholic south is intensified by the similar effect of the unrestrained pleasures of carnival and the strict observation of the period of fasting."

Sormani has studied these conditions for Italy :

"The increase of the conception rate appears earlier in the south of Italy than in the north, so that in the most southerly districts it begins in April and becomes later and later into May and June as one approaches the north, till, finally, in the most northerly part of the peninsula, it occurs in July. In the most southerly regions of Italy we have only one maximum and one minimum, whilst in the most northerly parts there are two. The minimum which follows the hot season of the year has a decided tendency to be higher the nearer one approaches the south, while the minimum which is associated with the coldness of winter increases towards the north, till in the most northerly parts this minimum is greater than the autumn one. In general, the variations in the curve of conceptions are greater the farther south one goes."

A table, which Mayr arranged, gives the best idea of the limits within which births and conceptions vary according to months :

	Monthly record of births (including still-born children).			
	<u>German Empire.</u> 1872-1875.	<u>Bavaria.</u> 1872-1875.	<u>Italy.</u> 1863-1871.	<u>France.</u> 1863-1871.
January . . .	4889	578	2848	2887
February . . .	4997	594	3025	3060
March . . .	4913	603	2928	3018
April . . .	4739	582	2805	2911
May . . .	4605	575	2533	2742
June . . .	4497	566	2371	2610
July . . .	4582	566	2419	2625
August . . .	4691	552	2496	2620
September . . .	5029	582	2663	2665
October . . .	4770	564	2605	2603
November . . .	4756	566	2624	2661
December . . .	4710	553	2587	2608
Calendar year . . .	4763	573	2656	2749

Beukemann split up the German Empire into four different groups for the years 1873-1877 :

(1) The North-East Provinces : Prussia, Pomerania, Grand Duchy of Mecklenburg-Schwerin ;

(2) The North-West Provinces : Hanover, Schleswig-Holstein, Hamburg, Bremen, administrative area of Münster ;

(3) The South-East Provinces : Silesia, Saxony, the Kingdom of Saxony ;

(4) The South-West Provinces : the Kingdom of Bavaria, Württemberg, the Grand Duchy of Baden and Alsace Lorraine.

Each year had the pattern of the whole Empire, although certain variations occur in individual years. The two maximums of births for the year in the Empire fell in February and September, and this is the case also in the individual years with the exception of the year 1877, when the first maximum occurs in March. The first minimum, in the year 1875 only, appears as early as April and May, the second minimum in December or November. We must emphasise the fact that, at times, a third maximum and minimum appear at the end of the year, that is to say, a maximum in November, a minimum in October.

In Group 1 (North-East), the month of January opens the birth-rate patterns for the year with a high proportion which yet continues to rise in February and thus produces the first, the so-called spring maximum. From February, the births decline uninterruptedly till June, the month of the absolute minimum ; after which there is an immediate rise, more sudden and stronger than the preceding fall. Then, in September, the second and highest maximum is reached ; yet the following month of October, the second minimum remains above the average.

The high number of conceptions from April to June comes from the influence of spring which is especially favourable to conception. The strongly-marked decline in conception from July to September, and the still lower position in October, are to be ascribed less to physical influences, but are closely connected with the economic life of the population, a predominant part of which is engaged in agriculture, and, therefore, are so much taxed physically in the late summer with the harvest and cultivation of winter products that conception suffers. The time which is left free for the cultivation of the land here in the North-East is already about a month shorter than in the West ; part of the male population is at sea in the warm season of the year. However, after the harvest is over and lighter work and recreation have come, there begins a considerable rise of conceptions which is hastened in the Protestant North by Christmastide. Yet afterwards there is a natural recoil in January, and in the months of February and March the social and economic factors appear to cause an increase again.

The second group, the North-West, which, in essentials rests on the same economic basis as the East, and has many other things in common with it, also shows, in general, a similar pattern of the distribution of births. The minimum comes in June, not quite so markedly as in the North-East ; the minimum birth rate in winter falls lower and comes later. Now the big towns of Hamburg and Bremen will bring in the element of industry and trade more than the seaside towns of the Baltic ; on the other hand, especially with regard to the second minimum, the influence of the Church must be considered, since the North-West has a greater proportion of Catholic population than the North-East.

In the third group (the South-East), especially if it is limited to the Kingdom of Saxony, important differences emerge. The prevalence of industries, hence the occupation of the people, appears to be decisive for the distribution of births, a fact that is clear in the summer months. Since industrial occupation makes the same demands on strength at all seasons of the year and consequently will not influence the distribution of births, it must be the social and climatic conditions and the economic chances and changes which determine the rise and fall of the monthly birth rate.

With this, the fourth group (the South-West) is linked both in area and in similarity of circumstances in question. The distribution of births has in fact much in common with the third group ; above all, in the slight rise and fall. It must be emphasised as a peculiarity that in South Germany the spring maximum of conceptions regularly exceeds that of the autumn,

whilst the contrary is usually the case in the other groups. Further, that in the case of the fourth group, the Catholic Church consideration is strongest. As is well known, the majority of the people here belong to this Church, whilst in the rest of Germany the Protestant Church predominates. The Catholic Church produces a diminution of conceptions during the winter, but usually a maximum is reached in February and a minimum in March, the following month. But, since Easter does not always fall on the same date, but hovers on the borders of a month, it, of course, happens in many years that the last-named influence is sometimes found without any other influences being present.

In Russia also, as well as almost everywhere else, there are two maximums in the birth rate; but here they occur in January and October: the relative majority of conceptions, therefore, takes place in April and January. Here there are certainly physiologico-climatic causes, but social and religious conditions are also involved. At least the figures indicate this, if we keep to the seasons, which are indeed of a less accidental character than the monthly dates. If we take the total number of births (average in the year, 3,163,405) as 12,000, then we find that the conceptions and births in Russia during 1867-1870 are distributed as follows:

Conception.	Greek Orthodox.	Catholics.	Protestants.	Jews.	Mohammedans.	General.	Births.
Spring.	2883·7	3015·6	3107·7	3193·5	3335·1	2916·4	Winter.
Summer	2679·1	3002·5	2961·9	2969·7	2902·4	2715·5	Spring.
Autumn	3206·5	2907·1	2869·5	2951·9	2852·3	3166·7	Summer.
Winter	3230·7	3074·8	3060·9	2884·9	2910·2	3201·4	Autumn.

According to this, the maximum conceptions in Russia generally and also among the adherents of the Greek Orthodox Church occur in winter (the birth maximum, therefore, in autumn); there follow, arranged according to the number of conceptions, autumn, spring and summer; among the Catholics, the order is as follows: winter, spring, summer, autumn; among the Jews: spring, summer, autumn, winter; among the Protestants: spring, winter, summer, autumn. The divergent distribution of conceptions, according to seasons, as shown in Russia is caused by the continuous and strict fast time in the spring as well as by the exhausting field work in summer. Connected with this, too, is the considerably greater number of marriages in autumn and winter than in summer and spring, a phenomenon which may be explained partly by the causes mentioned and partly by the necessity for waiting till the harvest is over.

But, in the towns in Russia, the conceptions are distributed differently from in the country, since the maximum occurs in autumn; then follow winter, summer and spring, as may be seen from the following table:

	Most Important Towns.	Country and other Towns.
Spring	1779·8	1552·2
Summer	2458·8	1333·8
Autumn	4081·9	4462·7
Winter	3679·5	4651·2

In England and Wales the figures indicate that the maximum number of conceptions occur in the autumn, the births being:

Period.	Quarter ending			
	March.	June.	September.	December.
1838—1932	18,653,281	18,800,810	18,172,334	17,696,448
1932	152,116	165,403	156,186	140,267

In order to illustrate the matter further, we give below a table showing the monthly distribution of live births, legitimate and illegitimate, for various countries for the years 1927 and 1928, the figures for which are the most recent available at the time of compilation.

Country.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Australia	10,929 550	10,479 483	11,198 485	10,249 437	11,333 594	10,352 531	10,961 574	10,882 597	10,072 511	11,348 582	10,215 500	9,731 487
Bulgaria	15,614 249	18,856 266	18,358 237	16,763 211	14,556 211	13,908 210	14,891 232	16,007 237	14,624 240	17,331 246	12,709 154	8,937 132
Czechoslovakia	25,862 3306	24,804 3241	26,721 3385	25,541 3182	26,318 3271	25,551 3003	25,511 2785	24,744 2662	24,622 2763	24,665 2711	23,650 2738	23,345 2888
Denmark	5145 655	4910 620	5707 678	5519 663	5383 675	4995 617	4992 618	5138 576	4835 595	4901 571	4647 664	4783 629
Egypt *	56,718	50,921	55,075	53,065	48,509	48,813	49,359	49,838	49,788	54,998	54,725	57,624
Finland	6312 594	5705 532	6254 594	5886 554	5928 526	6174 558	6586 511	6199 506	5777 475	5397 392	5473 399	5708 483
France * (1927)	64,792	59,628	65,902	64,561	65,909	60,995	64,971	62,343	57,741	57,415	57,621	61,955
Germany	88,810 12,554	85,959 12,268	94,586 13,416	89,221 12,537	89,548 12,456	86,016 11,808	88,181 11,872	84,766 11,064	83,889 11,584	82,955 11,432	81,255 11,369	83,248 12,021
Japan *	254,125	207,894	256,305	144,459	142,497	135,938	155,882	162,772	172,575	178,013	183,446	141,946
Netherlands	15,071 323	14,513 264	16,083 364	14,999 246	15,119 318	14,150 262	15,027 265	14,958 230	14,250 250	14,051 281	13,686 248	13,893 266
Norway	4013 301	3736 285	4131 345	4150 354	4134 325	3810 291	3830 269	3879 245	3799 289	3658 279	3278 241	3616 298
Poland (1927)	97,103 6122	78,472 5356	80,526 5316	74,894 4743	72,385 4933	70,341 4442	75,385 4375	72,531 4351	69,835 4059	69,572 4030	71,590 4172	69,785 4465
Spain *	61,935	61,214	61,436	56,610	57,062	51,136	51,521	49,762	50,600	54,029	53,917	56,918
Sweden (1927)	7116 1301	6767 1300	7538 1523	7384 1511	7425 1571	7086 1373	7040 1261	6740 1194	7035 1267	6319 1111	5739 1112	6088 1193
Switzerland	5714 256	5883 262	6078 264	5829 209	5900 229	5573 214	5741 257	5469 224	5239 197	5170 227	4970 206	5265 218
England and Wales	159,596 7378			163,070 7708			156,304 7550			146,179 6387		
Scotland	22,488 1764			23,828 1895			21,639 1805			21,709 1694		
United States * (1927)	153,275	147,993	166,522	156,017	156,160	151,999	160,877	161,459	153,876	151,353	141,419	144,113

* Legitimate and illegitimate taken together.

Further summarised, the European figures show that the maximum number of births occur about March and the minimum at the end of the year. Thus the maximum number of conceptions take place at the beginning of the summer or the late spring.

Country.	Max. Leg.	Max. Illeg.	Min. Leg.	Min. Illeg.
Bulgaria	Feb.	Feb.	Dec.	Dec.
Czechoslovakia	March.	March.	Dec.	Oct.
Denmark	March.	March.	Nov.	Oct.
Finland	July.	Jan.-March.	Feb.	Oct.
France		May.		Oct.
Germany	March.	March.	Nov.	Aug.
Netherlands	March.	March.	Nov.	Aug.
Norway	April.	April.	Nov.	Nov.
Poland	Jan.	Jan.	Sept.	Sept.
Sweden	March.	March.	Nov.	Oct.
Switzerland	March.	March.	Nov.	Sept.

So far as illegitimate conceptions are concerned, the natural influence of the different seasons is more obvious in them than in the legitimate. The maximum of illegitimate conception in the countries of Western Europe seems to occur in spring and summer, the minimum in autumn and winter.

CHAPTER IX

STERILITY IN WOMAN

1. WHY ARE WOMEN STERILE ?

BEFORE we enter upon a more thorough investigation of the fertility of women among different nations, we are going to learn what are the ideas prevalent among them with regard to sterility, to what causes they trace it, and what means they employ in order to combat and cure it. In doing so, it is, of course, not easy to help bringing forward ideas regarding fertility ; nevertheless, we shall avoid repetition as far as possible.

Sterility is regarded by most peoples as a special misfortune, as a curse, which weighs heavily either on both husband and wife, or which is much more frequent, only on the unfortunate wife.

The Talmudists thought that fertility or sterility depended upon the will of God. In the Midrash Dēbārīm Rabbah, a dictum of the Rabbi Jonathan is introduced which runs :

“ There are three keys in the hand of God, which none of his creatures can dispose of neither an angel nor a seraph. These are the key of mortality, the key for the sterile and the key for rain ” (Wünsche ⁸).

Here, too, the Mohammedans show their submission to the will of Allah. It is his decision to which the woman must ascribe her misfortune. In accordance with this, the Koran has :

“ God causes, according to his will, one woman to get girls, another boys, another children of both sexes ; according to his will, he also makes woman sterile.”

v. Düringsfeld states that among the Slavs in Istria, childlessness is regarded as a sign of anger of God ; there, sterile women are called mongrels.

According to popular belief, however, it is not only God who causes sterility, but also demons and wicked sorcerers. We have already seen in an earlier section that in Bosnia and Herzegovina, people believe that a woman is sterile because she has had intercourse with evil spirits (Vol. II., p. 146 and ff.). Enchantment also is regarded as the cause in some places, and then the clergyman has to say a blessing over St. John's wort (*Hypericum*). According to Glück, this plant is then to be cooked and to be drunk early for a few days. Besides this, the women must carry this plant with them.

The idea that childlessness is due to a curse or spell or some other pernicious cause, is shown also in the burial customs of the Wachaga, of whom Gutmann ² reports :

“ If a childless wife dies, she is thrown into the stream with all her things, her cooking pot and her ladle. She is carried to the forest or to some place that is never tilled. Also, they do not take her corpse out by the door but break a hole in the cottage wall on the opposite side through which they carry the corpse and all her things. The bearers, her relations, receive three goats as reward for their labour. One of these is killed for her gratification.” The corpse of a childless man also receives similar treatment.

Brough Smith reports that the wizards are medicine men in South Australia and are much feared by the women because they firmly believe that they have the power to make them sterile.

Among other nations, also, it is considered possible that wicked people have the power to obstruct the fertility of women by magic arts, as, for example, among the Bulgarians in Russia, and also among the Magyars. Among the latter, if someone wants to make a woman sterile, "then one smears the genitals of a dead man with the menses of the woman in question" (v. Wilslocki⁸). Further, the Magyars have still another spell, which v. Wilslocki⁸ reports. If one woman sprinkles the head of another woman with her milk while she is asleep, then she will never bear a child. The women of the Bakhtiari in Western Persia are accustomed to hang amulets on themselves which have the power of spells to make their rivals sterile, whilst they guarantee the fidelity of the husbands and assure an abundant issue for themselves (Houssay).

Sterility can also be produced by carelessness in diet or in some other conduct. On the Fiji Islands, if a woman is sterile, it is believed that she has at some time drunk "the water of sterility" (Blyth).

Ehmann quotes a Japanese saying that women become sterile if they eat *akinasubi*. The explanation of this proverb is that

akinasubi is a late fruit of solanum and contains little or no seed core ; hence the warning to young women not to eat of it or they will get no children.

The women of the Danakil in Equatorial Africa do not perform their ablutions with water from the White Nile because they are afraid of its causing sterility ; they use "much less innocent" liquids for washing themselves.

Among the natives of West Australia, the idea prevails that girls will be sterile if they eat the flesh of the bandicoot after they reach the age of 11 or 12.

Among the above-mentioned Bakhtiari it is considered enough to make a woman sterile if she has touched the flesh of the pig anywhere without her knowledge. Concerning this, Houssay states that

this superstition is clearly very old, certainly older than Islam, for, since the conversion of the tribes, the women have had no further opportunity for touching it.

About the women in Liberia, Büttikofer reports that :

The superstition which has prevailed among the Vei ever since the time of Dapper that a woman will become sterile if she treads upon the eggs of the goat-sucker, which hatches its eggs on the ground, is very peculiar. However, even in this instance, as usual, the *buli kai*, the fetish priest, can exorcise the supposed spell by various means.

A saying of the Magyars proves that also urinating on a dead man can produce sterility, for in the Katolaszeg district they say of a sterile woman : she has urinated on a dead man (v. Wilslocki⁸).

Among the Chippeways and a few other Indian tribes, the sterility of women is regarded as a proof of marital infidelity and of artificial miscarriages (J. de Laet : Keating).

The Japanese find the reason for sterility in the temperament of the woman, and so one of their sayings runs thus : "Sensual women are often sterile" (Ehmann).

2. PHYSICAL CAUSES OF STERILITY

In spite of all these mystical ideas, the knowledge penetrated fairly early that other causes might lie at the root of sterility in women, such as abnormalities in physical development, or similar physical peculiarities in the woman concerned. Thus Mohammed says :

“ Choose a woman whose skin is brown for she is fertile in comparison with one who has quite a fair skin who may be sterile.”

In Bosnia and Herzegovina, they have certain ways of convincing themselves as to whether a woman will be fertile. For this purpose they give her, without her knowing the reason for it, early in the morning a glass of warm water to drink, in which some rennet from a hare has been soaked. If she feels pains in the lower part of her body from this, then she will bear children, but if these pains do not appear, then she will be sterile (Glück).

A similar test for power to conceive is given in the Hippocratic collection (*De morb. mul.*, III., 219) :

“ When you treat a woman to make her able to conceive, if she seems to be thoroughly clean and the orifice of the womb in good condition, then bathe her, dry her head, but do not anoint her in any way. Then put a clean unperfumed linen cloth about her neck, and bind a clean unperfumed net-cap over it ; then apply to the neck of the uterus a decoction of galban which has been softened by fire and not by the sun, and let her sleep. Then, when the net-cap and linen kerchief have been taken off next morning, let someone smell the top of her head ; if she gives off a smell, then the purification has been good ; if not, bad. The woman must do this fasting. If, however, she is sterile then she will neither be cleansed nor diffuse a scent. But it will not smell so nice if you do it to a pregnant woman. But in a woman who is oft pregnant, conceives easily and is healthy, the head will have a scent even if you do not apply the galban and do not purify her ; but, in other cases, it will not have a scent.”

There is no doubt that the ancient Greek physicians had an idea of the causes of sterility and means for its cure. According to Hippocrates, the following conditions may cause sterility : (1) distortion and displacement of the uterus ; (2) too great smoothness of the inner wall, in which case the semen will not be retained ; (3) suppression of the menses and obstruction of the upper part of the orifice of the uterus ; (4) overfilling of the uterus with blood and excessive secretion of menstrual blood which washes away the sperm ; (5) prolapse of the uterus in which its orifice becomes hard and callous.

According to Paulus Aegineta, sterility is sometimes caused by insufficient nourishment, sometimes by plethora. According to him, the general mode of life should be regulated, for some women are not fitted for procreation because they have not enough seed.

Hippocrates said : “ If a woman is unusually fat, she does not conceive, for the solid net of fat lying on the edge of the uterus presses it together, and so the uterus does not take up the semen ” (*Aphor.*, V., 46).

That bodily fatness may obstruct conception has been known since ancient times ; on this account, the Greeks considered the Scythian women sterile (Häser).

Paulus Aegineta (III., 84) claims that women should then take food which helps the monthly flow. In those cases where the bad state of the uterus causes sterility which are made known by the absence of the menses, aromatic stimulating food must be given to induce the natural warmth ; at the same time, the lower part of the body is to be rubbed. If the whole body is warmer than usual and menstruation

less in quantity and painful, the genitals are ulcerated, and from this it must be concluded that the uterus is too warm. Then cool moist food is indicated and also cold compresses. In sterility, which is caused by a moist uterus, the menses are thin and profuse ; in this case dry food should be chosen. In great dryness of the uterus, sterility is cured by means of baths and salves. If fat "humour" hinders conception, this must be got rid of by means of purgatives. If, on the other hand, the uterus is swollen up, then aromatics and pessaries are used. A closed uterus-orifice is opened by means of aromatic injections, and the use at the same time of turpentine, nitre, elaterium, cassia and tar-water ; in the case of a gaping orifice, on the contrary, astringents are used. Sometimes impregnation is prevented by an existing distortion of the uterus ; here coitus from behind is indicated. The latter is recommended also by Oribasius, who, however, says further that the orifice of the uterus must be widened to make pregnancy possible, whilst, in other cases, the gaping lips of the orifice must be brought closer together by means of astringents in order to prevent the sperm from flowing away (see Jenks).

Confused as some of these ideas and advice were to a great extent, yet they will always remain the first serious attempts at a rational treatment of sterility. Celsus (V., 21 ?) says : " If a woman is sterile, one must soften lion's fat with oil of roses and put it in."

In the Talmud, also, physical signs are mentioned by which one can recognise a sterile woman. One may assume a woman to be sterile if she has reached the age of 20 and has no hair around her genitals. Further, a woman was considered to be sterile if her breasts were not developed, if any abnormality of the uterus existed, if the wife had any difficulty in the performance of coitus and if she had a male voice (see Wunderbar).

The ideas of Hippocrates have been preserved in Europe for a long time. As late as the beginning of the eighteenth century, Eckarth proposed to make a test in the following manner :

" Whether a woman (in whom there is doubt of fertility) be fertile or not, I take such a person, cover up her whole body so that nothing can get out, then I take a fire shovel, put in it a few glowing coals, and on them strew squashed juniper berries (*Baccæ juniperi*), let the steam from it pass into the vagina, then if, after a little while, one gets the smell from the mouth or nostrils of the woman, then she is considered fertile, but where the sign does not issue, she is judged sterile."

In the year 1621, Dr. David Herlicius, physician at Stargard in Pomerania, gives the following description of the physical causes of sterility :

" Like as a field that is too well manured, the seed distends, but a thin used hard one burns it up. On the other hand, one that is not too fat and not too lean, brings forth good fruit. . . . The very heavy and fat women are unfruitful, as Hippocrates testifies, because on account of their great fatness, they cannot retain the male seed ; as also very lean women seldom conceive or cannot bring forth the conceived fruit because it cannot get enough food from them ; as Avicenna also bears witness, and with whom Hippocrates agrees, that only the women who are not too fat and not too lean can be fruitful. Those women who are dusky of face surpass the fair. For the fair are of a very moist nature, which moisture is less able to maintain and nourish the seed. Those who spend their lives in eating and drinking ; again those who are dissatisfied with their natural monthly purification, and have it too much or too little ; or those afflicted with other ills of the uterus such as swelling of the womb, inflammation, callus, hardening, closing, great coldness, moisture, rising, sinking or falling out, whites, cancer, wind, and other such things, are all unfit for conception."

It was known as early as Aristotle's time that drunkards, invalids and decrepit men could also beget no children, even with a healthy woman, so, in the last centuries, the knowledge gradually penetrated further, that it is not always the wife who must be held responsible for sterility. Herlicius instituted tests which were to decide which of the married couple was really sterile. One of these he took from the *Neuen Wasserschatz* of Jacob Theodorus :

"Wilt thou know if a husband and wife cohabit with one another and get no children thereby, whether the husband or the wife is sterile. Then take two pots and in both put clover, and in the one pot pour the husband's urine over the clover, and in the other the wife's urine; and put both pots aside covered for nine or ten days. If the fault of the sterility is the wife's, then the clover in the wife's pot will be evil-smelling, and many worms in it. The same signs and indications if found in the other pot, shows the fault of the sterility to be the man's. When, however, no such indications are in either pot, then neither is to blame for sterility and, therefore, may be helped by medicine so that they may beget children."

That the husband may very well be at fault in the case of sterility is known also to the Chinese physicians. They bring forward as causes of sterility in men, love excesses, the use of arsenic which encourages the excessive formation of fat, and of mercury which destroys the genital functions, and finally the practice of *kong fu* (*i.e.*, a manipulation to lower sensation by straining the attention, similar to hypnotism or animal magnetism).

In woman, sterility likewise comes from love excesses, but also from excessive development of fat which is said to prevent the penetration of the sperm into the genitals. Also extreme thinness, an excess of bile secretion, anomalies in menstruation, *fluor albus*, and prolapse of the uterus are regarded by Chinese physicians as causes of sterility.

Also the Ainu in Sakhalin belong to the few peoples who are vouched for as having an idea of the fact that childlessness may be due to the man. About this, Pilsudski reports as follows :

"The Ainu seldom ascribe the fault of childlessness in a family exclusively to the wife. Rather a general idea prevails that this depends on both husband and wife, or really in their blood, which may be hard or soft. If both parents have soft blood, then a child will be born to them in the first or second year of their life together. But if the blood of one spouse is hard, then children can only come into the world after several years. Yet if both husband and wife have hard blood, then they are condemned to childlessness, and nothing can be done for them. . . . It is significant that in the latter case, they are not permitted to apply to the shamans for help. They would decidedly decline to pester their gods with unclean concerns of this kind."

Velten's authority, a Swahili, has very intelligent views on the cause of paucity of offspring : the following are his own words :

"The reason why the Swahili have no great issue is this : that they begin to have sexual intercourse too early in their youth. When they marry, the semen in their body is mostly dried up. Where a woman is still capable of child-bearing, she gets one, or at most, two children, for it is no longer semen that she has but spume. Our ancestors had many children, for they were forbidden to marry early or to have intercourse with girls so early." Besides this, abortion is also mentioned as a cause.

3. THE WAY IN WHICH STERILITY IS REGARDED

Amongst most people in the world, an abundance of children is desired, and the fertility of the wife is regarded as a special mercy and as a great conjugal good

fortune. Sterility, on the contrary, is considered an imperfection in a wife, and she is regarded as incapable of fulfilling her conjugal duties. If the evil cannot be removed, if, in spite of all efforts, it is impossible to break the burdensome spell upon the woman, to appease the wrath of the gods and propitiate them, the marriage is very often broken up.

This great esteem for fertility is, however, not common to all nations : in many peoples, very great fertility is even regarded as contemptible and animal.

Among the Greenlanders, a woman has from three to six children at intervals of from two to three years, so that when the Greenlanders hear of the fertility of other nations, they compare them with their dogs. Similarly, the Indian women of British Guiana made a grimace of mockery when they learnt from Schomburgk that with European women twin births were not rare ; they also said : " We are not bitches who throw off a heap of young."

Among the Australians in Queensland, fertility cannot enjoy any great respect, for Roth⁵ reports that a husband often prays the spirits which form children to send a child as a punishment when his wife has annoyed him.

Similarly, in former German New Guinea, an abundance of children, because of the attendant woes and pains, does not appear to a Papuan wife as a desirable object of her marriage : thus, it happens that a husband plays a wicked trick on the wife who scorns him by inflicting children upon her. The missionary, Keysser, reports that :

" for this purpose, he says the following words over two crossed bamboo twigs : ' Hop ! hop ! blood in my body hop ! Girls, boys, hop ! Hop like the hoho-bird in the grass, like the Balulu running girl in the bush, like the big-footed hens in the wood.' The two bamboo twigs are then put upon a stick and put into the ground at the side of the path by which the wife must come in her way home from the field. The passing wife must brush against the bamboo twigs and, in so doing, the dangerous soul substance is transmitted to her body. Leaves of an ordinary ornamental bush are used for the same purpose. The words in this case run thus : ' A long row ! Girls and boys, a long row ! Like the fruits hanging in the branches, just as long a row ! ' The particular hanging fruit may be specified and thrown over the hut in which the woman lives. To strengthen the effect, the following words may be used : ' Ye ffile eels, just as you bubble forth one after another so may this woman too bear children.' " (Cf. Vol. I., p. 474.)

Among many nations in Europe, also, there is little joy over a wife's bearing children quickly. In France, an old folk-song describes the marriage which is provided with too many children and is there considered unhappy in the following manner :

" In one year a child ! Is that a pleasure ?
 In two years, two children ; along comes gloom.
 In three years, three children ; 'tis truly devilment.
 One cries for bread, the other will have soup,
 The third must be appeased and the breast is sore.
 The father's in the inn and leads a wicked life.
 The mother stays at home and weeps and sighs."

(Theuriet.)

Among the Germanic people in ancient times, just as among the Gauls, conjugal fertility and the blessing of many children were regarded as good fortune because, at that time, there was no food difficulty. According to Old German law, the husband obtained a divorce if his wife bore him no children ; but she also could institute divorce proceedings if her husband, from impotence or for any other reason, had no sexual intercourse with her (Grimm).

However, even among the Germans, many children could be a burden, and in

Francesco Petrarca's² well-known work, "Von der Artzney bayder Glück, des guten und widerwertigen" of the sixteenth century, there is a chapter: "Of great and heavy burden of children," in which "Pain" laments and "Reason" tries to comfort him. Another passage, however, is entitled the "Pain of the sterile housewife," and here, too, "Reason" gives him council and comfort. In a third chapter, it is "Joy" which exclaims exultantly, "I have a fertile wife." But Reason goes towards it and says:

"She will give you much care, much labour. A sterile wife is but one, but a fertile wife is a manifold burden of the house." The words of Terentius are well known: "I have taken a wife, what have I not known since of poverty and trouble, and the other care is to manage children."

A woodcut (Fig. 585) attached, shows the parents in eager conversation; the father is explaining something to the attentively listening wife, who has a child at her breast. A half-



FIG. 585.—The fruitful housewife. Sixteenth century. (After F. Petrarca.²)

grown daughter is spinning; one child is sitting on the commode, one is standing on the wheeled chair; two are sitting on the floor eating out of a pan; a boy is riding on the wooden horse, a girl has a basket on her arm, and one is clinging to her father. Altogether, the married couple has nine children to feed. Hence it is easy to understand that reason must sometimes give comfort.

Then, Frank² introduces an old verse from which we see that even in old Germany, in the country, the father can have too many children.

"Of boys and girls we have enough,
If only we had clothes for them!
We now have seven children,
We shall never have more,
T'were better were't seven cattle,
Then should we have some more."

(Figs. 586 and 587.)

The ancient Hindus, because there was little difficulty about food, put a high value upon children. People wanted children for superstitious reasons. The Laws of Manu run (Book IX., 59):

“ If one has no children, then one can get the desired descendants by the alliance of the



FIG. 586.—Barbara von Abensberg with her thirty-two sons and eight daughters. (Germanic Mus., Nuremberg.)



FIG. 587.—Adam Streitzmann with fifty-three children. (Germanic Mus., Nuremberg.)

wife empowered thereto, with the brother or a relative.” And the child thus obtained is regarded as if he were begotten by the real husband, for in Strophe 145 it runs: “ The seed and the produce belong by law to the owner of the soil.”

In these cases male issue was particularly desired, and according to the Laws of Manu, a woman who, after 11 years had borne only girls and no boys at all, might

even be divorced by her husband.* According to the evidence of Ujfalvy, there are still similar customs in Kululand.

In ancient Greece, also, the desire for children led to the custom of having a substitute in the case of an impotent husband, as Glasenapp observes.

Lycurgus is said (according to Plutarch) to have passed a law of this kind ; according to this, it was "permitted to a man advanced in years who had a young wife, to introduce to his wife a young vigorous man who pleased him, and whom he thought fit, and to recognise as his own the child produced by them." For the good of the state, in the interests of which is the existence of issue in families, the injuries to individuals from the law were disregarded, as Plutarch thinks. In Athens too, according to the laws of Solon, a rich heiress was permitted, if her husband, whom she had been obliged by law to marry, was impotent, to have as substitute

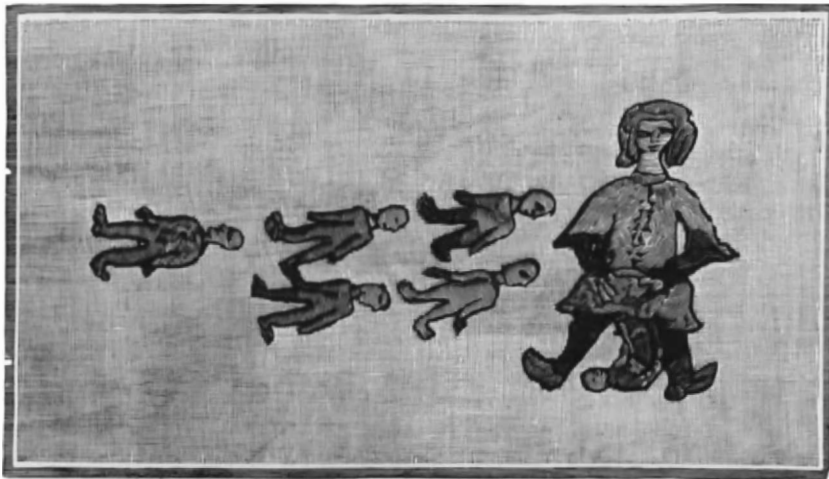


FIG. 588.—Jewish fertility. From a painting in a Hebrew MS. (Passah Haggada) of the thirteenth century. (After Kohut.)

in this respect, the nearest relation of the husband ; thus at least the blood of the family was retained.

Among the ancient Persians, it was considered honourable, according to Herodotus (I., 135, 136), to beget many children, and Zoroaster said :

“ I declare the father of a family before the childless one.”

By the Israelites, also, sterility was regarded as a great misfortune, and the Rabbis of the Babylonian Talmud pronounced the opinion :

“ The poor, the leprous, the blind and the childless are to be looked upon as not alive.”

Numerous offspring were, on the other hand, regarded as a blessing of Jehovah, and the Jews even believed that their wives were more fertile than the women of the peoples among whom they dwelt. An allegorical picture of this Israelite productivity, which appears very naïve to us nowadays, is shown in a Hebrew manuscript of the thirteenth century, which is reproduced in Fig. 588 from the copy by Kohut. The Jewess sitting on the ground has already brought six children to light, some of whom are lying at her feet, one still between her legs.

* In Bengal the hands of the woman who has no children are looked upon as unclean ceremonially (Lal Behari Day).

Childlessness is considered disgraceful in the Levant, and the Moslem, as well as the oriental Jews, make sterility a ground for divorce. By the Arabs it is considered as a want of blessing in a literal sense, and by their wives as a disgrace as well. Indeed, an Arab woman who has had only girls, looks upon herself as already accursed and afflicted with a defect (Sandreczki). D. H. Müller¹⁰ imparts from the Sokotri-texts the following verses which describe the Arabs' ideal :

“ Oh that round thee the children clamour,
The little children in thy room,
Thou bear'st one before thee, one in thy arms,
And one shall too at thy side cling ! ”

The Turkish wife who is childless enjoys little respect, and is neglected by her husband, and, in many cases, even divorced. That is a great misfortune for her, for, since the Turks regard sterility as a defect in the woman's formation, she rarely gets an opportunity for remarrying (Oppenheim).

In South Albania, among the Turks, sterile women are thoroughly despised, so that they are in continual association with old gipsy women who are said to possess secret means of bringing about quick conception (Lehnert).

Among the Badaga in the Nilgiri Hills in S. India, when a woman has no children, she takes her sister into the house as “ second wife ” ; she herself, however, remains as mistress in it. If this expedient is not practicable, then the wife is sent back to her parents or she marries an old man who does not want children from her, but work (Jagor). In Madras, if religious means used in sterility fail in their effect, then the husband may divorce his wife because she gives him no hope of descendants (Best).

About the motive, we learn through H. Niehus :

“ The childless woman or she who has only daughters is deeply unfortunate. The husband has the right to foresake her after from seven to ten years. It is true that this seldom happens, but such a wife is certain to be the object of unparalleled contempt. And this rises to a violent hate if her husband dies. Now he has no heirs who can offer up the sacrifice to the Manes for him and he must remain in hell until another sets him free.”

“ Men in Bali,” as Jacobs relates, “ regard it as a great favour of the gods if their wives presents them with many children, above all many sons, but especially if the children come *selat bænga* : literally, after the other a flower (*i.e.*, a girl), *i.e.*, alternatively a boy and a girl, etc. Yet just as great is the contempt for a sterile woman, and then numerous are the sacrifices which young married people offer to the god specially devoted to the purpose, by name *Dèwa Bætoeh-aja* (according to others, the name of this god is *Dèwa Sambangan*), to obtain a blessing for their marriage bed. The said god, carved in stone, is represented as ithyphallic, just as earlier among the Greeks, the statue of Priapus, and among the ancient Germanic people, that of the Sun god Frey or Frö was, likewise, represented with an immense phallus. M. Bartels had an opportunity of seeing one of these huge images. No doubt to show with what eagerness she brings her offering and how much she would like to see her hopes realised, many a young wife gets upon the phallus and sits upon it (*cf.* Vol. II.,). Whether it helps, *i.e.*, whether by this means she participates in the joys of motherhood, I could not learn. The great cannon of the city gate of Batavia is, as you know, ridden by wives, with the same intention.” Similar customs exist in Dutch New Guinea (see Wirz).

For the wives of the Chinese, a numerous crowd of children is the greatest joy.

In view of this, the stories that Chinese parents kill their children in cold blood and quickly get rid of the new-born ones by exposure, are very instructive (see Giles⁵, 95 ff.).

Childlessness, however, is inconvenient for the Chinese woman while she is dying, and even after her death. Katscher reports :

“ If a second or third wife remains childless, then when she is near to death, she is taken to another dwelling ; she may not die in the house of her husband. The ancestral tablets of first wives who die without having left children are not put upon the altar in the ancestral hall but on a pedestal fixed in an adjoining room.”

However, actual conjugal fertility is not always present everywhere where fertility itself is highly esteemed, as, for example, in Japan. For, although there children are regarded as a special favour of heaven and this idea is also impressed as a proverb : “ Honest people have many children,” yet most families are small and average not more than three children.

Childlessness seems not too rare in Japan, and they say of beautiful women who remain childless : “ The yamabuki (an ornamental bush, *Kerria japonica*, blooms but bears no fruit,” and the childless excuse themselves by saying : “ one can steal melon seeds but not the seeds of children ” (Ehmann). To have numerous children is considered a legitimate peculiarity of the poor also in Japan. To this they give expression in the saying : “ In the lean kaki-fruit (*Diospyros kaki*) are many seeds.” But the worry about food for the children forces out the sigh : “ Bearing children is easier than providing for them.”

In the little group of islands in the south-east of the Malay Archipelago the esteem for the blessing of children is very varied. Whilst in the Aru and on the Babar Islands, the parents want many children, we find on almost all the islands of the Malacca Archipelago artificial means of abortion much in use even among married women, whilst, on the other hand again, all kinds of curative methods are used for sterility. On Keisar the men desire many children, yet the women take care that they do not get more than two or three. The women of Watubela want to have only one child, or, at most, two, and get rid of fresh pregnancies by using means of abortion (Riedel¹).

On the Fiji Islands, as Blyth reports, childless marriages are common. Usually the woman is blamed, but cases of impotence in the husbands also were known to Blyth.

Among the peoples of Africa, also, sterility is likewise a disgrace for the woman and among many negro peoples it is regarded as a proof of earlier gross excess ; the childless woman in Angola is generally despised, and therefore she sometimes makes an end of herself by suicide. Wives and children are the highest possessions of the negro on the Loango coast ; they increase and strengthen the family ties ; they add to its prestige and its influence ; the fertile wife is honoured, the sterile wife despised (Pechuel-Loesche). The same applies to the negroes of the Guinea Coast where the respect a wife enjoys increases with the number of her children, especially if they are sons (Monrad). In Upper Guinea, also, among the Dualla negroes, a wealth of children is regarded as the greatest good fortune, yet it rarely happens there that a woman has more than two children ; nevertheless, if a woman gets no children at all, then the husband demands the return of his purchase money.

The Cameroon negress who has had one child is proud of her maternity. On the other hand, those women to whom motherhood has been denied are less regarded (Pauli, p. 17). There are similar reports of other peoples of Africa. In Kordofan the husband treats a sterile wife with contempt even if he has once loved her (Ignaz

Pallme). Among the Galla, the wife herself even helps her husband to get a second, third or fourth wife, by suggesting and introducing to him "beautiful and fertile girls" (Bruce).

Sterility in woman among many American Indian tribes is considered a great misfortune, and usually results in divorce. The Indians of Gran Chaco in South America often separate from their wives and simply take another, but only so long as there are no children. If a first child has been born, then divorces are exceptional (Amerlan, p. 185).

According to Slav ideas, children are a blessing of God. A marriage without children is unhappy and the fault is attributed to the wife. In Bohemia, the young wife who has a child in the first year of marriage is praised and loaded with gifts (Sumzow).

Children afford great joy to the Serbians (Petrowitsch), and Krauss¹ says :

"The sterile woman is pitied and little respected. Her position in the home of her husband becomes even more untenable. The husband, in common with his wife, seeks to cure this evil by magic means. The proverb runs : 'A wife is not a wife until she has borne a child.'"

4. THE PREVENTION OF CONCEPTION

We shall see in the following chapter how resourceful the human mind has been in attempting to make motherhood possible for the sterile woman. On the other hand, there are many situations where temporary or permanent sterility seems particularly desirable. It is not always a question of illegitimate intercourse between unmarried people, but even in marriage there are times when more children are not to be desired.

Among many peoples peculiar customs have stigmatised as immodest a pregnancy before the end of a certain number of years. A peculiar motive for women to remain sterile willingly is reported by Parkinson² from New Ireland and New Hanover : whole villages or tribes sometimes pledge themselves to have no children at all. In one district, the sterility of the women was the result of a prohibition or vow which had been most strictly adhered to ever since the death of a chief mentioned by name : whether he himself made the prohibition or whether the vow had been made in honour of him after his death, Parkinson was unable to get any clear information.

In all these cases, people have to resort to all sorts of artifices in order to avoid conception.

The first artifice to be named here is *coitus interruptus*, which was stigmatised in the Old Testament as the sin of Onan, who had to atone for his conduct with death.

The process of *coitus interruptus* (and *coitus reservatus*) may be taken for granted as being well known. The harmful effects which it produces on the genital organs and the nervous system of the woman have been discussed by many authorities, Valenta dealing with the latter in a paper to which we may refer here.

Equally widely diffused is the process of introducing foreign bodies, such as absorbent substances, in order to prevent the penetration of the sperm. Modern expedients attain a certain degree of reliability by closing the orifice of the womb or by a paralysing effect on the action of the spermatozoa.

It is no part of our task and offers very little ethnological interest to prove by

quotations from reports the occurrence of such manipulations. We shall speak later of other purely mechanical expedients.

Those reports, however, are of some ethnological value when concerned with the use of internal and magical specifics for the purpose of preventing conception.

In ancient Greece, it appears that *Vitex Agnus-castus* L. played an important part in this respect. Attic matrons, when celebrating the festival of the Thesmophoria used to strew *Agnus-castus* and other plants, which were supposed to be anaphrodisiacs, under their beds (see Frazer,¹ VII., p. 116).

In ancient Rome, also, attempts were made to cause sterility in women by specifics used internally. According to the ideas underlying sympathetic magic, the seeds of fruitless trees, drunk as tea, were said to produce sterility, especially those of willows and poplars growing in the grove of the childless *Persephone* (see H. v. Fabricé). The Greek physician Soranus also gave the advice that the wife should, if a birth threatened to be dangerous to her, beware of having coitus before or after menstruation; she should hold her breath at the moment of ejaculation, and after coitus sit with bent knees, whilst before coitus she should smear the os uteri with oil, honey, opobalsam or wormwood mixed, and have inserted pessaries with astringent qualities.

Until comparatively recent times, the belief was prevalent among the German peoples that a willow tree produces sterility, as both Seitz and Matthiolus testify, the latter even thinking that willow leaves drunk with water not only prevent pregnancy but also, if drunk when soaked, "banish lust and the inclination towards unchastity." In the neighbourhood of Kitzingen, Bundschuh, who wrote a dictionary of Franconia, said that there prevailed as late as 1796 the superstition that a girl would not become pregnant who ate pears and medlars grafted on hawthorn trees.

In Styria, it is generally believed that water from the smithy-trough would cause sterility. Likewise the taking of tincture of zinc, English balsam, honey and aperients of all kinds, particularly alois and myrrh. Fossel states that :

"According to authentic information, the 'unmarried people' in the . . . valleys of the Styrian uplands have, for many years, used linen rags instead of the modern safety sponges."

Various Scandinavian legends, collected and analysed by such students as Bolte and Kahle, show that among Germanic peoples magical methods played an important part, not only in averting pregnancy but in avoiding the results of one which had already commenced.

By the rotation of a mill (variations : by rotation backwards, by four backward rotations at midnight, by putting under the mill as many grains of wheat as there are children expected), the still unborn children, as well as those still unconceived, are killed. The grinding of the mill always raises a cry, or blood drops from the mill. In other variations, the woman gulps down the grains, or she throws apples, stones or pegs into the well; or she goes to the graves of her sisters and at each grave cries : "I do not want any children."

Kahle compares with this certain other popular customs which are about to be mentioned here; he did not, however, succeed in getting evidence for even one such custom in Scandinavia. Now Linnaeus reports (see Buschan²) that in Gotland and Oland, after the marriage ceremony, the young wife is able to determine the number of children to be expected by touching her bare body with her fingers. As it obviously depends upon herself with how many fingers she does the touching and whether with one hand or with both, so it seems to be not improbable that the

custom mentioned by Linnaeus can be understood in the sense of a preventive measure. Then it would be a question of a spell similar to that which Truhelka reports from Bosnia. He writes :

“When the bridegroom comes for her and she is about to mount on to the saddle, she shall push her hand under the firmly drawn girth. As many fingers as she pushes under the girth, so many years will she remain barren ; and if she can put both hands under, then she will never bear children.”

A Serbian custom reported by Krauss is very similar. There the bride sits down in the wedding carriage on as many fingers of her hand as the number of years she would like to remain without children and says : “I sit on so many fingers in order to bear no children for so many years.”

The Serbian woman, according to Krauss, decides her fate in another way by extinguishing a certain number of glowing coals in bath water and saying : “If these pieces of coal begin to burn again, then I too shall give birth to a child.” It is interesting to learn that she can again remove this spell if she desires a child later by throwing these coals in the fire. As soon as they begin to burn, she at once feels herself pregnant. Or she sets an open padlock and a key on the footpath before going to church and walks between them, returns, fastens the lock, and says : “If I once open the lock, then I shall conceive a child.” Whether this spell, too, can be removed, we are not told. Another spell is the following. She lifts the kettle with the water for her wedding bath with her whole hand if she does not want any children, otherwise with the desired number of fingers and says : “With as many fingers as I use to lift this water for so many years shall it wash me clear of children.” On the way to church, she puts round her waist a ribbon of which she does not know the length, and when entering the bridal chamber with her husband, she ties in it as many knots as the years she wants to be without children. Similar to this is what Petrowitsch reports of the Serbians and Krauss,¹ in another section, reports of the Southern Slavs.

When the wife of a Serbian does not want to have any more children, she must close the house door with the legs of the new-born babe (Petrowitsch). Among the Southern Slavs, when a child dies, the coffin lid must not be nailed at the head and feet of the corpse because otherwise the mother may become barren ; or if she does conceive, she will have a very difficult delivery at her next confinement. If a woman wants to bring no more children into the world for a few years, she need only dip her finger into the bath water in which her child is first bathed and then lick off the water. Each finger dipped corresponds to a year of childlessness (Krauss¹).

In another place, Krauss¹⁰ reports other means employed by the Southern Slav woman in order to remain childless. For example, she must put round her waist the band from the pants of an innocent dead youth, or the band with which the hands of a dead man were bound in the first night ; or where a child of hers has died and she wants to remain childless, then she closes the door with the foot of her dead child and says : “When the dead child has opened the door, then shall I bear a child !” Or she shakes the child in the coffin three times and says she will again bear children when she has shaken it once more.

Glück reports another spell from Bosnia.

“Although the Bosnians are very fond of children, it now and then occurs to them, especially in the towns if the family is increasing too rapidly or they think they have enough children, to put a stop to the increase. Then, if they want to have no children for a certain number of years, they put a knife in a cleft between two boards of the ceiling, the position of which in-

dicates for how many years they want to be without children. For example, if the wife wants to be barren for three years, she puts the knife in the third cleft counting either from the door or from the window. But if they want no more children at all, then they close the door with the foot of their last-born child."

In parts of Russia, people drink an infusion of lycopodium to prevent pregnancy, or they drink a glass of warm water in the morning while fasting.

A spell, which used to be used in Russia in the Lukonajov district of Nizhniy-Novgorod when childlessness is desired, is carried out according to Löwenstimm, as follows: The peasant girls collect the menses in a vessel and take this blood to the *sage femme* who pours it on the hot stove in the bathroom; thereupon the weeping of children is to be heard.

Jaworsky, in 1898, reported of the South Russians as follows:

"Among the South Russians of the Skaler mountain range in Galicia, I have discovered the two following recipes for spells which are commonly used by women who wish to be barren:

"(1) 'In order to remain barren,' a girl, when she first menstruates, takes a few drops of her menstrual blood and lets it flow through a hole into the first egg of a young hen. Then she buries the egg near the table in the room. There the egg is left lying for nine days and nine nights. After that, it is taken out. In it are found some little worms with black heads. So many children will this woman have. If she throws the egg with the worms into water, then she will have the children, but if into the fire, then they are burnt for ever. This method was heard of in Holowetzko.

"(2) Or again, the women take their menstrual blood and put it into flax wool, which they then tie into ten knots and ten corners, roll it together and wear it for nine days and nine nights. In the night, they keep it under the right arm, and in the daytime under the left knee. Then they bury it in the ground in the chief corner of the room and, in doing so, say these words: 'I bury thee not for a year, but for ever.' Then the woman will have no children. This also was obtained in Holowetzko.


"Although these strange spells are still very much esteemed and often employed, yet they are giving way more and more to other practical means. These consist in some kind of vegetable poisons by which abortion can be produced in case of need. I was unable, however, to obtain more precise details as to their nature and character."

When a Hungarian woman does not want to have children, she also tries to protect herself by means of a spell. Before the consummation of her marriage, she throws a locked padlock filled with poppies into the nearest well (J. v. Csaplovics). It is well known that, according to a widespread popular superstition, a couple can, by such means, be robbed of the *facultas coëundi*.

In Esthonia, the women take mercury, and in the district of Kiev, the aqueous infusion of the *Pæonia officinalis*. The fresh juice of the celandine (*Chelidonium majus*) also is famous; and the Tartar women use an infusion of male fern (*Lastrea Filix-mas* Presl.).

In Siberia, the women are said to take a certain quantity of white lead when the menses begin, by which means it is supposed to be checked, and conception prevented before the next period. On discontinuing the specific, according to the prevailing opinion of the people, the possibility of conception returns (see Krebel).

According to Klunzinger, the women in Upper Egypt take, fasting, three mouthfuls of powder of burnt cowry shells in order not to become pregnant. In Algiers, if a woman does not want to conceive so soon again, she drinks some water for a few days in which the leaves of the saltwort and the peach tree have been cooked; or she drinks the juice of the fruit of the fig tree. For the same purpose she need also only wear on her head an amulet consisting of a paper on which are

drawn two squares. At each corner are the following squares  on which are inscribed certain Arabic words.

In order to guard against undesired impregnation, the women of Mecca wear a box with rabbit droppings on their breasts (Snouck Hurgronje).

Blyth reports of the Fiji islanders, that as

“the native midwives undertake to cure sterility, so also do they have recourse to preventive means which are sometimes successful and sometimes not. For this purpose they use an infusion of the leaves and the peeled and grated roots of roga-wood and samalo. If coitus has taken place at night, then the drink is taken next morning. This specific for preventing a first conception is also taken by women who do not want further pregnancy.”

In the New Hebrides, Jamieson states that a plant which the women eat is employed to cause sterility.

We have already learnt of various purely mechanical devices for the prevention of conception used by Australian aborigines and by the women of the Malay Archipelago. The latter, according to Riedel,¹ keep themselves very indifferent during coitus in order not to become pregnant; the former know how to get rid of the injected sperm by a jerking movement of the pelvic region.

According to Graf Pfeil, the native women of the Mandated Territory of New Guinea also possess the remarkable power of making conception dependent on their will, since they claim to be able to get rid of all semen immediately after cohabitation. (It is, of course, very doubtful whether they succeed in throwing off all the semen, a method which German girls also are known to attempt more or less successfully.) Further, as we have seen, there occurs in Australia the cutting out of the ovaries as a preventive (whether consciously is questionable), and the same thing happens in Indonesia. Likewise, in India and in Dutch E. Indies, people know how to avoid conception by intentional changes in the position of the uterus. At least, the words of the missionary Jellinghaus may be thus understood for he says that poor women among the Munda in Chota-Nagpur, in India, have their womb compressed and displaced without the knowledge of their husbands in order to free themselves from the worry of pregnancy. Van der Burg, also, reports from the Dutch East Indies that :

“The early developed sexual impulse of the girls is unhesitatingly satisfied by the aid of a *Doekoen*, one of the numerous old women skilled in medicine for avoiding conception. In fact, these women seem to know how to bring about a change in the forward or backward position of the uterus by external manipulations, by pressing, rubbing, kneading the abdomen without touching the vagina. It must be admitted that the results are no worse troubles than slight pains in the loins and kidneys and difficulty with micturition during the first days of the procedure. If a girl wants to marry and later to become a mother, the uterus is prepared again in the same way.”

Seligman² writing of the Sinaugolo in British New Guinea, states that when their women think they have had a sufficient number of children, they have themselves made barren artificially. Living in each village or employed in several neighbouring villages, is generally a woman who is reputed to be able to bring this about. This gift is said to come to her from her mother. When the honorarium has been arranged, she is accustomed to ask whether the husband has given his consent. If this is not the case, then she refuses her help. The process itself is called *ginigabani*; the woman seeking help is *hageabani*, which means, literally, incapable of having more children. The skilled operator places herself behind the patient as close as possible and manipulates the lower part of the body while murmur-

ing incomprehensible magic formulæ. At the same time, herbs and roots are being burnt, the smoke of which must be inhaled by the patient. She hands the honorarium to the operator behind her without looking round, and she dare not say her name or look about her. The operation undergoes variations according to the powers inherent in the woman concerned ; and a vegetable drink is often given as part of the magic process.

Among the Maori, a spell for the prevention of conception is carried out by the medicine man. Goldie describes its action in a particular case. He describes how a

Tuhoe medicine-man rejoiced in a special reputation. A woman who was pregnant and did not wish to conceive again had to arrange her confinement so that the medicine-man was within reach. During the expulsion of the placenta, he took some blood, kindled a fire and threw the blood into it, at the same time uttering an exorcism. By this means, women were said to be preserved from further pregnancies.

The fact that all kinds of preventive measures are widespread among the civilised nations of Europe, too, needs no special mention in this place. The discussion of these specifics, among which a few, owing to the advance in technique, are almost absolutely safe, will not be attempted here. [The reader must be referred to the mass of literature on contraception which is now available. Dr. Marie C. Stopes has published a general account, and various aspects of the subject are discussed by her in other publications. Voge has issued a study of the chemistry and physics of contraception, whilst Florence and Charles have attempted to appraise some of the results from a statistical standpoint. The periodical reports of the International Medical Group for the Investigation of Contraception, which was formed at Geneva in 1927, are valuable for a survey of advancing knowledge and technique.]

5. PREVENTION OF STERILITY

We can easily understand, especially among peoples where a barren woman is exposed to shame and contempt and all kinds of insults on the part of her husband and her relations, that the bride and her friends are beset by anxious fears on the conclusion of marriage lest, for her too, such an unhappy fate be destined. And hence it appears to us quite natural that all kinds of preventive measures have been taken into consideration in time. However, if these magic measures are to be properly effective, it depends on the right moment being chosen for bringing them into use.

Thus we find that people proceed with the "sympathetic" magical measures as early as possible, and that there are three times which are specially preferred, namely, the *wedding day*, the *wedding night* and the *morning after the wedding*. On the day of the wedding, the spell can even begin in the church during the ceremony, or the preference may be for the moment when the young couple enter their new home for the first time. However, the time of the wedding feast is also suitable for this preventive assistance.

In Aegina, immediately after the blessing is over, the marriage witnesses are accustomed to pelt the young bride with peas and pomegranate * seeds in order to assure her fertility.

The Serbian woman hangs her chemise upside down on a grafted tree so that the sleeves are hanging downwards. Under the chemise she puts a glass full of

* [Cf. Arnobius.]

water. Next morning, the woman drinks all the water and puts on the chemise. Others put some leaven in their waistband and sleep with it for one night. Next day the woman has the leaven for breakfast.

Among the same people, when the young married couple enter the house, the wife must look at the roof beams. She will give birth to as many sons as she sees beams at that moment.

The tent gipsies in Transylvania, according to v. Wlislöcki,⁴ throw "old boots, shoes and peasants' shoes at the newly married as they are entering their tent, whereby the fertility of the marriage shall be increased." Shoes can often be seen in modern England suspended at the back of the wedding automobile.

In some parts of Russia, care is taken on the occasion of marriage that the young wife may not lack the blessing of children: *e.g.*, in Nizhniy-Novogorod, the newly married used to be led to the wedding-feast so that they should not describe a circle, as otherwise the marriage would remain barren (see Sumzow).

At marriages, the Esthonians throw money and ribbons into the well and into the fire "for the propitiation of the water and fire mother," and as late as the end of the eighteenth century, gifts were thrown by them into a great fire round which barren women danced naked, whilst sacrificial feasts were held and orgy reigned (see Böcler).

The custom found only in Germany of putting pieces of cake on the bride's body has doubtless also regard to the future fertility in married life.

Among the ancient Prussians, grilled he-goat and boar's kidneys were put under the bridal bed; by this means, fertility was to be evoked. No female cattle might be killed for the wedding feast, but only he-goats and bulls. On the following morning, the wedding company returned and the *Brauthahn* was examined; if any of it was left, then the young couple had to eat it up quickly.

Among the Tartars, it is the morning after the wedding which displays mystic power. Formerly, it was customary among them to lead the newly-married pair out of the *yurt* to greet the rising sun on the morning after the wedding night.

Among the nomad gipsies of Transylvania, the fertility spell is somewhat delayed. But they also allow only the very first weeks to pass: then they immediately have recourse to the following magic measure. The wife gathers the threads of the field spider which fly over the fields as so-called summer threads or "old wives' summer" and devours them in company with her husband. While doing so, they must, states Wlislöcki,⁴ recite softly the following incantation:

"Ye Keschalysi (goddesses of fate), spin, and spin.
Till more water in the brooks doth run!
To the christening we invite you
When the red and lucky thread
Ye have spun, ye have spun
For the child we have won
By your divine mercy Keschalysi."

6. INDICATIONS OF STERILITY

It might have been expected, considering the extraordinary importance which it has for the woman among many races, whether in her future marriage she will be fertile or not, that folk wisdom would have been at pains to discover certain signs and characteristics so as to be able to tell her this beforehand. But, in this respect, the folk-lore of almost all the peoples of the earth leaves us without information.

The question whether a woman is fertile cannot naturally be solved by means of magic and fortune telling. There are, however, ways and means by which the physician can, with moderate certainty, diagnose in the first three months a pregnancy which has commenced. It is the method associated with the work of Ascheim and Zondek to whose record of procedure the reader is referred.

In the Hippocratic collection we find a series of methods with the help of which a woman can discover whether she will become pregnant or not.

For instance, she has to lay a well-cleaned and scraped clove of garlic on the uterus, or

else a woollen plug moistened with oil of bitter almonds. Next morning, if she does not smell of these things from the mouth, then no impregnation will take place. If before going to sleep, she drinks finely-powdered aniseed in water, then she will get itching about the navel if she has any prospect of pregnancy; if there is no itching, then she will remain barren. Or let her be given while fasting, butter and milk from a woman who is feeding a boy. Only if she gets heartburn after this can she hope to become pregnant.

There is one nation, however, which thinks it has its own special signs in regard to this. That is the Japanese. In an "Encyclopædia of the Art of Fortune-telling," which was published in Yeddo in 1856 (a re-impression of an edition of 1842), two women were represented with the upper part of their bodies bare (see Figs. 589 and 590). For the text, we are indebted to Professor Dr. F. W. K. Müller.

Fig. 589 shows a barren woman. The appended text runs thus :

"It is difficult to tell from the face whether a woman will have children. Nevertheless, one can tell that a woman will be childless if both her eyes are deep set, if the philtrum of the nose is wide



FIG. 589.—A barren woman. (From a Japanese encyclopædia.)

above but fine below, or is very shallow. Further, if the philtrum is very wide below but shows a cross-line in laughing, then the woman in question is barren. This is a tradition of the ABE family.

"Also when the lips are not very red and appear bluish in the inside, then the woman is barren.

"If the whole body is round and the texture of the skin fine and very white in colour; if the skin and flesh look as if stretched, the navel flat and small; the abdomen small and as if polished; the part between the shoulders and the hips round and short; the nipples a little flat and a little sloping or yellow, then the woman is barren.

"If the teeth of themselves are very white and sharp, then their possessor is barren. If the abdomen is small and arched outwards at the navel, then the woman is barren. A very

fat woman, who at the same time is boneless is barren. To these signs many more might be added, but here we must be brief."

We see that to the Japanese, the fact alleged in antiquity, was not unknown that young women in whom excessive fat formation is present do not generally become pregnant.

Now, as contrast, the "Encyclopædia of the Art of Fortune-telling" has also given the illustration of a fertile woman (Fig. 590). In this, however, are at the same time described the indications which make it possible to predetermine sex.

"A woman who is constantly modest and talks of nothing of importance will bring many daughters into the world. If a woman's left ear is bigger than the right, then she will give birth to boys; but if the right ear is bigger than the left, then she will bear girls.

"A low bridge of the nose, thinness of the hair combined with a red colour indicate that a woman will have many girls but no boys. Many long crossed wrinkles at the outer corners of the eyes, and black hair indicate that a woman will have many boys but few girls.

"If birth marks (spots) appear on the nasal philtrum, then the woman concerned will bear twins. In barren women, however, these marks indicate that the person concerned is very sensual."

These quotations are included here, and not in the section on the predetermination of sex in the uterus, because here it is a question of something different. There it must be established, after fecundation, whether the pregnant woman is bearing a boy or a girl. Here, on the contrary, is being predetermined what sex will be conceived when the hitherto non-im-pregnated woman accomplished the sex act, and is made pregnant by it. The late date of publication gives clear proof that in wide social layers in Japan these signs are still considered infallible.

Here, too, another passage from Suśruta may be quoted :

"A woman who has a bright healthy face with very moist gums and mouth ; who shows desire for the male and talks of it ; whose abdomen and eyes are sunken, and whose hair is smooth ; whose arms, breasts, hips, navel, thighs, pubic region and buttocks are prominent ; and who is full of love and longing ; such a woman is, as you know, capable of conception " (cf. Schmidt⁸).

The same authority quotes from the ancient Hindu writer, Sāṅkhāyana, who gives this advice :



Fig. 590.—A fruitful woman. (From a Japanese encyclopædia.)

“Marry a girl who is endowed with (the requisite) attributes ; whose limbs are in proper proportion ; whose hair is smooth, and who has also on the nape of her neck, two locks turned towards the right. Of her one knows that she will give birth to six heroes.”

That there is an age limit for a girl's power of procreation is known also to the primitive peoples. Krämer quotes a word from the Samoan : *siliagfānaua*, *i.e.*, “a virgin too old to get children.”

Among the Ainu in Sakhalin, according to Pilsudski, women who do not menstruate are recognised as barren, and are designated by the Ainu as *kiejsach machneku* (*i.e.*, bloodless), and to whom sexual intercourse is strictly forbidden.

7. MEDICAL AND MECHANICAL MEANS OF PROMOTING CONCEPTION

The natural desire common to human beings of all races to produce descendants, and the great drawbacks and disadvantages which, as we have seen, are accustomed to be attached to a barren woman in so many peoples, was naturally bound to lead to attempts to obtain the hitherto hoped for blessing of children by artificial means. The ways adopted for this purpose are of three kinds : in the first place, the supplication for divine assistance ; secondly, the performance of certain magical acts operating sympathetically ; and finally, the employment of more or less suitably chosen medicines for internal or external use. We shall begin our observations with this third group.

It was, above all, on the medicinal power of vegetable and herbal products that men relied ; and the specifics prepared from them doubtless belonged partly at least to the sphere of love potions, *i.e.*, the medicaments which to some extent are sensually exciting, increasing voluptuous feeling in the woman and thus are supposed to make her more susceptible sexually.

To this category, according to commentators of the Bible, belong also the mandrake which Reuben found during the wheat harvest and brought to his mother Leah (Genesis xxx. 14). At Rachel's request, Leah gave them to her whilst she, on the other hand, gave up their common husband to Leah for the next night. But, in spite of the mandrake acquired in this way, Rachel remained barren for years longer, whilst Leah became pregnant without their help. The majority of the commentators consider the *dudaim* (love-apples) to be identical with the mandrake. (For a full discussion see Frazer,² II., p. 372.)

A direct effect was also ascribed to other substances, partly because they were supposed to purify the woman's secretions and strengthen their nature, partly because applied externally (*i.e.*, placed in the vagina), they were destined to soften and open the uterus. Sprung from popular medicine and then passed into the hands of ancient physicians, it was their fate to sink anew into the sphere of popular remedies, where even at the present day in many places they carry on their existence unimpaired.

In the great mass of these popular medicaments there have sometimes been found remedies really useful and effective. A medicament in use in Japan for menstrual troubles and sterility, called *kay-tu-sing*, is recommended by Williams. It is the tincture of the leaves of a perennial tree of the class *ternstrœmiaceæ* ; after only a few hours, the specific is said to affect the menstruation and to remove the sterility. In China and Japan, it is taken whilst magical formulæ are repeated and at the time of the full moon.

Among those plants regarded as healing, there is one above all, which in ancient times was held in high esteem by the Bactrians, Medes and Persians. That is the

soma plant (*Asclepias acida*) mentioned in the Zend Avesta. They called the juice *haoma*, and ascribed divine properties to it ; it had also the supernatural power of giving beautiful children and pure descendants to barren women (cf. Duncker).

The Talmudists specify some remedies (*pocula sterilium*) for sterility. These specifics seem mostly to have been intended to set going irregular menstruation, for the absence of the menses, where there was no pregnancy, was considered the cause, or at least a sign of incapacity to conceive. We find similar views half-conscious, half-unconscious, among many other peoples ; for their remedies for sterility also are primarily designed to restore to regularity the monthly functions.

According to Klunzinger, ginger, the precious ambergris (a biliary concretion from the intestines of the spermaceti whale), honey, cinnamon and carrot or radish seeds cooked with honey are used in Upper Egypt as specifics for arousing sexual desire, and probably also for removing sterility ; also the gall of the raven, the burnt shells of the tridacna mixed with honey and pollen of the date palm are used.

In Fezzan, according to Nachtigal, people try to increase the fertility of women by plentiful consumption of the dried entrails of young sucking hares.

In Algiers, if a woman has already had a child and then does not conceive again for a long time, she must drink sheeps' urine, or water in which wax from the ear of an ass has been pounded (see Bertherand). Local remedies are also used in the Orient. It is said that in Syria, among the women especially, ulcerations of the *portio vaginalis* occur, caused by foolish applications of irritating substances with a view to furthering conception. In South Tunisia, the barren woman goes to the hot vapour bath and puts a kind of wide poultice of clay, caraway and vinegar on the coccyx. Then she has this part as well as the abdomen massaged and the pelvis firmly bandaged ; after this, she is supposed to become pregnant at once when coitus takes place (cf. Narbeshuber). In the poems of the Kara-Kirghiz, to be mentioned later, occurs the line "she rarely bound her hips," in which, according to Max Bartels, a similar manipulation is probably referred to. In Upper Egypt, according to Klunzinger, a little piece of opium is put into the uterus for the first day of the cure, and for the three following days a piece of the belly of a ruminant.

The Indians in Peru are said to have aphrodisiacs which affect the female sex in particular ; these bear, according to an article in the *Mercurio Peruano*, the general name of *piripiri*.

Also on the Luang and Sermata Islands in the Malay Archipelago, aphrodisiacs are much used by both sexes. On the Amboina Group, barren women must take certain medicines and bathe in a prescribed manner. Likewise on Leti, Moa and Lakor, there are all kinds of remedies for sterility ; but here the husbands also have to drink the *pocula sterilium*. Riedel states that Galela women on Djailolo (Dutch E. Indies) also know medicines which assure them pregnancy.

As a cure for sterility on the Fiji Islands, the woman has to bathe in a river, and then both husband and wife have to take a drink made from an infusion of the grated root of the *mbokase*, a kind of bread tree, and of the nut of the *rerega* or *kago*, a kind of tumeric. Coitus must be performed immediately after this drink has been taken. A midwife assured Blyth that she had seen this treatment crowned with success in three cases.

According to Kersting, the women in Uschirombo in East Africa grind the root bark of a great tree *mwesia*, mix it with water, and drink it in great quantities in order to increase fertility. Elephant dung made into tea, along with roots, is taken by the Swahili women to hasten the arrival of pregnancy (see H. Krauss¹).

Among the West Australian aborigines, the opinion prevails, states Jung, that

if the women eat a great deal of kangaroo flesh their fertility will be considerably increased.

In Siberia, girls use the cooked fruit of the *Iris sibirica* before the bridal night. The women in Kamchatka, who want to have children, eat spiders ; and some of the women when in child-bed who wish soon to be pregnant again, devour the umbilical cord of their new-born babe (Kraschneninnikow).

Even among the peoples at a low stage of civilisation, we find the idea that if conception does not occur, some diseased condition must be present, and that it is not sufficient to try sympathetic measures for its cure, but that it is also necessary to proceed with the regulation of diet and with therapeutic prescriptions. Then, when a systematic medical science in the matter began to be acquired, there ensued a still better understanding, and, although the treatment adopted was still very primitive, it was nevertheless much more suitable for the purpose than at the very early stage of civilisation.

In the Hippocratic collection, a number of such specifics are mentioned which to us seem senseless. We have already learnt some of them. Among others are the following :

“ If thou desirest that thy wife become pregnant, then thou must cleanse her, and her womb thoroughly, *i.e.*, a suppository must be prepared of finely powdered sodium carbonate, caraway, garlic and figs prepared with honey and inserted into the uterus, and the woman must take a warm bath. After she has eaten dill whilst fasting and drunk real wine, sodium carbonate, caraway and resin is prepared with honey and put on a piece of linen as a suppository. Now when the water flows away, apply black softening pessaries and urge her to have conjugal intercourse. If thou desirest that thy wife be pregnant, then cleanse her and her womb, and put a worn linen rag as fine and dry as possible into the uterus and be sure to dip it in honey ; form a suppository with it, dip it in fig-juice, insert it till it has widened the mouth of the womb ; then push it still further in. Now when the water has been drawn off, let the woman rinse herself with oil and wine, lie with her husband, and if she wants to enjoy the conjugal intercourse, drink pennyroyal in an infusion of juniper berries ” (*De nat. fem.*, 94).

Another passage runs :

“ Now if everything appears to be in good condition and the wife shall have had intercourse with her husband, then she must fast, but the husband must not be intoxicated, but have a cold bath and eat temperately of food. If the wife notices that she has retained the seminal fluid, then let her not approach her husband but keep quiet. She can accept this, however, if the man says he has ejaculated the semen and the woman does not notice it since she is dry. But if the uterus lets out the semen on to the vulva, the woman will be wet, and she must then continue to copulate until she conceives ” (*De morb. mul.*, III., 221).

Max Bartels has set forth this process so fully in order to show how hard the physicians of that period tried to help by local treatment which, to be sure, could not achieve its purpose, but which, without doubt, was believed in and employed for a long time afterwards. Besides this local treatment, however, an internal one was also held in great esteem among the ancient Greeks. Women who wished to have children were, in the time of Hippocrates, advised to take silphium with wine, that mysterious specific which the ancients prized so highly, and which may again have been discovered, as Schroff believed, in the *Thapsia silphium* Viviani.

In the seventeenth century, barren women with “ a cold and too damp a complexion ” had to take drinks made from clove-pinks (*Caryophyllon*) with balm mint and orange peel. Rosemary also with grains of mastic were favourite remedies. At the present day in Styria, asparagus seed with wine and young hop shoots

prepared as a salad are still used as a remedy for sterility, according to Fossil. The wife also shall avoid conjugal intercourse for two months, have herself bled and then have coitus the following day. In Frankenwald, Flügel states that coffee enjoys special confidence in this respect.

Ankert reports from North Bohemia :

“ For female sterility, one fills a little bag with Roman caraway, boils it in wine and then lays it repeatedly, while still hot, over the genitals.”

In Bohemia, the young wife drinks an infusion of juniper berries in order to get children. The wandering gipsies of the Danube country think they can cure their barrenness by drinking the blood of a bat together with asses' milk. But the bat has this healing power only if it had been shot in the week before Christmas.

Among other home remedies, the Russians use a solution of saltpetre taken internally to make the woman fertile.

Popular remedies in Bosnia and Herzegovina include various medicaments for sterility. Glück reports thus :

“ To further fertility are recommended :—sour milk in which dill leaves (*Anethum graveolens*) have been soaked and the eating of the fruit and seeds. This remedy is to be taken morning and evening for several days. For four days after menstruation there must be no sexual intercourse ; on the evening of the fifth day, the wife shall drink a glassful of the juice of fresh sage (*Salvia officinalis*) and have coitus a quarter of an hour later. If she does this several times in succession, she will, so she is assured, have children. Besides these remedies taken from the vegetable kingdom, other specifics for hastening fertility are recommended : a soup made of an old cock which contains the dried baked and powdered testicles of a wild boar ; or ordinary drinking water, in which is some powder from the cleaned and dried uterus of a hare. Both specifics are to be used for some time.”

8. THE USE OF BATHS AND SPRINGS AGAINST STERILITY

Nowadays, an important method of removing sterility in women is the use of medicinal baths and springs, and one important spring in Ems has, as is well known, received the name of *Bubenquelle* (baby spring) because of its happy effect. But the prescription of medicinal waters is by no means a discovery of recent days. As early as 1715 Eckarth described

“ the warm baths according to choice, as Carlsbad, Aachen, Ems, Hirschberg, Landecker and other famous spas, would not be without use ; those who cannot afford the expense of the journey to these places must prefer the herb and bark baths.”

In the German saga, too, Holda, the dispenser of fertility and the blessing with children, has her abode in the water of the well from which new-born babies were fetched. Wells play a part connected with fertility also in the myths of other peoples (see Frazer,¹ II., 155, etc.).

In ancient Greece, many springs and wells were recommended as a cure for sterility, as, for example, the Thespian spring on Helicon. According to the report of Photius-Suidas, the spring, *Ἠήρα* on Hymettos in the neighbourhood of the temple of Aphrodite, had the property of helping women whose bodies were closed up to get children, and besides to have an easy confinement. Pliny (XXXI., 4) tells of the property of the waters of Sinuessa for producing fertility. Baiae was famous for just this property. Thus Martial says of a woman :

“ iuvenemque secuta relicto
conjuge Penelope venit, abit Helene ” (I., 62)

In Hindu and Chinese mythology also, the baths played a part. The Hindu goddess Parvati became pregnant in a bath without having had connection with a man : she gave birth to Gaṇesá.

In Algeria, not far from Constantine, there is a bath situated in the rocks with the spring *Burmál er-Rabba*, which Jewesses and Moorish women have been frequenting from the earliest times in order to seek a cure for barrenness. On several week-days the native women come down from Constantine to *Sidi-Meçid*, kill a black cock by the door of the grotto, and offer up within as well a wax candle and a honey cake. Then they take a bath and are sure that their desires will soon be fulfilled. The custom is an ancient Berber custom, for animal sacrifices are unknown to Islam (see *W. Kobelt*, p. 267).

Among the Yoruba negroes on the West Coast of Africa, the water which is kept in the temple of the goddess of nature is renowned. She is represented as a pregnant woman, and the water, which is consecrated by her, is used as a remedy for barrenness and difficult delivery.

A very remarkable water spell for the cure of sterility has been recorded from Serbia by *Petrowitsch*. The barren young wife is said to cut a reed and fill it with wine. Then she sews it in a linen purse along with an old knife and a cake made of wheat meal. Holding this purse under her left arm, she must then wade in a stretch of running water whilst someone on the bank prays for her : "Grant my prayers, Oh ! God, Oh ! Mother of God," etc. (amid invocations of all the saints). During this prayer, she lets the purse fall into the water ; and after she has waded out of the stream, she puts her feet into two kettles, from which her husband must lift her and carry her home. Here we find a food and drink offering quite in accordance with the rules of the God of the water.

9. SUPERNATURAL HELP AGAINST STERILITY

It is a common trait of the human mind not to rely only upon the power of suitable medicines to restore lost health. Hence the help and support of God, or of demonic powers is invoked, and, in addition, people accept peculiar forms of treatment to which they give all the more credence the more absurd and senseless they are : these are supposed infallibly to bring about the desired cure by some quite inexplicable "sympathetic" means. So, in the case of sterility, we meet the idea that it is a curse inflicted by the gods, an enchantment caused by evil spirits or human beings connected with them, and that an expiation or loosing and breaking of the spell can open the barren womb. Hence we find among the Celts the sacred medlar ground to dust used as a remedy for sterility.

The Arabs, also, according to *Sandreczki*, take measures against the supposed enchantment, which they regard as the cause of sterility, with an exorcism. They have recourse to the Koran, to be precise, to the third Sura, which bears the title : "The Family (or the race) of Imran." This whole section, consisting of 200 verses, must be written in a copper basin with saffron ; then boiling water is poured upon it and the woman in need of help has to drink a portion of this holy water, and with the rest, her face, breast and genitals are sprinkled. The choice of this Sura is to be explained in this way. The Arabs believe the wife of Imran, by name Hannah, was at first barren, but nevertheless found mercy and became in later years the mother of the Virgin Mary.

Among the Mohammedans in Armenia and Kurdistan, the *chodscha* (priest) writes the famous Sura 112, "The Unity," on an egg :

- (1) Say : He is God alone.
- (2) The eternal God.
- (3) He begets not and is not begotten.
- (4) And there is none like unto Him.

Then he gives one half to the married couple to eat. Or he writes the said Sura on a three-edged spear and makes the husband jump over it (*cf.* Volland).

In ancient Rome, sterile women directed their prayers to Juno Februalis (from *febrūo* purify, expiate), that is, the purifier, the expiator. The expiation also took place at the Lupercalia at which the priests called Luperci sacrificed goats, took pieces of the hide and ran through the streets striking with these pieces of hide the women they met who were wandering naked through the streets for this purpose. By this means, fertility was supposed to be attained (Ovid, *Fast.*, II., 379, 425, 445 ; Juvenal, II., 142).

A similar procedure is the whipping which is undertaken by the young men in Voigtland and in other parts of Germany on the first of the Easter feast days. Early in the morning, they chase the girls out of bed with fresh green twigs, striking them with these on the buttocks and the genitals. The Zempem of Lower Lusatia and the Semperlaufen of Bautzen likewise call to mind the Lupercalia (see J. A. E. Köhler, p. 167).

According to the interpretation of Marie Andree-Eysn, the *Perchten* processions in Salzburg are also to be reckoned here ; in the throwing of a child tied to a string and wrapped in swaddling clothes the authoress sees " an obvious allusion to the fertility of the woman who, fully conscious of what the throw signifies, receives the child laughingly or tries to avoid it." She also refers to a Shrovetide custom which takes place at Klingenau in Switzerland, where a masked jester goes with a big doll to the houses of the newly married people and shows the doll to the young wife, for which he gets a tip (see Frazer,¹ IX., 240 ff.).

Thomas Bartolinus² also calls to mind the Lupercalia among the Romans, and besides these, the worship which the god Mutinus enjoyed :

" Mutini Fascino insident feminae, ut concipiant. Lupercis quoque se offerunt, et ferula cœduntur caprina pelle corioque tecta. Gestant praeterea pyxide Lyden, immenso prolis desiderio, quo Reipublicae augendae causa, connubii retinendii et ob jus trium liberorum ardent " (pp. 1-5).

A marble relief which was found in a villa in Rome certainly, according to M. Bartels, represents the carrying out of a fertility spell. It is reproduced in Fig. 591, and it now to be found in the Glyptothek in Munich. Furtwängler describes it as :

" An idol of Hermes, in the form native to Attica, is being adorned with fillets by maidens."

" A youthful woman whose beautiful figure is inadequately concealed by the garment thrown lightly over it, is about to place a wreath on the head of the god. On the Hermes column, the male genitals are represented. According to Furtwängler, a restoration is involved here " by reason of a trace of hair that has been preserved." Upon this M. Bartels justly observes : " It seems to me as if this ' restoration ' were to cause the member to be ithyphallic. It was probably like this originally, and no doubt was broken off for that reason." Baumeister writes of this god :

" The most probable hypothesis is that Hermes represents the generative power of nature in action.—Previously, however, (before his representation in sculpture), there must certainly

have been a far earlier formation which took its name direct from him and kept it for centuries : that is the name of these phallic pillars, *έρμεία*. These square columns placed by the wayside on which only the head was carved and the phallus formed the characteristic mark, were particularly popular in the pastoral Arcadia, but were also cultivated in Athens from ancient times. "Strong masculinity is the peculiar attribute of Hermes 'as the god of fertility.'"

If this conception of the god be taken into consideration, then the second female figure, close to the god, also becomes comprehensible. She has already put off her mantle ; it hangs precariously on her left forearm as if about to fall to the



FIG. 591.—Hermes honoured by women as a fertility rite. (Relief in the Glyptothek in Munich.)

ground. The hand lies loosely on the left hip and holds a rolled-up *tænia*. The right leg is bent at the knee and is also turned outwards, the buttocks are extended somewhat backwards. Thus the legs are opened, and although the dress still conceals everything, yet the open right hand hanging down is perhaps already in the act of lifting up the dress in order to expose the lower part of the body so that it may be brought up to the member of the God who brings her his blessing (*cf.* Fig. 458). With the toes of the right foot, she has stepped into the sling of a *tænia* with which, as with that in her right hand as well as the one lying rolled up on the ground, she presumably is going to adorn the god after she has accomplished her sacrifice (M. Bartels).

In Greece, Demeter is regarded as the representative of fertility ; she was connected with procreation, birth and the care of children, and was really the goddess of female life, especially in marriage. In Athens the Thesmophoria were celebrated in her honour ; and the women alone celebrated this festival on the 11th, 12th and 13th of the month ; Pyanepsion (24th, 25th and 26th of October) ; at it the wives invoked the Goddess, praying that as she granted increase to the field, so might she grant issue in marriage. The preparation for this festival (abstention from intercourse with the husband) began with the new moon, and with the ninth night before the festival. After this preparation, the wives from all the boundaries of Attica went to the sea between Halimus and Cape Colias. Here they sat mourning upon the ground, but afterwards held games and dancing on the seashore, after which they returned to Athens in ceremonial procession. In their midst were some who wore vessels on their heads which concealed the "precepts" of Demeter. The last day of the celebration was devoted to Demeter Calligeneia, *i.e.*, the Demeter, the fair-born, who generated beauty, fruits of the field and children. The purpose of the festival, which was perhaps to win the favour of Demeter for the birth of beautiful children, was regarded as fulfilled ; with gaiety and jesting they rejoiced in the newly won favour of the goddess and the coming blessings.

In Modern Greece even now, there are customs related to these. Until recent times, Athenian women, who were both expecting and wishing to obtain the favour of fate for a fortunate delivery, were seen to slide down the rock on the northern slope of the so-called Hill of Nymphs near the very old inscription *ὄρος Διός* at a place polished by much use. And, according to Pouqueville, there existed in Athens, not only among pregnant women but also among those women who wanted to be fertile, the custom of rubbing themselves on a rock in the neighbourhood of Callirrhoe, and, at the same time imploring the Moirae to be merciful to them. Bernhard Schmidt believes that this custom must be connected with the ancient cult of Aphrodite Urania, who was worshipped in this district (*i.e.*, on the right bank of the Ilissus but a little above the Callirrhoe) as the oldest of the Moirae. On the other hand, Wachsmuth is not convinced that this assumption is sound. The rubbing of the lower part of the body on the rock might indicate that it was Demeter, the earth mother and the representative of fertility, whose influence, as Demeter Calligeneia, was said to have been invoked by such behaviour, but whose place is now taken by the nymphs of Callirrhoe.

Among the Dyaks in Borneo also, the water gods called *djata* have a special influence on sterility which they inflict upon women arbitrarily or from which they set them free. Thus Hein reports :

"If barren women (and men, too) desire to be blessed with children, they arrange a great feast (called *Bararamin*) for a *djata*, to which one goes in a finely adorned boat to an abode of the *djata* and there fowls (and other birds), the beaks of which are smeared with gold leaf, are offered as a sacrifice by being thrown alive into the water or having their heads cut off and these only being sacrificed, the body, however, being devoured. In many cases, moreover, people appeared to be satisfied with figures of birds carved from wood."

The local museum in Bremen possesses, among others, charms from the Western (English) part of the territory of the Ewe-speaking peoples, and also the figure reproduced in Fig. 592 which was used for the bringing of children, and which was described and copied by H. Schurtz. The description given was based on information received from the collector, the missionary Spiess, and runs as follows :

"*Se*. In a little basket sits a figure like a human being, made of greyish-yellow clay, into which are pressed at fairly regular distances, cowries and the seeds, about as big as the cowries, of the *Caesalpinia bonducella*. Two cowries form the eyes: on the head are stuck a few hen feathers. Several cotton cloths are put between the sides of the basket and the lower part of the figure."

"The *legbawo* standing in the houses is designated as *Se*; it has chiefly the purpose of bringing children. One often finds a male and a female idol set up beside each other, and the genitals are also generally very carefully executed. In the *se* depicted here, this is by no means the case: whether an allusion to sexual relationships is to be seen in the cowries and the seeds is the question." [This would seem obvious since the cowry everywhere is the symbol of the vulva.]

On the Slave Coast of Guinea, among the Tshi Negroes, the childless woman is assigned to a fetish as its property in case it may give her children; if this happens, then the child is a fetish child, and is now the property of the fetish.



FIG. 592.—*Se*, a clay figure, used in fertility rites by the Ewe-speaking peoples, West Africa. Note cowrie shells. Städt. Mus., Bremen. (After H. Schurtz.)

In Abbeokuta, Bastian reports that the barren woman prays to the hermaphroditic form of the *Abbatalla*, which consists of a naked woman and a dressed man.

On the way from Malanga in West Africa into the interior beyond the boundaries of Angola, Lux found that the barren negresses wore on a string round their body, two little carved ivory figures representing the two sexes, as a fetish for making them fertile.

Among the feasts customary with the Masai, is one which is celebrated only by married women in order to beseech God to give them children. Merker reports of it:

"It is called *iruga 'Ng ai ol adjo*, *i.e.*, May God listen to the word. In or near the kraal, the women meet in the forenoon, together with a magician (*ol goiatiki*) round whom they place themselves in a circle. Each woman then receives from him an amulet which she hangs on the hip string of her hide apron. Then he sprinkles their heads and shoulders with a medicine which, besides milk and honey-beer, contains another secret ingredient of his own, for which he is rewarded with a few sheep. Then the women dance and sing all day long under the shadow

of a tree and, at night, in the kraal until day dawns. In the songs they repeat continually the following prayer : ‘ God, I implore thee ; I beg ; we beg thee alone, we beg for children, for fertility for the barren woman.’ ”

In the Grihya-Sûtra of Hiranyakesin occurs a spell which is supposed to give fertility to a woman. In Oldenberg’s translation it reads :

“ May Vishnu make thy womb ready ; may Tvashtri frame the shape (of the child) ; may



FIG. 593.—The Linga (Master Mihr Chand), India. Seventeenth century. Staatl. Mus., Berlin. (After Kühnel.)

Pragâpati pour forth (the sperm) ; may Dhâtri give the conception ! Give conception, Sinivali ; give conception, Sarasvatî ! May the two Asvins, wreathed with lotus, give conception to thee ! The embryo which the two Asvins produce with their golden kindling-sticks : that embryo we call into thy womb, that thou mayst give birth to it after ten months ” (*Patala*, 7, sect. 25, p. 199).

Schmidt ⁹ says :

“ Certain gods of the Hindu Pantheon are said to be accessible to the prayers of barren women who, to entreat the earnestly desired blessing of fertility, often undertake long, wearisome and expensive pilgrimages to certain shrines. The seven pagodas between Madras and Masulipatam is a place specially favoured for that purpose, and Miss Billington heard Southern Indian women assert that favourable results frequently occurred. The rites and ceremonies are, however, according to old reports, of a somewhat mystic and phallic kind, so that it is perhaps best not to enquire too closely into the acts of sacrifice which have to be done on these occasions.”

According to what Jagor heard verbally, sterile women in Bombay, in order to become fertile, resort to a great Linga (the image of a male member as a religious symbol) and walk round it in a circle praying. Not far from Bombay, as Haeckel reports, is situated the Brahmin village Walkeshwar, where the highest Hindu castes (Brahmins) live to the exclusion of unclean castes. Numerous little temples enclose a square pond lying in the middle of the village, and in the innermost of these temples lies a sacred bull (*cf.* Fig. 245). Other objects of worship like the bulls adorned with flowers, are stone symbols of fertility, some of them obscene and grotesque in form (*cf.* Figs. 593 and 594). These are also scattered in many places



FIG. 594.—Entrance to the Linga-Grotto of the cave at Elephanta.
(After Woermann.)

on the road inside and outside the town of Bombay, and are painted red. They are visited by childless married people, and their red parts are stuck over with bits of gold paper, and are also covered with fragrant flowers in order that the worshippers may be blessed with children by this offering of gifts.

In Poona, Jolly visited the renowned sanctuary of the goddess Pārvatī, which lies on a steep hill. Before a sacred tree a *Ficus indica*, in the middle of the village through which he came, was a crowd of pious Hindu women busy worshipping the linga or phallus and other symbols executed in stone. They were offering roses and painting the figures with red colouring materials, which they afterwards employed to dab their own brows. The mark on the forehead was renewed each morning after the bath.

Among the Badaga in the Nilgiri Hills, married people whose union is barren, are accustomed to promise a god a little silver sunshade or a hundred coconuts if he will bestow a child on them. On the day of the christening, these vows are fulfilled. Barren women in their need, turn to Māhalinga (*Maha* = big, *linga* = phallus; a name of Siva) who, in many places in the mountains, is worshipped in the form of an upright stone.

One class of these objects, considered particularly effective on account of their supposed miraculous origin, are the stone axes sometimes found in the ground during ploughing, which are regarded as having sprung spontaneously from the earth,

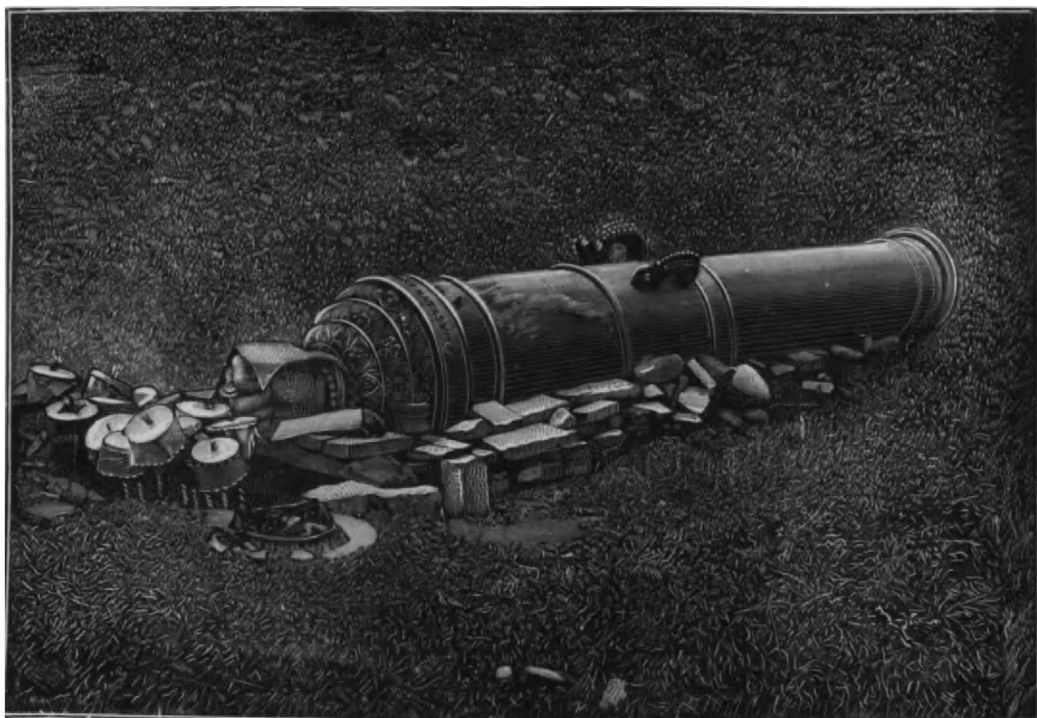


FIG. 595.—Ancient Dutch cannon at Batavia, on which barren women ride and before which offerings are laid. (Photo : F. Schulze, Batavia.)

and hence are also called *swayambhu* (self-born). This recalls the miraculous power which is, in Germany too, ascribed to the so-called thunderbolts, the stone axes of antiquity (see Frazer,¹ II., 374).

Between Tanjore and Trichinopoli, many hundreds of great horses made of baked clay are to be seen. These are offered up to the god Ananga by sterile women so that he may give them children. He too has to thank the great intelligence for his miraculous birth, for Ananga's parents, Siva and Vishnu, are both male. Hette also, a special goddess of the Badaga women, who has many temples in the Nilgiri Hills, is frequently invoked.

“The god Hanumān grants descendants, hence, in Bombay, the women sometimes go to his temple early in the morning, undress completely and embrace the god. His gross image, states Schmidt,⁸ smeared with oil and red ochre is to be found everywhere in almost every Hindu village of any importance.”

In the Amboina Group, barren women offer up a sacred stone, and afterwards pray in the temple.

In Java, an old Dutch cannon which lies in the open near Batavia, has a similar power and significance. The women in their best dresses and adorned with flowers, are accustomed to sit astride upon it, often two at once, and at the same time they put down offerings of rice, fruits, etc., which are then, of course, pocketed by the priests (see Kiehl, Giglioli, Wilken ⁴).

The miracle-working cannon is reproduced in Fig. 595, and laid around it can be seen all kinds of offerings, particularly little sunshades, which play a great part as votive offerings among the tribes in the Dutch East Indies. If we look at the cannon closely, we understand how it has come by its repute as a bringer of fertility. The head, which forms the closure of the barrel towards the back has the form of a human hand, the fingers of which form the so-called *fica*, *i.e.*, they are clenched to a fist, and the thumb protrudes in doing so between the index and the middle finger. This finger position is generally regarded as phallic; it is certainly in relation to this that this cannon, according to popular belief, can provide woman with children (M. Bartels).

According to Pander, Hodous and Réville, the Chinese worship Kwan-yin as the goddess who brings children, and perhaps they have done so from pre-Buddhist times. Kwan-yin is often represented as a child. The very pretty statuettes of her resemble closely images of the Madonna.

The Oroke of the island of Sakhalin, appear to make a barren marriage fertile by hanging a particular idol over their bed. Poljakow reports :

“There was a group which represented a woman and a seal sleeping together under one blanket. I have already learnt what an important material significance the seal possesses in the life of the Oroke and Gilyak. I was also convinced that a religious significance was assigned to this animal so that I found it difficult to comprehend that of the idol.” Poljakow took the idol from one man and hung it at his bed, but he begged to have it back again as he had it as a protection from stomach-ache, which statement, however, was false.

On Ceram, the priest, who afterwards consumes the offering with his comrades in the village, prays with the wife thus :

“Lord of the firmament, Lord of the Earth, heaven, earth, be merciful and give me a child.”

The wives of the ancient Peruvians who desired children used, according to Tschudi—

“To wrap a little stone in a piece of cloth and wind threads of wool round it. They then laid this stone near a clump of rock and worshipped it with little offerings. This swaddled stone was called *Wasa*” (*cf.* Vol. I., 474).

The Teutonic god Frö or Freyr was also the god of love and fertility; midsummer's day appears to have been dedicated to him, for this day is, even now, superstitiously related to love, wealth and fertility. Nuts are the symbol of fertility, and also of sexuality (see Zingerle ²). The popular saying runs in Swabia, Silesia and Thuringia: “If it does not rain on midsummer's day, then there will be many nuts”; and in Lech they say: “If it rains on this day, then the nuts will be wormy and many girls will be pregnant” (Wuttke).

In Tyrol, so-called “*Muettern*” are hung up among miracle images. These are little waxen toads which are intended to represent the uterus. People believe (as already mentioned above, Vol. I., p. 385) that women have a toad-like being of

this kind in their bodies. Many a mother has lain down and opened her mouth while asleep; then the *muetter* crept out to the nearest water where it bathed. Now, if the woman had meanwhile not shut her mouth, the returning *muetter* crept back, and the woman who was sick was whole again; but, if the woman had meanwhile shut her mouth, then she died. Zingerle¹ states that barren women make offerings of these wax figures to images of the Madonna and to the Holy Sorrow.

Fig. 596 shows one of these toad-like waxen *muetter* which M. Bartels bought in 1890 at a wax chandler's in Salzburg.

In Catholic countries prayers to the saints are considered helpful for the removal of sterility; thus, in Styria, according to Fossel, pilgrimages to miracle-working images, for example, to Maria Zell, to Maria Trost, to Maria Lankowitz, to the Mariakulm on the Frauenberg near Admont, etc., are held in great esteem.

In the province of Bari in the south of Italy, St. Francesco di Paolo is stated by Karusio to be highly reputed as a helper in case of sterility. According to Demič, in the Russian department of Chernigov, people believed that a pilgrimage to the Lavra, the famous convent in Kiev, in order to touch the saints in the catacombs, cures sterility.

The Madonna "Mary in the wood" on an oak between Alt-Trier and Hersberg confers the blessing of children in Luxemburg. On the other hand, Saint Lucia bestows her blessings in Walloon Luxemburg. E. de la Fontaine states that near Verdun, the armchair of this saint was to be seen in a rock. Childless women when praying occupy this stony seat, and await with confidence the fulfilment of their desire.

French women also, who were barren, called upon the saints in their need, but in this case, male saints performed the miracle. Until the time of the Revolution, there existed in Brest a chapel of Saint Guingalois (+ 532) which bore the symbol of Priapus.

Sterile women, or those who were afraid of being so, went to this statue and, after having scratched or scraped that which may not be mentioned and drunk the powder obtained thus in a glass of water, went away with the hope of being fertile (see R. Charles).

St. Guerlichon (or Greluchon) was similarly worshipped, and according to Harmand, has the same results to show.

In the Pyrenees near Bourg-d'Oueil is to be found a male figure in stone, one and two-thirds of a metre in height, which is called *éra peyra dé Peyrahita*. Barren women rub themselves on it and embrace and kiss it (cf. also Fig. 597, showing phallic coins, etc., found in the Seine).

We must therefore, it seems, recognise in these things the remains of an old phallic worship, and it is obvious and, indeed, not improbable that, in this case, they were originally ancient heathen gods who, in the course of centuries, were gradually transformed into Christian saints.

Also in Australia, in Fiji, and in New Zealand, according to Goldie, phallic stones are known, to which people turn with prayers and adjurations. Such a well-known Maori stone stands on the bank of the Awaroa River (Kawhia district) in New Zealand.



FIG. 596.—Votive toad in wax. Salzburg.

10. SUPERNATURAL HUMAN HELP AGAINST STERILITY

In the forefront of these human beings who can afford effective help to a woman who is afflicted with the curse of sterility stand the priests, as may be easily understood. Thus Büttikofer states of the Vei-negroes in Liberia that

“superstition prevalent among the natives makes a lucrative existence possible for the numerous witch doctors, called *buli-kai*, in the Vei language, who earn much money, not only by the making and blessing of *grigris*, but also by magic exorcisms and the like. A proper *buli-kai* can give advice about everything; e.g., if a woman gets no children (which is considered a great disgrace) then she ascribes this to a spell which has been cast upon her, and she goes to the witch doctor for advice, for he is ready to exorcise the spell for a small remuneration. Then saras must be laid, or the evil spirits put in a favourable mood in some other way. The witch doctor often demands a whole series of objects. Some of them are buried or thrown into the river after the necessary incantations have been pronounced over them; others are destined to be ‘sold,’ by

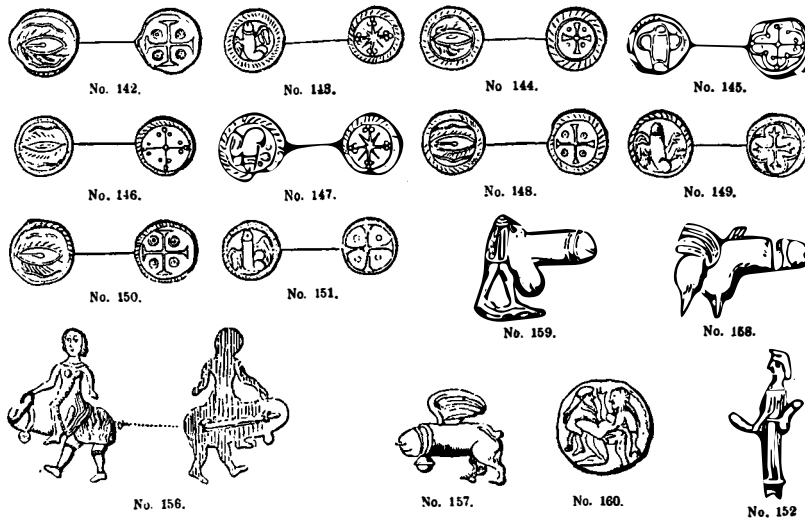


FIG. 597.—Phallic tokens found in the Seine. Formerly in the Musée de Cluny, Paris. (After Dulaure.)

which the doctor means that they are to be handed over to him. Among the latter is a certain quantity of rice or most usually a white fowl. The magician always states the exact colour of this offering, and if, for example, a white fowl cannot be provided, then a piece of white cotton cloth must take its place. White and red appear to be the two colours which are preferred to all others in these objects. Besides this, the doctor makes all sorts of rules for his clients about avoiding certain foods. Thus one finds, e.g., persons who must not eat fowl; others must avoid monkey flesh; and others again who must not eat the flesh of a specially mentioned species of antelope. These rules of abstinence often pass from parents to children and grandchildren. Once, when I happened to ask one of my servants why he would not eat monkey flesh he answered: ‘Because my mother must not eat it.’”

Seligman² reports that among the Sinaugolo in British New Guinea, certain women are reputed to have the power to help other women to get children. They are visited especially by women who are jealous of their husbands. The woman concerned places herself first before and then behind the petitioner, and makes manipulations over her abdominal region, meanwhile muttering incantations and sprinkling chewed areca nut over her abdomen.

At Gujarat in the Punjab is situated the temple Shadowla, in which the temple service has since the seventeenth century been attended to by microcephalic priests, the *Chua* (rats, so-called from the malformation of their skulls).

“The temple is visited secretly by women, who spend the night there, and



FIG. 598.—Chinese witch priestess who brings the blessing of children to women. (From a Chinese woodcut in the Ehrenreich Collection.)

in the morning find only one *Chua* at their side, which is said to be favourable to conception and to produce Chuas” (Jagor⁸).

Schmidt⁹ states that in India, fakirs are regarded as supernatural dispensers of fertility. “Married women come to them and kiss their membrum, whilst they

meanwhile stroke the women's heads and murmur prayers. This is to be seen daily on the military roads," adds his authority, Ives.

In China there are temples of fertility. Eduard Hildebrandt visited one of these. The devotees consisted solely of pretty young Chinese women; and the priests who were on duty in the temple seemed to be earnestly employed in comforting the petitioners in their grief over their childless marriages, and in indicating that constant visits to their temples would bring better things in the future.

Chinese women, however, know another way to provide themselves with children. For this the help of certain priestesses skilled in magic is necessary, who are accustomed to go about the country especially for this purpose. Fig. 598 represents one of these priestesses as depicted in a coloured Chinese woodcut. In the right hand, she holds a metal gong which she beats with a thin little stick which she holds in her left hand. On her back, she has a carrier, shaped like the so-called *kraxen*, commonly used in the Austrian Alps. On this carrier hang two dolls which are meant to represent little children. How the women use these dolls in their fertility spells we are unfortunately not informed. This magic must be related to the above-mentioned *Perchten* belief in Germany (Vol. II., 283 & ff.) or to the *debata idup*, the deities of life of the Battak of Sumarta (see Fig. 599).

On the Babar Islands, the women take what seems to us extraordinary measures when the blessing of children is denied them. Riedel¹ states that :



FIG. 599.—*Debata idup*. Male and female figures carried on the back of barren women like children, Sumatra. (Mus. f. Völkerk., Berlin. Photo: M. Bartels.)

“they seek the help of a man who has many children so that he may pray to the god for them. The husband of the woman concerned then gathers 50 or 60 kalapa fruits whilst she makes a doll half a metre long out of red calico. On the appointed day, the man in question comes to the house of the woman and makes the married couple sit beside each other, and sets before them a plate with sirih pinang and a young kalapa fruit. The wife holds the doll in her arms as if she were suckling it. The fruit is opened and with the water contained in it the man and wife are sprinkled. Then the helper takes a hen and holds its feet against the woman's head whilst he says : ‘Oh Upulero, make use of the hen ; let there fall ; let there descend a human being, I beg thee, I implore thee, let a human being fall ; let him descend into my hands and upon my bosom.’ Immediately, he asks the woman : ‘Has the child come ?’ Whereupon she answers : ‘Yes, it is sucking already.’ Then he touches the husband's head with the

“they seek the help of a man who has many children so that he may pray to the god for them. The husband of the woman concerned then gathers 50 or 60 kalapa fruits whilst she makes a doll half a

hen's feet and mutters a few incantations. The hen is then killed by being struck against the door posts, is opened and the blood vessels of the heart examined. It is thereupon put on a plate and placed on the sacrificial altar in the house. Then it is announced in the village that the woman is pregnant, and everyone comes and congratulates her. Her husband borrows a rocking cradle in which she lays the doll and for seven days long she treats it as a new-born child."

In similar manner, the barren Nishinam (Southern Maidu) woman in California is given a grass doll by her friends, and in order to remove her sterility, she lays this doll on her breast singing cradle songs (Powers).

Among African tribes, also, we find the doll a means of helping to get children. Fabry reports from the life of the Wapogoro in Tanganyika :

"For women who would like to have a child, or have lost one in death, there is a doll. A dry bottle gourd bears at its upper end a bundle of short strings to which dried seeds of the wild banana are fastened. This plaything is a bad imitation of the doll of the Wangindo, who also take a bottle gourd, but they adorn it lavishly with pearls and instead of the banana seeds, they put on strings of pearls. The doll is tenderly rocked and fondled, and if one treats it with special tenderness, then one soon gets a child."

The Ethnological Museum in Berlin possess two wooden figures, *debata idup* (see Fig. 599) from Sumatra. Barren women who beg to be blessed with children must carry these on their backs like babies. They are very crude representations of a man and a woman, both quite naked, and certainly adult. Both figures have the hands folded over their genitals.

Another kind of supernatural help in sterility we find in a manuscript collection of popular remedies from Bosnia of the year 1749, which is made known to us by Truhelka. There we read :

"Let the woman who bears no children seek a woman who is in this blessed state ; let her take leavened bread through a fence from her mouth into her own mouth, eat it up, and she will give birth to a child."

Among the Masai, according to Merker, it is the boys destined for circumcision in whom a special power to bestow fertility is inherent. The time of circumcision is ended by a festival called *en gabata*, which is managed by the boys who are destined for the next circumcision. At this many women are present, and especially all those hitherto barren. "The former," adds Merker, "appear partly as the mothers of the boys who are celebrating, partly as companions of the sterile women, and these again come in order to have fresh cattle dung thrown over them by the boys for, by this means, according to a conviction generally prevalent among the Masai, they will become fertile." Since, according to the same author, women who betake themselves to neighbouring territory to sell vegetables and the like to strange tribes, smear their brows and cheeks with cattle dung in order to protect themselves from the magic arts of the strangers, the matter here also is a kind of protection from enchantment ; naturally, on the other hand, the connection between the boys' festival and the struggle against sterility is not incomprehensible.

In the customs practised in Upper Austria and vouched for by Pachinger,² we have obviously a kind of sympathetic spell. A barren woman who wants children wraps herself naked in a tablecloth which has been used for a meal at a baptism.

A very strange measure against sterility, which must also be designated as a supernatural human aid, has been conceived by the Chinese in the southern part of that country. The missionary, Leuschner, reports that if the male offspring

anxiously expected by a married couple fails to appear, then a wife is sought for the son who is not yet even conceived, and is received into the house of the pseudo-parents-in-law. The Chinese call this *erecting a pillar of flowers*. Now it is firmly hoped that the longed for son will not keep them waiting long when he sees that a desirable wife is already awaiting him in this house. If, however, the still unconceived husband will not come in spite of this, then his unlucky pseudo-wife has to be heavily indemnified. The parents-in-law, and especially the unfortunate mother-in-law, whose position in the house is greatly injured by her childlessness, torment and annoy her to within an inch of her life, for if she were not such a lazy, barren, unattractive creature, the husband still tarrying among the little male spirits, would have been found long before.

11. THE HELP OF THE DEAD AGAINST STERILITY

A very naïve but truly human notion lies at the root of a measure which, according to Krauss, is taken by the Southern Slavs when barren women wish to bear children. The unhappy woman betakes herself to the grave of a woman who has died whilst pregnant. She calls her by name, bites off some of the grass growing on the grave and repeats her invocations in which she implores the dead woman to give her the fruit of her body. Then she must take some of the soil from the grave and carry it about in her girdle.

Similarly, among the wandering gipsies of Transylvania, the barren woman must eat grass from the grave of a woman who has died in childbed. This has to be done, according to von Wlislöcki,⁴ while the moon is waxing.

Among the Northern Basuto in Malakong in the Northern Transvaal, it is not the wife but the husband to whom the blame of childlessness is attributed. It is, therefore, he and not the wife who has to seek treatment. In an account the missionary Schloemann writes :

“ Afterwards our (national) assistant Salomo came and said that, at any rate, the heathens also were aware that one might kill one's nearest relation by vexing him : often after someone has died of grief, they were convinced of their guilt by their conscience. Their everyday speech says plainly : ‘ He died of grief.’ The conscience of a man who has much vexed a dead man is often awakened by misfortunes of some kind, such as mortality among the children, or continued lack of them, sickness among the cattle, etc. The man concerned at first bears these blows with dull resignation, but soon has recourse to the magician, and has to bear much expense so that the latter may drive misfortune from house and farm by means of all kinds of healing herbs, traditional prayers and incantations. But, if he sees that the evil fate does not leave him in spite of everything, then he relinquishes his effort, his conscience awakens and he says : ‘ It is your father (or someone else) whom you have vexed unto death who has sent you ill-luck.’ His plan is then quickly made ; the dead man must be propitiated so that good fortune and peace may return. He goes into the wilderness, seeks the grave of his father, and confesses to him in prayer what his trouble is. ‘ Father, I have no children for I have sinned against you. Let your anger cease and turn your heart to me again ! ’ Then he prays, and in doing so takes some object from the grave, such as a pebble or a twig, and takes it home with him. There it becomes his fetish, which he carries about with him as a charm, or else he puts it somewhere in his courtyard. The close connection which he now has with the object worshipped by him indicates the communion re-established between him and the dead man, which is the whole value of this worship. Such a fetish is the family tree which serves as entry to the great place of assembly in the capital. In it the dead chief Mancopane is worshipped for the propitiation of whom it was deposited there.”

We find grave-worship again among some other tribes. This may again be divided into two groups according to whether the buried person in question is male or female. Of the latter group, we shall speak again later. In the former group, to which the example just reported belongs, a few more facts may be classified. Thus Demič reports :

“Barren Kirghiz women betake themselves at night to the graves of prominent persons and sacrifice a ram and spend the night there praying near a blazing fire.”

In order to get a son, the tent dwellers in Morocco take many superstitious precautions. During the pregnancy of their wives, the husbands make a pilgrimage to the sacred town of Nesan and try to get from the principal shereef or scribe a firm promise that the All-Highest will bestow a son on him, for which the shereef takes a horse as a present : to be quite certain, the pious husband no doubt then makes the pilgrimage to Fez also to the tomb of Mûlâi Idris and offers up a sum of money to the scribes of the house of God there (see Rohlfs).

Near Eskishehr in Asia Minor, according to Dernburg, is situated the grave of the sacred hero Sidi Ghasi Battal. “In the *Kibla*, the niche turned towards Mecca (the sepulchral chapel of the saints), are hung votive inscriptions of gratitude such as we have seen hanging in Catholic Churches as thanks for restoration to health effected by the saints. The saints still perform miracles for the faithful. Barren women obtained the blessing of children here by putting bands on the coffin of the powerful hero.”

Riedel ⁸ states that in the Watubela and islands of the Sula Archipelago that :

“Barren women go with their husbands to their parents’ graves, or, if they are Moham-medans, on Friday to the grave of a saint, in order to pray there in company with a few old women. They take with them some *piga mena-mena*, a filled *sirih-kober*, a bamboo with water and a live goat, or if pagans, no doubt a young pig. The grave is then visited, the *piga mena-mena*, with the water poured into it, and the *sirih pinang* are laid upon the grave whilst the goat or pig is tethered nearby. After this has been done the husband says in a whisper : ‘I inform the grave of my parents that if I get a child I will sacrifice a goat (pig) or give food to the people ; I request specifics for getting a child and medicine which I can drink ; and if a child is given to me I will come back (to make a sacrifice).’

“The medicine in question is revealed to the wife as well as to the husband in a dream. Then the couple wash with the water which was consecrated by having stood upon the grave and eat the *sirih pinang* together. A portion of the latter is left behind in a dish on the grave. Then they return to their abode and take the goat or pig with them. If the woman becomes pregnant, then the said animal is slaughtered, cooked and set before the Negari comrades so that they may praise and glorify the Niawa, the spirit of the father or the saint whose grave was visited.”

From the neighbourhood of Padang in Sumatra, Maass ² speaks of a little holy rock grotto in which Malay women are accustomed to pray for children. He says :

“They scratch a little cross in the rocky wall as a sign that they were in this sanctuary. Usually this happens over the saint’s grave, which is enclosed with rough stones. Those women whose prayers have been heard by the patron saint, that is to say, those who have had children conferred upon them, obliterate the cross they have made.”

South-east of Great Achin in Sumatra, there is, according to Jacobs, a grave covered by an awning to which sterile women bring offerings and eat some of the soil of the grave. In this grave lies the penis of a man whose jealous wife cut off his genitals when she surprised him cohabiting with a fellow wife, whose turn was not

on that day. The name given by the Achinese to the unlucky man who suffered this attack is *Tuan Déboh* (penis man) ; the women, however, call him *Tuan salah nama* (the man with the indecent name).

In the East, some women who want offspring step over the body of a decapitated man seven times without speaking. Others, with the same object, dip a piece of cotton in the man's blood and use this in a special manner.

According to Curtiss, childless women once rushed upon an executed murderer in Jerusalem in order to conceive by him.

The wandering gipsies in the Danube districts still have the custom of putting nails from coffins or from tomb crosses into water which must be drunk by childless married people, in order to get offspring, while the moon is waxing. Among the Turkish gipsies the corpse of a dead man is sprinkled with the blood of a black hen. When the drops of blood on the dead body are dry, then they are carefully scraped off. Sterile women then mix this blood with asses' milk which they then drink out of a pumpkin cup (see v. Wlislöcki ⁶).

We must regard this also as help given by the dead man for sterility ; and to this class belongs also the following which takes place, states v. Wlislöcki, ⁶ repeatedly among the gipsies. They make the so-called "*dead-men*" (little human or animal forms) from a dough of resin taken from the trees of a churchyard, together with powdered hair, bits of the finger- and toe-nails of a dead child, and some of the ashes got from the customary burning of the clothes of a dead man. These little figures are dried in the sun ; and, when opportunity offers, ground to powder. If barren women mix some of the powder thus obtained in a millet porridge and eat it while there is a waxing moon, then conception will be hastened.

Another horrible custom of the ancient Hindus which Schmidt ⁹ reports, must be mentioned here. He states that :

" At the horse sacrifice, the chief wife of the king, as soon as the animal is dead, puts its penis in herself, at which rite they are sufficiently modest to conceal this act (for attaining fertility) from the spectators by means of a curtain. This revolting duty—revolting, of course to us, but by no means so to the Hindus—the first wife of the king had to perform also at human sacrifices."

12. SOULS OF TREES, SPARKS OF FIRE AND OTHER AIDS AGAINST STERILITY

Many peoples believe in a sympathetic connection between the life substance of certain trees and plants and the destiny of human beings. On the most important thing in a woman's life, namely, the conception of children, the soul of a tree is able to exert its influence.

The Maoris in New Zealand, according to Goldie, regard human beings and plants as descendants of the god Tane-nuia-rangi, but they come from different wives. The trees of the forest were first-born, and they too had souls. The sterile apply to this tree-soul for help, but the kind of tree does not here come into the question. The sterile woman goes to a tree which possesses a male and a female side and embraces it whilst a priest sings incantations : if she embraces the male side (east), a boy will be born to her, in the other case, a girl. Another tree has a sterile and fertile side ; with closed eyes, the wife goes to the tree and embraces it for a long time ; then she goes away without seeing the place she has embraced. The accompanying priest, however, sees it ; if the woman has embraced the barren side, then she will never have a child.

The wives of the Chin in the Himalayas direct their prayers for children to the chili-tree (v. Ujfalvy).

Among the Kara-Kirghiz likewise, trees, such as apple trees, to be precise, are regarded as places of refuge for barren women. Thus, in one of their poems, recorded by Radloff and Vámbéry, we read :

“ Chirichi, daughter of Aidar
 By Jacyb Chan once espoused
 Though I, too, espoused Chirichi
 Ne'er have I kissed a child.
 Chirichi never bound her hair
 Imploring God for help at me she looks,
 Never did her hips firm bind
 And bore me never children,
 Since Chirichi I espoused
 Have fourteen years gone 'by.
 She ne'er went to holy places,
 Turns not by the apple tree.
 Oh, have mercy, my Lord God.
 Ne'er spent the night by healing spring.
 May in the womb of Chirichi
 A boy even now arise !
 Could I her hips now bind
 And unto me a son be born, etc.”

Again, Krauss ¹ states that among the Southern Slavs the two following spells rest upon the old belief in the tree-soul, which has its abode in the tree in the form of a wood-grub. The woman takes a wooden dish full of water and puts it under a roof beam where the wood dust falls from the worm-eaten wood. Her husband strikes the beam with a heavy object and shakes out the dust. If the wife be lucky in catching even a speck of the dust she drinks it with the water. Many women search in the knots of the hazel for a grub and eat it if they find it.”

To the same group of ideas belongs also the following spell from Bosnia, recorded by Truhelka. The woman who wants to get rid of her sterility must, on the first Sunday after the new moon, look for three grubs in a wild dog-rose hip. If she is lucky enough to find them, then she climbs on a willow tree, looks towards the sun, and devours them. While doing so, she says thrice :

“ The sun was setting behind the mountains and I shall become expectant.”

Among the gipsies, v. Wlislöcki ⁶ states that barren women are supposed to let a witch cut a piece from every nail on their hands and feet and some hair from the crown of their heads by the light of a waxing moon. The cuttings must then be sewn into a little bag and put in the bore-hole of a tree. The bore-hole is closed with wax, and as soon as it is overgrown with new bark, the woman can regard herself as cured.

The Miao-tse, the original inhabitants of the province of Kwang-tung, as the missionary Krósczyk reports, have peculiar customs for achieving fertility. With them, when a marriage is childless, a basket is taken, white paper is put in it, and a priest is employed to pray for this paper. The paper represents the Fa-kung-mo, grandfather and grandmother of the flowers who are spirits which keep back the soul of the child in a garden. The priest now brings offerings of hens or pigs to these flower ancestors in order to put them in a favourable mood. It only depends on the soul of the child being released from the garden, in which case, of course, the

child must make its appearance. The ceremony is called *Kau-fa*, i.e., praying to flowers.

From Bosnia, again, we have a prescription recorded by Truhelka :

“ If a woman has no children, she must search in the dung of an unknown stallion for whole grains of barley and cultivate them. When they germinate she must eat three grains, and she will bear a child.”

A spark from the fire is also helpful. Likewise from Bosnia Truhelka reports :

“ The spark from a fire also has the same power of making woman fertile. The woman holds a wooden dish full of water beside the fire on the hearth. The husband meanwhile strikes two firebrands together so that the sparks fly. After a few sparks have fallen into the dish the woman drinks all the water from the dish.”

The following customs, too, are dependent upon the purifying and expiatory power of fire :

Among the wandering gipsies in Transylvania, according to v. Wlislöcki,² the



FIG. 600.—Fertility magic. (From Petrarca's *Trostspiegel*.)

woman who is afraid she will be barren must drink water into which her husband has thrown glowing coals ; or, still better, has let saliva run, with these words : “ Where I am the flame, be thou the coal ; where I am the rain, be thou the water.”

A peculiar fertility spell which had best be inserted at this point, we find depicted in Petrarca's *Trostspiegel*. A woman with uplifted hands, as if praying, is standing among bushes, while heavy rain from a dark cloud showers down upon her. She has tied her dress firmly round her body with several strings. One string is close above her ankles, a second is about the height of her calves, and a third is tied above her knees. Whether it is a question of May rain in this case, or of the fertilising thunder cloud, is, unfortunately, not explained in the text. In the foreground kneels a man his hands stretched out towards heaven in order to receive a naked child from the hands of God the Father who looks forth in full splendour from the clouds (see Fig. 600).

M. Bartels states that here must be recalled the fact that various ancient Hindu writers mention a marriage ceremony at which the bridegroom puts a yoke-line round the bride who is dressed in a new robe, while reciting a saying : “ Then he fastens a yoke-line round the foot of the maiden's dress ” (see Schmidt ⁸).

Among the remaining sympathetic spells and methods which sterile women use, the amulet naturally plays an important part. We meet it among the wives of the Bakhtiari in Persia. According to Brehm, the Sudanese women also wear amulets against sterility hidden under their aprons.

The wives of the Moors in Morocco likewise adorn themselves with a talisman or amulet as a protection against sterility. A special favourite with them for this purpose is, we are told, the foot of a porcupine, to which is attributed the property of increasing fertility (see Schlagintweit).

Among the women of Mecca, Snouck Hurgronje states that the weaving of a magic girdle as a means of producing fertility is very common.

In Persia, the mandrake is valued as a charm against sterility ; there it is called man's herb (*merdum giāh*) or love herb (*mehr-e-giā*).

The gipsy women of the Danube area, if they are barren, wear "snake powder" wrapped in a baby's hood, next their skin. Then, if a pregnancy appears, this charm is thrown into a river so that the "snake may catch it up and thus turn it into poison." Here, again, we see the snake in direct association with fertility as we have already seen it connected with menstruation. For instance, the gipsies believe, according to v. Wislocki, that, if a snake is caught in Easter or Whit week, it is sufficient for a barren woman to touch it in order to be cured of her sterility. Besides this, however, she must spit on it three times, sprinkle it with her menstrual blood, and also utter the following incantation :

"Wax thick thou snake,
That I a child attain.
Thin am I now as thou,
Hence have I no great rest !
Snake, snake, glide hither !
If once I pregnant grow,
A cap to thee I'll give, an old one
So that thy tooth much poison hold !"

The cap refers to the above-mentioned baby's cap.

We have encountered already the sympathetic action of fertility of male animals or the characteristic parts of their bodies. We give some examples here.

The women of Masuren in West Prussia use the water which drips from the mouth of a stallion after drinking as a remedy for sterility.

According to Truhelka, in Bosnia it is written in an old manuscript :

"There is also a remedy if husband and wife cannot sleep together and have no children. Let them take a black cock, from the comb of which the husband shall suck blood, whilst the woman may suck blood from the lobes, and then let the cock out ; it is said that they will then have children."

In Samland, according to Spitzer, a woman who has not had her wish for children fulfilled because she has been bewitched, will have her prayers heard if she stands for three hours on the night of the solstice in the shafts of a carriage, in which a pregnant mare has been harnessed, and during this time tells her beads without interruption.

Both gipsies and the Keisar islanders have an egg spell. Among the gipsies, the husband sometimes takes an egg, makes a very tiny hole at each end, then blows the contents of the egg into the mouth of his wife who gulps it down.

Barren women on Keisar take a hen's egg, go with it to an expert old man and ask him for help. He puts the egg on a *nunu*-leaf (*Ficus altimeraloo*) and presses

the breasts of the woman with it while muttering words of blessing ; then he cooks the egg in a folded *koh*-leaf (*Borassus flabelliformis*), takes a piece of it, lays it again on the *nunu*-leaf and gets the woman to eat it. Then he again presses the nose and breasts of the woman with the leaf and strokes her right hand and left shoulder from top to bottom ; then finally rolls a piece of egg in the *nunu*-leaf and has it kept in the branches of one of the highest trees near the dwelling.

In Styria (Frohnleiten), in the case of sterility, the woman is supposed to shave off gold from her wedding ring and eat it.

The barren Saxon woman in Transylvania is supposed to appropriate water secretly from the baptismal font on Midsummer day and then wash herself with it (see v. Wlislöcki ⁵).

On Engano in the Dutch East Indies, we come across a custom with which we shall find analogies on other occasions.

Here, " when a marriage remains unfruitful, many of those who desire children assume the name of an animal, at times that of a dog, to which animals they give names as we do in Europe ; a chief who visited von Rosenberg was called ' *Pah*,' after his favourite dog."

In this section we must glance at the attempt to lead astray harmful demons and turn their attention away from the human beings they pursue.

There is a remarkable custom practised in Japan, where women who would like to experience the joys of motherhood crouch in the place where a birth has just taken place (ten Kate).

The placenta also often plays a part. Thus we learn from Goldie that the sterile Maori woman stands with legs wide apart over a fresh after-birth. A similar idea lies at the root of the custom of the sterile Ainu woman when she sits with bare buttocks on the placenta of a woman who has just brought a child into the world (see Pilsudski).

An interesting fertility spell in which the woman in a sense " binds fertility " round her, is shown in the following custom reported by Pachinger. In Upper Austria and Linz, a woman who, on paying a visit, enters the room where a birth is in progress, must not only at once untie her apron according to the well-known idea of untying a knot and so not hindering the birth, but she will herself become fertile by putting the apron on very quickly. Also some twigs should be kindled from the broom with which the living-room has been swept.

CHAPTER X

FERTILITY

1. RACIAL DIFFERENCES IN FERTILITY

It is without doubt of anthropological interest to enquire whether among the different peoples of the earth, the power of multiplying and propagating the race exists in a uniform degree, or whether in this connection, natural differences can be indicated. Although the material hitherto at our command in this respect is imperfect, yet even with this scanty material it is possible to give good evidence that very considerable differences exist, and sometimes it may be possible to gain an insight into the causes underlying these differences.

First of all we must indicate how female fertility is to be investigated. For the "estimation of fertility" of a population means, as a rule, the crude birth-rate figures which merely compare the total number of births with the total population. An annual total of less than 30 births in 1000 inhabitants may, according to international statistical information, be regarded as low; one of from 30 to about 40 as normal; a total of 40 and more births in every 1000 inhabitants, however, as very high. However, several statisticians (Mayr among others) point out that this general birth figure should not be regarded as the proper indication of the fertility of the population because by this method of calculation, the total population is taken into account whilst only a fraction of the population actually participates in and is capable of propagation. If the total number of old people and children were everywhere in equal proportions, the conclusion would be less incorrect because then fertility would at least be proportional to the general total of births. Not even the proportion to the number of women in the population can give us correct information on the fertility of women, for the woman is only able to bear children for a certain period; and all those female persons must be excluded from the calculation who, on the one hand, have not yet entered upon the child-bearing period or, on the other hand, have passed this period and have thus become sterile. Lexis, in 1904, examined more closely the sources of error in the different methods of calculating fertility. He takes as a gauge of fertility "the number of confinements in the course of one generation, divided by the original number of this generation, which in its part, of course, apart from any migration, is equal to the number of the dead, who at all ages up to the highest attainable limits would issue from this generation," and he has devised a method of approximation by which the number of births within one generation can be fixed. Weinberg, among others, uses as a measure of the degree of fertility, a fertility index, "i.e., the proportion of the annual number of women who bear children (or even of the children born to the number of living women at the child-bearing period, according as to whether the legitimate and illegitimate births are taken as a whole or not) is then the general, legitimate and illegitimate rate of fertility to be differentiated." As we see, the problem is by no means simple and the methods employed for its solution are only practicable in an advanced state of statistical calculation. For anthropological purposes therefore, we must content ourselves in the absence of exact statistical information among primitive peoples, with the crude, empirical methods.

Now, when in two peoples of different race a different degree of fertility is found, we must, of course, be careful before deciding to judge it as a racial difference. For, on closer investigation, it is shown that greater or less fertility is very considerably influenced by a whole series of other factors. To this series belongs the "moral" position of the population, their social position and, together with this goes the relative age of the procreators.

For example, such differences are indicated by the standstill in the development of the population of France; whilst almost all over Europe the fertility of marriages is calculated as at least four children: according to the oldest calculations of Wappäus, there were

only 3.3, and according to the more recent reckonings, only 2.9 children to one marriage. The standstill in the development of the population of France, recently deplored by different Frenchmen, is not due to the decline in marriages but to the fact that marriages in France are less fruitful than elsewhere in Europe.*

In France, the prevailing two-children system is chiefly blamed as a hindrance to greater fertility. But other circumstances may also come into the question.

Not only in France, however, but in general in almost all European countries and also in America and Australia, there has been evidence of a considerable decline in fertility for about a generation; Weinberg gives the following table showing this.

DECLINE IN FERTILITY IN POPULATION OF THE WHITE RACES

Children born alive per thousand living women at from 15 to 50 years of age.

	General.					Legitimate.					Illegitimate.				
	1856 to 1865.	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1905.	1856 to 1865.	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1905.	1856 to 1865.	1866 to 1875.	1876 to 1885.	1885 to 1895.	1895 to 1905.
England and Wales	134	139	135	118	104	244	252	250	229	203	18	16	13	10	8
Scotland	132	136	133	121	111	275	278	271	255	235	22	23	20	17	13
Ireland	—	113	101	92	89	—	260	250	245	264	—	5	4	5	3
Denmark	129	124	133	128	118	228	225	244	235	217	28	27	26	24	23
Norway	132	120	127	125	119	262	242	262	259	247	20	19	19	17	16
Sweden	128	120	119	117	110	248	235	240	231	219	22	23	22	22	23
Finland	—	133	142	135	130	—	—	259	246	245	—	—	21	18	17
Austria	—	147	149	148	145	—	—	246	250	245	—	—	44	44	40
Hungary	—	—	172	173	156	—	—	234	225	216	—	—	41	49	41
Switzerland	—	116	117	110	109	—	236	239	237	215	—	10	10	9	9
German Empire	—	151	153	146	141	—	—	268	258	243	—	—	28	27	26
Netherlands	134	144	150	142	133	—	294	293	286	272	—	10	9	9	6
Belgium	127	131	132	118	114	276	270	264	236	213	16	17	19	17	17
France	101	103	99	89	85	172	172	167	150	134	17	17	16	17	18
Spain	144	—	141	137	—	—	—	—	—	—	—	—	—	—	—
Italy	—	146	148	149	138	—	253	248	249	232	—	20	24	24	19
Massachusetts	—	—	86	92	90	—	—	—	—	—	—	—	—	—	—
New South Wales	—	—	—	150	116	—	—	—	261	207	—	—	—	18	15

[Later figures give the same results. Thus the legitimate living births per annum per 1000 married women (15 to 49) for 1907-14 were 204 for Prussia, 214 for Bavaria, and 153 for Saxony. For 1908-13 they were 196 for Sweden, 116 for France, and 161 for Belgium; whilst for 1906-15 they were 171 for England and Wales, 233 for Holland, and 247 for Ireland. Beveridge, from whom the above figures are taken, is of opinion that the general fall of human fertility in Europe since 1880 is due mainly to deliberate prevention, the sudden spread of the practice being due to the more effective means employed.]

As no other reason in particular is apparent why this decline has recently set in, many enquirers have agreed with Beveridge and Weinberg when they seek the cause in the ever more extended use of the scientific methods of birth-control which are everywhere becoming known. The fact also that, as Weinberg specifies (particularly for Prussia and Denmark), fertility has declined much less in the rural communities than in the towns may also lend itself to the same explanation.

* Cf. "Fertility and Sterility in Marriage: their voluntary promotion and limitation, by Dr. Th. H. Van. de Velde, London, 1931.

Numerous social factors contribute to the greater or less fertility of a people. Among these, the age of the married people especially must be taken into consideration.

It has been found that the fertility of marriages attains its highest value when the parents are the same age or when the husband is from one to six years older than the wife. Quételet summarised the results found with regard to the influence of age on the frequency of births as follows : Too early marriages promote sterility ; from 33 years of age in men, from 26 in women, fertility begins to diminish. At this time it reaches its highest point. Other circumstances being equal, it is greatest where the husband is at least as old as, or somewhat older than the wife. Wappäus pointed out that inquiries, both in England and Austria, had shown that marriages at a certain time are most fertile ; that few and mostly delicate children result from premature marriages ; and that the fertility of the marriage is the more considerably lessened the further the relative age of the parents is removed from that quoted as most fertile.

The variation in the age of the parents is, of course, also dependent to some extent on the early or late attainment of puberty as well as on climatic influences. We know that in the southern countries with Latin populations, marriages are, on an average, concluded earlier than in the north, partly perhaps because there the most necessary requirements for the maintenance of a family are, for the great mass of the people, less and more easy to obtain than in the north. Thus it happens that in the south of Europe the marriage bond is almost universally more lightly concluded than among the inhabitants of Germany. So that here race and climate have far less influence than cultural conditions associated in turn with historically conferred circumstances and, moreover, dependent on the sexual relationships prevailing in their mode of life.

Hence it happens that, for example, peoples in the Orient who live under the same climatic conditions show great variations in fertility. Thus Damian Georg wrote of the peoples living in Greece that the Jews and the Armenians are there very fertile, but the Greeks less so and the Turks least of all.

The fact that the Jewish population everywhere shows great fertility is, however, certainly due to a special characteristic of this race.

The Southern Slavs, too, according to Krauss,¹ are very fertile.

Grebenschtschikov, quoted by R. Weinberg, also came to the same conclusion by reason of a total of 7,000,000 notified births in Russia, according to which the fertility of the women among the Slavs amounted to 210 per 1000, and among the Jews 117 per 1000. The fertility of the Slavs and, as shown above, of the Russian Jews is, therefore, very high ; it is only surpassed by that of the Mongolian Tartars (214 per 1000). These figures are, of course, not quite reliable in so far as their nationality could only be decided from their religious denominations (Orthodox, Jews, Mohammedans).

In North Germany a family of five or six children is considered a very large one. But, in many cases, this total is considerably exceeded. The statistics of the town of Berlin give detailed information about this. Although the population of the capital is extraordinarily mixed yet it is not incorrect to assume that the predominant part consists of North Germans.

Among the births which occurred, for example, in the year 1902, in 2847 cases, the seventh to tenth child came into the world ; in 637 cases, it was the eleventh to fifteenth child ; in 53 cases, the tenth to nineteenth child, and six times it was the twentieth to the twenty-third child.

Among the Americans, it will have been observed that their women in the fifth and sixth generations become even paler, thinner and more delicate. In fact, as the Bureau of Education indicates in its publication on "*Vital Statistics of America*," the number of births in America declines from year to year. This decline is steady, and is generally to be found in all the States : in Arkansas, Alabama, Massachusetts, Connecticut, Michigan, Indiana, Pennsylvania and New York. Certainly the surplus of births among the immigrants is greater than in any country in Europe, though constantly diminishing. The disinclination of the woman in America for the trouble of rearing children has no small share in this phenomenon.

Various authors also have asserted that there is quite a considerable decrease

in fertility in European families which have settled permanently in the tropics. "The fertility of the woman," says R. Virchow⁴ in his lecture on acclimatisation, "as experience proves, is very quickly destroyed in the tropics in a few generations." And even of Cuba, which has always been held up as a pattern of a tropical country suitable for the acclimatisation of Europeans, Ramon de la Sagra stated, "what has for a long time been accepted as a fact for the Antilles, especially for the French, that a white family, a Creole family, which is domiciled in the country and has not been revived by new European blood, proves to be no longer fertile beyond the third generation."

The effect, which emigration to the tropics exercises on the European woman is clearly described by Havelburg, one of the greatest authorities on this question, as follows : , ,

"It cannot be denied," he says, "that European women are, in general, more susceptible to the influence of acclimatisation in the tropics than men. Under the climatic influences and in the unusual environment, they tend to grow anæmic and nervous; and menstrual disturbances are extraordinarily common. According to earlier opinion, all European women living in the tropics were supposed to suffer from *fluor albus*; that it is so general cannot be maintained, although this disease is uncommonly widespread. One finds that the female sex is less liable to get malaria, but only because of domestic occupations.

"These women prove not strong enough for the duties of matrimonial life; they have miscarriages easily. As a rule, the young mother loses her milk. Later, endometritic diseases develop which lead to all kinds of uterine troubles, to amenorrhœa, menorrhagia, and end in sterility. Along with this, the general condition of the woman declines; she grows thin, her nerves and normal mental condition are shattered, and hence one often sees married life between Europeans very troubled. Whilst the husband's sexual demands increase, the wife's capacity for resistance declines. Although the sad conditions described above are very common, especially among young women who, out of well-ordered homes, go straight from Europe to the tropics, and bring to their young married life fantastic ideas instead of serious experience of life, and who cannot accustom themselves to the lack of the comforts which they have had in their European homes, yet there are women who accommodate themselves completely both to their conjugal life as wife and mother, and to the climate. Fertility is greatly reduced by all these ills and, as a rule, does not last beyond the fourth generation."

It must further be mentioned that among all the customs of Europe, periodic fluctuations in fertility have been thought to be governed by the prices of the most important means of subsistence, as many statisticians have pointed out. In general, favourable living conditions may be said to exercise a great influence on procreation in every population. Numerous considerations, as, for instance, too frequent pregnancy, and hence frequency of abortion; too early marriage; the spread of certain diseases, enervating habits of the male sex, etc., are obstructive to fertility.

One habit particularly common in many savage tribes may also limit fertility; that is prolonged lactation often continued for several years. For, in itself it is a physiological fact that usually nursing mothers do not conceive; and, moreover, in many peoples custom and religious teaching prohibit sexual intercourse during the whole of the suckling period. Consequently in these cases even the possibility of conception is excluded during suckling. The fact that many women, especially among savage tribes, expressly continue suckling their children for years, so as not to become immediately pregnant again, will be discussed later.

The assumption that cross-breeds from different races are mostly not very fertile is false; at least it has no general validity. Thus, there lives in Brazil a very numerous cross-breed population of negroes and Portuguese; in Chile, a similar one of Indians and Spaniards; in other parts of the continent, complicated crossings of

negroes, Indians and white people occur ; yet these threefold crossings in particular offer the clearest proof of the reciprocal fertility of the various races. Boas found in statistical investigations of North American Indian women, at the age of 40, there were, on an average, six children ; whilst among half breeds of these tribes and whites at the same age, the average was eight children. He came across childless women oftener among full blood Indians. Ritter reports of the Aleutian women that their marriages with Russians were more fertile than those with men of their own tribe. The mixed race in Paraguay surpasses in fertility both the races from which it sprang. The Mulattos (the descendants of white people and negroes), spread through the European colonies as well as the South American States, are particularly prolific. Le Vaillant says : " The Hottentots, when they marry among themselves, get three or four children ; when they unite with negroes, they triple this number and increase it still more when they mix with the whites " (*cf. v. Reitzenstein* ¹⁰).

E. Fischer, speaking of the cross-breeds in former German South-west Africa, says : " The number of children is very considerable : I am taking into account 44 marriages, in which production may be regarded as having ceased, they have together 339 children or 7·7 per marriage ; the totals for single marriages fluctuate from 15 to 0, but in only seven marriages are there fewer than four children. These are cross-breeds from four to seven degrees ; the majority pure bred, half-breed with half-breed, from the first Boer-Hottentot mixture. The fertility is superior to that of the pure Boers which I calculate (in British South-west Africa) at 6·3 children per marriage. The proportion of the sexes is not changed in comparison with the parent races. The mortality, especially the child mortality, is very low ; the general constitution, the productive power and the general health of the mixed peoples are excellent. In this case, it is a question of a tribe which, it is true, keeps on absorbing pure European and pure Hottentot blood here and there, but, in the main, multiplies itself very typically as cross-breeds."

Now, if we make a survey of the state of fertility among the various nations of the globe, it must be confessed in advance that most of the evidence which we have been able to bring forward is lacking in statistical proof.

In any case, we have not much reason to occupy ourselves here with this question which is one not by any means confined to women but is of interest to the whole human race.

2. FERTILITY AMONG ASIATIC PEOPLES*

Among the Trans-Caucasian peoples, particularly the Georgians and the Georgian Armenians, large families are rare, and some are of the opinion that it is not incorrect to seek the cause of this phenomenon in the too early conclusion of marriages. Chevsur marriages result in few children. More than three children are seldom found in one family, and this paucity is intentional. First of all, it is the custom to delay the marriage till the girl is 20 years of age ; and among the married, moreover, it is considered a great disgrace if a child is born to a young couple before four years have elapsed. Later also, there must be a further interval of three years before another confinement takes place. The people think, states Radde, that if the children followed more quickly upon one another, the younger would rob the elder of the necessary nursing. On the other hand, Minassian found, having made a great number of observations, that among the Armenian women, fertility was not inconsiderable. Among 400 women who had conceived the number of pregnancies totalled 11 (2 cases) ; 9 (8 cases) ;

* [The following sections are printed, not on account of the value or otherwise of the information imparted, but as illustrations of the kind of travellers' tales to which early anthropologists were indebted for their material.]

8 (18 cases); 7 (7 cases); 6 (59 cases); 5 (48 cases); 4 (64 cases); 3 (62 cases); 1 (76 cases). On the other hand, it is true that abortion is frequent.

The Bedouin women are, according to Layard, not very fertile. He thinks that lactation lasting two and three years contributes to this.

In Persia, according to Polak, women who keep wet-nurses for their children, conceive and bring forth a child almost every year; while, in the poorer classes, where the child is suckled by the mother until its third year, conception and births succeed each other more slowly. Yet it happens that women during lactation and in spite of it, again menstruate and conceive in the second year. On an average, Persian women give birth to from six to eight children. The barren woman is, in Persia, almost always cast out by the husband. Early marriages, disparity in the ages of married couples, hysteria, menstrual anomalies and other diseased conditions of the uterine system, produced to a great extent by the unnatural parturition, are, according to Häntzske, to be regarded as the reasons which make the woman in the Persian province of Gilan on the Caspian Sea, appear not to be very fertile.

The Sarts, in Tashkend and elsewhere, are very fertile. It is not uncommon to find a family of 15 living children. However, if the Sart has several wives, then more than 30 souls may possibly be encountered in his family.

Among the Kirghiz women, according to investigations by Vasiliev, the average fertility is 5.5 : 221 women examined had had 1,216 living children (662 male, 554 female), 60 abortions, 13 still-born, 8 twins.

Of the tribes in the extreme North-east of Asia we know little on the whole; Dall, however, says the Yuit are not fertile. The Chukchee appear to have more children, at least Hooper (p. 102) calculated that among them there were five or six children to each wife.

The Siberian population shows considerable differences as regards fertility. In one report is mentioned the fact that the fertility of the women declines the nearer to the north the people live (see *Phys. u. ökon. Zustände*, etc.). Thus the marriages in the Turukhan district are remarkably less prolific than, for example, in the south and east of Siberia. If the Russian woman in the south of Siberia, but still below the 50-57th degree Northern latitude, can give birth to 24 children, then her countrywomen near the polar circle bears about 10, 12, or, rarely, 15, whilst in the neighbourhood of Wogorov seldom up to 19 children; the Ostiak woman at most 8 or 9; the Tungus woman at most 8 or 10. The best and youngest years in marriage, usually marked by great fertility elsewhere, are, among the families settled in Turukhan, remarkable for paucity of births. The Ostiak are not very fertile, and one seldom comes across families with three or four children; the main reason appearing to be the high rate of child mortality (see Alexandrow). Pallas also expressed the same opinion. He says:

“Of jealousy, the Ostiak know but little. Their marriages, too, are not particularly fertile, although people say of them that they are very much addicted to sensual pleasure. One finds few fathers who have more than three, or at most four, children. Perhaps the fact that many children, on account of rough treatment and food die at a tender age is to blame, although the mother suckles them as long as they like, often till the fifth year.”

According to the report of Sieroshevski, the Yakut women are very fertile. Not infrequently they have 20 children, and even more. In most families the number of children fluctuates between 5 and 10.

The Samoyeds are decreasing in number as their marriages are very unproductive. Among the individuals examined by Sografi (p. 293) were 18 married men and 10 married women. To these 28 persons there came altogether only 25 living children, certainly a very small number. With the dead children the total amounted to 47, divided over 19 marriages, and among these, six marriages were childless. This small number of children is no doubt to some extent to be accounted for by the considerable weakening of the body by brandy drinking; on the other hand, a very early marriage appears to have a bad influence. Boys of 16 or 17 are married to girls of 13 and 14. The Tungus also are not very fertile; according to Georgi, very few parents among them produce more than four children.

The Chinese, according to C. Scherzer,¹ who wrote in 1860, are also not particularly fertile since the family (*i.e.*, the husband and, as a rule, two to six wives) has not more than four children on an average. But Scherzer does not appear to find the cause in the long continued

lactation, for he adds : " Many women become pregnant again after a few years, even if they are still suckling."

A. Wernich² states that the Japanese women are very fertile. The number of children would, as he says, be still greater were it not that the number is limited by the long suckling and by abortion. Although in Japan, as in China, many prostitute themselves fairly freely, yet this is not at all obstructive to the growth of the population (*cf.* Letourneau).

Mondièrè has studied the fertility of the Annamite women of Cochin China. Menstruation makes its appearance with them comparatively late (average age 16 years 4 months); only 4 per cent. of the women enter into marriage before this date; the majority (941 individuals) were more than 17 years of age on their union with the husbands. Of these, however, who would have had the opportunity of bearing children, not half (440) had given birth to one or several children. The average age at which the first birth took place with them was 20½ years. Thus the first-born comes fairly late, and, whilst 46 per cent. practise coitus before the onset of menstruation, 95 per cent. have been menstruating for four years before they have their first child. Mondière found that 119 women who were at the child-bearing period had 545 children. Since the young girl mostly gets married at the age of 19 or 20, when she is fitted for procreation, the rest given until then to the sexual organs favours conception, and so they mostly become pregnant at this age.

Among the Sakai in Malacca, according to Stevens, the fertility is good; but the mortality of the children is very great. A Bèlenda woman had 16 children (5 boys and 11 girls), but 7 died in the first year of their life, and 5 more before they had reached the age of puberty.

In the Nayar caste in India, mothers with 10 children are not very rare. A woman in Calicut is reported by Jagor to have had 16, and another even 20 children.

W. E. Marshall has given detailed tables showing the fertility of the Todas. He found that 36 women had given birth to 167 children. Of these

8 women had	1 child.
3 " "	2 children.
3 " "	3 "
3 " "	4 "
6 " "	5 "
4 " "	6 "
1 " "	7 "
3 " "	8 "
3 " "	9 "
2 " "	10 "

The women had their first child at about 14 years of age, the average being at 17½ years. As they continue to bear children in later years, the fertility of the tribe thus leaves nothing to be desired.

The average number of children in Achin, Jacobs² gives as four; families with five to seven children by the same mother are rarities there. But, in this case, it is true, intentional limitation of the number of children is not without influence.

At Banka, in the Dutch East Indies, the women, according to Epp, are not very fertile; he ascribed this to the scanty food. On the other hand, the women in Amboina, who are fed mostly on fish and sago, are described as particularly fertile. In Sumatra (Taluk), Maass³ states that a woman generally brings five to seven children into the world. Of the Danigala Veddas, Rüttimeyer states that one woman may have up to eight children, but they generally die young.

3. FERTILITY AMONG AMERICAN PEOPLES

Among the Aleuts, in the North-west of America, Ritter states that one family is seldom blessed with more than two or three children. In Alaska one finds in the marriages of the natives usually only one to three children; the highest number which Dall found was six, and surprisingly many marriages are childless.

Lundberg found among the Eskimo that 21 women had, on an average, six children ; among 66 women there were only two who were childless (Robertson). Abbas also reports that the marriages of the Eskimo of Cumberland Sound are not blessed with many children ; one seldom comes across more than two children, and he supposes the reason to be that the want of a suitable substitute for milk compels the women to keep their children at the breast as long as possible. Moreover, the great mortality of the children is to be taken into account.

The North American Indians seem to be less fertile than the whites. Heckewelder seldom saw more than four or five children in Indian families which formerly lived in Pennsylvania ; Le Beau also reports that the wives of the Indians in Canada are less fertile than the whites. Weld regards the prostitution at a tender age and the long suckling of the children, during which period the wives have no sexual intercourse with their husbands, as the cause of the low rate of fertility. Total sterility, moreover, is said to be rare among Indians. On the other hand, there are frequent artificial abortions among both married and unmarried ; mostly not more than three to four children are brought up (*cf.* Waitz, III., 105). The reports from tropical America show a similar state of affairs. The women in Jalapa (Mexico) are, as a rule, fertile, and examples of sterility are seldom found ; yet they often avoid becoming mothers and impose strict abstinence on themselves so as not to add to their domestic cares (*Nouv. Annales des voyages*, Jan., 1863, 43).

The fertility of the women in Nicaragua is reported to be very great. Even immigrants seem to become more fertile if Bernhard is correct. He says that it is nothing unusual to find women who have had no children in their first marriages give birth to 27 children in their second.

In the towns in the interior of Cuba, in Trinidad, Santo-Espiritu, and Villa Clara, marriages, according to Ramon de la Sagra (Mayer-Ahrens³), are extraordinarily fertile ; many of them have 12, many even 20–25 or 26 children. In Trinidad (in the year 1853, with 14,643 inhabitants) one marriage was blessed with 24 children, two marriages with 21, one marriage with 18, one with 16 children ; two marriages with 15 children ; 10 with 13 children—that is, 260 children were derived from 17 marriages. In the same year, in Trinidad, 123 families of whites were counted, which each contained 8–10 living children. In Villa Clara there were 12 marriages with 206 children. At Santiago the productivity of marriages is said to be still greater. Many Cuban women bear children as early as their thirteenth year. It is noteworthy that almost all the women in the towns of the island of Cuba nurse their own children. Our informant adds : “The favourable conditions of the climate, the equable uniformity of the peaceful life and the material well-being which the families enjoy put the women in a position favourable to the rich fulfilment of their maternal duties.” This is contradicted by the statement of Virchow, which we quoted on page 326.

On the other hand, in Cayenne and French Guiana, the fertility of the women is not so great as in the above-named places, or even as in colder districts. Bajon, who reported this 100 years ago, finds the cause partly in the dissipated manner of the life of the men, partly in the irregularity of menstruation in the women and in the prevalence among the latter of *fluor albus*.

The Indian women in Brazil, according to v. Spix and v. Martius, are not very fertile ; these travellers seldom saw more than four children in a family. Kupfer found the same among the Cayapo Indians in the province of Matto-Grosso : “Even three or four children in one family were seldom to be found.”

Karl Ranke found that in the villages of the Trumai and Nahuqua Indians in the Xingu district of Brazil, the fertility of the women was about equal to that in Germany. But in these tribes many children die at an early age.

Among the Indians in the border territory between Peru and Bolivia, E. Nordenskiöld found the families were not big, being only one to three children in each ; in the biggest family he saw, which was among the Atsahuaca Indians, there were four children.

The fertility of the women in Colombia is not inconsiderable. Posada-Arango writes that in Colombia poor and rich women alike suckle their children themselves, and that there, as a rule, the children are kept away from each other at the age of only 18 months. In the State of Antioquia each marriage is usually blessed with 10–15 children. One mother there had 34 living children, among them various twins. A man who married three times had 51. The women there marry at the age of from 13 to 16 years.

The Fuegian women are very fertile ; seven or eight children are the average, though one finds not infrequently young wives who have already 12-15 (see Bove).

Hyades and Deniker also state that sterility must be very rare among the Fuegian women as they did not come across one case of a woman of over 25 years of age being sterile.

4. FERTILITY AMONG AFRICAN PEOPLES

Among the Arabs in South Tunis, according to Narbeshuber, six children is the common number, although there are also women who have given birth to 15-20 children, not all of whom, of course, survive owing to the great child mortality.

Lane and Frankl state that Egyptian women possess a high degree of fertility. Greek writers report the same thing of their ancient forefathers. On the other hand, European women who have emigrated to Egypt are remarkably often childless. In Cairo one reckons on an average one birth to 22-23 individuals. The women usually say that they have been confined eight to ten times, but with them, more than five or six children seldom remain alive.

The women in Senaar and among the Dinka are described as very fertile by Cailliaud. One often sees among them mothers who are suckling one child, carrying two or three in a kind of knapsack, and have a fourth following at their heels. Among the Madi in Central Africa, Felkin states that the family appears to have an average of four children.

Abyssinian marriages are not very fertile ; Ruppel does not remember having seen an Abyssinian woman with more than four living children, and even this number is generally regarded as a rarity there. On the other hand, James Bruce wrote that : Abyssinian girls who are bought for money are much preferred, because, among other things, they are capable of bearing children for several years ; whilst few Arab women get any more children after they are 20 years of age.

Merker reports of the Masai : " The highest number of confinements I heard of for one woman was 17. Eighty-seven old women questioned had had altogether 548 children, which gives an average of 6.3 for one woman. Of these, 231, that is, 42.2 per cent., were boys ; 317, or 57.8 per cent., girls. Including still-born infants, 38.7 of the children die before their circumcision "

The same investigator reports of the kindred tribe, the Asá and Wandorobbo :

" The highest number of confinements to one woman which I learnt was 11. To 27 old Asá women questioned, 154 children had been born, which gives an average of 5.7 for one woman. Of these, 81, or 52.6 per cent., were girls, and 73, or 47.4 per cent., boys. Before their circumcision 70 = 45.5 per cent. died ; in this number the still-born were included."

" Among the tribes in the interior of East Africa, fertility appears to be rather high," states J. M. Hildebrandt ; " the mother of a Kikuyu had had 13 children, whilst the chief Mitu had by 10 wives about 25 sons ; they did not like counting daughters." " The coast tribes of East Africa," he continues, " are cross-breeds of very heterogeneous races and have few children owing to many kinds of abuses and diseases which are of sexual and climatic origin."

The number of children of the Wangoni (East Africa) is not very great : it is considered a great number if a woman has five children (Hälfinger in Fülleborn²).

According to Reichard, the Wanyamwezi women seldom bring more than four children into the world.

Among the Swahili, Velten, in 1903, reported that fertility was low, partly owing to abortion, partly on account of too early sexual intercourse ; in the interior, however, there are still fathers of families who have five or six children.

On the other hand, the wives of the former natives, now extinct, of the Canary Islands, the Guanches, were considered very fertile (v. Minutoli).

Among the negroes of the West Coast also, fertility is not inconsiderable ; among the Wolof it is very great according to A. T. de Rochebrune. Among the Fulah women of the Sudan, on the other hand, fertility is much lower, for it was found that a Fulah woman seldom had more than three to four children, whilst in the families of other negro tribes there were

seldom fewer than six to eight children, and often 10-12 children by one mother. The Loango negroes are not very fertile, since with them a woman usually gives birth to only two to three children. Pechuel Loesche presumes that, in this case, the prolongation of the lactation period has some influence. Also Burton¹ says of the Egba negroes that because of the long-continued lactation, their marriages are seldom fertile. And of the inhabitants of the Sierra Leone Coast, the Bullom, Susu, etc., Winterbottom says likewise, that the long-continued suckling is to blame for the slight increase in the population; for during this period, which ordinarily lasts for two years, or at least until the child is able to bring its mother a gourd full of water, they live apart from their husbands. It is even not unusual for a woman who has a baby at the breast to provide another woman for her husband, who occupies her place until the child is weaned. Women who bring more than three to four children into the world are, he states, rare in Africa. This is by no means due to their ceasing to bear children at an early age. He points out still another cause of sterility on the Sierra Leone Coast, namely the fact that so long as a woman is mourning a dead woman friend or relation, she lives apart from her husband. Mungo Park also thought he could explain the sterility of the negroes. He writes: "as the Mandingo negroes suckle for a long time, often as long as three years, and as during the whole of this time the husband bestows his favours on another woman, it happens thus that his wife seldom has a numerous family; few have more than five or six children." On the other hand, A. T. de Rochebrune cites the frequency of natural abortion as the reason for the paucity of children among the negroes observed by him. W. Winwood Reade (p. 243) considers polygamy as imposed upon equatorial Africa, but in spite of this, there are fewer children than wives there.

The wives of the Guinea negroes in the Bissagos Archipelago are extraordinarily fertile.

Barrow declared the fertility among Hottentots to be very low; not more than three children are the average issue of one marriage. As already mentioned, the facts are different if the mixture of a Hottentot woman and a European man takes place, for then the fertility of the woman is far greater.

5. FERTILITY AMONG AUSTRALIANS AND OCEANIANS

The wives of the natives of Australia are very fertile. Grey (II., 250) calculated 188 children of 41 women; individual mothers had seven; among 222 births, 93 were girls and 129 boys. The Australian women of Victoria, on the contrary, are not specially blessed with children. In the year 1862, only two children were born in an area of thousands of square miles in the Portland Bay District (*cf.* Oberländer¹). A married couple of Central Australian aborigines has, according to observations of the missionary Kempe, about three children; meanwhile, owing to the not infrequent infanticide, this number of births will certainly have to be estimated higher.

Of the Maori in New Zealand, it is stated that they are very barren, and are near extinction. Fenton reckoned that among them there is one birth to every 67.13 persons. One cause among others of this diminished fertility lies, no doubt, in premature fulfilment of sexual functions. Wholly incompatible with this statement, however, is that of Goldie, who states that fertility is very great, mentioning a case where one woman bore 15 children.

The inhabitants of Humboldt Bay in New Guinea were found by van der Crab not very fertile; they themselves do not wish to possess more than two children.

In New Caldeonia, a woman seldom has more than four to five children; the cause of this moderate fertility Lorsch ascribes to the rough treatment from the husband to which the wives are exposed.

Danks reports that in New Britain a considerable time elapses between the births of two children. The usual period is about three years. One child is always well out of hand before the next appears. He had heard of only two or three exceptions to this.

Elton says of the women of the Solomon Islands that he has not seen more than five children in one family (born in 10 years).

A very low degree of fertility among the women of the Fiji Islands is stated by Blyth to be the general rule. However, exceptions occur, and here and there are isolated women who have brought 10 to 12 children into the world.

On the Savage Islands (Polynesia), families with five to six children are common, but many women have given birth to 16 children. Now, however, in consequence of sexual excesses at a youthful age, childless women are not unusual (Thomson⁵).

It has been maintained that Polynesian women are not fertile; and this was even claimed as a special racial characteristic. However, Gerland¹ proved that this assumption is false. Cheever and Forster knew cases of great fertility in Hawaii and Tahiti; Dieffenbach, also in New Zealand, and in Tonga, Tukopia and Samoa.

On the Gilbert Islands, Krämer² states that it is a general custom for a married couple not to produce more than three children. Possible further pregnancies are artificially interrupted (by kneading the uterus) and the motive appears to be vanity with, perhaps, worry about subsistence.

The women of the Marquesas Islands are said not to have children until they are old and ugly because they are afraid that if they are childless they will be cast out by their husbands (*cf.* "Ausland," 1880, 163). Here circumstances comes into question which are to be discussed later when intentional abortion is being dealt with.

CHAPTER XI

MOTHER AND CHILD

I. THE SEX OF THE UNBORN CHILD

1. BOYS OR GIRLS

IN one of the earlier sections, we have seen how among many peoples the birth of a daughter is not only undesired but is regarded as a disgrace and a misfortune, whilst again, other peoples rejoice less over sons since, by the possession of many daughters, they can obtain wealth and esteem through their marriage "price" at a later time. We can thus understand that from the earliest times people have endeavoured to learn the reasons why in one case a boy and in another a girl is formed; and to discover ways and means by which they can produce at will the sex desired. Up till now, no one has taken the trouble to pursue these studies historically, although they can contribute much to the delineation of the cultural position of individual nations and to the knowledge of their ideas. What the cultured and learned people in half-civilised peoples had endeavoured to develop as a special art brought to light, as we shall see, wonderful and original magical specifics in the mysticism of popular superstition. Nowadays, this question has unfortunately become a sport for various charlatans and unscientific writers.

In Suśrutas Āyur-vedas, there is given by an old Hindu physician, instruction in the art of producing boys and girls at will. Three days after menstruation, if a boy is to be produced, the wife shall have a special diet and stay apart from her husband in a bed prepared with a particular plant. On the fourth day, washed and dressed in new clothes, she shall appear to her husband amid religio-mystic ceremonies. For people believe that the kind of son to whom she will give birth depends upon the character of the man whom she sees first after her purification by menstruation. She herself and her husband are consecrated to Brahma for a whole month, and only after this period has elapsed must coitus take place. The husband, however, must first anoint himself with purified butter, and eat rice cooked with pure butter and milk; the woman, on the other hand, must anoint herself with sesame oil, and eat sesame oil with a certain kind of beans. Also the husband shall accomplish coitus with her on the fourth, sixth, tenth and twelfth nights, each time after consoling prayers. These days are the favourable ones for producing boys. But, if the husband wanted a daughter, then he had to practise coitus on the fifth, seventh, ninth and eleventh nights. After the agreed three days following menstruation, the physician gave the wife, if she wanted a boy, three or four drops of a liqueur prepared from *Spongia marina*, *Ficus indica* or *Hedysarum lagopoides* N. L. Burm., with distilled water into the right nostril; but she had not to blow it out again. The ancient Hindu physician also thought that a boy would result if the man's generative substance was present in greater quantity; a daughter when the quantity of the female generative substance was greater; but a *napunsaka* (hermaphrodite or sexless being) would result from equal parts of male and female substance.

The medical Talmudists likewise maintained that the man could procreate male or female children as he liked; one of them, Rabbi Jizchak, son of Rab Ami, said:

"If the husband brings semen first then she will bear a female; if the wife bring semen first, then she will bear a male" (*Tractate Bērākōth*).

Further, the principle is laid down in the Talmud (*Tractate Niddah*) that if during coitus

the woman takes part more passionately than the man, a male product will be attained, but when the case is reversed, a girl will be brought forth. The following assertion of the Talmud however, is somewhat more doubtful ; it also is in the *Tractate Bērākōth* tractate :

“ For thus said Rab Chama, the son of Chanina, in the name of Rab Jizchak : He who sets his bed between midnight and mid-day gets a child of male sex. For it says (*Psalm* xvii. 14) : Whose belly thou fillest with thy hid treasure (zaphun) ; they are full of children.”

These *zaphun* (north) Luther translated as treasure.

We come across a very peculiar interpretation of the ancient Israelites in *Midras Echa Rabbati*. Here we find the belief that the locality where the confinement took place determined the sex of the child. In the commentary on *Lamentations* (ii. 1) it runs :

“ Why is it called Kephar Dichrin ? Because every woman brought boys into the world there, and every woman who would bring forth girls went away from her place, and she bore a girl, and every woman who would have a boy betook herself thence, and she begot a boy ” (see Wünsche ⁴).

Still more remarkable is the idea set forth in *Midrash Bērēshith Rabba* that the sex of the child can be changed during the confinement.

One specific, given in the Talmud for determining the sex of the child, just as the head is being born, agrees surprisingly with a Chinese tenet, of which we shall hear later.

The Greek natural philosopher Alcmaeon, who lived about 540 B.C., was of opinion that the sex of the fetus was determined according as male or female power prevailed. Empedocles (about 444 B.C.) explained the difference of sex from the warmer or colder temperature produced by the ratio of the quantity of semen to the power of imagination (Plutarch : Aetius). According to the researches of His (p. 200), the physicians in ancient Greece and Rome did not admit the possibility of influencing the sex of children at will.*

In his book “ *περὶ γονῆς*,” Hippocrates expresses his opinion as follows :

“ But the man also has female seed, and the woman likewise, male seed. Still, the male is stronger than the female, consequently procreation must proceed from the male. Further, in this case, the matter stands as follows : if strong seed comes from both, a boy will be produced, but if weak seed comes from both, a girl. That which exceeds in quantity too will be produced. That is to say, if the weak seed is much more abundant than the strong, the strong will be overpowered, and by mixture with weak seed formed into a female foetus ; if, on the contrary, the strong seed is more abundantly present than the weak and the weak is overpowered, then the latter will be turned into a male fetus. . . . That in the woman as in the man, both male and female seed exists may be accepted as a fact. That is to say, many women have borne a girl to their husbands, but when they went to other men, they gave birth to a boy, and the men again to whom their wives had borne a girl, produced, when they had coitus with other women, male offspring, and those who had a male issue, produced a female when they went to other women ” (6, 7).

Parmenides and Anaxagoras (cf. Clazomenæ (500-428 B.C.)), on the other hand, thought that boys came from the right ovary, and girls from the left (see Diels). According to Aristotle, the decision as to which sex the children will get, depends solely on the man (see Needham, I., 62). Galen says that the unequal temperature of the two sides of the human body is the reason why the warm right side serves to form the male, the cold left side to form female children (see His, 210).

The Arabian physician Avicenna (+ 1036) held that it was possible to produce boys or girls at will.

Several German writers in bygone centuries also gave their opinion on this question. Thus, e.g., Eucharius Rösslin says in his *Rosengarten* :

“ When the man’s seed is hot and plentiful, then he has the power to give a boy. The other case is when the man’s seed comes mostly from his right side, and is taken into the right side in the mother. That is because the right side is hotter than the left, and the seed from the right more powerful than from the left. Therefore, shall the woman lean to the right side immediately after the act if she would like to have a boy.”

* [For further details, see Needham, I, 51, who gives full information with references.]

Rueff says the same in his book *Ein schönlustiz Trostbüchlein* :

“ Male infants are conceived more in the right side of the womb, and are derived more from the seed that comes from the right genital organs. But the female infants are conceived in the left side of the womb from the left genitals. For the right side, on account of the liver, is hotter in the body, and the left side colder. Hence the greater heat of the seed from the right side is a cause of male infants.”

Another opinion is to be found in Nigrino's work *Der aus einer Asche sich wieder schön verjüngende Phönix oder ganz neue Albertus Magnus* ; there it says :

“ But if a husband does not cohabit with his wife more than three or four times in one month, then the seed in one as in the other is thicker, more matured and more filled with spirits. It would be more fit to form a boy if it were not drained away so often. And, therefore, it happens from these causes that the old sometimes beget sons, for although they lack natural heat, and their semen is crude and weak ” etc.

According to the reports of von Martius, a Chinese physician expressed the following opinion :

“ Whether a son or daughter is born depends upon the husband and not on the wife. Daily experience shows that more boys than girls are born. But we often find as well that, in many families, the mother brings nothing but daughters into the world.”

According to another theory of the Chinese, which is communicated by Hureau de Villeneuve, the sexual development of the fetus is supposed to be decided by the elements *Yang* and *Yin*. That is to say if the strong principle *Yang* is dominant in the man and the weak principle *Yin* in the woman, then they will beget a boy ; in the opposite case, a girl.

From all these different views, we can formulate three opinions which are opposed to each other. The first assigns to the man alone the power to influence the formation of the sex ; and as we have seen, his right side, as the stronger, holier and more fortunate, produces boys, his left girls. The two other opinions mete out justice also to the woman, and allot to her, too, the power of influencing the formation of the sex. But they are diametrically opposed in so far as the one seeks to uphold a direct, the other a mutual transmission of the sex. The one maintains that the stronger in regard to sex of the two procreators transmits his or her own sex to the child, whilst the other opinion maintains that the opposite sex is called into existence by the stronger parent.

As knowledge increased, much attention was paid to the problem. Methods became more scientific and numerous theories were propounded by various workers.

If one examines the numerous attempts at finding an elucidation, then one may say here, as in many other fields : many men, many minds ! For the purposes of summary, we have a classification by Henneberg in which the literature published up to 1897 is very completely made use of, to whose monograph and bibliography readers may be referred, and, in accordance with which the following summary has been compiled. It has been supplemented only in a few points, and the important material has been arranged according to various aspects. For the elucidation of the formation of sex are instanced :

I. INFLUENCE OF THE DEARTH OF INDIVIDUALS OF ONE SEX

After every war, as we know from experience, there results an increase in male births. Ploss explained this as due to the lowering of the standard of living which has, as consequence, malnutrition of mothers, and thus, an excess of boys ; Berner, according to Henneberg, finds exactly the reverse, namely, that the standard of living is higher after a war ; Düsing indicates that owing to the loss of men of procreative power, greater sexual demands on individual men are made after a war, who effect impregnation with comparatively young spermatozoa, and hence produce

boys. [More probably the alteration of the sex ratio is due to longer spacing of births, thus permitting more boys to survive and fewer abortions to take place.]

II. INFLUENCE OF DELAY IN THE FERTILISATION OF THE INDIVIDUAL

Women who are no longer young when they have their first-born, that is, women who have had to wait a long time for conception, usually bring a preponderance of boys into the world. Thus (according to Düsing), in 5,756 first births by women over 30 years of age, the sex ratio amounted to 120-130 ; the same is true of multiparæ when there are fairly long intervals between each confinement ; in 4903 such births the sex ratio with an interval of one year was 108.6 ; with two to three years, 109.6 ; with four years, 115.7 ; with six to 11 years, 121.9. Düsing declared the delayed fertilisation to be equivalent to the effect of a shortage of men (*cf.* No. I.).

III. INFLUENCE OF THE STRONGER SEXUAL DEMANDS

Experiments by Düsing, Janke and Fiquet on horses and cattle claim to show that a strong sexual power on side of the father leads to male births, while on the mother to female births : the sexually stronger, in the first case the mother, in the second the father, imprints the opposite sex on the child.

The experiments of Fiquet, cattle breeder in Houston in Texas, can be used in support of this declaration :

Fiquet succeeded in more than 30 successive cases, without a single failure, in deciding at will several weeks before fecundation the sex of the calf to be delivered. If he wanted to have bull calves, then he had very careful attention bestowed on the cows ; whilst the breeding bull, on the other hand, was kept on scanty fare and used for mounting a series of cows not intended for the experiment. Only after the second or third lot of cattle was the experimental cow put with the bull, and he then showed a very slight inclination for mounting, whilst the cow showed strong sexual desire. At the appointed time, the cow had the expected bull-calf. But, if the experimental cow was to drop a heifer, then the procedure was reversed, and the bull was fed well on strong food and carefully tended while the cow was put in thin pasture with a freshly castrated ox which made vain attempts to mount her. Then later, when the experimental animals were brought together, the bull was full of desire, whilst the cow evinced only a very moderate impulse for sexual satisfaction ; and, at the appointed time, she dropped a cow-calf. [These experiments, however, are not convincing, and it does not appear to me that more recent experiments (*cf.* J. R. Baker, p. 139 ff.) are entirely satisfactory from the scientific point of view.]

IV. INFLUENCE OF SPEEDY OR DELAYED IMPREGNATION OF THE OVUM

According to a hypothesis of Thury in 1863, females were supposed always to issue from ova which were impregnated immediately they were ready for it, and from those impregnated later always males. Twenty-nine experiments made on cows, acting on the knowledge that among Jews, where coitus must not take place until seven days after menstruation, boys preponderate, 47 further pregnancies were successful among 72 which Düsing was able to observe. This appeared to confirm this theory.

V. INFLUENCE OF FOOD

Under unfavourable conditions, male births increase. Ploss showed this by comparing the rise and fall of food prices with the fluctuations in the ratio of the sexes ; further, Hampe showed that in 5000 births there is a surplus of boys among

the poor (ratio of the sexes among the poor 115, among the well-to-do 104.5); also the country in comparison with the town has a surplus of boys. To this section, to some extent, belong the above-mentioned (under No. III.) experiments by Fiquet, who fed the cow well but the bull scantily when a bull-calf was aimed at.

According to Düsing's statement, food should have influence on the quality of the sex products, since diminished nourishment causes a smaller productive power in the sex apparatus; thus, *e.g.*, the production of sperm would be diminished and the sperm would hardly recover so quickly. Impregnation would then take place with comparatively young spermatozoa which leads, according to his theory, to the production of boys.

To this group belongs also a theory of Schenk, which was discussed a short time ago. Schenk had observed that a woman who had given birth to a boy five times in succession became diabetic, and then twice later, when she became pregnant, gave birth to a girl. Further, he found in mothers who had borne far more girls than boys, a comparatively large amount of sugar in the urine though not in sufficient quantity for the disease to be present. In the presence of this small quantity of sugar, he saw a symptom of a deteriorated metabolism and thought that such a woman would no doubt produce a less well-nourished ovum which would then form a female individual. By a special form of food, he tried to make the sugar in the urine disappear, whilst he changed the metabolism so that favourable conditions for the production of a boy were provided. As is well known, Schenk was not altogether fortunate in his experiments.

VI. SEASONAL INFLUENCE

Göhlert and Düsing and others show in large numbers that in spring (and in summer) a comparatively large number of children are produced, the majority being female; and in autumn (and winter) few children but many boys. The reason was sought in the different conditions of subsistence, and also in the increase in sexual activity accompanying the rise in temperature.

VII. INFLUENCE OF THE AGE OF THE PARENTS

(a) *Of the absolute age*: At the same age in the mother, younger (14-30 years of age) and older men (over 45 years of age) beget more boys than those at the intermediate ages. On the other hand, the younger the mother, the more female births (with the exception of very young mothers under 20).

Düsing explains the former by the better condition of subsistence, and hence the better productive power of the father (at the intermediate ages), and hence the excess of girls. The influence of the youth of the mother is attributable to the effect of better nourishment, which will be shared by the embryo. The exception of the very young mother is only an apparent one, as here the genitals may not be yet fully developed, and hence the nourishment of the embryo is insufficient.

(b) *Of the relative age*: According to Hofacker and Sadler, who, however, drew their conclusions only from 2000 births, there was on an average, a greater excess of boys in those marriages where the husband was considerably older than the wife.

VIII. INFLUENCE OF IN-BREEDING

In Christian mixed marriages in Prussia, more girls are born than in Christian marriages; whilst the Jews have a very great excess of boys. In the first case, the

parents usually come from widely separated districts, the crossing of breeds is thus a strong one ; in the latter case, the crossing is naturally small. The latter can also be explained otherwise (*cf.* No. IV.).

Some information may be added here which is partly not quite certain and partly quite inexplicable.

Thus Olshausen, in 1884 (on the strength of 521 births) thought, according to Henneberg, that it could be assumed that more boys were born with a narrow pelvis ; A. Linden found the same (from 360 births) ; on the other hand, R. Dohrn, with 150 births, could establish no difference worth mentioning ; the ratio of the sexes, in this case was 100·4. Probably the numbers used were too small.

Seligson maintains, going back to a very old view, that the left ovary is intended to bring forth " male " ova, the right for the issue of " female " ova, and gives rules on the way coitus must be practised according to whether a boy or a girl is to be produced.

Fürst found in 193 pregnancies that they mostly led to the birth of a boy when the conception had taken place in the first four days after the end of menstruation.

Dupuy gives advice (supported by observation of more than 200 families and more than 1000 children) to husbands who already have a son and now want a daughter. He advises them to count the menstruation periods which have elapsed since the confinement, and to have coitus in an even month, that is, in the second, fourth, sixth, etc. If a son is to be begotten, then the wife must be made pregnant in an odd month. The exceptions to this rule are twins with two placentas and the case where the one child is the issue of another father.

With some of these rules, we come almost into the realm of the absurd and the miraculous.

As we have seen, a great part of the elucidators assume that *both* parents, and not only one, have a share in the influence on the sex of the children produced by them.

This, however, is contradicted by Lenhossek in a book to which we can only refer here. He tries to prove that sex is represented beforehand in the ovum alone, thus the mother is sole determinant of the sex of the child. Such would be possible if the female ovum (see later) exercised a definite and somewhat chemico-lactic action on the male-forming (or female-forming) sperm.

These sharply opposed views B. S. Schultze (1903) has undertaken to reconcile. He points out that statistical conclusions, especially those of Hofacker and Sadler (*cf.* VII (b)), according to which the father also, obviously exercises an influence, cannot, of course, simply be disregarded. " The apparent contradiction between these facts," he says, " and the assumption of the sex character of the ovary disappears if we assume that the sperm of the older husband is better fitted to impregnate the male ovum of the younger wife than the female, or that the young spermatozoa coming fresh from the testicle of the stallion which is much in demand, seek out the male ova of the mare with better success than the female. Or, let us express the hypothesis in this way : the male ova leaving the ovary of the younger wife have more attraction than the female for the spermatozoa of the older man. The male ova of the mare are more accessible to the spermatozoa of the stallion than the female ; the female are, on an average, more accessible to the spermatozoa which have stayed ready formed in the male organs for some time."

[Further examples of theories based upon inadequate scientific material need not here be given. As R. Goldschmidt says, the statistical material regarding the sex ratio in man is remarkable, and illustrates clearly the danger of any statistical treatment of dubious data. Among these attempts might perhaps be mentioned the astronomer Newcomb's essay in applying a rigorous theory of probable inference

to this question of genetic biology. Among his conclusions are that the statistics show that the functions of the "father in generation are entirely asexual, the sex being determined wholly by the mother." Regarding the alleged preponderance of boys in the Jewish race he states that this "is due mainly to the unisexual tendency of the mother in the case of a first child" (pp. 3, 28).

Although as we shall see later the determination of sex has been placed upon a sound foundation, many writers will still be found who maintain that such determination can be achieved by methods which are reminiscent of the older writers. Such authors are apt to ignore the experimental evidence furnished by the geneticist and rely upon observations of their own. For some representative specimens of these writings taken almost at random from the literature, see Scientist, Dalmau-Pujadas, Hall, Macfadden, and Erskine, who, in a book published in 1925, gives a mass of material supporting her formula that males proceed from the left ovary and females from the right.

We have already mentioned in Vol. I., p. 36, and Vol. II., p. 264, that it is the chromosomes which determine sex. The male, in every cell of the body, possesses one less chromosome than the female. The odd chromosome and the corresponding pair in the female are often called the sex or X chromosomes. As Goldschmidt puts it in his work on the mechanism and physiology of sex determination: "It is usually the male sex in which the odd number is found, and then the number is always one less than is present in the female. . . . Consequently in the male one chromosome, the X chromosome, must lack a partner which is present in the female with its even number. The latter sex must have two X chromosomes in addition to its other chromosomes" (p. 50).

In the case of the male the odd sex chromosome goes into one or the other cell at the reducing division of the germ cells, and thus two types of sperm result, one containing the sex chromosome and one without. As every egg contains its sex chromosome it may be fertilised by either of the two kinds of sperm, and thus the result is a male when fertilisation is effected by a sperm having the sex chromosome, and a female when fertilised by a sperm having no sex chromosome.

It is too early to hazard any guess as to how long it will be before sex control in man will be achieved. In mammals certain experiments have already been made which tend to suggest that such control may be effected by irradiation with X-rays or by certain regulation in the amount of vitamins allowed. Success will be attained when it is found possible to separate the two classes of sperm or so to influence them that fertilisation is effected by the one or the other at choice. It is possible that the experiments of N. K. Koltzoff and V. N. Schröder, of which summaries appeared as this book went to press, may suggest developments which may ultimately result in a scientific control of sex in the sense understood by the earlier writers.]

2. SEX DETERMINATION IN FOLKLORE

There is a common popular belief that the sex of the future child can be called forth according to one's own liking by special expedients.

Among the Czechs, boys hit the bride with their caps so that she may get a son. Among the Kashubes, even to-day, a male nursling is put on the knees of the young wife, who meanwhile has her head concealed; likewise, in Serbia, in Galicia, among the South Macedonians, Bulgarians, and in many parts of Russia (*cf.* Sumzow).

For the same reason, in Bosnia, when the bride visits her betrothed's house, a

boy is put in her hands whom she spins round three times, then kisses him on the brow, and thereafter gives him a present (see Mrazovič).

Here we have a very ancient custom, for among the ancient Hindus, a boy was also led to the bride; the priest put the boy on the bride's lap, she gave the child some sweetmeats and then set him free.

In Herzegovina, according to Grgjič-Bjelokosič, people are said to put a man's cloak on the naked body of the girl who is getting her engagement ring so that she may bear only male children.

In Spessart, if the husband wants to beget a boy, he puts a wooden axe by him in bed and says a formula with a rhyme at the end; "Thou shalt raise a boy"; while if he wants a girl, then he puts on his wife's cap and says a formula ending with "Thou shalt raise a girl."

At Kaltenbruch, near Ellingen in Bavarian Franconia, there stands, as Mayer reports, an old beech which is called the magic beech. A decoction from its wood drunk by pregnant women brings about the birth of a boy; a decoction of the bark on the contrary, the birth of a girl.

An old Bosnian manuscript, published by Truhelka, contains a specific for "when a wife bears only girls." It is as follows:

"When she is menstruating let her go to a strange field which is being ploughed, take a plough in her hand, go up hill with the plough, and say three times: 'One ox after the other, one son after the other!' and she will bear a son."

Glück also reports from Bosnia and Herzegovina as follows:

"Numerous are the practices which are employed to get in future male issue by a wife who has already given birth to several girls. Immediately after the confinement, she is put on a bed of hay, and the placenta, after being put in her husband's stocking, is thrown into the water, or it is torn into four pieces; the new-born babe is wrapped in its father's trousers; the god-father's cap is turned after the baptism; the guests' boots misplaced so that the right is put ready for the left foot, and the left for the right foot; or the god-parents are changed, a thing which rarely happens among the Eastern orthodox without good reason."

Milena Mrazovič says:

"But if the wife (in Bosnia) has only daughters, she seeks a blessing bestowed by a clergyman irrespective of confession; if that does no good, then she repairs to a meadow, and on the way there she must pass running water. Having reached the meadow, she wets the lower part of her body with dew, takes some grass, puts it in her bosom, and says the following incantation:

'Meadow be, with God, my sister,
Mine be thine, thine be mine!'

A magical expedient for predetermining sex is, as Gjorgjevič reports, used by the gipsies in Serbia:

"If a woman bears only male or only female children, she steals a vessel from the bedroom of another woman who has children of the sex desired in order to drink some water out of it or to bathe in it; or when she has her monthly purification she must take a little of her menstrual blood, smear the testicles of a young bull with it, and say: 'Here take my male children, give me thy female' or reversed in case she wants male children."

We have already seen above that in the early dukedom of Modena, according to Riccardi, the same thing is achieved if the husband during coitus bites his wife's ears, or if he chooses another place for this performance.

Zingerle says that if in Tyrol the husband wants to beget a boy, then he must

wear boots during coitus. Also there is a so-called "artificial procreation." This consists in the father who desires a son smearing the penis *ante actum* with hare's blood ; but if he wants a girl, he must use goose-grease for the purpose.

In the Nayar caste in India, if a boy is desired, then a month after conception, the wife drinks seven days brews made from certain herbs. On the evening of the seventh day, the golden or silver ribbon of a male child is soaked in a pot of boiling milk and taken out after a few hours. The wife, prepared by a priest by prayer and incantation, then drinks the milk in the presence of her husband. He grinds some tamarind leaves and drops the juice into the right nostril of his wife if a boy is wanted ; into the left if a girl. There can be no doubt that this expedient is a survival of ancient Hindu customs. As the women were sometimes mistaken in thinking themselves pregnant, these ceremonies were put off till the fifth or seventh month, when they were held along with the *Pulli-kuddi* ceremonies (for the protection of the pregnant and the embryo against the devil). Next morning, states Jagor, the pregnant woman drinks the juice of tamarind leaves pressed in her hand and mixed with water.

Among the Maori in New Zealand, Goldie says that a woman who has given birth to several girls and now wants to have a boy can attain this by means of the procedure called *piki-whenua* ; if a boy is born in the neighbourhood, then she goes and tries to get the placenta (*whenua*) and then places herself over it (*piki*) for some time with her legs apart. Barren women also make use of this process.

According to popular belief, however, there are many more contingencies which, independent of the will of the parents, have yet a determining influence on the sex of the child. Again, in Herzegovina and Bosnia, according to Glück, it is said :

"If the first work which the woman takes in her hand after her confinement is a feminine occupation, then the following child will be a girl ; but if it happens to be work of a kind usually done by a man, then she will have a boy."

In Hungary, the young wife, when she moves into her husband's house, must not take her distaff or her sewing materials with her because, otherwise, she runs the risk of giving birth to girls only (J. v. Csaplovičs).

In the case of Germany, there is prevalent in many districts, the superstition that if it rains during coitus, the child will be a girl ; if it is dry weather, then the child will be a boy (J. G. Schmidt). In Frankenwald, it is thought that the waxing moon brings boys, the waning moon girls (Flügel).

In modern Greece, daughters are not wanted, for they are a burden on the house, and, moreover, a frequent and much feared curse is that a woman will be brought to bed with daughters. A spell to bring this misfortune consists, states Wachsmuth, in burying a number of pierced gold coins before the door of the person concerned.

Even when pregnancy has already begun, quite a number of people believe that it is still possible that some influence, intentional or unintentional, might be exercised on the sex of the future citizen of the world. Among the Greeks, for example, pregnant women, according to Wachsmuth, have to eat a certain herb in order to guard against the birth of a daughter.

Among the Esthonians, women do not sit down on a water pail during pregnancy because then only daughters will be born. If they even dream of having done so, it is regarded as having a great influence on the sex. Among them, states Krebel, a dream about a well or spring indicates that a girl is to be expected ; a dream about a knife or hatchet signifies a boy.

According to H. Krauss,² the Swahili believe that a woman who continues to be active and industrious during pregnancy will bring a boy into the world ; one who is dreamy and sleepy, a girl.

In Celebes, among the non-Mohammedans, when a young wife becomes aware that she is pregnant, then, along with her husband, she twists a rope end from the fibre (called *tali-rarahum*), of a certain tree named *cola*. Then the priest is summoned. Whilst he is offering up a fowl as sacrifice, he prays the gods to fulfil the young people's wish. If they want a son, then they must make known their wish by asking for a sword ; if they want a daughter, then they must ask for corals or ear drops. Thereupon the priest hands over the above-mentioned objects together with a *sarong* for the use of the pregnant woman (Diederich).

Influencing the sex in this way is believed by some tribes to be possible during the whole period of pregnancy, and extends even as far as the confinement. In this case, too, an example comes from the modern Greeks : with them, as Wachsmuth reports, a pregnant woman must be very careful not to utter a feminine name because otherwise the new-born child will be a girl.

CHAPTER XII

MULTIPLE PREGNANCY

1. SUPERFECUNDATION

WE cannot bring the discussion of the fertility of women to a conclusion without alluding to the circumstances in which not only one, but several children simultaneously develop in the womb. It is customary to make a distinction here between the cases of ordinary multiple pregnancy (twins, triplets, quadruplets, etc.) and those of superfecundation. The latter is supposed to have taken place when a considerable and conspicuous disproportion in the gross dimensions of the product exists, or when, as happens sometimes, an interval of several days has elapsed between the births of the two offspring, fertilisation not being effected at the same coitus. Many peoples of low civilisation regard every bi-parous pregnancy as a superfecundation, and, indeed, they consider that this condition is possible only when a second man has shared in the business of procreation. Only thus can be explained the fact that the natives of Guinea and Guiana and Chibcha and Saliva Indians consider the birth of twins certain proof of the adultery of the wife and treat her and the children accordingly.

Civilised peoples look upon superfecundation in a different way, but for the most part as brought about by the sole instrumentality of the husband. Thus, Empedocles had expressed the opinion that a double pregnancy was due to a division of the male semen. On the other hand, Erasistratus, according to Galen, considered a double impregnation possible.

The possibility of superfoetation was presumed also both by Aristotle ("Hist. Anim.," VII., 4) and Pliny ("Nat. Hist.," VII., 11). In Philemon Holland's translation of the latter passage, we read :

"Few creatures there be but women again that seeke after the male and can skill of their companie, after they be once conceived with young : one kind verily or two at the most there is, known to conceive double one upon the other. We find in books written by Physicians, and in their records who have studied such matters and gathered observations, that there have passed or been cast away from a woman at one onely slip, 12 distinct children : but when it falleth out that there is some prettie time betweene two conceptions, both of them may tarrie their complete time, and be borne with life : as it appeared in Hercules and his brother Iphicles : as also in that harlot who was delivered of two infants, the one like her owne husband, the other resembling the adulterer : likewise in a Proconnesian bond-servant, who was in one day gotten with child, to wit, by her master, and his baily or procurator : and being afterwards delivered of two children, they bewraied plainly who were their fathers. Moreover, there was another who went her full time, even nine moneths for one child, but was delivered of another at the five moneths end. Furthermore in one other, who having dropped downe one child at the end of seven moneths, by the end of the ninth came with two twinnes more."

Similarly, Aristotle states, as we have said, that "in the human species cases of superfoetation are rare, but they do happen now and then" ("Hist. Anim.," VII., 4.

The Talmudic physicians considered a superfœtation possible in the first three months, and if it took place not later than the fortieth day, was not considered harmful to the children. On the other hand, they expressed the opinion that one of the products might come into the world as a "*sandalium*."

In the *Tr. Bērākōth* it runs : " According to our teaching, beg the man for mercy that he may not destroy (the embryo) ; from the third to the fortieth day that it may not be sandal shaped ; from the third month to the sixth that it may come out in peace."

The word *sandal* is explained as the name of a flat fish, that is to say, a malformed fetus which is like this fish. This is obviously the first observation of that form of twin births which occurs sometimes where one child, dead for some months, is born pressed flat, shrivelled and dried up, in which, however, there is usually no question of superfecundation.

According to Kazenelson, the fate of the *sandalium* had to suggest that of a human being ; and in spite of its being incapable of living, yet as regards ritual, it came within the class of normally developed issue. Since no statement could be made about the sex, the Mishnah got over the difficulty by declaring the mother *unclean*, as if she had given birth to a boy and a girl. Likewise, in the *Tosapha*, it runs : *Quae ejecerit sandalium vel secundinas, ea sedeat pro masculo et pro foemella.*"

Kazenelson then proceeds : " Once in a school the question was raised how long the intervals could be between the first and second deliveries in multiple births. In answer to this question cases were quoted in which the intervals amounted to 10, 23, and even 34 days. Among others, Rabbi Menachem of Capharshearim mentioned a case of twin births, in which one child came into the world three whole months later than the other, and in doing so, he pointed to the two sons of Rabbi Chija who were present. A fierce debate arose over this fact, in which some saw a proof that superfecundation processes had taken place, whilst others explained it as ' a splitting of the drops which had resulted in the development of two embryo of which one had anticipated the other by three months.' "

Rawitzki, however, is of opinion that from the text of the passage in the Talmud, here quoted, it appears : " that the questioner denies the possibility of a superfecundation for himself personally, and also will not even permit the narrator to put a supposititious case."

We come across a peculiar idea of superfecundation in the *Pesikta de-Rab Kahana*.

" And the Lord smote all the first-born in the land of Egypt " (Ex. xii. 20), *i.e.*, the first-born of the husband, the first-born of the wife, the first-born of the wives. How comes that ? One man lay with ten women and likewise ten men lay with one woman and she bore ten children by them, consequently, these were all the first-born of the men " (see Wünsche.⁵).

Still later, the Arab physicians considered a superfœtation possible. Avicenna declared it to be dangerous, and Abulcasis thought that the first child might easily be killed by the second, but that the second child, too, was likely to die.

In the seventeenth century very peculiar views on this question were prevalent. Eckarth relates how he himself had observed two such cases, one in the year 1686, where there was an interval of two months between the two births, and the other in the year 1677, where a woman was first delivered of a son, and 12 weeks later was delivered of a daughter. He says :

" In the beginning and during the first 12-20 days, such a second pregnancy cannot take place for it would cause confusion in the growing semen and one would destroy the other."

Ruysch,² the famous Dutch anatomist of the seventeenth century, reports a case of superfœtation which had happened in the year 1686 in the case of the wife of a surgeon in Amsterdam. He states that

she had borne a strong live child, and six hours later, there followed a smaller embryo about the size of a bean, of which a reproduction reduced in size is given in Fig. 601. The placenta belonging to this embryo had the size and thickness usual in the third month of pregnancy. The umbilical cord of this little being appeared to be a series of vesicles.

Obviously in this case it was a question of one of those cases of twin pregnancy in which one embryo, being obstructed in its development by the other, when at last expelled, is seen to be little thicker than parchment, the so-called *fœtus papyraceus*.

Up to the present, it has not yet been ascertained whether a multiple impregnation is possible by different unions at a considerable interval (superfœtation). Superfecundation seems fairly well established, although some authorities maintain that confusion is common.

Thus, according to Olshausen, the distinction formerly made between superfecundation (fertilisation of ova of the same period of ovulation through several copulation acts) and superfœtation (fertilisation of several ova from different periods of ovulation after a pregnancy) can no longer be sustained if one follows the opinion (which cannot altogether be dismissed) that the expulsion of ova from the ovaries can take place outside a period of menstruation. The cases already mentioned in earlier editions of this book where European women have

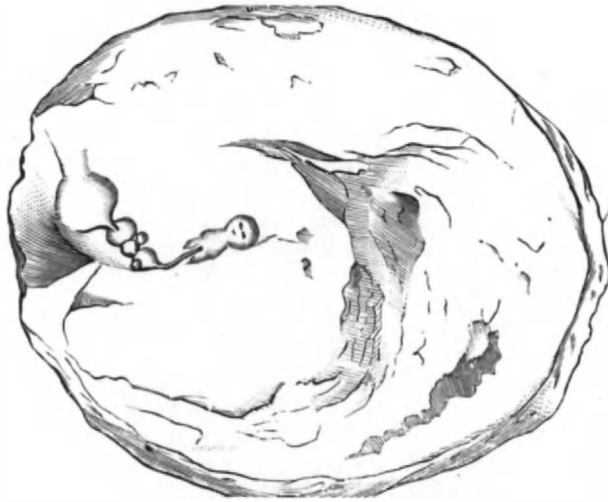


FIG. 601.—The second embryo in superfœtation. (After Ruysch.)

given birth to twins of two races, a white and a mulatto after they had had intercourse with a European and a negro shortly after one another, (such a case is said to have happened in Rhineland about 1921), are not a sufficient proof to Olshausen, since he points out that in cross-breeding experience proves that the children resemble almost exclusively either the father only or the mother only, and thus even the white child of a white mother may be the legitimate offspring of a negro.*

These cases cannot have been thoroughly investigated since, as we said before, no certain decision had yet been possible. As in the above-mentioned passage from Eckarth similar occurrences are reported from time to time, which at any rate seem to suggest some caution in the matter of rejecting the possibility of superfœtation. R. Müller says on the question of superfecundation, that

in 1906, there appeared in the *Medical Record*, as seen from a report by Buschan, a short notice of a case in Albany, according to which a young woman of 20 years is said to have brought a

* [Apart from the arguments outlined by Olshausen, which do not appear to me to be sound, modern opinion is divided on the question of superfœtation. For two points of view see Tarnier and A. W. Meyer.†]

second child into the world 116 days after the first was born ; both children, according to the doctor's statement, are said to have been normally formed.

[Although there is a good deal of evidence for superfecundation the case for superfœtation has not yet, it appears, been fully established. Theoretically there would seem to be a possibility for superfœtation as long as the fusion of the decidua vera and the reflexa (towards the end of the third month) has not taken place. As J. W. Williams points out, it is possible to suppose that, should ovulation occur, " a



FIG. 602.—Male double monsters, born in Augsburg in 1720. (Germanic Museum, Nuremberg.)

second ovum might find its way into the uterine cavity and there be fertilised. Still more favourable conditions would be afforded by a duplex uterus" (p. 443).]

2. TWINS AND DOUBLE MONSTERS

[As we have already seen, multiple pregnancy is well known in the human species. In the case of what are commonly called "twins," two main kinds are to be carefully distinguished. The first result from the fertilisation of two eggs ovulated about the same time. These are called ordinary, fraternal or dizygotic twins. They may be of the same or different sex and, strictly speaking, should not really be called *twins*. The second kind result from a single egg, the exact embryonic process being obscure, although evidently some kind of fission takes place. These are called

identical, uniovular, monozygotic or monochorial twins. They are always of similar sex and show remarkable identity in a number of physical characteristics. About one quarter of all twins are uniovular (see H. H. Newman).



FIG. 603.—The sisters Radica and Doodica from Orissa, Bengal. Photographed at three and a half years.

Although uniovular or identical twins belong to the same class of embryological phenomena as connected double monsters, the latter may conveniently be considered separately.]

These twins (if we can call them such) are not seldom exhibited for gain, and belong to the monochorial class, such as the brothers Tocci and the Siamese twins.

In all these, as even the layman can understand and as scholars in past centuries actually assumed, there is no question whatever of "growing together" or "merging into each other," but of an actual duplication of the kind described. The germinal anlage is split from one or from both sides. Now, if this duplication does not extend throughout the whole length of the embryo, then one part of it will remain single, and at this place the twins will appear to have grown together, but actually they have not completely separated. If the duplication is not complete at the anterior part of the embryo, then there arise malformations with *one* head and upper body and with four extremities; if it was absent at the posterior end of the embryonic formation, then we get malformations with two heads and upper bodies for the whole of which there are only two legs. Of these, the brothers Tocci are a very characteristic example.

Now, if the duplication of the embryonic formation took place at both ends but was absent in the middle, then we get beings with two heads, two arms and two upper bodies and with four lower extremities, whilst the middle part of the body remains single or at least not completely duplicated. In those cases, also, where the duplication has reached a very advanced stage, the middle parts are still joined together by a more or less wide bridge of soft parts. Examples of such cases were the Siamese twins.

Fig. 603 also shows such unfortunate beings. They are the sisters Radica and Doodica (born 1889) from Orissa in India, who travelled through Germany in the year 1892. They were three and a half years of age at that time. In them, too, the separation was not quite complete; they were merged together in the upper abdominal region only. One of the sisters fell seriously ill from tuberculosis so that Professor Doyen decided to separate the two in order to save the life of the other. He was successful in this, but the surviving sister died also some time afterwards. [See Doyen; M. Baudouin; and Vaschide and Vurpas.] (Cf. Fig. 604, of a quite recent case, and Figs. 605 and 606.)

As we have already said, identical twins proceed from the same ovum and share not only a common chorion and placenta, but even sometimes a common amnion as well. Savage tribes seem sometimes to recognise that there are two kinds of twins.

Thus it is reported that the natives of Achin have in their minds a distinction between the two kinds, according to a statement by Jacobs,² which says that they attach a particular superstition to twins with a common placenta. They are con-

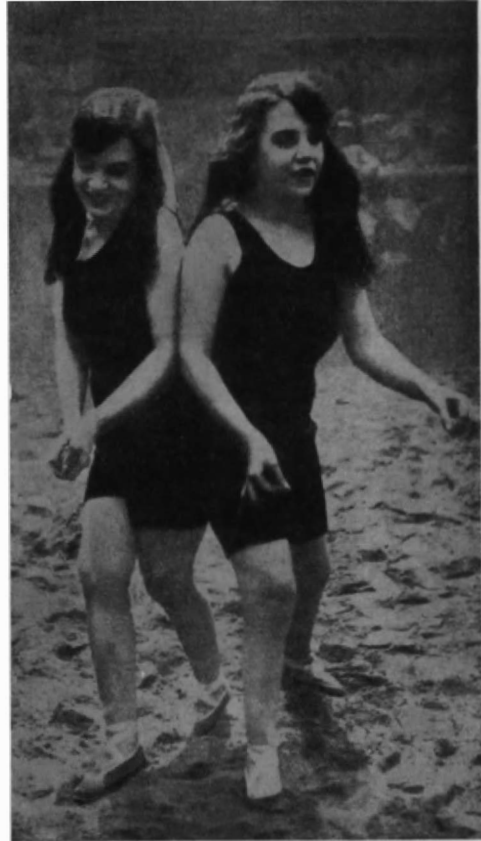


FIG. 604.—The sisters Daisy and Violet Hilton.
(Berl. Ill. Zt.)



FIG. 605.—Female double monsters born in Hungary in 1701. (Germanic Museum, Nuremberg.)

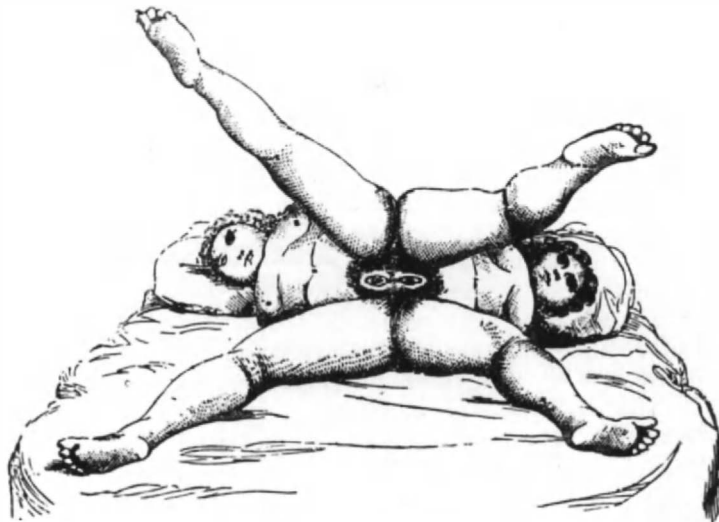


FIG. 606.—Double female monsters with double vulva. (After Witkowski.)

vinced that if one of these twins dies, even in later years, the other, too, must follow it in death in a short time.

According to v. Hovorka, the Dalmatians believe that twins remain alive only if they are of the same sex.

Identical twins, as already mentioned, are always of the same sex ; but twins of one sex are not always necessarily identical. These identical twins are much rarer than the others ; according to Strassman and others, they occur about once in every six to eight twin births. (Schapiro found in the Charité (Berlin) in cases of twin births, a ratio of 123 : 36.) Heredity or predisposition in the mother cannot be discovered ; moreover, in the white race they do not fall in the period of greatest sex activity, but sometimes at the beginning and sometimes at the end.

Premature births and miscarriages are more frequent with identical twins, and the death of one of these is three times as frequent as with fraternal twins (Rumpe). This tends to show that in this kind of multiple pregnancy there is no question of a greater degree of *fertility* in women, but that this kind of production of two offspring, as we suggested above, comes within the sphere of pathology. Strassmann calls it " in a certain sense, malformation of the ova, *monstra per excessum*."

3. TWINS

Now if we leave aside for the moment the difference between the two kinds of twins, it may be said that twin births have been observed in all the races of the earth, but the proportion of these to the normal births is, as we can still assert to-day, very unequal in different nations. Racial differences alone can give no satisfactory explanation for this. For we often see among peoples of similar descent and living near each other, cases where in one, twin births are a great rarity, whilst in the other they occur with striking frequency. Can the degree of " domestication " too, have some influence ? It would be highly interesting if travellers and people settled in the Colonies were to turn their attention to this subject. The little that we can gather from the reports of travellers on the frequency of multiple births may be summarised shortly ; it is true that it is incomplete, but the material is of some interest.

Mondière reports of the women of French Cochinchina that twin births rarely occur : according to his reckoning, not more than one case in 10,211 births. Nevertheless, he continues ; More remarkably still, one district alone, Bentré, in the province of Vinh-long, seems to have the privilege of these twin births, for of the 15 which have taken place in six years, Bentré alone is responsible for nine."

In the little islands of the Malay Archipelago also, we find twin births in varying frequency. On Watubela Island they are very rare ; on Buru, Eetar and the Aru islands, they are also rare, on the Tenimber and Timor Laut islands they occur somewhat more frequently. On Leti, Moa and Lakor the natives (like the Samoans (see below)) have special names for the three possible combinations of sex (two boys, two girls or boy and girl), and on the Kei islands a comparatively large number of twins are born. The Siamese women, too, according to Turpin are said to be very fertile, and twins are not uncommon with them.

Twin births are known also among the Samoans, for, according to Krämer, they have three different words for the three possible sex combinations : *masagatama*, two boys ; *masagateina*, two girls ; *masayalu* a boy and a girl.

Of the Orang Bèlenda in Malacca, Stevens says that twins are almost unknown with them. It can hardly be accidental that he saw no case of it among them, for the Jákun told him that they too have seen none.

According to Blyth, twin births are not unusual among the Fiji Islanders. In the Solomon Islands, also, twin births occur according to Elton, but they are rare, and the natives are astonished when they hear that it often happens among white women.



FIG. 607.—Uterus with twins, two placentas and decidua. (After Stephanus, 1545.)



FIG. 608.—The birth of twins. By Jakob v. Heemskerck. (After Pachinger.)

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17



20



The development of the foetus at 4, 6, 8, 10, 12, 17 and 20 weeks.
 (Spalteholz Preparation. Hygiene Museum, Dresden.)

A Bushman questioned by Passarge knew it was true that twin births were possible, but had never in his life come across the occurrence.

Among the Wakimbu and the Wanyamwezi, East of Lake Tanganyika, according to Burton and Speke, twin births are seen more rarely than among the Dinka negroes and the "Kaffirs." Nevertheless, in individual tribes among the latter, they are of varying frequency. According to Reichard, twin births are comparatively common among the Wanyamwezi.

The missionary Beuster wrote from Ha Tschewasse in the Northern Transvaal to Max Bartels : " I have come to the conviction that among the black peoples, at least among the people in my sphere of work (Bawenda (Basuto)), many more twin births take place than at home in Europe. Among about twelve women in my station, three twin births in succession took place a few years ago."

Pliny (" Nat. Hist.," VII., 3) and Aristotle (" Hist. Anim.," VII., 4) relate of Egyptian women that they were often confined with twins.

With Armenian women, according to Minassian, the birth of twins is comparatively common : of 400 women who had conceived, twins were born eight times ; according to this, therefore, there would be one twin birth in every 50.

In the year 1863, at a census of the population in Trinidad among not quite 3000 persons, there were more than 30 cases of twins among the adults ; and in the year 1856, in Santo-Espiritu in Cuba, six twin births were remarked. In Nicaragua, it is said, the native women very often bring twins into the world.

In former times, Bertillon in particular has made a study of twin pregnancies among European nations. The following table is from his work :

Country.	Period of Observation.	Twin births per 1000 Pregnancies.	In 100 Twin Births.	
			Of one Sex.	Of two Sexes.
France	1858-68	10.00	65.1	34.9
Italy	1868-70	10.36	64.3	35.7
Prussia	1859-67	12.50	62.5	37.5
Galicia	1851-59	12.50	62.4	37.6
Austria	1851-70	11.90	62.0	38.0
Hungary	1851-59	13.00	61.3	38.7

It is worthy of notice that, according to this, Prussia, Galicia and Austria, on the one hand, and France and Italy on the other, show similar results, whilst Hungary takes the highest place. Bertillon thinks he is justified in seeing in this certain differences between the " Teutonic and the Latin Races."

From the above table, it appears also how much oftener twins are of the same than they are of different sex, and in these figures also it cannot be denied that there is a difference between the two groups. For the periods shown in the table, the proportional percentage remains, on the whole, constant for Prussia and France, even when they are compared year by year ; the maximum fluctuations being 8/10 per cent.

Among the Southern Slavs, according to Krauss,¹ twins are a common occurrence. In Bosnia, too, according to Mrazovič, twin births occur frequently.

Inossov, in a treatise published in Russian, which Bartels quotes from a report by Weinberg, gave statistics of multiple births in Russia, which comprise 8,000,000 officially registered births from 50 governmental districts during the decade 1882-1891. The following table gives the total result :

	Total Births in Fifty Governmental Districts of Russia.		Multiple Births.						Of 1,000 Births are Multiple.			
			Twins.		Triplets.		Quadru-plets.					
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
Period, 1882-86 .	2,027,212	1,922,749	45,325	46,468	701	674	75	70	22.80	23.95	23.64	
Period, 1887-91 .	2,174,122	2,058,102	50,578	49,635	736	762	72	70	23.62	24.47	24.46	

It is interesting that Inossov also thinks that racial differences can be seen in the tendency to multiple pregnancy ; it was most frequent among the Finns, rarest

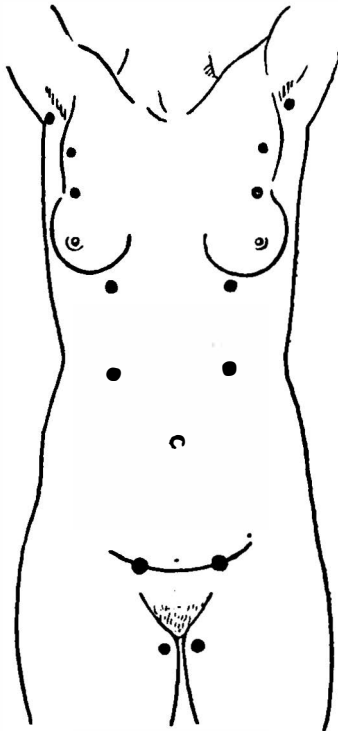


FIG. 609.—Schematic representation of sites for supernumerary nipples. (After Stratz.)



FIG. 610.—Supernumerary nipple on the thigh. (After Witkowski.)

among the Mongols, whilst the Slavs took a middle place. It appears interesting that a close examination of twin births by Rumpe led to the surprising conclusion that the capacity to bear twins varies according to the age of the mother. It appeared that true twins, that is to say, those coming from two ova, were in a predominant number of cases born of mothers at the intermediate sex age, *i.e.*, at the age of 26-30 ; hence, at the most favourable time for conception. On the other hand, the identical twins were nearly all produced at the beginning and at the end of the sex period (*i.e.*, before 25 and after 35 years of age). True twins proceed almost entirely from mothers who have already given birth to children ; identical twins, on the contrary, are equally often met with both in primiparæ and multiparæ. The frequency of twin births is at its lowest in quite young mothers (under 20 years

of age), then rises gradually up to the fortieth year to descend again without, however, reaching the minimum already mentioned (see Weinberg).

Thus, whilst the production of identical twins, as we saw above, almost borders on the pathological, the tendency to produce the other kind of twins (and other multiple births) represents an actual increase in fertility in the biological sense. Now it appears very tempting to see, with Strassmann, something in this kind of "hyperplasia of fertility" which was more common in earlier states of mankind; the development of man would, according to this idea, be aiming at a uniparous condition, but would not yet have completely attained this aim and just such occurrences as the occasional birth of multiples would show that man is still at a transitional stage. This interpretation of the significance of multiple births is all the more attractive since the history of the breasts also teaches us something similar: The occasional reappearance of more than two breasts (in the embryo they are found in greater numbers, but, for the most part, do not develop) has been thus correctly explained, since multiple breasts were formerly the rule because multiple fertility, too, was normal; the higher primates were the first to lose them, and only an occasional atavistic reappearance of both recalls the former normal condition.

Now it would seem difficult to reconcile with this the fact that in races of lower civilisation, as appears from the collection of information given above, frequent twin and multiple births are almost unknown; but perhaps it is not impossible to explain it. In many peoples the birth of twins or more is considered a misfortune or a kind of disgrace, especially for the mother, so that they get rid of the unwanted babies in all secrecy, and in any case have every reason to be careful not to tell the curious enquirer of such an event. Here only long continued observation, especially on the part of the missionary, could produce really useful material for us.

In man the tendency to multiple births seems occasionally to have an hereditary basis. For instance, there appears to have been a hereditary transmission of multiple births in the male line in the case of a German noble family comprising 216 members, in which the occurrence of male twin births was to be observed, yet a definite conclusion is so far not possible (see Rosenfeld).

Strassmann received through v. Winckel, a very instructive table, which may be all the more reliable since it comes from the family of a woman doctor:

HEREDITARY TRANSMISSION OF MULTIPLE BIRTHS ON THE FATHER'S SIDE THROUGH THREE GENERATIONS

		Births.	Twins.
I. generation.			
II. generation :	1 son, 2 and 3 twins. son daughter	3	2
III. generation :			
1st marriage			
2nd marriage			
1 and 2 twins (sons)	3 and 4 twins	5	3
5 daughter	6 son		
twins (sons)			
IV. Generation :	and 2 twins	1	1
			6

Here multiple births have been transmitted in the male line through three generations. The women of the second generation had only single birth families.

The twin pregnancy of Rebecca, which is told in Genesis xxv. 20–26, has attained a wide popularity and renown. Jehovah hears Isaac's prayer that his wife hitherto barren, should be blessed with children. And now she at once became pregnant with twins who became inimical to each other even in her womb: "The children struggled together within her." To Rebecca's question to Jehovah what this meant, she received the answer:

"Two nations are in thy womb, and two manner of people shall be separated from thy bowels; and the one people shall be stronger than the other people; and the elder shall serve the younger."

At the birth, Esau comes first and Jacob, who follows him, took hold of Esau's heel.

In the miniatures of a Haggada preserved in Sarajevo, the confinement of



FIG. 611.—Delivery of Rebecca's twins. From a miniature of the thirteenth century. Haggada of Sarajevo. (After D. H. Müller and J. v. Schlosser.)

Rebecca is depicted. (A Haggada is a kind of biblical reading book, which is read aloud by the father of the family at the feast of the passover and in which is described chiefly the life of Moses and the deliverance of the Israelites from Egypt.) The miniature mentioned is reproduced in Fig. 611. Rebecca sits leaning back on her couch and the twins lie before her between her legs. The Haggada of Sarajevo is said to be the work of Spanish Jews in the second half of the thirteenth century.

We have seen earlier that the physicians of ancient Greece at the time of Hippocrates imagined the human uterus, which they had probably never seen, exactly like that of the animals they slaughtered, *i.e.*, they believed that woman, too, had a bicornuate uterus. Now the understanding of twin births was for them very much simplified, for they were convinced that one of the children had developed in each of the horns.

Chinese doctors diagnose a twin pregnancy when the finger put on a certain

point of the wrist artery finds the pulse beating strongly on both sides of the body.

Among the Japanese, instruction in twin pregnancy is given by Kangawa. He lays down the following principles :

If twins are present, then the left should have the head downwards and the right upwards. Each has its own placenta ; the left comes first at birth. On the other hand, if both twins lie with their heads either upwards or downwards, then they have only one common placenta, and the birth is always attended with greater danger. The sex of the twins can be different. Sometimes one twin develops at the expense of the other ; then the latter is born with the sac in the seventh month. According to Kangawa a woman is carrying twins when her body appears sunken at the middle line.

4. TRIPLETS, QUADRUPLETS, QUINTUPLETS, ETC.

As is well known, sometimes not only two but three and even more children are developed simultaneously in the womb. If we take for example the following early figures, likewise due to Bertillon and Lewis, we shall be unable to exclude the impression that triplet births occur much more frequently than we should have expected.

France (1858-68)	120
Italy (1868-70)	130
Prussia (1858-67)	107
Hungary (1851-59)	62.5
Austria (1851-70)	125
Galicia (1841-59)	36
Scotland (1920-30)	120 (including one case of quadruplets.)

[In Scotland the quinquennial average for triplets since 1855 is as follows :

1855-60 16*	1861-65 13	1866-70 13*
1871-75 13	1876-80 14	1881-85 14
1888-90 13	1891-95 13	1896-1900 16
1901-05 17*	1906-10 14*	1911-15 15
1916-20 10*	1921-25 10	1926-30 11

* Including one case of quadruplets.

From 1855 to 1930 quadruplets were born six times in Scotland. In Northern Ireland from 1922 to 1932 there were 32 cases of triplet births including one case of quadruplets in 1928.]

For France, the proportion is one triplet birth in 8570 normal births, or in 86 twin births. In Scotland (1855-1901) it was 116 per million confinements. Gerschun states that it was observed that one triplet birth occurred in every 4995 normal births in Ireland ; in every 4045 in Russia, and in every 5464 in Württemberg.

In Prussia, according to Strassmann, one twin birth occurs in every 80 births, and one triplet birth in every 7500 births. The figures of Veit (in Olshausen) are slightly different ; in over 13,000,000 births in Prussia, there were twins in every 89 ; in every 7910 one triplet, and in every 371,126 one quadruplet birth.

In triplet births, four different sex combinations are, of course, possible : there may be three boys or three girls, two girls and one boy, or two boys and one girl. Here, too, the embryos (as in the case of monozygotic twins) can, in certain circumstances, all come from one ovum (Strassmann).

Triplets.	Austria.	Prussia.		France.	
	(1851-70).	(1826-48).	(1859-67).	(1858-60). (1866-68).	(1861-1865).
3 Boys . . .	25.05 } 46.6	24.1 } 45.1	25.5 } 48	27.7 } 51.1	27.8 } 52.2
3 Girls . . .	21.6 } 46.6	21.0 } 45.1	22.5 } 48	23.4 } 51.1	24.4 } 52.2
2 Boys, 1 Girl . . .	29.0 } 53.4	29.2 } 54.9	27.5 } 52.5	24.2 } 48.9	24.4 } 47.8
2 Girls, 1 Boy . . .	24.4 } 53.4	25.7 } 54.9	25.0 } 52.5	24.7 } 48.9	23.4 } 47.8

Here, too, it can be seen, as in the earlier tables, that France occupies a special position compared with Prussia and Austria.

In Berlin, from 1883-1893, as has already been stated, there occurred 532,658



FIG. 612.—Triplets. (From a photograph in the Berl. Ill. Zt., 1925.)

single births and 5872 twin births of both kinds. In addition to these, there were 48 triplet births. Quadruplets, etc., were not observed during this period.

Of these triplet births, there were :

Three Boys	12 times.
Two Boys and one Girl	13 „
Two Girls and one Boy	11 „
Three Girls	12 „

The *Statistische Jahrbuch der Stadt Berlin* (twenty-fifth year) gives the following survey of multiple births in Berlin in the course of 74 years (1825-1898) :

“ The recording of multiple births began in the year 1825. Now in the 74 years' period of records to 1898, in a total of 1,971,759 confinements, *quadruplets* were born three times (1854 : 2 boys and 2 girls, 1874 : 1 boy and 3 girls, 1881 : 4 girls) ; *triplets* 223 times ; and *twins* 21,909 times ; that is to say 0.0015% of all births were quadruplets ; 0.113% triplets ; 11.111% twins.”

So far as the sex distribution in these multiple births is concerned, it can be seen that in the quadruplet births there is a decided preponderance of girls, for among 12 quadruplet children, nine were girls and only three boys. Here, however, the scanty material under observation may lead to a false conclusion. Strassmann quotes information from Veit about the numbers in the 36 quadruplet births ; according to this, 76 were boys and 68 girls. Hence, it is by no means



FIG. 613.—Identical triplets. From a preparation in the Hygiene Museum in Dresden.

improbable that, in quadruplets, as in all other births, the male sex predominates ; the degree of preponderance can only be ascertained by the consideration of much more material. With triplet and twin births, however, the proportion is decidedly in favour of boys. Thus, in the above report it runs :

“ In the triplet births, there were 30% boys only, 26% girls only ; 23% 2 boys and 1 girl ; 21% 1 boy and 2 girls.” In the twin births “ 7974 or 36·4% were mixed pairs ; 7098 or 32·4% were boy pairs and 6,837 or 31·2% girl pairs.”

According to Mrazovič, triplets sometimes occur in Bosnia also.

Of triplet births in other parts of the world scarcely anything has been reported. In Cochin China, according to Mondière, they do not occur; among the Gilyaks they are unknown, according to Pilsudski; likewise, on the Fiji Islands, according to Blyth, they are quite unknown, and Barth declares them to be unheard of in Central Africa. Also among the Masai, in East Africa, triplet births are also unknown, according to Merker; on the other hand, an old myth tells of the birth of twins, followed three months later by a third child, which, like the twins, was male and which, therefore, got the name "the tarrier." In Cuba, in the year 1856, not less than four triplet births took place in a village named Bando. In Ceram, too, according



FIG. 614.—Birth of quadruplets. Picture by an Upper German painter, c. 1450. Gallery of Castle Lichenstein. (After Kossmann-Weiss.)

to Riedel, they are sometimes seen. Hrdlička states that among the Indians in the South-west of the United States and in North Mexico, twins are not unusual, but triplets are very rare.

According to Krämer, the Samoans have a special word for triplets, *unitolu*. The Maori, too, according to Goldie, know triplet births, yet (like twins) they seldom occur.

A greater number than three children at once is seldom bestowed on human beings. Pinther wrote of quadruplets in 1857 and in the course of the last few years news of such births has appeared in the newspapers several times. M. Bartels, however, has drawn attention to an exceedingly interesting antique carving which is in the famous Ny Carlsberg Glytothek in Copenhagen. It consists of a young woman

of about 76 cm. in height, sitting on a seat which was found in a cemetery in Capua. The garment is fastened on the right shoulder ; the left shoulder and the left breast are bare. On her lap, supported by her left forearm, repose side by side, four babes in swaddling clothes which the woman holds firmly with her right hand. This is probably a memorial to a young mother who, after being confined with quadruplets, died with them. Other quadruplets are depicted in Figs. 614 and 615.

Aristotle (" Hist. Anim.," VII., 4), however, already upheld the opinion that



FIG. 615.—Birth of quadruplets in Augsburg in 1683. (Germanic Museum, Nuremberg.)

quintuplets could be born.* Yet he considered a greater number of embryos in the same pregnancy to be impossible. In the Talmud, we are told that the Israelite women in Egypt had brought even six living children simultaneously into the world, whilst Pliny considered even a twelfefold pregnancy possible.

Recent observation has verified the occurrence of quintuplets, sextuplets and septuplets, but they are always such rarities that they can only be regarded as curiosities. Wappäus took the trouble to ascertain the statistical proportions of

* [Cf. Shishido.]

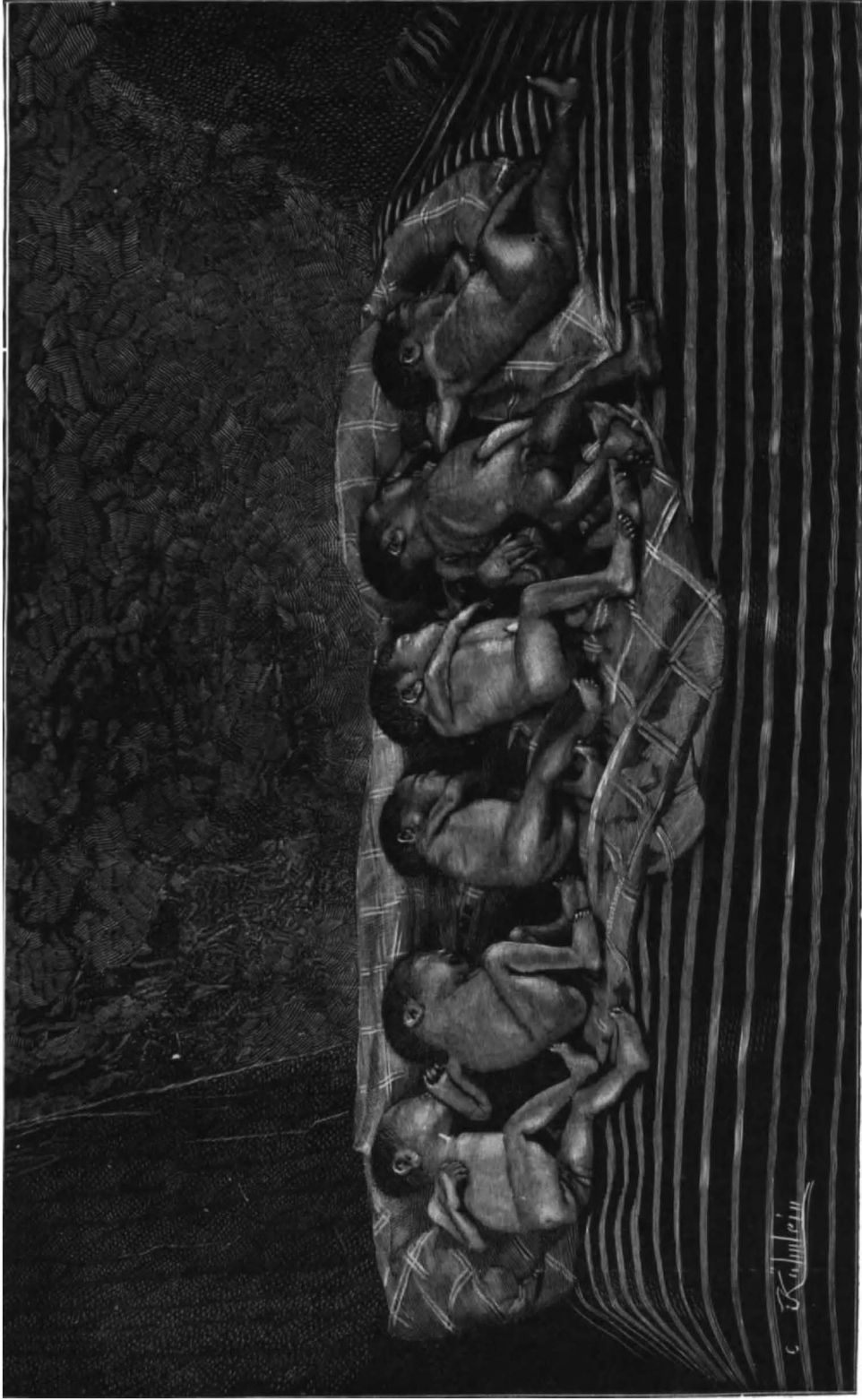


FIG. 616.—Sextuplets. Gold Coast. (Photo : H. Vortisch.)

multiple births. He found, in general, in 10,000,000 births, 9,768,334 single births, 227,597 twins, 3948 triplets, 118 quadruplets, and 3.5 quintuplets.

According to G. C. Nijhoff, there exist up to 1904 descriptions of 27 cases of quintuplet births, to which he adds another case in the year 1719 (at Scheveningen), of which a contemporary sketch exists and one not quite authenticated case in the year 1796, at Dordrecht. Added to this, there is a case very carefully investigated by himself, so that 30 cases were known to him. Among the quintuplet births, the boys were in the majority: 67 boys, 47 girls (in 23 cases). [Further cases (one in 1934) were published later. Cf., for example, Stoker (1895-1896), W. Martin (1917), and Veerana (1923).]

In the case described by Nijhoff and observed by de Blécourt, a 34-year-old woman, in whose family twin births had occurred several times, the mother of a seven-year-old boy (besides him, apparently, one miscarriage at six months) brought quintuplets into the world in the sixth month of pregnancy, 1 boy and 4 girls, which were almost perfectly formed and lived for one hour after birth. There were three ova present, two with one embryo each and one with three embryos.

The Berlin gynæcologist, Karl Schroeder, gave it as his opinion that there were no authentic observations of more than five simultaneously developed embryos. All the more interesting, therefore, is a communication from Vortisch that in the year 1903, a negress in Christiansberg on the Gold Coast was delivered of sextuplets, of which the missionary there had taken a photograph. Five of the children were alive, and the sixth was dead. There were five boys and one girl. From want of sufficient care, the five children born alive soon died. The "happy" mother had a decided tendency to multiple births. According to what she said, this was her fifth confinement; at her second, she had given birth to twins; at her third to quadruplets; at her fourth to triplets. Thus, she had brought 16 children into the world in five confinements. Vortisch points out a very interesting circumstance, namely, that in three of these multiple births, the fathers were different men. That suggests that the capacity for multiplying the embryos is without doubt in the mother and not in the fathers. Mr. Vortisch had the kindness to send to M. Bartels the photograph of the sextuplets, which is reproduced in Fig. 616. Nijhoff mentions two further cases of sextuplets in the appendix to his work quoted above. [For further cases, see Vassalli and *Boston Med. and Surg. Jour.*, 1895, p. 243.]

But there are also records of confinements with septuplets. On a gravestone in Hameln (for the photograph of which Max Bartels has to thank the Government architect Weisstein) which is inserted in the outside wall of a house which stands near one of the churches occurs the following inscription:

"A citizen named Thiele Roemer in our town
His wife, too, Anna Breyers here well known,
As one counted 1600 years,
The ninth of January at 3 o'clock of the morn,
Of her two baby boys, five little girls
At one time were born.
Have too received the Holy Baptism,
And then on the 20th at midday died happy.
May God give them the blessing
Vouchsafed to all believers."

Fig. 617 represents this gravestone (without the inscription) and shows the parents and their relatives kneeling below the crucifix; six babes in swaddling



FIG. 617.—Tombstone of septuplets in the Roemer family in Hameln.

clothes are lying on a pillow on the ground, whilst the father holds the seventh up towards the crucified figure.

In the Berlin Anthropological Society where M. Bartels discussed this case, he pointed out that January 19th, and not the 9th, is indicated as the day of birth. Then the children would have lived not 11 days but 33 hours. That appears more

credible, for even triplets, as is well known, have very little vitality. Since, at that time, people used not to make a mock of holy things, we may safely assume that a veritable fact is involved here.

The same conclusion was reached by D. Barfurth who—a remarkable example of “duplication of cases”—sketched and described this gravestone in the same year as M. Bartels, without either of the authors knowing anything of the other’s publication. (The publications were made almost simultaneously, the photograph shown in Fig. 617 was laid before the Berlin Anthropological Society by M. Bartels at a meeting on October 20th, 1894; the date of the appearance of Barfurth’s information is December 31st, 1894.) Barfurth also discusses the possible doubt concerning the credibility of the report which might arise from the length of life of the septuplets (9–20). He writes that “this circumstance might, in our sceptical times give all the more cause for thinking of wicked neighbours, evil midwives, cuckoo’s eggs, and suchlike things. But if one considers how difficult it would be to foist strange babies on her owing to the smallness of the fœtus, and the great sensation that the whole case was bound to make, then the event is certainly much more credible than a complicated deception.”

Another case of septuplets is reported in the Roman newspaper *Opinione*, of March 19th, 1899. It was stated that in

Madrid, a few days earlier, the wife of a blacksmith is said to have been delivered of a stout, strong boy. Half an hour later pains set in again and then two dead boys were born. But again the pains began, and lasted the whole day until evening, and then were born at two-hour intervals, a fourth, a fifth, a sixth and even a seventh son; but they were all dead, although completely formed. The mother, a very strong woman, was perfectly well afterwards.

How far this newspaper notice, quoted by Max Bartels, the publication of which was due to an original telegram of the reporter, coincides with the truth on all points, there is, of course, no way of deciding. That no impossibility is involved the septuplets of Hameln indicate. [Further cases of septuplets have been published by Shultz (1903) and J. B. Davey (1921). The latter was a Goar woman at Dar-es-Salaam. A month previously a tumour had been suggested by the medical examiner !]

Now it is quite different in a case described by Francesco Pico della Mirandola, Lycesthenes and Ambroise Paré. It concerns the Italian woman Dorothea, who was said to have brought 20 sons into the world in two confinements. The first time she was delivered of nine, and the second time she is said to have given birth

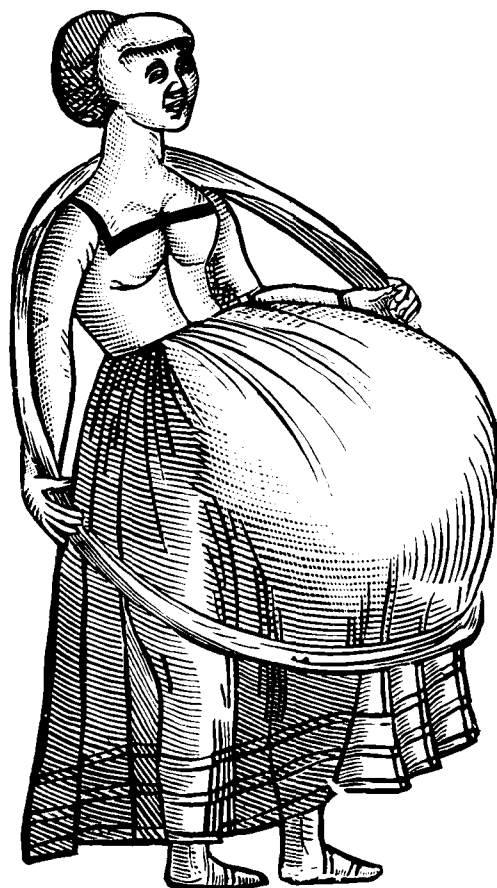


FIG. 618.—Dorothea, an Italian woman, pregnant with nine or with eleven children. (After Paré.)

to 11 children simultaneously. According to the description, she was so big in her pregnancy that her abdomen hung down to her knees, and in order to carry it, she had to wear a sling which she put over her shoulders and round her neck. The sketch which Paré gives is reproduced in Fig. 618.

In Schwelin's *Wurtembergische Chronica* (cf. Scheible), the following report is to be found :

“ In the year 1503 at Benigheim in Württemberg, a husband and wife were still living. The husband's name was Adam Streitzmann, his wife's however, was Barbara Schmutzerin ; these together begot 53 children (see Fig. 587, Vol. II., p. 285) as follows :

“ Eighteen times, one child at once ; five times two children at once ; four times three children at once ; once six children, of which three were born at five months, and shortly after one more ; eleven weeks later, still another ; the sixth she carried for ten weeks longer. Finally, this woman again became pregnant, and bore seven children. In twenty weeks, she gave birth to three of these. When she was rising from childbed, she gave birth to another ; in four and a half weeks two more ; afterwards, one more, which was an ell and three fingers breadth long, and had a big head, which no man could span, with which she lay three days in labour, and became so weak that she no longer knew anybody, yet God released and delivered her.

“ Among the children mentioned, there were 38 boys and 15 girls, all perfect in limb and fully formed ; of them, 34 came to holy baptism, but 19 did not reach it. Among these 53 children, not one lived beyond the age of nine years. The mother died later in the year 1503 already mentioned, and the husband did not live long afterwards. Thus, these two married people passed 50 years in uninterrupted union. This true and marvellous history is recorded not only in writing, but is also depicted in the churches of the said Benigheim, and on the town hall, and may still be found there ” (pp. 119-120).

With some of the old Rabbis, we come across still stranger views. In the Midrash Shemot Rabba, in the interpretation of the Biblical passage, Exodus i. 7, we find :

“ Although Joseph and his brethren were dead, yet their God was not dead, but the children of Israel were fruitful and increased abundantly.” Or : Each woman bore six children at once (*i.e.*, in one womb). Many say each woman bore 60 at once. “ It is not to be wondered at, for the scorpion which belongs to the reptiles brings 70 into the world,” etc. (see Wunsche 4).

We see what theories in natural science orthodox theology could produce (*cf.* also Fig. 588).

That infants in multiple births are more difficult to rear than one child is generally understood, even among primitive peoples, as many of their customs which are to be mentioned shortly, show. In Germany, O. Kaiser, a Dresden gynæcologist, began, in 1905, to make enquiries into the fate of triplets. So far, he succeeded in finding only four families which have been able to keep alive and rear triplets. Three triplet sisters are now 30 years of age ; two sisters and a brother now 23 ; three brothers five ; and three sisters of eight years of age. All had been artificially fed because they had been too weak to take the breast. From the same clinic, Naumann informed us of 4 cases which became known there later, which are now at from 16 to 24 years of age ; these were all fed on what, at the time, constituted artificial food, which was no doubt of great advantage for them. They were delicate for a time, but are all strong now.

We have to thank Weissenberg¹¹ for some interesting information about a “ drop ” of triplets, and one of quadruplets. The former, boys, nursed by the

mother, were delicate at first, but in 1911 were now nine years old and normally developed ; the latter, girls, also weak at first, two nursed by the mother and two by a nurse, were 15 years of age and somewhat retarded in development. In both cases the parents were Russian Jews.

Among the Pima Indians, Hrdlička was able to discover one case of triplets, in which all three had reached an advanced age.

5. THE CAUSE OF MULTIPLE BIRTHS

In the present position of scientific knowledge, there is no great difficulty in forming an opinion as to what is the reason that in one and the same pregnancy several embryos come to fruition.

As we have seen above, not only one cause but several may be present. We have already discussed how twins of the same sex may be regarded as coming from an impregnated ovum which has undergone fission. Among twins of different sex, and also in a number of those of the same sex, more than one ova must have been impregnated at the same time ; and the same is true of triplets, etc.

Now there can be no doubt that in individual human beings a certain physical or hereditary tendency towards the production of multiples must exist, and that this may even be transmitted to their offspring. We may have, as we said, to regard this as an atavism, as, for instance, the occasional occurrence of supernumerary breasts. The ancestors of mankind had many breasts, doubtless suggesting the capacity for giving birth to several young. Thus a tendency to multiple births is theromorphic. Now, whether this tendency is transmitted by the mother only or by the father also is an unsolved issue. When, for example, the case observed by Bamberg is read, where a man's first wife had twins twice, and his second wife also had twins, whilst the man's parents had twins once, and likewise his paternal uncle had twins, then one is tempted to see in this a transmission of the tendency in the male line of descent.

In any case, we have to be very careful in assuming an hereditary tendency since, as Weinberg and Rosenfeld in particular point out, statistics can very easily lead to misconceptions, yet there is no reason why the fact of heredity should be doubted, above all on the maternal side.

Callaway reports a case where a South African native, in whose family twin pregnancies had repeatedly occurred, married a wife from a tribe where twins had practically never occurred. At her first confinement, this woman bore twins. Hence, in this case, assuming the facts, an influence of the father on the formation of the twin pregnancy is not inconceivable.

In any case, the occurrence of twin births in several generations or with several members of the same generation has been ascertained by several observers. Very interesting is the experience of Rumpe that he could only prove this transmission for the procreation of fraternal twins, whilst in the procreation of identical twins, it was the greatest of rarities. However, it is not so very rarely to be observed that the same women have been delivered of twins several times. A very interesting case happened recently in the village of Leipe in Spreewald. Its truth was vouchsafed by the chief magistrate there in a communication to M. Bartels.

The wife of the farmer, Richter, was confined with twins on January 30th, 1902. On January 7th, 1903, she again gave birth to twins, and on November 30th, 1903, she was again confined, but this time with male triplets. The children were all born too prematurely to survive, and they only lived a short time.

The most remarkable thing here is the short period in which these multiple births took place. So far as the number of multiple births is concerned, we have already met a few analogous cases. Saniter mentions several triplet births which had taken place in the Frauenklinik in Berlin. Three of these mothers of triplets had already had twins once ; in one case the mother had had twins once and triplets once ; and one of these women had even previously had twins twice and triplets once ; thus, with four confinements, she had attained the possession of 10 children. It is noteworthy that, in most of these cases, the twin births preceded the triplet births. Hence, it would seem, the tendency to multiple births increases in the same woman. Mirabeau has already drawn attention to this.

With regard to the so-called malformations or monsters (Greek *τέρας*, hence teratology), a word may be added here. They can be divided into three groups :

- (a) Anomalous formations in the embryo.
- (b) Anomalous formations in the chorion and the germinal areas.
- (c) Imperfect development of the maternal part of the placenta.

In the anomalies of formation in the embryo, one distinguishes between simple and double deformities. In these, the axes of the two bodies may be in one line or parallel or joined at one place only. The union may take place in the heads, in the thorax (sternopagus), or in the abdomen (gastropagus). It was formerly held that the malformations represented a form which corresponded to an earlier stage of human development, for which, however, incontestable proof is lacking (atavism or throwback). To-day, authorities incline more to the idea of formations due to development, that is to say, of a pathological origin which may be caused by some mechanical interference with the uterus. The tendency to produce these malformations has often been shown to be hereditary. The popular opinion that psychic emotions make their influence felt in the formation of the embryo can be considered as a superstition (*cf.* so-called "maternal impressions").

An article by Agnes Bluhm in M. Marcuse's *Handwörterbuch der Sexualwissenschaft* conforms to the modern position of the enquiry into multiple births. The following passages have been summarised from this article.

Multiple births arise in two ways : first in that several ova come to maturity simultaneously (multiovular multiples), and secondly by abnormal fission leading to the splitting of one ovum (uniovular). The latter can be regarded as multiple, mostly double, malformations. According to this, they have invariably only one chorion and one placenta, generally also only one amnion ; they usually have, however, two umbilical cords which are connected with each other by a placental anastomosis. . . . According to an older view, uniovular twins were supposed to come from ova with two germinal vesicles. Such ova have occasionally been observed. In this case, however, the twins must have had two choria, which has so far never been seen in uniovular cases. The impregnation also of one ovum by several spermatozoa has been suggested. Experiment has proved this to be not impossible. It leads, however, to giant and not to multiple formations, and polyspermal ova perish very prematurely. Identical twins would then also occur frequently among uniovular twins ; but they are invariably of one sex, which indicates an impregnation by a single spermatozoon. The cause of their formation is now generally assumed to be an abnormal fission process. This means the formation of two or more germinal areas, and, according as these are situated near or at a distance from each other, are formed mono-, di- or poly-amniotic, but invariably monochorial multiples. The blood supply for individual multiples may be different, and thus with one nine months child, there may be one or several examples of *foetus papyraceus*, or the

vessels of the allantois of one fetus grow into the body of the other, and thus make the second a parasite of the first (see Ahlfeld), or one embryo takes up the whole of the placenta for itself, in consequence of which the heart of the second perishes, and it becomes by curtailment of form an acardiac monster, which is not so very rare.

The formation of the uniovular twins by the division of one ovum explains their striking resemblance. They often resemble each other as one half of a body resembles the other.* So far as the origin of the multiovular types are concerned, they are regarded even nowadays among some uncivilised peoples as examples of superfœtation, and as a proof of conjugal infidelity. In general, superfecundation is assumed at the present time. The ova may come from one or both ovaries; they may be set free by the simultaneous bursting of several follicles, or of one multiovular follicle (plurifollicular or unifollicular). Follicles with two or more ova are not so very rare among human beings.

The ancient Hindus believed that twins were formed "when the semen pressed by wind from both sides splits in two" (see Schmidt⁹).

Roth⁵ states that among the Australian aborigines, on the Tully River in Queensland, the birth of twins or triplets is regarded by the women as a punishment, which the mother-in-law brings upon them because the wife has not shown her enough attention in collecting firewood, etc. When the daughter-in-law is away from the camp, the old woman comes and puts two or three pebbles under the place where the daughter-in-law sleeps, in consequence of which the latter then gets twins or triplets.

It is also believed by the aborigines in Queensland that a woman gets twins if she dreams that she has been with two different men. It is regarded as a further reason for the development of twins that the woman may have had a place for them in her womb (see Roth⁵).

We find another theory in Africa. A pregnant Wandonde woman is said not to be able to have another sit beside her on a tree trunk because otherwise twins will be born, which is regarded as a great misfortune (*cf.* Fülleborn²).

6. CONDEMNATION OF AND ESTEEM FOR MULTIPLE BIRTHS

We have already seen in an earlier section that many peoples think it impossible that a wife who has been faithful to her husband can have twins. The birth of twins is for them always an infallible sign that the mother has committed adultery, and in that event death usually awaits the new-born babes. This is very often their fate even where no adultery is suspected, and for this the tribes concerned bring forward various reasons. Among many it is the unnatural and the unusual generally which they regard as bringing evil. We find this belief diffused in many parts of Central and South Africa, and the missionary Beuster, working among the Bavenda in Northern Transvaal, announced in the year 1886, as an important success of the out-station Mpafudi, that he had baptised twins, the first couple not to be killed. He writes :

"For when one knows how careful they are that no contact with these twins or their parents should bring the same evil upon them, one must admire their resolution, etc. . . . When, for instance, such a misfortune happens to heathen parents, the children are at once put to death and removed to some wet place; for the most part they are buried in pots on the banks of the river. Then the doctor is called, who is well paid to use all kinds of medicines

* [For mental characteristics, see Herrman and Hogben.]

to ward off the return of such a misfortune. All the clothes of the husband and wife are taken away by the doctor, because the seat of the evil may be in them, and they must be removed in order to effect a cure. People leave the house not by the door, but by an opening made by force at the back of the house."

Of the savage tribe of Longkiau in Formosa also, the Chinese report :

"The birth of two at the same time is regarded as an evil omen. The new-born children are then bound to the top of a tree and left to die there. The dwelling (for superstitious reasons) is also transferred to another place" (Florenz²).

Granville and Roth² state that among the inhabitants of the Warri district on the Niger Coast, Jekris, Ijos and Sobos :

twins are killed and the mother leaves the town and lives in the wood. The natives say that a woman must have been unfaithful to her husband or done something else very wicked if she is confined with twins. In the eyes of the natives, it is something unnatural to have twins.

Certain of the Australian aborigines are said to kill twin children, and even single ones, because they are too much trouble to look after (*cf.* Howitt, pp. 748 ff.). In New Britain, as Danks reports, twins of one sex are left alive. But if a boy and girl are born at the same time, then they are killed, because they belong to the same tribe and are of opposite sex, and it is assumed, since they have undergone connection and union in the womb, that this must be regarded as a breach of the marriage laws.

Among the Bukaua (New Guinea), it is assumed that the evil spirits have had a hand at the birth of twins. One of the children is killed, generally by strangulation, but the old grandmother has the final say in the matter (*cf.* the missionary Lehner in Neuhaus²).

On the Island of Yap in the Carolines, Senfft states that when twins are born one of them is given away, generally to the father's brother or, failing him, to another near relation, because people believe that otherwise one of the children will die. The child given away then cannot be claimed back if the other should die.

On Nauru Island, a peculiar view prevails in regard to twins of different sex ; it is assumed that they fornicate in the womb, and, as fornication is regarded as a crime to be punished by death, the male child is killed as atonement.

Among the Dyak of Matan, Simpang and Sukadana in Borneo, the birth of twins is regarded as an unfavourable omen, especially if they are of different sex. The boy is then given away as a slave (*cf.* Schmidt⁹).

The Swahili also think twin births a misfortune, and formerly killed the children ; now, twins as well as deformed ones (those with hare-lip, and also children whose back teeth are cut before the incisors and the like) are handed over to the missions (H. Krauss²).

It can be regarded as an advance in cultural development when of new-born twins only one child must lose its life. Here, too, the reasons brought forward as explanation of and excuse for such infanticide are not the same everywhere. The Indians in California kill one child because the rearing of two would be too great a burden for the mother. The ancient Mexicans feared that one of the twins would one day kill its parents, and this evil was averted by killing one child. The Campa Indians in Peru, according to Grandidier, kill the last-born because they regard only the first-born the legitimate child of the married couple, the second-born being the offspring of a demon.

Of the ancient Peruvians, v. Tschudi says :

“ One of the strangest fasts was that which had to be kept in many provinces when a woman bore twins (*toutsu*), which was regarded as something quite horrible and shameful. The fast (on this occasion of the mildest kind) consisted in abstaining from salt, Spanish pepper, and from sexual intercourse for the duration of six months. In some parts, it was made harder, for the father and mother were shut up in the house or in a hidden place. Each lay down on one side and drew up the foot on the opposite side ; in the bend of the knee, a bean was laid, and was left there until the warmth and perspiration made it begin to sprout, which happened, as a rule, after five days. Then only would the fasting people change their position and now had to do the same thing with the other foot, until again on the fifth day, the second bean sprouted. After this punishment was undergone, the relatives killed a roe, pulled off its hide and made a kind of canopy of it, and the guilty parents had to walk under it with a rope round their necks. After this ceremony was over, however, they had to wear the rope round their necks for many days more.”

Similarly, v. Tschudi states that among the ancient Peruvians :

“ at the great hunts of the Indians in the mountains he (the deer *taruco*) is often killed. His hide too, played a part at certain ceremonies of the ancient Peruvians. That is to say, when, after the birth of twins, the parents had carried out the strict fast prescribed, their relatives hunted a stag, pulled off its skin and made a kind of canopy under which the parents of the twins, with rope or string round their necks, had to pass. These ropes they then had to wear for several days longer. Wiener is, therefore, in error when he thinks that the human figures in clay and wood with a rope round the neck, which are fairly common, represent prisoners of war ; these figures were rather put on the graves of persons who had produced twins. The rope, it appears, was a symbol of the death penalty by strangulation, for to bring twins into the world was, according to the Indian ideas, in many provinces of Peru, a crime which merited severe punishment ” (p. 136).

In Nias, the father who had killed a twin child, as Modigliani relates, makes a big wooden image of the god Adù Hóro.

Among the natives of Guiana and the Saliva Indians in Brazil, twin births are regarded as a great disgrace ; the mothers are mocked at by the other women because they are prolific like mice, and bring several children into the world at once. To escape this unpleasantness, the mothers are accustomed to kill one twin child at once, which can be done unnoticed, since there the women usually await their confinement quite alone in the woods. Also, on the Romang Islands north of Timor, the birth of twins is looked upon as a great disgrace, and one of the children, usually the weaker, is suffocated immediately after birth. Similar views prevail on the islands of Damar, Nila and Serua. Among the Makalaka in South Africa, according to Mauch, one twin is put in a dish and set out as food for the hyænas. Here it is decided by drawing lots which of the twins shall meet this fate, and certain magical pieces of wood are used for the decision.

The birth of twins worries the Gilyaks (*Sakhalin*) terribly, for they are convinced, as Pilsudski informs us, “ that one of the twins is a son of the mountain and forest god, *pal-niwuch*, who represents for the poor, weak Gilyaks, a powerful, now benevolent, now evil god. Hence, the child of the *pal-niwuch* must at once be restored to its father. Yet as they are not sure which child is not of human origin, they prefer to treat them both in the same way. When twins live and grow up, for the whole of their lives they are objects of fear to their neighbours and acquaintances.”

Nevertheless, those twins are most feared who die as children. The offspring of the mountain spirit who, to be sure, tarried only a short time among men, but who had never got used to them and does not feel their equal, is especially endowed with power to harm people,

and they, therefore, strive eagerly for his grace. The family which has received the unwanted descendant of the mountains, makes a little model of a Gilyak yurt and puts it, either on a shelf in their dwelling, or outside under the open sky. In this little yurt a figure carved from wood is supposed to represent the dead child. All the members of the family regard it as necessary daily to give some of the food they themselves eat to the figure. This is done not only by the parents of the twins, but also by the two generations following them. The great grandchildren first take the figure from their dwelling place and carry it with great ceremony to a mountain nearby, and there they offer it choice food for the last time. Near the offerings a stick, 1-2 m. high, named *nau*, with twisted carvings, is buried. From this moment onwards, the whole family is assured that the dead child, *tonhr ehlian*, will not, even without prayers and offerings, haunt them.

The non-observance of this law, the object of which is to soothe and render gracious the fearful mountain spirits, draws down their anger on the careless survivors. Various diseases, which may attack the parents and relatives of the twins, are regarded as marks of their vengeance. These are generally quite different maladies, *e.g.*, curvature of the jaw, squint eyes, stiff neck or fits of all kinds. The appearance of these illnesses is declared to be the consequence of the displeasure of the mountain spirit, and they say in such cases: "*Tonhr ehlian singrund*," *i.e.*, "The twin child torments."

Twins must not be burnt, as is the custom of the majority of the Gilyaks in respect of other corpses. This would immediately be avenged by loss of sight in all those taking part. Even the parents of twins must be buried in the ground, as the relationship with the mountain spirit has passed to them. Yet the children of twins are considered as quite ordinary people of their tribe and at their burial are not excluded from the usual custom (see Pilsudski).

This example brings home to us how the birth of twins can be disastrous, not only to themselves, but also to the family and even to the whole tribe.

The Wahehe (East Africa) also obviously think the birth of twins harmful, although they do not kill them. The chronicle of the sisters from Madibira in Waheheland relates, according to Fülleborn,² that both parents were shut up in the house for two months: "in the third month, however, the exit is opened with dancing and carousal. The two babies are laid in a corn-riddle and carried round. The chief receives as a present a white cock, white pearls and other things, also the evil spirit gets his share. Afterwards the hide, in which the child is carried before the mother, is washed in a certain *dawa* ('medicine'), and they all betake themselves to the nearest cross-roads. There the blood of a cock or goat is poured out, water is put in, and the evil spirit adjured to sleep and rest well and not to destroy the children with disease or death."

Among the Konde, too, the birth of twins is thought a great misfortune; if it does happen, great fear prevails; everybody flees, for they are afraid that at the mere sight of such a woman their bodies will swell up and they will have to die; even the pythons, as they told Schüler the missionary, left the place for fear of the many twin births (Fülleborn²). The father and mother of twins are shut up in a hut apart from the village for some months (in summer four, in winter two months, according to Merensky; five months according to a missionary; one month according to Johnston); they are looked after by people who were themselves born as twins; only with these can they talk; if anyone else goes past and calls a greeting to them, it must only be answered by the knocking with a piece of wood.

Of the purification ceremonies themselves, to which the parents must submit themselves, Nauhaus * the missionary, as eye-witness, reports as follows:

"We were first at the ceremonial ground but gradually the people collected together, and, though the chief was there, the ceremony did not yet begin. There was still something lacking

* [No reference is given.]

we were told. The neighbour, a relative, will not have his head shaved until he has been given a head of cattle. The cattle are dead, will not a hoe do ? But now there is no hoe. The chief must help them out again and has a hoe brought. The neighbour, however, can still not take part in the ceremony, for a happy event is expected in his family and his taking part in the present ceremony might bring ill-luck on his wife. His younger brother must let himself be shaved instead. According to the various grades, they stand round the gourds filled with beer. The beer, mixed with hot water, is innocuous and does not intoxicate. The women take no part in this drinking bout ; only four or five of the highest placed ones had a good drink and then went away. The old priestess, meanwhile, concocted her medicines and everybody streamed towards her pots. With a brush of banana leaves, they were all now sprinkled with the hot brew. That caused shrieks among the children, of whom the little girls especially were dragged along without mercy. Then the whole company placed themselves so that they had their backs turned to the hut where the parents of the twins were. Now the father creeps out, gets the pot with medicine from the wise woman and sprinkles all those present ; then he goes into the hut again, but, at a sign from the priestess, comes out again backwards in a bending position and calls : ' I am cleansed ! ' Everybody answers : ' Thou hast dealt us a blow ! ' He returns to the hut. Suddenly everybody cries : ' The enemy is there ! ' And all run away in wild frights. At the door of the hut the woman waits who takes the little citizens of the world from the mother, who now appears and then joins the fugitives. The flight continues for 300 or 400 steps distant ; then they all come back. All the men greet the father, the women the mother, and now each woman takes the children in her arms."

Likewise, in Uganda in Central Africa, the birth of twins is a great affair which involves precise ceremonies. Roscoe² has described these in great detail. We can give only a short summary of them :

The midwife must not go home until the conciliation and thanksgiving ceremonies to Mukara, the god of fertility, are finished. From the reports, it seems to be a matter of expiation to some extent ; the birth which has taken place must not be spoken of, otherwise the children die ; they are indicated to those taking part by signs and certain presents ; the parents and the twins themselves are specially named (Salongo, Nalongo, Balongo) ; at the ceremony undertaken by the witch doctor the door of the house is arranged as a window, two new doors, one for each sex, are broken in the back wall of the house ; images of the children, which include their navel cord, are set up ; in the closest family circle the parents go through a sort of act of coitus, at which those present turn their backs. In short, these customs seem to aim at concealing the fact of birth of twins from the spirits and in a way to make them legitimate after the event. Meanwhile, the god, through the priests, receives gifts, and in the family, too, they give expression to their joy by gifts and feasting. The placenta is put in two earthen vessels on an uncultivated spot near the house.

The Ewe negroes also have to carry out complicated ceremonies on the birth of twins. These ceremonies have been described fully by C. Spiess, the missionary. The interesting point in this case is that the expiation is undertaken by another couple, who have also had the misfortune to beget twins, and we must add, only a couple whose twins correspond exactly in sex to those just born.

The parents must not look at the sky immediately, otherwise they would be turned into iron poles, so they remain in the hut for 25 days or longer. Then they must submit to the *Venovidzidzi* customs which are carried out by companions in misfortune and give rise to various feasts and entertainments. The mother of twins has her hair shorn until only three tufts are left, the father except for two tufts (*vetawáwla* = the shearing of the hair of the parents of twins). " In a few districts of Togoland one sees little girls wearing an image of an *Aklama* (carved in wood), the protecting spirit, who is accessible to everyone, either in front or at the back, showing a little from their garment. In most cases, this shows that she is one of twins, the other of whom has died. The image of the spirit represents also, in a way, the dead

sister or brother. At the same time, the idea is linked with it that this girl would also like to have children later, but only one at a time and not twins."

Among the Hottentots, the fear of having twins is especially great, and just as peculiar is the means which they employ to avert the misfortune, namely, the removal of one testicle. Germann writes :

" Kolben's tale of cutting out the left testicle (which operation all the young men have to have performed on them if they want to get a wife) has frequently been described as a fable. Whilst, however, the old authors before Kolben, namely, Tachard (1686, p. 101), Boevingh (1712) and Saar (1672, p. 178) are at one on the existence of this custom, they merely explain it differently. Sparmann knows nothing about it and contests it, whilst Le Vaillant admits it at least for some tribes. The best authority on South Africa among the younger ethnographers, Gustav Fritsch, thinks that there is a gross error in Kolben and that the natives pretend to Europeans that they cut out a testicle when they merely remove the foreskin. Kolben's statement that he could scarcely discover a trace of the operation scar in boys who had been cut a short time before, strengthens him in this opinion, and in the Hottentots the peculiar position of the scrotum in the abdominal cavity is said to be the cause of the error. Now, however, Brincker,² the missionary, states clearly that among the Khoikhoi one testicle is removed in order to avoid the birth of twins, and also Theophil Hahn ascribes it to ' the superstition about twin births ' which still has great influence among the Nama at the present day. This reason, namely, the avoidance of twin births, is also, however, brought forward by Kolben for the strange operation. That is to say, it represented a kind of analogous preventive measure ; the single testicle, in the opinion of the Hottentots, admits in sexual intercourse of the procreation of only one single child. According to Kolben, the operation was performed on boys of eight and nine as on those who had reached a marriageable age. The vividness and clearness of the description allow us to decide with certainty that Kolben must have been present as an eye-witness. According to it, the patient was laid on his back on a piece of level ground, and his hands and feet were stretched out and bound firmly apart. A few men knelt on his arms and feet, whilst another lay across his chest in order to keep him firm and prevent him from seeing the incision. ' When this was arranged,' Kolben continues, ' then the old Hottentot who was to perform the operation appeared and, after he had sharpened his knife well on a stone, he took hold of the testicle in his hand, made an opening about one and a half times the length of the member, and pressed out the testicle which he then cut through and off, not at the blood, urinary and other vessels, but behind and at the extreme end. Meanwhile a sheep had been slaughtered, from which, before it was quite dead, the intestines, fat and mesentery were taken and brought to the operator who, after *buchu* and other good and healing herbs had been powdered and mixed with it, made a bullet about the size of the testicle and put it in through the wound in place of the one cut out. The sewing up of the wound then took place with a bird bone, sharpened and polished like a bodkin, which is their needle ; and with a sinew from an ox or sheep which they pull out of the spine. The patient was now smeared all over with sheep fat and, after that, the old operator came again and took in his hand his own member and made him wet all over with his urine.' "

Kolben asserts positively that he had seen the " deed " several times and had later examined with his own hands many of those operated on (according to Germann). [Captain Cowley, in observing the " nasty bodies " of the Hottentots, stated that " the men have but one stone in appearance, which is very strange " (p. 35) ; and Leguat stated (II., 156) that the mothers bit off the right testicles of their sons and ate them. This was supposed to make the boys more agile and better hunters.]

In Bosnia and Herzegovina, as already mentioned, twin births are not unusual. Lilek reports from there :

" If a wife bears her husband twins, the first, second and third year, then he chooses her as his ' sister ' and with her consent, takes a second wife."

The White Russians regard the birth of twins, as well as that of a deformed

child, as a punishment from God ; the result of breaking the Commandments of the Church, such as laws of abstinence on the eve of the great feasts at the time of fasting (P. Bartels³).

“ If a Balinese woman,” says Jacobs,¹ “ from any caste is delivered of twins of different sex (these are called *kĕmbar boentjing* = bride twins), then the wife must go immediately afterwards to the graveyard, where the two children will be carried after her, and stay there in a hastily erected hut for three months longer whilst her food will be brought to her. Her house will be burnt to ashes so that her husband and the remaining members of the family have to find accommodation elsewhere ; the *dĕsa* (village) in which the dwelling stood is purified ; the temples of the *dĕsa*, with a few exceptions (especially those which are dedicated to the memory of the dead), are closed for 60 days ; a fearful number of sacrifices are offered up and the *dĕsa*, as well as the mother and children, sprinkled with holy water (*toja tirta*) ; and all this in order to wash away the incest which the twins are supposed to have committed in the uterus. The wife of the prince, or of a Brahman alone is excepted from this. One can understand that these customs of divine service also sometimes demand human sacrifice.”

The Esthonians, states Böcler, used to believe that the birth of male twins foretold a year of war stress.

Pliny (“ Nat. Hist.,” VII., 4) considers confinement with twins very dangerous for the mother. He says :

“ On the birth of twins, it seldom happens that either the mother or the two children survive. But if the twins are of the same sex, then still more seldom are both the mother and the children saved.”

Among many nations, people make anxious efforts to protect themselves against twin pregnancies. Thus, on the Amboina Group, the pregnant woman believes that she can prevent the development of two children if she avoids sleeping on her back, or eating *pinang* or *pisang* fruits which have grown together. Similarly, even nowadays, in many parts of Germany, the pregnant woman is careful not to eat of fruit or turnips which have grown together if she wants to avoid having twins.

Also the Saxon woman in Transylvania gets twins if she eats a fruit that is two grown with one, or if she sits “ crosswise ” at table (see v. Wlislöcki⁵).

Among the Gilyaks (Sakhalin), young women and girls are strictly forbidden to listen to tales of such occurrences with the idea of being able to prevent the birth of twins by precautionary measures. Wives must not borrow any household utensils or accept gifts from acquaintances who have given birth to twins. In the latter case, the most dangerous are old soft objects. Hard things, on the other hand, especially household utensils made of metal, do not possess the property of transmitting the earlier owner’s ill-luck to the new (Pilsudski).

The Ainu, like the Gilyaks, endeavour by prayer and sacrifice to guard against a repetition of such ill-luck. In the south of Sakhalin, for instance, people hang over the bed of the mother who has brought twins into the world, the usual sacrificial object, the twisted carved stick (*inau*) in honour of the gods and spirits. In the northern villages besides the *inau*, two little dolls, or rather little wooden rods, which are supposed to represent the twins, are fixed on the wall. This *inau* is renewed as often as the ashes are taken out of the yurt on which nearly all the sacrifices to the gods are offered up (Pilsudski).

7. ESTEEM FOR TWIN BIRTHS

Among other tribes, however, who are often near neighbours of those mentioned in the foregoing section, we come across gentler customs. Thus, on the Babar

Islands, twins are certainly not desired, but they are brought up with care ; and one of them is generally given to a friend in the village to be cared for. Also, in Keisar, twins are well looked after. In Eetar, they are regarded as a gift from the great spirit in the firmament. Likewise in Leti, Moa and Lakor, on the Luang and Sermata Islands and on Ceram, they are looked upon as a gift from God, and are accordingly well looked after. On the last-named island, the custom also prevails of keeping only one child in the house of the parents ; the other is handed over to a blood relation to be brought up. Also among the Ainu, according to von Siebold,



FIG. 619.—Amulet used by the Goldi of Siberia at twin births. Umlauff Collection. (Photo : M. Bartels.)

twin children are not brought up in the same house. This, according to their ideas, would inevitably lead to the death of one child.

Among the Goldi in Siberia, when twins are born, the Shaman makes a special amulet of wood. It consists of a crude human figure and a crude animal figure, which are put side by side and wrapped in a piece of cloth at their lower end (see Fig. 619). To this little image, there is added also a little double shell offering, which is carved in the form of a long shallow double trough. Mr. Umlauff, in Hamburg, possessed such objects, and he very kindly allowed M. Bartels to photograph them.

On the Aru Islands, twin births are desired because the parents can then get many mother-of-pearl shells as presents. Among the Cameroon negroes, if a wife

gets twins, she is held in great esteem by her husband, for the women there are prized according to their fertility.

Among the Masai, according to Merker, the greatest joy prevails at the birth of twins, especially if both the children are boys. He writes, "the twins soon after birth have a leather string set with cowrie shells hung round their necks, an expression of the father's pride, so that everyone knows at once that the child is one of a pair of twins."

Among the Wanyamwezi in Central Africa, twins, as has already been men-

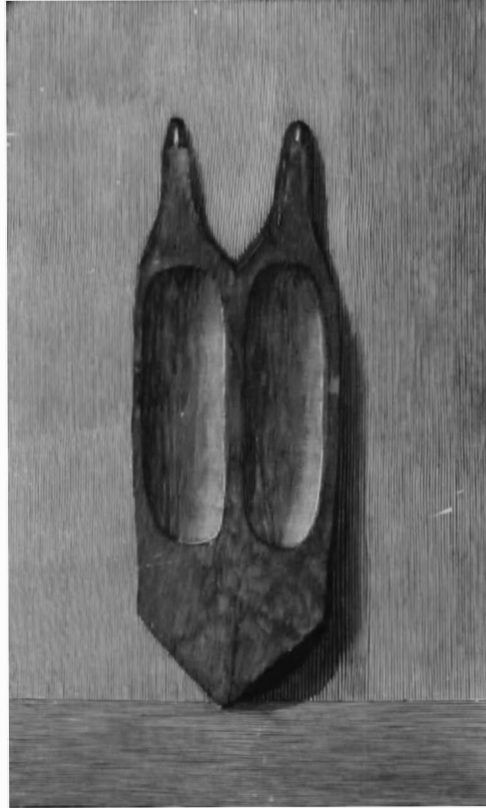


FIG. 620.—Dish used by the Goldi at twin births. Umlauff Collection.
(Photo: M. Bartels.)

tioned, are not uncommon, and are called *mpassa*. Reichard reports of them as follows :

"Among the Wanyamwezi a disproportionate number of twins occur, more, I am told, than in other tribes. For with them twins play an important part, they are called *mpassa*. On the birth of these, the parents have to pay taxes to the elders of the village and to the chief of the land, consisting generally of a hoe or small cattle. Old women then go round the village and the surrounding districts collecting gifts for the twins—pearls, bits of cloth and corn, and now and then they even get a fowl. While doing this, they appear with the lid of a bark box on which, as well as on an iron shovel, they beat a slow rhythm and sing a horrible song, the words of which always culminate in the glorification of the sexual organs of husband and wife. Two

little fetish huts are at once built in front of the house where the woman is confined for the twins and on every occasion, suitable or unsuitable, they offer gifts to them, especially when anyone is ill or about to go on a journey, or to the war. If a twin wants to go over water, stream, river or lake, he must take a mouthful of water and spray it over the surface of the water and say: 'I am a twin,' the same if he falls into a lake or a stream. If he omits this, then harm may easily happen to him as well as to his companions. If one or both the twins die, then two aloes are planted beside the little fetish huts at the birthplace."

Among the Ovaherero in South Africa, the parents are sanctified by the birth of twins. According to Brinckner, among them the mother of twins is praised with recitative and ancient odes by other mothers and honoured by gifts of glass beads.

To the Dakota Indians, twins appear to be a mystery of supernatural origin. They come from the land of twins, and since they are not human beings, they must be treated with special care and tenderness. Otherwise, states Dorsey,² they will be offended and return to twin-land.

The Nootka Indians in Vancouver, according to Boas, have very complicated rules prescribed for them on the birth of twins. He states

that the parents must erect a little hut in the wood far from the village. Here they have to dwell for two years. The father has to continue his purification by bathing in a small pond for a whole year, and has to colour his face red. While bathing, he has to sing certain songs which are used only for this occasion. Both parents must keep away from their fellow tribesmen. They must eat no fresh food, that is to say, no salmon, or even touch it. Wooden images and masks representing birds and fish are set up round the hut, and others representing fish near the river at the place where the hut stood. The reason for this is to invite all the birds and fishes to come to see the twins and be kind to them. They are continually in danger of frightening away the spirits, and the masks and images, or rather the things they represent, are supposed to avert this danger.

The twins are regarded as standing in all kinds of relationships to the salmon; nevertheless, they are not regarded as identical with them as among the Kwakiutl. The song which the father sings at his purification is an invitation to the salmon that they may come, and is sung in praise of them. When the salmon hear the song and see the images and masks, they come in great numbers to see the twins. Hence, the birth of twins is regarded as a sign of a good salmon year. If, however, the salmon omit to come in great numbers, that is considered a sign that the children will be killed. Twins are forbidden to catch salmon, and may neither eat nor touch fresh salmon. They may not sail, because the seals would seize them. They have the power to make good and bad weather. They make rain by smearing their faces with black pigment, and they then wash without shaking their heads.

Among the Lkungen or Songish Indians twins possess supernatural powers immediately after their birth. They are at once taken into the wood and washed in a pond in order to become ordinary people. If the twins are girls, then that is a sign that an abundant increase in the fish population will take place. If they are boys, then they will be good warriors (see Boas).

In a neighbouring tribe the parents of twins have to live in a corner of the house for 16 days after the birth of the children; to paint their faces red and strew eagle down on their hair daily. Twins, especially those of the same sex, were salmon before they were born. Among some of the Indians the father dances for four days with a big four-cornered rattle. When the children swing this rattle, they can cure the sick and influence wind and weather (Boas).

Among the Shushwap in British Columbia, Boas states that when twins are born the mother has to erect a hut in the mountains or at the edge of a creek and live there with her children till they begin to walk. She may be visited by her family or by anyone she wishes to see, but she may not go into the village else her other children will die.

"Twins are called 'young grizzly bears.' It is believed that supernatural powers dwell in them all their lives. They can make good and bad weather. To make rain, they fill a little basket with water and spray it in the air. In order to make good weather, they use a little stick, to the end of which a string is tied. To this a smooth piece of wood is tied and this is swung.

Storm is prepared by strewing branch sprouts about. So long as they are children, the mother can see by their play whether her husband, when he is out hunting, has been successful or not. If the twins are playing about and pretend to bite each other, then he has been crowned with success, but when they keep quiet, then he will return with empty hands. If one of the twins dies, the other must cleanse himself in a vapour bath in order to get the blood of the dead twin out of its body."

According to a belief prevalent in Oldenburg, the woman who has given birth to twins possesses the power to join others happily in matrimony.

In Bosnia, a woman who bears twins is, according to Mrazovič, more esteemed and regarded as specially blessed.

Among the Magyars, a woman who has given birth to twins may wear for her whole life the slippers of the goddess of birth, Baldogasszony, which are otherwise only permitted during the period of confinement (see v. Wlislöcki ⁸).

The ancient Sumerians seem also to have regarded twin births as bringing luck. Among the clay tablets covered with cuneiform writing, which formed the library of King Assur-bani-pal (*Sardanapalus*) and which were excavated in the ruins of ancient Nineveh, there are some on which the Sumerian priests had recorded the significance of all kinds of odd births. For there it is written of the confinement of a queen with twins.

"If a queen bears male twins . . . this is a good omen for the king ; a son and a daughter . . . then the land will increase . . . ; two daughters at once . . ." (see Lenormant).

The remainder is illegible.

Among the gipsies, all kinds of magic are practised with the prepared bodies of still-born twins. Sexual desire is promoted by this means, states v. Wlislöcki, and thieves are made invisible.

8. TELEGONY

Arising from certain phenomena in animal breeding, which no one has ever taken the trouble to explain seriously, there is appearing at the present time (which has an inherent preference for the improbable) a belief in *telegony*. Hence, it seems necessary to go more closely into the matter in this chapter. In an article entitled "Telegonie" by Agnes Bluhm in the *Handwörterbuch für Sexualwissenschaft* of M. Marcuse, she says :

Telegony (from τῆλε distant and γονή begotten) signifies the influencing of the outward appearance and inherited form of later children by earlier pregnancies of the mother. For a long time the classical example of telegony was the famous chestnut mare of the Earl of Morton which, crossed with a quagga stallion, gave birth to a foal with moderate zebra striping, and later mated with an Arab stallion, brought three foals into the world, one of which showed far more striping than the quagga cross-breed. The explanation for this, and a great number of similar cases mentioned by breeders at the end of the nineteenth century, was that the spermatozoa were prevented from coming into contact with the wall of the uterus by the mucus covering it. The first solid body which they encountered was the ovum or the ovary. Whilst they surround it, they forfeit their vitality to a certain extent, but their substance, absorbed by the still unripe ova, is able to alter the latter. This idea was opposed at the beginning of this century by Kohlbrugge. He showed in the case of the Javanese bat (*Xantharpya amplexicaudata*) that the spermatozoa penetrate in great numbers the uterine epithelium, the gland cells and the surround-

ing structures. In the oviduct, on the other hand, he found only a few spermatozoa, but in the oviduct, an unsegmented ovum into which spermatozoa had penetrated. The penetration of the uterine mucous membrane by millions of spermatozoa cannot, in his opinion, be without influence on the woman's organism. Every act of mating may be compared to a serum injection. An impregnation takes place by which the female body is "altered" and this alteration is transmitted to the later offspring ("induction"). Lately, some quite vague relationship has been indicated between observations on sperm immunity and telegony.

R. Müller,¹² for instance, states that many breeders believe that if a pure bred female is mated with a male of mixed breeding, later mating even with a pure bred male will not result in pure bred issue, since some of the influence of the first male asserts itself. However, not only in animal breeding are people supposed to have observed cases of telegony, but they are said also to have occurred in human beings. It is clear that if telegony really exists, the egg-cells of the mother must undergo changes under the influence of the semen of an earlier procreation.

The best known story is, as Bluhm wrote, that of the Earl of Morton's mare. Lord Morton had a young chestnut mare, almost pure bred (seven-eighths) mated with a quagga stallion. The issue of the mating was a female cross-breed which, in colour and shape showed clear signs of its mixed origin. Later he had the mare covered by a very beautiful black Arab stallion. The issue of this mating, a male and a female foal, had decided Arab characteristics. In their colour and their hair, the foals had a striking likeness to the quagga. The colour was reddish brown with quagga-like but darker markings. Both were distinguished by the dark stripes, which ran along the middle of the back, and by the dark stripes on the fore-quarters and on the back of the legs.

Many important considerations may be brought forward against the explanation of this case as impregnation. Albrecht's objection that it is difficult to see why the distant effect of the quagga should manifest itself only in the hair pigment of the offspring of the Arab stallion, deserves notice. Still more decidedly against this as a case of telegony are the reports of Nathusius that a uniformly coloured light brown mare brought into the world first five uniformly coloured foals in succession by the pure-bred stallion Belzoni, then two uniformly coloured foals by a trotting stallion; and at the eighth birth by a white stallion, Cheradam, a foal which, had the same zebra-like markings in all its feet, on its back and shoulders, and certainly had them to a much greater degree than the foals in the Morton case. The appearance of stripes in horses is, therefore, nothing unusual, and is only overlooked in many cases because, after the first change of hair, as a rule, another colour appears and then the stripes disappear. Concerning the Morton case, Agnes Bluhm says (*loc. cit.*):

The Morton case in 1899 was explained in this way by Ewart. The mare was a half-breed, between an Arab and an Indian pony, which had itself a striping similar to that of the foals. All cases claimed as telegony have proved, on closer investigation, to be dubious. Ewart and others, in spite of extended experiments in cross-breeding, have had little success in producing a case of telegony. All the supposed biological explanations, as well as the phenomenon itself, are so entirely irreconcilable with the known facts of impregnation and heredity that it is time to relegate telegony to the realm of fable. That telegony still lingers in the heads of breeders and hence may occasionally be taken up by inferior books on the "subject" (*e.g.*, Dinters' "Sünde wider das Blut"), is to be explained by the fact that breeders are generally insufficiently instructed in the pedigree of their animals, and think that they are using pure-bred material whereas really they are dealing with cross-breeds. In von

Reitzenstein's opinion, in many cases a superfecundation (*i.e.*, a multiple pregnancy of a multiple bearing animal by various males) comes into consideration, the possibility of which has been proved by Cole's experiment. He came across the following illusory case of telegony. A young pure-bred Persian cat used to rove about, and had young ones which were all cross-breeds. For breeding purposes, she was kept with a pure-bred Persian tom-cat of her kind, and she brought only true Persian kittens into the world. Later, for purposes of observation, she was allowed to rove in breeding time, and then she had four kittens of the most beautiful pure Persian type; besides these, however, she had a fifth which, in the matter of colour, shape of head and tail, resembled a common farm cat.

[Among the most curious of the human examples of supposed telegony was the case reported by Lingard in 1884. Here a normal woman married a man (H1) with hypospadias. Both his father and grandfather had suffered from the same condition. All their three sons were afflicted. The eldest son married and had four boys, all with hypospadias, whilst from later marriages of these four three further cases arose.

When H1 died the widow remained thus for 18 months, when she married again, this time a normal man with no history of hypospadias in his family. Four boys were born to them all afflicted by the same condition, and from later marriages contracted among these four two more were born.]

CHAPTER XIII

THE PHYSICAL HYGIENE OF PREGNANCY

1. THE DIAGNOSIS OF PREGNANCY

WE now come to one of the most important parts of the life of woman. The germ cell, released from its ovary, has been impregnated, and, in her womb, begins the growth and formation of a new individual. A new life is awakened ; and through this event the woman also, on account of her new condition, enters at the same time into a new life. She has much to do and much to avoid before her delivery, and confinement being successfully over, she is permitted to return to the usual mode of life of her fellows.

We shall learn how, at the most varied periods and among different peoples, men have striven to discover what are the unmistakable signs of the inception of pregnancy, and how this is solemnly welcomed and consecrated by prescribed ceremonial proceedings ; we shall see how the pregnant woman has to submit to a prescribed diet ; to undergo special methods of manual treatment, and to behave in a certain prescribed manner. We shall also note the ideas prevailing among the peoples about the duration of pregnancy as well as about the position of the child ; and finally, we shall learn the causes of the natural miscarriages which occur more or less frequently. All this presents without doubt important phenomena in the cultural life of the various peoples.

Among almost all the peoples of the earth, it must have happened that the birth of a child must have been preceded by the absence for months of the regular menstrual courses. It may have been just this that suggested to human beings the connection between cohabitation and conception. And, therefore, the absence of menstruation is no doubt regarded everywhere as the first and surest objective sign of pregnancy (*cf.* Epp ¹). The swelling of the body and the increasing size of the breasts are only secondary. But even in his time, Aristotle (" Hist. Anim.," VII., 2) observed that in rare cases, the menses continued during pregnancy, and he was of the opinion that the embryo was on this account badly formed.

The Sinaugolo, a tribe in the interior of the Rigo district in British New Guinea, as Seligman ² reports, regard the increasing size of the breasts and the change in colour of the nipples and the areolæ as the sign of pregnancy having set in. The cessation of menstruation was not regarded as a certain sign. Also more frequent need to urinate together with morning sickness and diminution of the appetite are regarded as signs of pregnancy. The last-named signs are supposed to disappear as soon as the child's bones have formed.

The increase in size of the breasts is believed by the Australians in Queensland to be brought about by the fact that the child inserted into the woman by the spirits is pressing them outwards (Roth ⁵).

In Samoa, the absence of the menses is regarded as the sign that pregnancy has begun (Krämer).

The retention of the semen at coitus is regarded by the ancient Hindus, the

Greeks, the Romans and the Germans, and others, as a sign of conception. Suśruta (in the Āyur-veda) states the following as a sign that a woman has conceived :

“ Tiredness, exhaustion, thirst, contraction of the lumbar region, retention of the semen and blood and twitching of the vulva. To these belong also the dark pigmentation of the nipples, and the swelling of the veins, the sinking of the eyelids, vomiting, fear of coitus, running at the nose and mouth and fainting ” (see Vullers).

The absence of menstruation was explained in that the orifice of the womb was closed owing to conception having taken place.

According to Vullers, the ancient Hindus also regarded a running at the mouth and nose as a symptom of pregnancy. On the other hand, in Hessler's Latin translation of Suśruta, there is mentioned only a dripping or running of mucus, without the nose or mouth being mentioned, so that it is uncertain from which organ it came and a discharge from the vagina might be intended. It is, however, very probable that Vullers understood the sense of the passage correctly.

How the ancient Egyptians diagnosed the presence of pregnancy, we learn from a papyrus in the Egyptian Museum in Berlin, which probably originated in the nineteenth or twentieth Dynasty and must be ascribed to the fourteenth century B.C. Together with the Ebers papyrus, it is one of the oldest works on medicine that we possess. In the Papyrus are to be found instructions for the cure of various diseases, and the numerous prescriptions contained in it, as well as the very well-developed system of prescriptions, permit us to suppose that the art of healing had long before been cultivated with a certain degree of care. Brugsch translated a passage which deals with the diagnosis of pregnancy as follows :

Let the woman be given of the herb *boudodou-kâ* with milk from a woman who has given birth to a male child ; then, if the woman vomits, she is with child ; if, however, she gets borborrygmus, then she will never have a child. The same recipe is recommended again with the only difference that an injection is to be made in the *kâ* (?) of the woman. Then follows another specific for the diagnosis of pregnancy, according to Chabas' translation : if the woman has a salty, cloudy urine, then she is with child ; if one does not find this, then she is not with child. Another test is as follows : “ The woman must lie down and have her arm rubbed hard with fresh oil to the forearm, then, when she is examined on the following morning and her vessels are very dry, that proves that she is not with child ; but if they are moist as well as the skin of her limbs, then it may be supposed that she is with child.” A further test described is designated by Brugsch as very obscene. The author of the papyrus also teaches how to diagnose pregnancy from the condition of the eyes : “ If one of her eyes has the (brown skin) colour of an Amou (Asiatic), but the other eye the colour of a negro, then she is not pregnant ; but if both eyes have the same colour, then she is pregnant.” In conclusion, there comes a strange test. The woman is to soak wheat and barley in two sacks in her urine the whole day ; if they germinate, then she is pregnant ; but if they do not germinate, then she, too, is not pregnant. If only the wheat sprouts, then she will give birth to a boy ; if, on the other hand, the barley germinates, then it will be a girl.

We can get similar information from the Greek physicians. Thus, in the pseudo-Hippocratic book *de natura mulierum* it runs :

“ In order to learn whether the woman has conceived, boil a head of garlic and put it (or oil of bitter almonds wrapped in wool) into the uterus. Next day, let the woman investigate with her fingers and notice whether the smell comes from her mouth, for then it is good ; if not then let the garlic head be put in again.”

“ If thou wouldst test whether a woman is pregnant or not, then rub her eyes gently with red stone ; if the stuff penetrates, then the woman is pregnant ; if not, then she is not pregnant.”

In the Talmud, the following signs of pregnancy are given : The lower part of the body is swollen out, especially if it is already three months past coitus ; the breasts swell up. And if the milk now flows from the latter, or if the woman's feet leave certain traces in loose earth, then there is no longer any doubt about the pregnancy.

By the footprints in a Buddhist tale which Schiefner has made accessible to us, a Brahman physician diagnoses the pregnancy not only of a woman, but even of an elephant. The footprint must have belonged to a female elephant because it was longish, while the print of a male is round, and the animal must have been pregnant, "because it went along pressing both feet." However, she must have been pregnant with a male calf, "because she had pressed more with the right foot." The pregnancy of the woman who had dismounted from the animal was diagnosed by the physician, "because the heel of the foot on the right had made a deep impression."

Among the Chinese, the physicians feel the pulse when they want to test whether a woman is pregnant (du Halde). They consider a woman is pregnant when in her usual health and with the non-appearance of menstruation, she has a strong regular pulse, especially in the places in the artery which are called *tsuen*, *tsche* and *kuan* (Hureau de Villeneuve).

Dabry states that the Chinese diagnose pregnancy by the fact that menstruation did not appear and that the woman is at the same time in good general health whilst her pulse is regular but deep or superficial. A pregnancy is the more certainly present if the *tsche* pulse is high and stronger than usual or, in a delicate woman, if, when the fingers are put firmly on the pulse in the elbow joint, the pulse beats are felt without interruption. The woman is also pregnant when the *tsuen* pulse is feeble, the *kuan* (elbow) pulse smooth and the *tsche* pulse quickened. In the first month the pulse is sometimes slow, sometimes fast ; in the second and third months, smooth and feeble or moderately slow or slow and fast in turn ; in the fourth month, moderately slow or slow and fast alternately ; in the fifth month it beats strongly.

The Japanese physicians proceeded more rationally. They did not rely on the pulse alone, but felt the breasts and examined the lower part of the body. But until a few generations ago, they did not know of internal investigation by introducing a finger into the vagina. Now, however, since as the Japanese physician Mimazunza said, they have heard of "this beautiful method" and have learnt its value, it is practised by many doctors.

According to the opinion of the Japanese Kangawa, quoted by Miyake, the first symptoms of pregnancy appear one month after impregnation. Because of the non-appearance of the menses, slight headaches set in, discomfort in the abdominal region and ill-humour. Up to the forty-fifth day the symptoms increase, vomiting comes on because the blood pushes against the abdomen ; to these are added congestion of the blood in the head, coldness, fever, thirst at times, pain in the bowels and diarrhoea ; from the forty-fifth day to the fiftieth, languor appears, the pregnant woman lies down rather than sits up ; she likes eating sour fruit.

Kangawa says :

"Now since all the above-named symptoms are very similar to those of fever, for exact diagnosis the examination of the three places must be undertaken : (1) The arteries of the four finger points ; for this examination the doctor puts his finger tips against those of the woman ; (2) The arteria cruralis. (3) The arteria radialis. If pregnancy is present, then arteries (1) and (2) are stronger than (3)." In a later book it is stated : "That the examination of the three arteries is not always sufficient, since in the hot season, even without pregnancy, the finger arteries beat more strongly than the radialis. If these methods are not enough to establish the

diagnosis in the second or third month, then the doctor puts his right hand on *kiubi*, *i.e.*, the heart cavity, and gradually feels to the *tenshu*, *i.e.*, the point half an inch below the navel, with the left hand, he goes from the pubic region, pressing lightly upwards in the middle line as far as the *tenshu* on the other side. He then feels, in pregnancy, a smooth ball-shaped object, the size of a chestnut. The pressing must be done lightly. If the object felt is hard, angular, long, then it may be regarded as a fæcal mass. On the other hand, if several objects can be felt then they are blood clots."

As a further symptom of pregnancy, the dark aureola round the nipples is brought forward (this, in Japanese women, becomes quite dark brown, almost black) yet, at the same time, a case is mentioned where without pregnancy being present, the aureola was brown and even some fluid was expressed from the nipples.

If the woman comes to the doctor in what she supposes to be the fourth or fifth month of pregnancy, then he must ask her if she had her menses regularly and abundantly before this. If the answer is "Yes," then she is pregnant; if, on the other hand, it is "No," especially if the abdomen is still relatively small, then it is a question of a blood clot. In the sixth or seventh month, one feels in the region of the navel and somewhat below it, a soft ball-shaped object in which a pulsation is perceptible with the hand. If this symptom is absent, then the stronger pulsation of the crural artery and an adhesion and difficulty in displacing the skin between the navel and the pubis give essential facts for the diagnosis of pregnancy.

Kangawa mentions as a specially wise provision of nature that the small of the back in women is wide and bent outwards while in men, on the contrary, it is narrow and straight.

The ideal figure is that where the small of the back is formed by the junction of the projections and hollows which appear at the lowest spinal process and the ridge of the hip-bone.

In the Orient, the midwives do not, even to-day, know the internal examination. Eram reports :

"Conception in a young woman is most often determined by the midwives in the Orient. The moment that the family perceives an enlargement of the abdomen of the young wife, the midwife is called and she judges the nature of the swelling and makes her diagnosis."

Of course, diagnostic errors are not excluded by this method, one of which Eram reports.

Among the negroes in Old Calabar, the non-appearance of the menses, a pale, ashen appearance of the face, yellowish spots on the upper part of the breasts and the darkening of the aureola are regarded as signs of pregnancy. The latter change of colour is thought by the negroes to be an unmistakable sign, so that the husbands resisted the attempt to put on a dress to cover this symptom (Hewan).

Among the Swahili, according to Velten, the parents know when pregnancy has begun in a young girl, by the desires which appear in her : "She generally hates a young man or girl in the house; her breasts increase in size, her brow gets lighter in colour, and then, if the menses also fail to appear, the parents examine her and find that the navel projects a little; these are the most certain signs that pregnancy has set in."

According to Blyth, pregnancy in Fiji women is not accompanied by the symptoms usual in European women. Menstruation is said to continue sometimes through the whole period of pregnancy. Morning sickness does not occur; on the other hand, attacks of vomiting at mid-day do. During the pregnancy, the women are often overcome by giddiness so that they fall down. This giddiness and the sudden falling is so common that it is regarded as a characteristic sign of the existence of pregnancy, and if the woman falls down suddenly they say she is pregnant. Pregnant Fiji women have no other discomforts.

Movements of the child, according to Fiji midwives, begin two months after

the non-appearance of the menses, but, as they have a very imperfect conception of the measurement of time, all the less value is attached to this statement, as it is very improbable.

Among the lower classes in Russia, according to Krebel, the sudden appearance of freckles on the brow or cheeks is regarded as a sign of pregnancy, and this is found in many parts of Germany also.

2. SUPERNATURAL SIGNS OF PREGNANCY

If the signs by which to diagnose pregnancy, given in the foregoing section, were all more or less justifiable since they came from a change in the physical condition of the woman concerned, yet we also come across here and there attempts to find out by supernatural means whether a woman is in a happy condition. We have already heard of similar means when the question was one of measures which are in use for finding out the sex of the foetus when still in the uterus.

Among the wandering gipsies of the Danube countries, if a girl sees the first stork of spring and rouses it, she will become a mother without having been married.

If a woman is licked by an ox, then a pregnancy lies before her. The same thing takes place if a cicada jumps on her (v. Wlislöcki ⁴). Among the Abyssinians, if a night owl appears and flutters round the house, then a woman in it will be confined (Hartmann). Among the Wends in Lusatia a similar superstition is prevalent. Whichever woman in the house is indicated by the oracle will generally be easily guessed by the occupants.

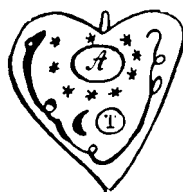


FIG. 621. — Apparatus used by Danubian gipsies for determining pregnancy. (After Wlislöcki. ⁶)

If a gipsy woman in Transylvania makes the experiment already mentioned to find out whether she is carrying a boy or a girl, she can also learn whether the child will be born in the morning. It will be so if she sees geese or ducks flying in the evening.

The wandering gipsies of the Danube region make use of a special object to find out if they are pregnant. It is a heart-shaped tablet of lime wood (Fig. 621) on one side of which various figures are burnt in. These represent nine stars and the full moon, also the waxing moon, all of which are encircled by a snake. In the upper part there is a hole (at A), into which a hazel nut is wedged, which is artistically covered with hair from a donkey's tail. Then, if the hazel nut falls out after some time, the young wife believes that a pregnancy has set in (v. Wlislöcki ⁶).

The Serbians have a very wonderful sign of pregnancy : if anyone among them gets a grain of barley, then that signifies that his aunt is pregnant.

Krauss ¹ reports the following :

“ If among the Southern Slavs a woman cannot be certain in any other way that she is in a happy condition, then, on three successive evenings, she must wet an axe behind the door and let it lie there overnight. If, all the three times, the axe is rusty in the morning, then the woman is certainly pregnant.”

For the diagnosis of pregnancy in the Rhine Palatinate, an alcoholic liquid, apple, pear or other wine, is put in a “ boll ” (a big, round, long-handled metal spoon) and allowed to stand overnight ; if the woman vomits after drinking it, then she is pregnant. In Frankenwald, when a woman who is capable of bearing children is ill, her neighbours say conjecturally : “ She is no doubt beginning ” (Flügel).

The popular voice everywhere has made up various expressions to indicate that a woman "is carrying a child under her heart." Throughout the whole of Germany they say: "she is pregnant, she is in a certain, in an interesting or in a blessed condition." In Austria, they say that she is "pricked." Thus it runs in one of their "little songs":

"The maiden is pricked
The maiden is thick,
Who may the father be
Who has the luck?"

Among the Saxons in Transylvania, various other sayings are prevalent, which express this condition figuratively: "She is like the people"; "she has gone to stay"; "she is expecting"; "she is heavy on her feet"; "she must go to Rome"; "she is the master's maid"; "she is so skilful"; "she is not alone." In individual Saxon-speaking districts of Transylvania, humorous coarse turns of speech are in use: "she has got a new apron" (Gergischdorf); "she has lost the calendar" (Eibesdorf); "she has pushed herself, has run against something, therefore she is swollen" (Kreuz); "she is getting a ridge in her belly" (the same); "she has swallowed a bean and then drunk water, now it is swelling up" (the same place); "she has the nine months water" (the same place) (Hillner).

According to W. Grube, the Chinese call a pregnant woman four-eyed. But not she only, but her husband also is called four-eyed. Pregnancy is also called bed separation; we shall return to this later.

The Japanese call the beginning of pregnancy "receiving the seed"; in advancing pregnancy, they say: "the months are heaping up." and when pregnancy is nearing the end, then they say: "the months are complete" (Ehmann). The ancient Hindu texts designate the pregnant woman as *Dvihṛdayā*, that is, "a woman with two hearts" (Schmidt⁸). Krämer heard pregnancy called "the illness" by the Samoans.

The gipsies say of a woman who has become pregnant without being married, "She has smelt the flower of the moon." This is an allusion to a popular belief, according to which there grows in one night on the moon mountain, *i.e.*, on the mountain sacred to the moon, a plant which shines far off, by smelling which, women can become pregnant without sexual intercourse (v. Wlislöcki).

3. PREGNANCY IN ART

The spectacle of a pregnant woman, especially when she is in the later months of pregnancy, is not exactly an æsthetic pleasure, and it is therefore comprehensible that such is rarely met with in pictorial art. Artists, however, have not altogether avoided drawing this condition of the female sex into the sphere of their activity. We shall consider some examples here.

Incontestably, the oldest representations of pregnant women belong to the old stone age, and have been found in various parts of France. In one case, we have an engraving or scratching on the sacral bone of a reindeer which, in common with other paleolithic objects, was discovered in Laugerie Basse (Fig. 622). Only a fragment of the representation is preserved.

"It is an engraved drawing from Laugerie Basse belonging to the older Madeleine period, and is from the same site as the hunter of the aurochs. We see a naked

woman, whose head is missing, in an advanced condition of pregnancy, lying on her back. The breasts are not depicted, but, on the other hand, the genitals are very prominent, although, in this position, they would not really be visible at all. The hair is clearly shown. Further along we see the legs of a reindeer, and in the background various curved lines. Unfortunately, the representation is only a fragment. Like all human representations of the Madeleine period, in contrast with representations of animals, it is not really well executed. Now the next question, of course, is : are the three representations part of one picture ? Obermaier (*Mensch der Vorzeit*, p. 231) is of the opinion that in the case of the hunter of the aurochs and in our drawing ' nothing actually warrants bringing the figures represented into internal connection ' ; that is, the aurochs and the hunter, in the one case, and the woman and the reindeer in the other. In my opinion that is going decidedly too far. If it is not clear that the figures were scratched at different times, then it would be very

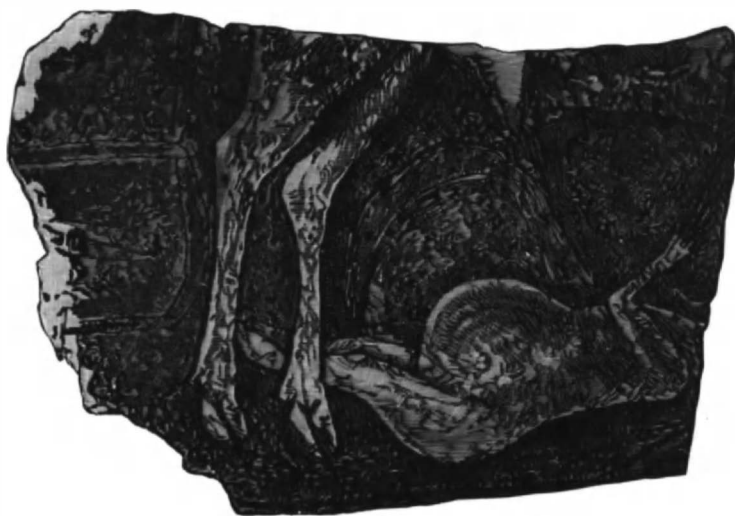


FIG. 622.—Representation of pregnancy. Reindeer bone. Laugerie Basse, France. (After Piette.)

strange if an artist were to engrave several figures at the same time on *pieces so limited in space*, and in such special positions without any purpose, figures which at the very first glance give a suggestion of being connected with each other. On the walls of caves that would be more conceivable because, there, various passers-by might happen to express their thoughts according to their humour or impulse. In little pieces of bone, on the other hand, which at that time must in themselves have served some purpose, the former explanation must be given. The hunter of the aurochs no doubt has a spear or lasso in his hand, with which he aims at the animal. The woman certainly lies under the reindeer, indeed, Ranke even suggests that our drawing represents the reindeer and woman in a pen (that is, he thinks he sees a pen in the curved lines). Of course, the woman happens to be rather small and her legs should, strictly speaking, pass in front of the left hind foot of the reindeer. But these very mistakes are continually occurring. Doubtless then, the connection is more obvious than the object, and there is no reason for rejecting the more obvious in favour of the less, since, so far no one has thought of contesting whether the individual parts are contemporaneous. Hence, we are justified in endeavouring to

try to explain the representation as a unity. The pregnant woman is near her confinement, and all primitive peoples (and, to be sure, even the majority of those who belong to civilised nations) try to make the process of birth easier by magic or sympathetic means. For this purpose, a superstitious proceeding is employed which is spread over the whole world. Baker reports a specially characteristic proceeding of the Arab woman. Wives who are near their confinement crawl between the fore and hind legs of a very strong camel in the belief that by this act the strength of the animal might be transferred to the child. If we assume that our



FIGS. 623 and 624.—Clay figures of pregnant females. Caraya Indians, Brazil. (Mus. f. Völkerk., Berlin. Photo: M. Bartels.)

piece of bone was employed for a similar reason, then this would explain the powerful representation of the reindeer—it is intended to be a very strong one. The custom of crawling or going through holes among stones and plants is as old as it is widespread" (v. Reitzenstein¹⁷).

To the paleolithic age likewise belongs the little torso of a female figure, carved in ivory, which was found in the Grotte du Pape in Brassempouy (Landes), along with several other figures. From the photographs given by Piette, there seems to be no doubt that the paleolithic artist intended to portray a pregnant woman. Piette thinks that in this figure steatopygia is also indicated besides, and the suggestion of a Hottentot apron.

In the works of art of some savage tribes, also, we have come across the portrayal

of pregnant women. Thus, for example, Paul Ehrenreich brought a number of little human figures in clay and wax from the Caraya Indians on the River Araguaya in Brazil, among which are unmistakable pregnant women. They are now in the Ethnological Museum in Berlin. Examples of these are given in Figs. 623 and 624. They were called *likoko* by the Indians ; the name may signify nothing more than children's dolls.

We must conjecture a deeper meaning, however, in two works of art from West Africa and Siberia. The first is a design on an amulet plaque from Dahomey ; in this case, a pregnant woman already far gone, with big overhanging abdomen, is represented in the complete figure. The other piece is a wooden figure of the Goldi which, cruder in execution, is obviously a pregnant woman. The figures in both pieces had had sections added later. There can be no doubt at all that in these cases there is a mystical significance, for both possess the power to give help in the troubles of confinement. Also, in Yoruba in West Africa, there is a piece of water consecrated to a goddess, who is portrayed as a pregnant woman. The water is used by the negroes there as a specific against sterility and for the relief of difficult labour.

On the other hand, the fat belly shown in many fetish figures from Africa certainly does not represent pregnancy. It is merely a peculiarity of these fetishes that the bodies have a swollen appearance, or are square, round or oval in form ; often a piece of looking-glass is inserted, but generally nails are driven in ; and as this is repeatedly found in undoubtedly male figures, this can, of course, not be intended for a pregnancy. In the works of art of the Japanese also, portrayals of pregnant women occur sometimes. Usually they treat of the putting on of the body bandage, a ceremony of which we shall have to speak later in detail. Of the copies mentioned, a few will then be reproduced.

A drawing by the famous Japanese painter Hokusai, which is frequently reproduced, shows us a naked pregnant woman. It appears in Fig. 625. It again gives evidence of the remarkable gift of the Japanese for close observation of nature.

One of the public baths is here represented of which we spoke in Vol. II., pp. 7 and 8. A child has lain down on the steps ; the mother carries a smaller brother, holding him hanging over both arms. As she has both hands full, she holds the washing cloth in her mouth whilst the child holds a little wooden toy vessel in its hand. A nun with her head shaved quite bald crouches on the ground, and is occupied in removing her growth of beard with a razor.

The person interesting to us, however, is the woman kneeling higher up who is washing herself. That she is pregnant is proved conclusively by the binder round the middle of her body, the characteristic mark of pregnant women in Japan. But the contours of the body also leave us in no doubt as to her condition, although she has her back turned towards us and almost nothing can be seen of her abdomen. It is, of course, well known that not only does the abdomen increase in curvature and expansion, but that also the whole lumbar region and buttocks broaden considerably. Hence it happens that pregnancy in many young women can be recognised from behind. And Hokusai has brought this out excellently. It should be observed how he has characteristically brought out this considerable broadening of the lumbar region with a few strokes.

Some other representations of pregnant women, such as we find in Japanese works, have the express purpose of having a definitely instructive effect. We shall



FIG. 625.—Pregnant Japanese woman bathing. (Japanese woodcut by Hokusai.)

see a few examples of this later, and therefore we shall not go further into the matter now.

A miniature of the fifteenth century, which is in a Belgian Galen manuscript in Dresden, likewise has an instructive purpose.

A naked and pregnant woman is seen standing before a seated teacher, who is giving a lecture on her to two students standing nearby. (See Fig. 626.)

In conjunction with this may be mentioned the illustrations of anatomical and gynæcological text-books from the sixteenth to the eighteenth centuries, many of which we shall study. In these pictures, the abdomen mostly appears open in order to show the position of the distended uterus or of the embryo within. Some of these, too, will be reproduced later (*cf.* Fig. 627, and also elsewhere).

In the book on obstetrics by Jacob Rueff we find the representation (Fig. 628) of a pregnant woman which can scarcely be intended for demonstration and instruction, but more as a genre-picture. The pregnant woman who, in this case, is fully dressed, is receiving from her midwife the necessary comfort and advice.

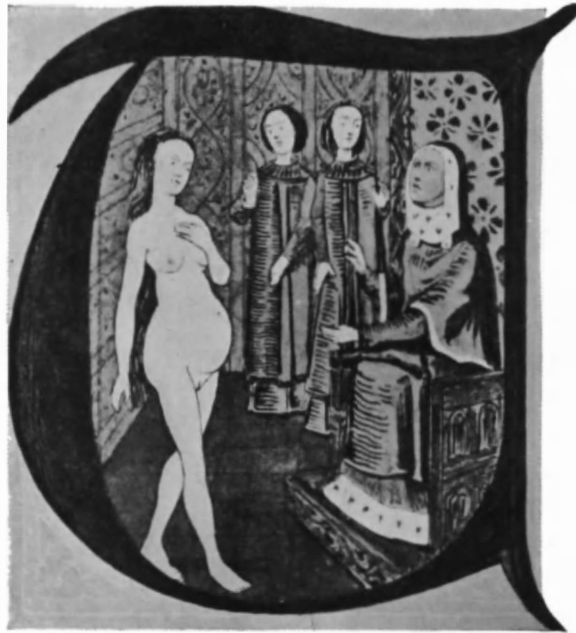


FIG. 626.—Medical instruction on pregnancy. (After Pachinger.)

Christian art, however, has also taken possession of our subject, and we have many such pictures by many famous painters of the most varied schools of old masters. Generally, these have for their subject the visit of Mary to Elizabeth, as it is told by the Evangelist Luke. Many of these artists have made a compromise with their difficult task, as they have found it necessary to disguise the physical condition of the two women as far as possible. They have represented them embracing each other, so that the figure which has her back turned to the spectator has thus made not only her own abdomen invisible, but also that of the other woman. Others, however, have thought that the episode could not get the clearness necessary to the naïve notions of the religious community, unless the great roundness of the abdomen could be seen as naturally as possible.

In the famous "Visitazione" of Mariotto Albertinelli in the Uffizi Gallery in Florence, the folds of the mantle mitigate the effect to some extent.

In his life of Mary, Albrecht Dürer also has illustrated this tale, and he has

taken pains to represent the physical condition of the two saintly women with the greatest plainness (see Fig. 629).

Besides this study from sacred history, the artists of the last century have also made use of a profane subject in which pregnancy plays the principal part. That is, the discovery of the false step of the nymph Callisto whom, while she was resting in the wood alone, Jupiter approached in the guise of Diana. And the portrayal of



FIG. 627.—Internal female genital organs, partly from Vesalius. Sixteenth century.

the nude pregnant nymph forms the actual central figure of their artistic compositions.

4. EARLY IDEAS OF THE DEVELOPMENT OF THE EMBRYO

Suśruta describes the growth of the foetus in the various months of pregnancy as follows :

In the first month, the embryo is formed ; in the second, by coldness, warmth and wind, a hardish mass of the proper fundamental elements of the body, is formed ; in the third, the five lumps of the extremities and the head are developed, but the large and small limbs are still very small ; in the fourth and following months, the sections of the large and small limbs become perceptible. In the eighth, the vital energy is still low ; finally, in the ninth, tenth or twelfth month, the birth takes place (see Vullers, p. 238). In single details too, Suśruta (see

F. Hessler, I., 15) constructed, according to his judgment, a peculiar history of development. According to him, liver and spleen are originated from the blood, the lungs from blood and spume, the abdomen from blood and secretions ; then, in the uterus, are formed the intestines, the anus and the belly by the puffing up of air ; and from the elements of blood and flesh comes the tongue ; from the union of the blood and cell-tissue, the diaphragm ; from the union of flesh, blood, mucus and cell tissue, the testes ; from the union of blood and mucus, the heart and in its region, the nerves as carriers of the life energy.

Suśruta also knew that the nourishment of the foetus takes place by means of the navel vessels.

“There is no doubt,” he says, “that the umbilical vessel of the foetus is joined to the sap-bearing canal (placenta) of the mother. This conducts the essence of the nutritive juice



FIG. 628.—Noble German lady of the sixteenth century, who, whilst pregnant, converses with the midwife. (After J. Rueff.)

of the mother to the foetus. By this internal bond with the mother, the foetus receives its growth, and the sap-bearing and winding vessels accompanying the whole body and the limbs instil life by their internal inter-connection from the time of conception to the partition of the still unformed large and small limbs.”

Suśruta states, further, that the embryo gets from the father the hair of the head, the beard, the hair on the rest of the body, bones, nails, teeth, veins, sinews, canals, semen and other solid matter ; from the mother flesh, blood, fat, marrow, heart, navel, liver, spleen, intestines and other soft matter (Schmidt ⁹).

The Chinese imagined the history of the development of the foetus according to the book, *Pao-tsam-ta-seng-Pien*, to be as follows :

“In the first month, the embryo or ovule is like a drop of water ; in the second a rose-bud ; in the third, the embryo lengthens and shows a head ; in the fourth, one sees the principal

organs appear ; in the fifth, the limb masses ; in the sixth, eyes and mouth can be distinguished ; in the seventh month, it has a human form and can live. Yet at this period it does not leave the mother, like as a green fruit which, when it breaks off, takes with it a portion of the branch which bears it. Whilst in the eighth month, the child is so far perfected, that in the ninth month it resembles a ripe fruit which is only waiting to fall off" (cf. Hureau de



FIG. 629.—Mary visits Elizabeth. Woodcut by Dürer.

Villeneuve). This comparison of the formed child with a ripe fruit seems to be adopted in several Chinese works. For in the *Abhandlung über die Geburtshilfe* which H. v. Martius translated from the Chinese, we read : "The physician Dschuli says : 'Premature births are sufficiently different from the natural. For the natural birth of a child may be compared with a ripe chestnut which, at the period of ripening, falls off gently of itself. A premature birth, however, is like an unripe fruit which, when broken by the storm, takes the twig with it in its fall.'"

Fujihara Kanegoshi gives strange evidence of Japanese ideas in his commentary Nihongi-Sansho :

“ The nose is the beginning of man. In the uterus, the nose is formed first. Hence, the nose (*hana*) is called the beginning (play on word *hana*). Mankind’s ancestor is called nose-ancestor ” (see Florenz ²).

Aristotle (*Hist. Anim.*, VII., 4) states that Alcmaeon, living about 540 B.C., maintained that the head of the embryo is formed first, because it is the seat of the soul, and that the foetus gets part of its sustenance through the skin.

It is probable, too, that Hindu and Talmudic physicians made embryological investigations of birds’ eggs. But the Talmudists used another important material for their embryological studies.

Kazenelson ssay :

“ The developmental history of the human embryo occupied the Talmudic investigators not so much from scientific motives as, for the reason that the knowledge of embryology was indispensable for the solution of many questions of ritual. But, as an unfounded feeling of reverence for their dead prevented their making investigations on human bodies, the Talmudists preferred to turn to investigations of abortions, in which case the above-mentioned prohibition appeared to be abolished. How the wise men of the Talmud regarded these affairs may be seen from the legend which puts the following words into the mouth of King David :

“ ‘ Am I not righteous ? While all the rulers of the East and of the West sit upon the throne in their full glory surrounded by their courtiers, I sit with my blood-soiled hands and study premature births and their membranes.’ ”

In the notes of the Rabbis, we repeatedly come across observations and disquisitions on the origin and mode of action of the embryo in the womb. In the Midrash Wayyiqrā Rabba, the Rabbi Eleasar says :

“ If man tarries only one hour in the heat, will he not come to life ? And the inside of the woman is seething and the child lies in it, and God protects it so that it does not turn into a membrane or a lifeless mass or, a sandal.”

Rabbi Tachlipha then says :

“ If a man eats one thing after another, will not the second push aside the first ? The woman, however, how much does she eat and how much does she drink without the child being pushed aside ! ” (see Wunsche ³).

In the same Midrash is then reported a dictum of the school of Schamai :

“ Not like the formation of the child in this world is the formation in that world. In this world, the formation begins with skin and flesh and ends with sinew and bones ; but in days to come, it begins with sinew and bones and ends with the skin.”

Rabbi Abuhu added to this :

“ A great benefit God confers upon woman in this world in that He does not let the formation of the child begin with sinew and bones ; for if that were the case, then it would split her abdomen and step into the light.”

The so-called foetal membranes, the chorion which surrounds the foetus on all sides, the allantois, a double membrane, and the amnion, a double membrane, are described by Soranus ; Moschion follows him fairly faithfully, and both lay special stress upon the importance of the chorion. We also learn from Soranus the views of some earlier authors on the origin of the umbilical vessels ; according to Empedocles, they belong to the liver ; according to Phaedrus, to the heart ; accord-

ing to Herophilus, the veins reached to the vena cava, the arteries to the arteria trachea; finally, Eudemus thought the vessels connected with the navel of the embryo were separated from there into two arches under the diaphragm.

The authors of that period had still more divergent views on the nature of the amnion: some of them even denied its existence in human beings. The villi of the chorion are described in detail by Soranus (*cf.* Pinoff). He compares those of animal placentas with the smaller excrescences of the human placenta; by them the foetus was nourished. The vessels formed in them are connected with two veins and two arteries; to these the urachus is attached; these five vessels form the umbilical cord; the two veins unite and pass the vena cava in order to conduct the blood of the mother to the child as sustenance, and likewise the two arteries are merged into one, *i.e.*, the great artery (aorta).

Galen is also aware of the chorion and states that it is formed of discharged blood; the allantois also he includes with the foetal membranes. He says that, in the beginning the foetus, because of its small size, is not recognisable, and that first the brain, the heart and the liver are formed; these organs then send out the medulla spinalis, the aorta and the vena cava; and after this the dorsal vertebra, the skull and the chest are formed.

The Arab physicians follow almost exactly the statements of the Greco-Roman authors.

It is clear that the foetal membranes were not unknown to the Talmudists, for we find repeated proof in the Midrash Wayyiqrā Rabba. Rabbi Akiba explains some passages of the Bible as follows:

“When I gave him a canopy as a garment.” By this the chorion is to be understood: “And clouds for his swaddling clothes,” *i.e.*, the thick mass of flesh. “When I defined his limitations,” that is, the first three months; and said: “Thus far shalt thou come and no farther,” *i.e.*, the last three months; “Here be a limit for the rising of thy obstinacy.”

The medical Talmudists were divided in opinion on the development of the embryo. Some thought that the head and the organs nearest to it were formed first; others, on the contrary, held that the middle part of the human body, and particularly the umbilicus and the surrounding parts, were formed first (Tr. Niddah).

At about the end of three months, the nostrils are clearly present; the extremities showed finger and toe formation; also the sex could be distinguished. In order to be able to do this better the Talmud recommends sounding with a wooden probe; nothing, however, could be decided about the sex before the forty-first day. The formation of the hair was to be regarded as the first sure sign of an advanced formation.

Aba-Saul describes the “embryo still enclosed in the membranes” as follows (Tr. Niddah).

The whole embryo is the size of a cricket; the eyes are like two points about the size of flies; these are at some distance from each other; the nostrils too, resemble these two points only with this difference, that they are less distant from each other; the mouth has the appearance of a drawn-out hair; hands and feet are like silken threads; whilst the organ of sex is of the size of a lentil. In the female embryo, however, this place looks like a grain of barley with a lengthwise furrow in the middle. Then it runs thus in the book of Job (x. 10-12):

“Hast thou not poured me out as milk, and curdled me like cheese? Thou hast clothed me with skin and flesh, and hast fenced me with bones and sinews. Thou hast granted me life and favour, and thy visitation hath preserved my spirit” (*cf.* Kazenelson).

It runs similarly, also, in the Midrash Wayyiqrā Rabba :

“ It has been taught how the form of the child (the embryo) is. In the beginning of its existence (creation), it resembles a house cricket ; its two eyes are like two fly marks ; its two nostrils are like two fly marks ; and its two arms are like two shining stripes ; its mouth is like a grain of barley ; its member like a lentil ; and the other limbs are bound together and to it as an unformed mass. Then says David (Psalm cxxxix. 16) : ‘ Thine eyes did see my substance.’ If it is a female being, however, then it is like a grain of barley split lengthwise. Hands and feet are not stretched out ” (see Wunsche ³).

The Talmudists averred that the differentiation of sex, as we have said, appeared only after 41 days. At the same time, the skin and hair were supposed to be formed.

Here another interesting statement from the Midrash Koheleth may be quoted. It says :

“ It has been taught : In the period when the child is being formed in the womb, three (factors) work together, God, the father and the mother. The father gives the white, the colour from which the brain, the nails, the white in the eye, the bones and the sinews are made ; the mother contributes the red, from which the blood, the flesh and the black in the eye are made ; God, however, gives ten things : the spirit, the soul, the features, sight, hearing, speech, the movement of the hands, the gait, wisdom, reason, understanding, intellect and strength. When man’s hour of departure comes, God takes his part and lets the part of the parents lie, wherefore they weep. Then God says to them : ‘ Why do ye weep ? I have only taken My own.’ ‘ Lord of the world,’ reply the parents, ‘ so long as Thy part was united with ours, was ours preserved from worms and decay, but now that Thou has taken back Thy part, our part lies here at the mercy of worms and decay ’ ” (see Wunsche ⁶).

From Vindicianus, who lived about 370 B.C., came the theory that the sex of the embryo develops in the fourth month of pregnancy, but that animation takes place as early as the second month. This view gained authority in mediæval legislation and caused the infliction of severe punishment in artificial abortion, injury to pregnant women and similar cases.

The advance to modern embryology came from Italy in the sixteenth century. After Fallopio and Arantius had turned their attention to the anatomy of the fœtus, the development of the chicken in the egg was again made the subject of scientific observation by Count Aldrovandi and also by Volcher Coiter, and soon Fabricius ab Aquapendente followed in their footsteps. Finally, Harvey, with his typical scientific methods, laid the foundation in this field.

We cannot pursue further here either the history of embryology or the development of the embryo in the uterus through all their phases. Readers must be referred to any of the current text-books, such as the work of Halban and Seitz, “ Biologie und Pathologie des Weibes ” (Berlin and Vienna, 1924, etc.), Vol. II., and Grosser’s “ Entwicklungsgeschichte des Menschen ” (*ibid.*), Vol. VI., 1925, etc.

5. THE DURATION OF PREGNANCY

Very peculiar views as to the length of time in which the embryo can normally stay in the womb are prevalent in individual nations. Thus, in the Chinese book “ Dan-zi-nan-fan ” is written :

“ Daily experience proves to us that a woman is pregnant from seven to ten months. But there are also women whose pregnancy lasts from one to two years.”

A Chinese doctor in Peking informed Grube that they reckoned the duration of normal pregnancy at nine months and 10 days. Lunar months are meant by this.

Among Japanese women, the surest point from which to reckon pregnancy is considered to be the non-appearance of menstruation: formerly, with the official division of the year in lunar months, this sign was still more convenient, since they simply regarded ten of these periods from the first non-appearance of menstruation as necessary for the completion of the pregnancy. Strangely enough, it confused them when the last menstruation extended from the last days of one (calendar) month to the first of the next: then the reckoning was inaccurate as they reckoned the month begun as a full month. Now the women reckon 280 days. They admit, however, that they often miscount (*cf.* Wernich).

The Japanese doctor Kangawa assumes in his book, "Sanron," that with a primipara, the date of the birth is 300 days, and with multipara 275 days after conception (Miyake).

Of the views of the ancient Israelites, Loew says:

"As with the non-medical public up to the present day, so in the Talmud also, the duration of pregnancy is reckoned in months. Only Samuel, the physician, reckons in days. He assumes that the birth takes place 271, 272, 273 or 274 days after conception."

It was thought, however, that there could be very notable exceptions to the usual duration of pregnancy, and that pregnancy could be shorter as well as longer. Loew relates that Rabbi Juda-ha-Lewi from Mainz, one of the greatest Talmudic intellectual leaders of his time (died 1509), referring to the operation of the conventional lunar month, declared that after a pregnancy of five months, the birth of a fully-developed child could take place.

On the other hand, according to Rabbinical Marriage Law, the birth may be delayed till the end of the twelfth month:

In the fourteenth century, this was made use of in Enns in Austria. A young husband had left his home in order, as was the custom at that time and even much later, to pursue his studies at a foreign Talmud school. After an absence of 11 months, he was surprised by the news of the confinement of his wife, who had, moreover, enjoyed the best of reputations. The Rabbis, reassuring the husband, placed her under the ægis of the Thospian theory (Rabba of Thospia had earlier declared the long duration of pregnancy possible). The name of the scholar who had attained fatherhood so unexpectedly was Schelumiel (according to the usual pronunciation, Schlemiel). Since then, his name has become a nickname among German Jews; anyone upon whom misfortune falls not by any fault of his own is pitied as Schlemiel.

The Buddhist legend relates that Buddha was born of his mother after the lapse of 10 months.

The Potowatomi chief, Meta, told Keating that, in his tribe, pregnancy was accustomed to last eight and nine months.

Among the Omaha Indians, if the wife cannot reckon how long she will be pregnant, she asks her husband or an old man to tell her.

The Swahili reckon the duration of pregnancy in the case of a male child as from nine to 12 months; in the case of a female, eight to nine months (*cf.* H. Krauss²).

The Wapogoro (East African tribe) are of opinion, according to Fabry, that boys remain longer in the womb than girls.

The length of pregnancy is reckoned by the native midwives of the Fiji Islands, according to Blyth's statement, at 10 lunar months.

The Hindus, according to Kirtikar, reckon the period of pregnancy at 261 days, exactly nine months after the last menstruation.

Nevertheless, the ancient Hindu physicians say :

“In the ninth or tenth, or eleventh, or twelfth month, the fœtus is brought into the world.”

The White Russian peasants believe that the semen takes three days to penetrate the ovum. The further development they compare with the formation of a web, in which first the chain must be made with long and arduous work before, by the establishment of the woof, the actual weaving can begin ; the expression used for the manufacture of the chain is used to designate the first development : the youngster, the coming child “forms a chain” (*ssnujiotsia*) for 12 weeks. Boys are carried two weeks longer than girls (see P. Bartels³).

With regard to the duration of pregnancy, experience has shown that the birth may be expected about from 270 to 280 days after the last period. Fürst thinks there may be a difference in the time of pregnancy between these women who are pregnant for the first time, and those who have already had several children, and the fact is, the time is longer among the latter. He reckons the duration of pregnancy in a primipara at 278 days from the end of the last menstruation, and at 268½ days from the day of conception, whilst, in a multipara, these two periods have amounted to 282 days and 271 days respectively.

6. UNUSUALLY PROTRACTED PREGNANCY

The statements about the duration of pregnancy which we have just heard correspond on the whole to what we have learnt by general experience among women of our own race. There are, however, some notable exceptions to this rule, of which some owe their origin to the credulity of the people, whilst some, on the other hand, are due to pathological conditions.

In the first group, we have to include information such as we come across in the Hippocratic corpus, and in Aristotle (*Hist. Anim.*, VII., 4) and Pliny (*Hist. Nat.*, VII., 5). The ancients were not yet quite clear as to whether, in some circumstances, a pregnancy might last longer than the usual period of nine months. In the work in the Hippocratic collections, *De Diaeta*, this was regarded as possible, whilst the author of *De Natura pueri* (30) doubted the information about these cases. Aristotle relates that according to some people, a pregnancy might be prolonged to 11 months, but he put no faith in this. Pliny, on the other hand, tells of a case in which delivery was said to have taken place after 13 months.

However, in our time, also, such views occur. Thus, Quedenfeldt reports from Morocco :

“There are many Moorish women, divorced or widows, who maintain that a child sleeps in their womb for years ; this is commonly believed, and is even accepted as something very ordinary. With the loose morals of the widows and divorced wives, it is very convenient for many to have a sleeping child on hand for, if they give birth to a child again two or three years after the separation from their husbands, then it is just that child reawakened.”

Among the Southern Slavs, according to Krauss,¹ “the wonderful belief is prevalent among the peasant population that, in certain circumstances, the woman can give birth in six weeks to a perfectly developed child. This belief may arise from the fact that many young wives give birth to a child shortly after marriage. The explanation of this ‘miracle’ is that the time of pregnancy was much shortened.”



FIG. 630.—Cadaver showing a lithopædion present after 22 years. (After J. G. Walter.)

Likewise, the “*Multeka ül übbür*” of the Turks, the statute book which is the foundation of the religious, political and moral government in Turkey, deviates

considerably from our experience. According to it, the duration of pregnancy is fixed at from six to 24 months. According to Oppenheim, who reports this, the Turkish lawyers make their decisions as follows :

“ When a woman, who is about to enter upon her second marriage, becomes pregnant without having previously explained her seclusion, then a child born in the first six months is ascribed to the first husband (and this circumstance, at the same time, effects the dissolution of the marriage). If, however, a wife declares that she is not pregnant and if, all the same, she is confined before the end of 11 months after the death of her husband, then the child is, nevertheless, regarded as legitimate and belonging to the dead man.”

Here we may again refer to the already quoted beliefs of the Chinese in one to two years long pregnancy.

We have still the second group to consider, *i.e.*, the cases where for pathological reasons pregnancy continues longer than usual. Here the overstepping of the usual

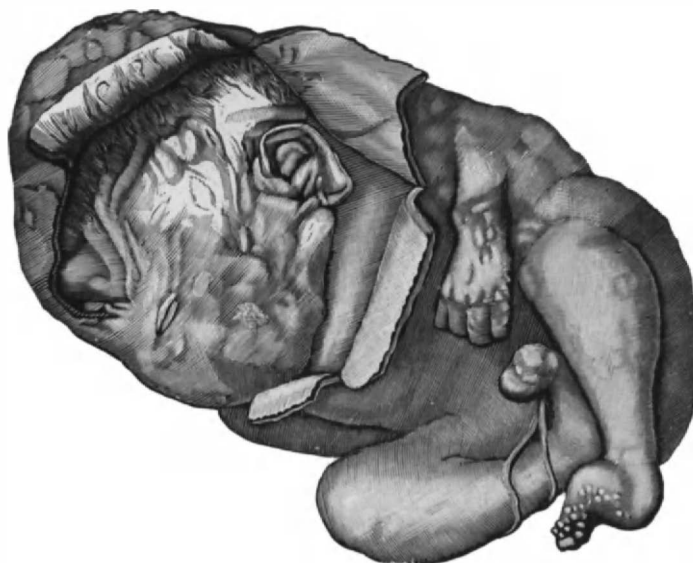


FIG. 631.—Lithopædion, extracted after 22 years. (After J. G. Walter.)

period is always very considerable, and these cases are essentially different from the former ; for here, the pregnancy does not reach the normal conclusion, for the child is not born at all. That the woman really was pregnant, however, the post-mortem examination proves.

The founder of the Berlin Anatomical Museum, Johann Gottlieb Walter, in the year 1778, related to the Prussian Academy of Science in Berlin the history of a woman who carried a petrified child in her womb for 22 years. In Fig. 630, a reduced reproduction is given of one of the illustrations which Walter added to his work. It shows the opened abdomen of the woman and the position of the 22-year-old embryo.

The children which have remained so long in the mother's body are, of course, not alive like a normal embryo in the womb, but they have long been dead. They do not decay, however, but other chemical changes proceed in their dead bodies. They become fatty or soapy on account of a deposit of margarates of calcium, potassium, etc. Hence, such a child gives the impression of having been turned to

stone, and, for this reason, an embryo of this kind has, from ancient times, onward, been given the name of *Lithopædion*, or "stone child." The example observed by Walter is portrayed in Fig. 631. The right foot, immovable owing to the calcification, lies before the genitals in such a way that the sex of the child cannot be determined. As Walter points out, it is apparent that its length, if extended, corresponds to that of the average nine months embryo.

He continues, "but this is impossible for . . . this child has been hardened with a substance hard as stone, hence it is called a *Lithopædium incrustatum*. I have, as the third illustration shows, [Fig. 631] taken off this incrustation from the face, neck and the upper parts of

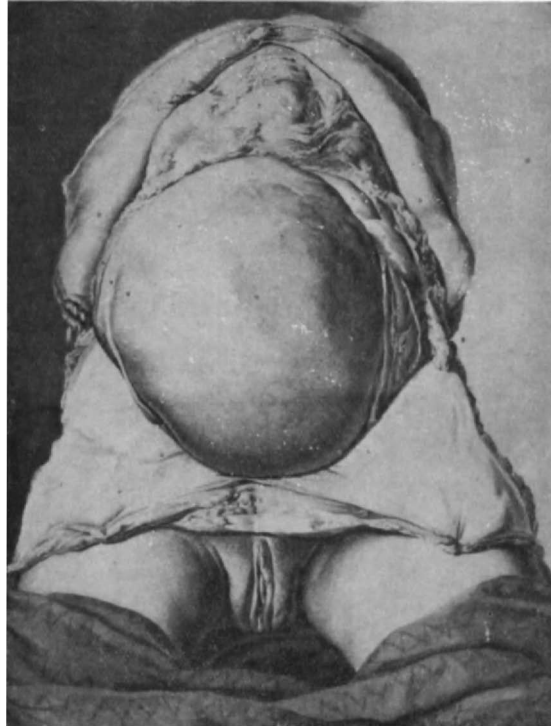


FIG. 632.—Section showing uterus in a woman who died in the end of her ninth month of pregnancy. I. V. Rymsdyk. (After W. Hunter, 1774.)

the body with the handle of an anatomical knife, so that the left ear, the eye and the hair of the head can be clearly seen. The remaining parts of the face are as hard as stone; about the immovable mouth and the nose the incrustation was so firmly fixed that it was inseparably connected with these parts and, therefore, had imparted a monstrous appearance to the usual formation of the face."

The reason that such infants are not able to leave the womb is not the same in all cases. In some of the instances observed, it seems to be due to the uterus having been torn in severe labour and the child having slipped into the abdominal cavity from which it could not get out. Such a case is most probably that of a woman in Toulouse, who was pregnant for 26 years, as well as the very famous case of Anna Müller of Leinzell, in Württemberg (see Kieser). The latter became pregnant at 48 years of age, and, in spite of labour pains, lasting for seven weeks, could not be

delivered. A treatment with baths cured her pains, but her abdomen remained large. Nevertheless, she gave birth to two other living children, and when she died at 94 years of age, a lithopædion was found in her which she had carried for 46 years.

A second cause by which the embryo may be retained in the abdomen of the mother may in very special circumstances be ascribed to an extra-uterine pregnancy. Of these we shall speak again later, and we shall even find that probably this possibility was not unknown to the ancient Hindus. At least in a passage of the Ayur-Veda, Suśruta speaks of a kind of fœtus which he calls *Nagadara*. That signifies *breast-plate*, and probably a lithopædion is meant by it here. Walter thinks that his case belongs to this category, but we cannot go further into his evidence of this. Moreover, both kinds are extremely rare.

CHAPTER XIV
NORMAL AND ABNORMAL PREGNANCY

1. THE POSITION OF THE CHILD

THE want of careful obstetric investigation in ancient times and in the Middle Ages explains why the normal position of the child inside the womb remained vague ; but it is very remarkable that peoples, apparently independent of each other, had the common idea that, during pregnancy, the child quite suddenly changes its position in the womb. The necessary light was first shed on this question by modern clinical observation.

The Talmudists also meditated upon the position of the embryo in the womb. In the Midrash Wayyiqrā Rabba, a statement of the Rabbi Abba bar Kahana is reported :

“ Usually, if a man turns a purse of gold with the opening downwards, does not then the gold fall out (is it not scattered) ? The child is in its mother’s womb, and God protects it so that it does not fall out and die ; does He not, therefore, merit praise ? ”

In the same Midrash, another statement, that of Rabbi Simlai, is reported which gives the following detailed description of the position of the embryo :

“ How does the child lie in its mother’s womb ? Wrapped up like a book, its head lies between its knees ; its two hands lie at its two sides ; its two heels at its two hips, its mouth is closed ; its navel is open and it eats of that which its mother eats, and drinks of that which its mother drinks, and gives off no excrement for, otherwise, it would kill its mother. Then, when it enters the air of the world, what was closed is opened and what was open is closed.”

In the Hippocratic collection, it is said that

“ Children are begotten with the head upwards, but may enter the light upon their heads and are much more safely delivered than those which are born on their feet.”

Thus we find also in Rueff’s *Hebammenbuch*, the child is represented in its foetal membranes with the head upwards. Fig. 633 is a reproduction of the figure from the edition of 1581.

Hippocrates assumes, further, that the birth must be initiated by a rupture of the membranes. First, however, he thinks it indispensable that the body of the child should turn over into another position. He says that in the last days of pregnancy, women carry their abdomens most easily because the child has succeeded in turning itself. An uneasiness in the child, he thinks, may interrupt this unaided turning.



FIG. 633.—The position of the embryo in the membranes. (After Rueff, 1581.)

Into this error of Hippocrates, which for a long time was maintained as dogma throughout all literature, Aristotle also fell. He says (*Hist. Anim.*, VII., 9) :

“ In all animals alike, the head in the embryo is upwards ; but when they have grown and are striving to be born, they move downwards.” And in the book *De generatione animalium* (IV., 8) he says : “ The head in birth, therefore, seeks the orifice of the womb because a greater part lies above than below the umbilicus ; the greater part, however, is heavier, and,



FIG. 634.—Schematic representation of a pregnant woman whose child is on the point of turning over. (From an anonymous work of 1766.)

therefore like the balance of a pair of scales, inclined towards the place to which it is drawn.”

Aristotle describes the position of the embryo in human beings in this way. It lies bent so that it has its nose between its knees, the eyes on the knees, but the ears free at the sides. At first the head lies upwards, but with further growth and the impulse towards birth, the head, by the falling over of the embryo, comes below, whilst it sinks by its own weight to the orifice of the womb (*Hist. Anim.*, VII., 9).

This turning over of the foetus was afterwards called *the fall or overturn (culbûte)*

of the embryo. According to Suśruta, it takes place shortly before birth, and according to Schmidt,⁹ the following specifics were recommended to parturients for this :

“ Then let her smell repeatedly aromatic powder, scent her and anoint her with lukewarm oils, especially on the genitals, by which means the emergence of the foetus with its head downwards is helped ; the fact that the foetus has turned can be recognised by the fact that it is freed from the mother’s heart, that it enters the abdomen and reaches the neck of the bladder, when the pains become more frequent.”

A pictorial representation of the “ falling over ” of the child is to be found in the anonymous work of S. J. M. D. on the procreation of human beings and child-birth, which, translated from the Dutch, was published in the year 1766 at Franckfurt am Main. The plate reproduced in Fig. 634 is a representation of a child ready to turn over and in its natural position.

We know how very widespread is this error among all civilised nations. Indeed even up to the time when the dissection of corpses began, the principle of the “ falling over ” continued the prevailing view for a long time. Although Arancio (Arantius), a pupil of Vesalius and a professor in Bologna, according to his own statement, frequently found on opening corpses that even in the very early stages of pregnancy the head of the foetus was very often already at the orifice of the womb ; hence he upheld the view of the “ falling over ” of the child on its head, but put the time of this process at the beginning of the birth. According to him, unless some unusual disturbance takes place, the head of the child rests, until birth, at the orifice of the womb, since the fundus uteri has more room for the head of the foetus than the part next the neck of the uterus.

We find something similar in an illustration (Fig. 635) from Count Ulysses Aldrovandi in the seventeenth century. We see the prepared organs of the abdomen and among them the opened, pregnant womb. In this crouches the child with the head upwards, the back towards the front. Its breech rests on the heels and the hands are raised towards the ears.

A very exact description of the position of the child in the uterus is given by G. Scipione Mercurio in the early years of the seventeenth century. He had had the opportunity of observing this in the year 1587 when his teacher, Giulio Cesare Arancio, had to cut the living child out of a dead woman. He writes (I., 3, p. 14) :

“ This human creature kept its head in the upper part of the uterus in its wider part ; the arms were bent so that the elbows were against the sides ; the palms of the hands lay on the knees ; the legs were drawn up and crossed, so that the soles of the feet lay on the breech ; the eyes were over the knees, the cheeks touched the outside of the hands, and the nose was between the knees.”

In this way the child, as Mercurio himself puts it, was in a circular form. (*La creature dunque cosi raccolta forma di se quasi una figura circolare*). Now this, according to his opinion, is intended by nature, for it is the most perfect of all mathematical figures, and in this form the “ creature ” can move with ease without suffering any harm from the movements of the mother.

This position of the child is also shown by another illustration (Fig. 636) given by Welsch (1671) which represents the child in its proper and natural position as it lies in the womb.

According to the view of Mauriceau, who was so highly respected in his own time, this sudden change of position takes place in the seventh month of pregnancy, and “ it may be noted, that when the child hath thus changed its first situation, being

not yet accustomed to this last, it stirs and torments itself so much sometimes, that the woman, by reason of the pains she feels, is apt to believe her Labour is at hand" (Hugh Chamberlen's translation, p. 172).

Still less need it surprise us if we find even at the present day in Germany, and perhaps also in France and England, that now and again, popular writers speak of the falling of the child in the womb. This arises from the fact that in the oldest midwifery books of the Germans, the tumbling of the child was spoken of and the midwives certainly spread this tradition among the people.

The savants were in disagreement as to whether the reason for this change of



FIG. 635.—Representation of the normal fœtal position by Aldrovandi, 1642.



FIG. 636.—Representation of the normal fetal position by Welsch, 1671.

position of the embryo was to be sought in an instinct in the child, or in a purely mechanical circumstance. The former view was supported by Hippocrates; the latter by Aristotle.

Moreover, the Israelite physicians also believed in the sudden tumbling, for it says in the Talmud: "When the time for birth has come, then the child turns and goes out; and from this come the pains of the woman" (Israel's).

The theory of the falling over or tumbling of the child in the womb was first contested by Realdus Columbus, a pupil of Vesalius. In his work *De re anatomica libri XV.* (1559), he rejects everything that had hitherto been taught on this subject, and he ridicules the idea that the embryo should turn over in the womb "*simiarum instar seu funambulorum et mimorum*"; for the lack of space alone does not permit of this change of position. In spite of this opposition, however, the old view per-

vailed for a long time, and only later did Smellie, Solayrés de Renhac and others succeed in destroying this hypothesis.

Now, when once this theory of the sudden turning over of the child, which had lasted so long and had such general recognition, had been disposed of, nothing more was heard for a long time of this subject, once so well known. Only in recent times were actual phenomena ascertained which were bound to arouse the greatest astonish-



FIG. 637.—Fœtal positions as portrayed in the Codex Hafniensis. Twelfth century.

ment. How could it happen, people had to ask themselves, that so many skilful obstetricians in earlier centuries did not find these phenomena? Why did these facts escape them? Were they not observed at all? The explanation of this problem probably lies in the fact that those who made such observations, under pressure of a prevailing dogma, avoided making them public because they were afraid of being ridiculed or pronounced unreliable observers.

Onymus appears to have been the first who, by internal examinations of

pregnant women who had already given birth to children, was able to ascertain the occurrence of a change in the position of the embryo. He found that among 43 pregnancies, only in 27 did the position of the embryo remain the same until birth; he explained both the normal position of the head, and the various changes in the

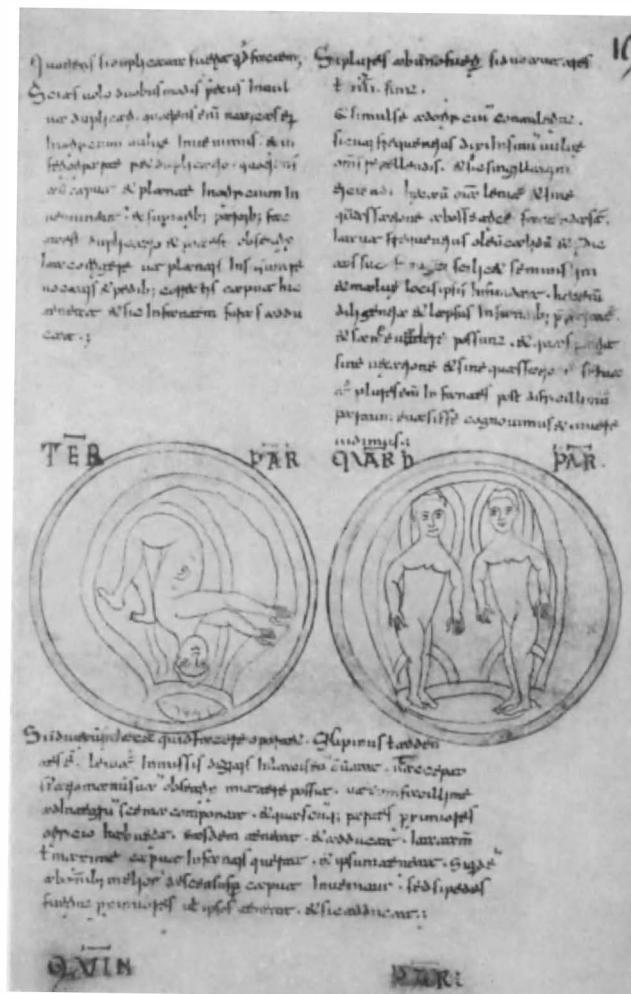


FIG. 638.—Fœtal positions as portrayed in the Codex Hafniensis. Twelfth century.

position of the embryo, by the laws of gravitation. Nevertheless, his statements did not get sufficient attention.

Since, however, such experienced obstetricians as Justus Heinrich Wiegand and Franz Carl Nægele do not mention the change of position of the embryo in their work, it must be assumed that they never had the opportunity to observe it.

Paul Dubois and F. W. Scanzoni were the first who again dared contest the beliefs of the authorities and support the idea of changes of position of children in the womb. Only it was by no means the results of repeated examinations of pregnant women which they adduced as grounds for their opinions. Rather they

cited the statistical comparison of premature and normal births with the relative totals of head, breech and transverse presentations ; in premature births, the fœtus was found in the first months of pregnancy disproportionately often with the breech against the neck of the uterus, and the frequency of this position diminishes as pregnancy approaches the end. As if excusing himself for his disloyalty, Scanzoni (1853) says :

“ We shall be taxed with having tried to support the theory of the so-called somersault of the fœtus in opposition to the opinion of the greatest authorities. We must, however, remark

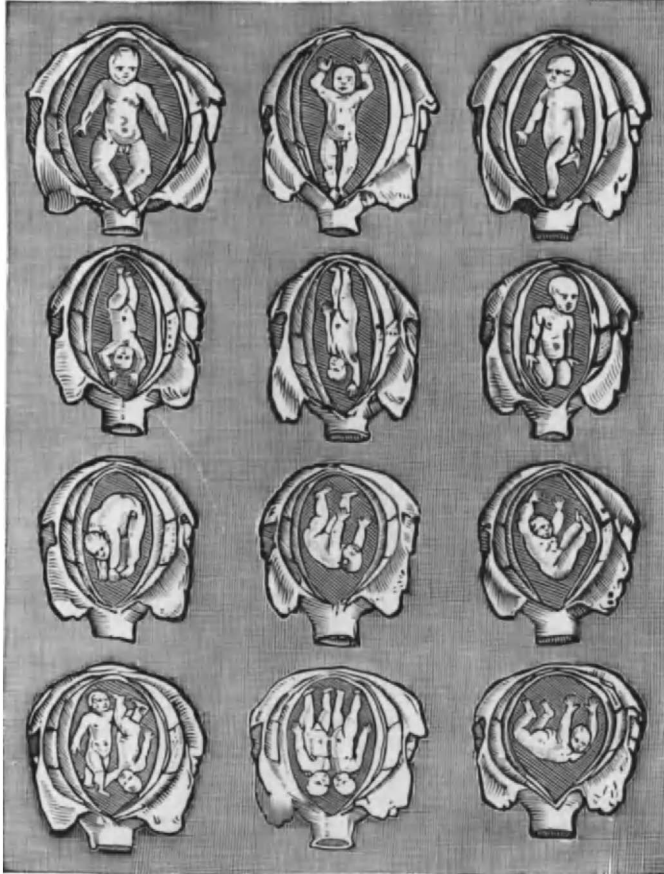


FIG. 639.—Abnormal positions of the child in the uterus according to Dryander, 1547.

that, on the one hand, the objections brought forward by the opponents of the latter view do not seem to us to be sound, and, on the other hand, our observations in conjunction with those of Dubois appear to be conclusive.”

Scanzoni speaks here of a process which took place before the final months of pregnancy, for he says :

“ We are firmly convinced that the fœtus is placed if not more often, certainly as often, with the breech downwards as with the head, and that a complete turning over appears not only possible, but even actually to take place in many cases.”

Of a change of position in the course of the final period of pregnancy, he made no mention.

Recent observations have now proved unquestionably that a change in the position of the embryo very often occurs, and the more easily the less advanced in pregnancy. Also it is more common in later than in first pregnancies, and is even not uncommon shortly before birth, whilst in first pregnancies it takes place only in very exceptional cases. Most commonly transverse and breech positions change to head presentations; but breech presentations rarely change to transverse presentations and the converse also rarely takes place (see Schroeder).

The contest of the followers of Aristotle and Hippocrates as to the cause of the change of position of the embryo has been decided by recent researches in the sense that they are both right. For, on the one hand, the weight of the head favours the development of the head presentation, but, on the other hand, the embryo itself, by reflex movements, contributes to this end, for it is always striving to evade the pressure of the womb.

From these discussions it is clear that it was not unknown to our forefathers that the embryo was not always in the same position in the uterus, but that there were besides the usual positions, a few unusual ones (*cf.* the picture of the positions of the child from the Codex Hafniensis, twelfth century, Figs. 637 and 638). An endeavour was then made to give an account of all the positions which the fœtus could assume in the uterus, and in the books on anatomy and obstetrics these positions are fully illustrated. Fig. 639 represents a set of such illustrations from Johannes Dryander's *Artzeneispiegel* of the year 1547. This set is attached to the chapter on unnatural birth. From it can be seen that the author intended to present that which deviates from nature. Although his illustrations may seem very fantastic to us, yet those of his contemporaries are no better or truer to nature. These circumstances were not satisfactorily cleared up until recent times by means of close investigation.

2. THE VIEWS OF EXTRA-EUROPEAN NATIONS ON THE POSITION OF THE EMBRYO IN THE UTERUS

The idea that the embryo may shortly before birth change the position which it had had till then in the uterus, we find also among the Chinese and Japanese. In a Chinese treatise, it is said that the child turns in the womb before it is born, and uneasiness in the child may disturb the birth. From another Chinese work, v. Martius states that it is asserted that :

“As soon as the child has turned over and downwards, the labour pains of the mother will increase,” and the question is put : “Then does the child turn of itself in the womb ?” to which is given the answer : “Of course !”

As we have said, the same view was also widespread among the Japanese. Kangawa, who had a reformatory influence in many directions in the field of obstetrics, also rejected this belief. He says :

“It is a regrettable error if it is believed that the fœtus turns over before birth : it is not understood that the transverse or the cross-position exists from the beginning of the pregnancy and rather happens of itself ; in this way, the treatment of the midwife or obstetrician at the proper time is hindered.”

In a Japanese work which bears the title “How to Proceed in a Sick Family,” there is portrayed an embryo lying in its foetal membranes. Fig. 640 is a copy of

this woodcut. One sees the placenta, the umbilical cord and the little embryo, the crouching attitude of which approaches reality. Fig. 641, likewise, is taken from a



FIG. 640.—Fœtal positions, according to a Japanese woodcut.

Japanese woodcut which also affords a view of some positions of the child in the womb, and doubtless shows the influence of European theories. In the standing



FIG. 641.—Positions of the child in the uterus, according to a Japanese woodcut.

figure, one sees a head presentation ; in the two women on the left, breech presentations are illustrated. In the women on the right, perhaps the place where the

placenta is attached was meant to be illustrated. In the original, the whole of the upper part of the picture is covered with writing.

Here must be mentioned a fan which Paul Ehrenreich received at one time in a

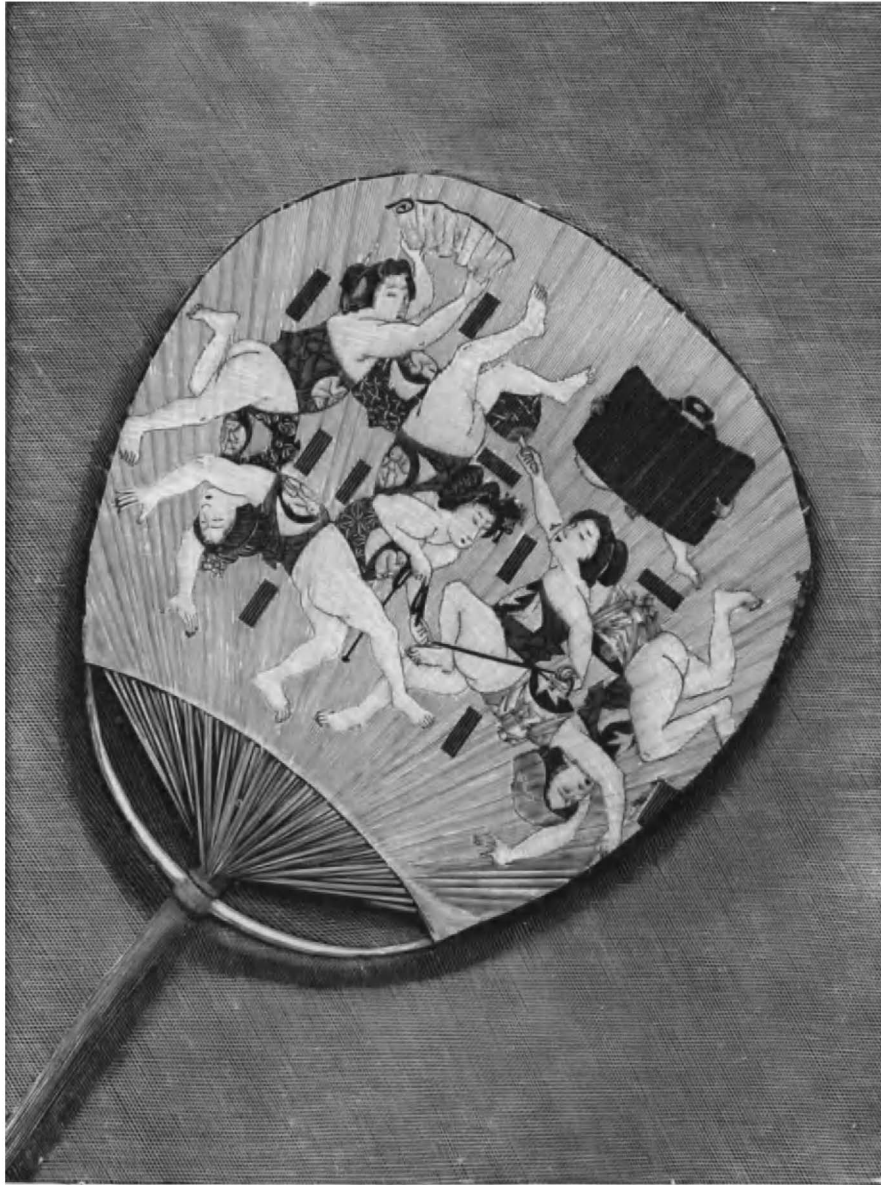


FIG. 642.—Novelty fan from a Japanese tea-house showing position of the child in the uterus.

tea-house in Tokio, as a kind of business card. M. Bartels writes: "On it, we see represented in colour a number of nude women in the most peculiar positions. Their abdomens are opened and in them can be seen crouched embryos and in three also the placenta. Of these abdomens, there are nine; but there are only five upper

bodies and heads in the picture, and similarly only five lower bodies and 10 legs can be counted. That is to say, the figures are so cleverly grouped that the upper bodies combine with the lower bodies in various ways so that they seem to belong now to one or now to another lower body. By a clever insertion of the abdomens and by making use of the combinations mentioned, nine different women can be counted. A boy sits near this lively group, but he pays no attention to them, for he is almost entirely hidden behind an open book." This interesting fan is reproduced in Fig. 642.

Among many peoples, as we shall see, a regular massage and stroking of the body takes place during pregnancy. No doubt there lies at the root of these strange measures the idea that the position of the child in the womb can and must be influenced.

Our knowledge, however, about the notions formed by foreign nations of the position of the embryo inside the womb is very scanty.

A wooden figure of the Goldi in Siberia, an illustration of which is given by M. Bartels, suggests to us that this tribe imagines the child in the womb standing upright with legs apart.



FIG. 644.—Painted door from New Guinea showing the position of the child in the uterus. (After de Clercq.)

The woman, with conventional head and a trunk formed from an oval, sits upright with her legs apart and bent at the knee. The arms, with fingers spread out, are raised: the vulva, furnished with hair, is clearly marked. Inside her body one sees a rectangular figure standing on its narrow end; on the upper narrow end is placed a kind of cap-shaped appendage. This upper end

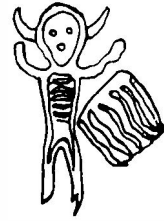


FIG. 643.—Embryo as portrayed on a Chippewa music-board. (After Schoolcraft.)

We have also (Fig. 643) a pictorial representation of the foetus in the womb from the Chippewa Indians. This is on a so-called "music board" which is used, as it were, as a hieroglyphic text-book for ceremonial hymns. The explanation which Schoolcraft gives runs:

"This figure represents a half-grown foetus in the womb. The idea of its age is symbolised by its having only one wing."

Attached to the picture is the hymn text:

"My little child, my little child, I pity thee!"

The wing, of which mention has been made, is on the left hip. This child also stands upright. It has, however, both arms raised, and not, as in the aforementioned Goldi child, with the arms hanging down close to the body.

A very interesting picture from Dutch New Guinea has been described by F. S. A. de Clercq. "It is to be found on a door of yellowish brown wood, painted with zigzag lines, and portrays a pregnant woman whose confinement is perhaps approaching (Fig. 644). The woman, with conventional head and a

extends to the pit of the woman's stomach. It is the widely distended uterus, for in it one sees the embryo. The latter stretches its legs upwards, whilst the head is downwards. Thus it is a head presentation, and this is certainly a proof that this feature of birth is the usual one among the inhabitants of New Guinea. The embryo, moreover, stretches out both arms, and is quite unmistakably characterised as a boy. An indication even of the navel cord is also given and the cap-shaped appendage is probably intended to represent the placenta" (M. Bartels).

It has been maintained that certain peculiar methods of burying dead bodies might have originated in the idea that the dead person was to be given to mother earth in the same position as it had assumed in the mother's body. Whether that is so, however, must remain open to doubt, since it seems a trifle far-fetched. An attempt has been made to explain the burial of corpses among the Basuto and Peruvians in this way, and the conclusion must then naturally be drawn



FIG. 645.—Siamese from Bangkok with ovarian dropsy.



FIG. 646.—Ovarian cyst. Arup. (After Neuhauss.)

that these peoples had already a clear idea of the position of the embryo in the uterus.

Among the Wanyamwezi in Africa, according to Reichard, an abnormal position of the child gives rise to the giving of a name, *e.g.*, Kasinde, these born feet first.

The Orang-Bélenda in Malacca designate a child born with its head first as *betul*, according to Stevens, whilst they call a child which comes feet first, *junyong*.

In earlier times, there was also a custom of this kind, and Pliny says :

“To be born with the feet first is contrary to nature, and, therefore, such children were

called *Agrippas*, *i.e.*, born with difficulty. Marius Agrippa is said to have come into the world in this way, etc."

The fact that the embryo can move in the womb is commonly known from the Gospel story of the meeting of Mary and Elizabeth. It is reported that women in Annam felt these movements towards the end of the third month, but more often not until the fourth month. Then they at once announced this to their neighbours with great satisfaction, saying at every movement of the foetus: "He is amusing himself by rocking" (see Mondière,² p. 36).

3. EXTRA-UTERINE PREGNANCY

Among some nations, we find more or less clear traces that the occurrence of pregnancy outside the womb has been known to them. Thus, Suśruta, in a passage of the Ayur Veda appears, though not very clearly, to indicate such a pregnancy:

"The seminal blood disturbed by Vayu and come to life swells the body. Then this is sometimes quietly brought through its proper way and removed in the passage of food; sometimes it dies off and then it is called *nagadara* (breast plate). In this case, one proceeds as with a dead foetus."

Vullers (p. 237) thinks that this is a question of two issues of extra-uterine pregnancy; in one case, it is a matter of decomposition of the embryo and its gradual ejection outside into the rectum or into the bladder. By the "breast plate," as has already been observed, probably a lithopædion is meant. (*Cf.* p. 403.)

The Rabbis of the Talmud named a child "Joze Dofan" which emerged from the abdominal side of the mother. According to their view, a "Joze Dofan" can be born alive; they maintain that both mother and child survive in such cases (*cf.* Israel's). However, they also called "Joze Dofan" a child which was got out of the mother's body by an operation.

In Soranus (ed. Pinoff, cap. 29, p. 82) there is a chapter which may deal with an extra-uterine pregnancy. How does one recognise those who have conceived in the abdomen (abdominal pregnancy), whether they suffer from perversion of appetite or according to the condition mentioned? The chapter is, however, so corrupted that no definite meaning can be found in it (see Ermerins).

The ancient Arab physician Abulcasis cites the observation of an extra-uterine pregnancy in which, when opening an abscess in the navel region of the mother, bones of the foetus were removed.

We come across a peculiar form of extra-uterine pregnancy outside the womb among the Buddhists. Their legend says that the boy Buddha was born through the right side or the armpit of his mother (see Koeppen).

Our knowledge of extra-uterine pregnancy and its various forms has made considerable progress during the last generation owing to the extraordinary improvement in operative surgery, and many women have been saved who would otherwise have perished miserably owing to these processes which are by no means rare. The great danger for the pregnant woman which accompanies this abnormal condition lies in the fact that the sac can easily rupture in the body and thus lead to a fatal hæmorrhage, or to peritonitis and by decomposition of the foetus to serious septic processes, owing to which, either after a very short or after very long painful illness death results. We cannot pursue this subject further here. It belongs to pathology.

4. FALSE PREGNANCIES

We cannot conclude our discussion of the anatomical states of pregnancy without calling attention in a few words to certain diseased conditions which can arouse in others or in the woman concerned the erroneous supposition that a pregnancy is present. The most important of these are certain kinds of swellings in the lower part of the body, cyst-forming worms of the liver and of the great omentum, tumours of the womb, and especially cyst formations of the ovaries, the so-called

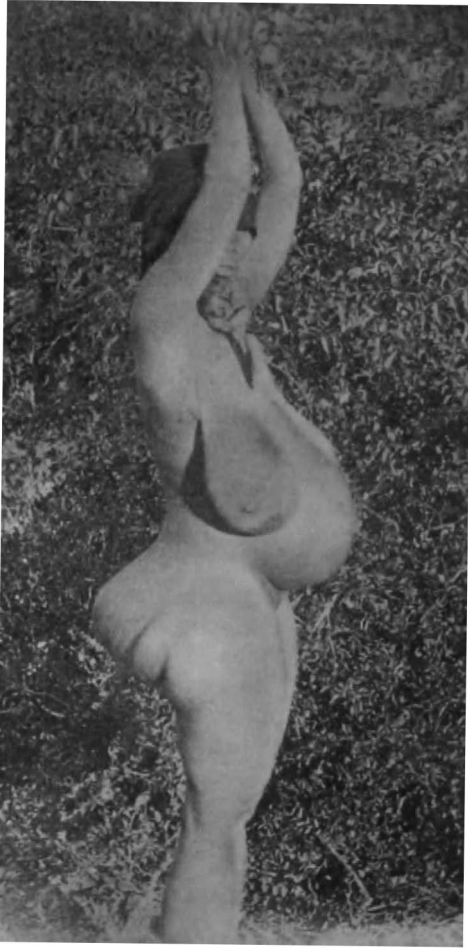


FIG. 647.—Pregnant Hottentot. (Photo: E. Speer.)



FIG. 648.—Pregnant Hottentot of mixed breed. (Photo: E. Speer.)

ovarian dropsy. As these not infrequently befall unmarried women, and often even quite young individuals, and as their gradually expanding body gives them indisputably, when they are clothed, the appearance of being pregnant, the poor girls have to suffer not only from their illness, but often as well from many jeering and unpleasant remarks.

The worst stages of these affections cause the abdomen to distend to quite incredible dimensions (see Figs. 645 and 646), so that finally the whole body looks like an appendage of the abdomen.

Certain forms of ascites, which may also distend the body as in pregnancy, will, however, seldom give rise to mistakes, because they are found almost exclusively among elderly people whose general appearance leaves no room for doubt about the severity of their malady.

One affection which may mislead not only her relations and friends but even the woman herself is, fortunately, not very common, nevertheless, it played a very

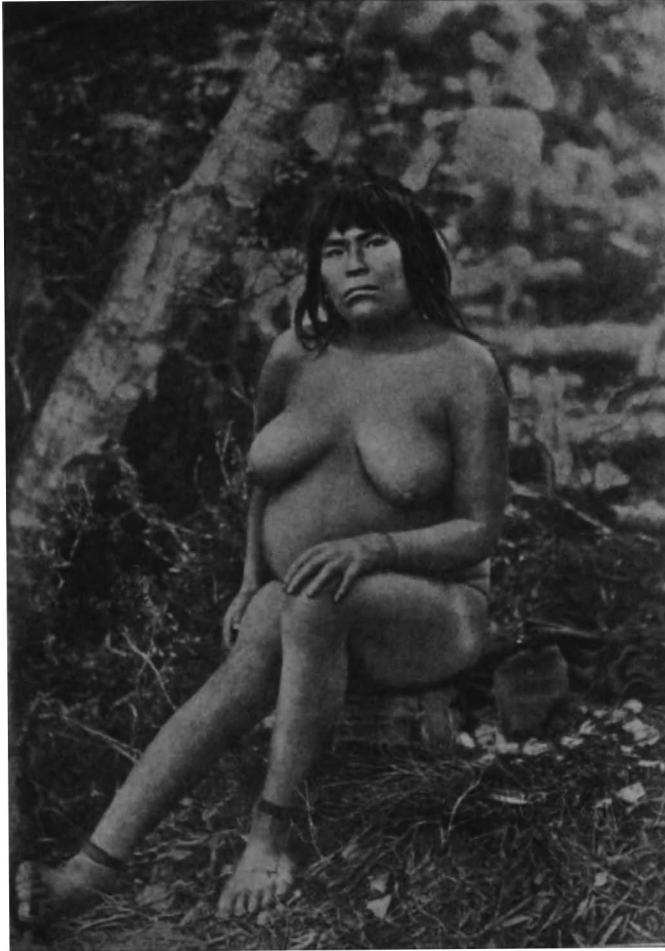


FIG. 649.—Seven months pregnant Fuegian. (After Hyades and Deniker.)

prominent part in earlier centuries. This is the “*false pregnancy*,” which leads to the formation of moon calves (“fleshy” or “blood” moles). The name *moon-calf*, also called moon-child (see Vol. II., pp. 148 and 368) arises from the fact that it was imagined that the moon had a direct influence on the development of these malformations. In Latin, the word was *mola* (cf. Pliny), which is supposed to come from the mass (*moles*) caused by them. Here two different conditions have been confused; on the one hand, true monstrosities, which belong to the group of headless deformities, and on the other ova degenerated by pathological conditions which have also been

described as so-called fleshy moles. The "moon-calves," firmly attached to the uterus, which have been discussed by some writers, were specially big uterine polypi.

Pliny says :

"The only creature which has a monthly loss of blood is woman ; hence only in her womb do moon-calves occur. This is a shapeless, lifeless piece of flesh which resists the stab and cut of the iron instrument. It moves and stops the monthly flow just like a foetus ; sometimes it is



FIG. 650.—Pregnant Malay. (After Verl., R. A. Giesecke.)

fatal to women ; sometimes they retain it till they are old, or it passes away with quick opening of the womb."

Mauriceau states that :

"The *Mole* is nothing but a fleshy substance, without Bones, Joynts, or distinction of Members ; without form, or figure, regulated and determined ; engendred against Nature in the Womb, after Copulation, out of the corrupted Seed of both Man and Woman. Notwithstanding, there are sometimes that have some rudiments of a rough form.

"It is very certain, Women never engendred Moles without copulation, both Seeds being required to it, as well as for a true Generation" (Hugh Chamberlen's translation, p. 54).

He continues (*Ib.*): "*Moles* are ordinarily engendred, when either the Man or Woman's

Seed, or both together, are weak or corrupted, the Womb not labouring for a true Conception, but by the help of the Spirits with which the Seed ought to be replenished : but so much the easier, as the small quantity found in it is extinguished, and as it were choaked, or drowned by abundance of the gross and corrupted menstuous blood, which sometimes flows thither soon after Conception, and gives not leisure to Nature to perfect, what she hath with great pains begun, and so troubling her work, bringing thither confusion and disorder, there is made of the Seeds and blood a meer *Chaos*, call'd a *Mole*, not usually ingendred but in the Womb of a Woman, and never or very rarely found in that of other Animals, because they have no menstuous Blood, as she hath."

The symptoms by which pregnancy with a moon-calf may be diagnosed, the differences between its movements and those of a real fetus, the medicaments and operative measures which are necessary in order to rid the woman of these moles are discussed in detail in the old books on obstetrics ; we need, however, not go into that in this place.

A third kind of apparent pregnancy must be briefly considered. This is that which has given rise to the popular satirical verses :

" And when she thinks she has a child
'Tis but her whole belly that's full of wind."

A general expression for this condition does not exist in German ; the French call it "*grossesse nerveuse*," the English have a less appropriate name for it : *spurious pregnancy*. In this case, it is a question of the complete but erroneous conviction on the part of the woman that she is pregnant ; and she actually gradually experiences all the subjective phenomena of pregnancy.

This imaginary pregnancy was known as Hippocrates. He writes about it :

" In those whose womb falls on the hips, it dries up there at the hips, if it does not quickly move back to its place again. The orifice of the uterus must, of course, have been turned aside and gone further up ; but if turned away, it must be closed and consequently the orifice must become hard and closed up and callous. It sends the obstructed course up towards the breasts and the breasts sink under the weight of them. The abdomen swells up and the women who are inexperienced in this think that they are pregnant, for they have troubles similar to those of pregnant women up to the seventh or eighth month ; that is to say, the abdomen increases in bulk in proportion to the time, the breasts swell and milk appears to form in them. But, as soon as this time is past, the breasts fall away and become smaller ; the same happens with the abdomen ; the milk disappears and leaves no trace ; the increase in the



FIG. 651.—Girl of the Bavarian Rhenish Palatinate, 27 years old and pregnant for the second time. (After Pachinger.)

abdomen at the time when the birth appears to have been due is over and the abdomen falls away. When that happens the uterus contracts rapidly and it is impossible to find the orifice, everything is so contracted and dried up."

Of these conditions, Schroeder says :

"These occur just as often soon after marriage as in the beginning of the period of the climacteric, but most often, though not exclusively, among married women, and especially those who urgently desire children. In this condition, the abdomen, owing to tympanitis and the deposition of fat in the abdominal walls and in the omentum, often expands to a considerable extent, the linea alba and the region of the nipples become brown in colour, the mammary glands swell and emit colostrum. Moreover, the women believe they can feel clearly frequent and irksome fœtal movements ; at the time reckoned as the end of the pregnancy, they even retire to bed and complain of violent pains."

Now, although Schroeder asserts that such cases are more "psychologically interesting than difficult to diagnose," yet he himself admits that a certain decision can often only be reached when the patient is under chloroform, and experience has shown that even famous gynæcologists have sometimes been led astray in these cases. The poor woman's disillusionment on the diagnosis of this *grossesse nerveuse* need hardly be described. When the women are convinced, however, that they were not pregnant, all the above described symptoms of pregnancy vanish very quickly without further intervention on the part of the doctor.

CHAPTER XV

SOCIAL PROCEDURE DURING PREGNANCY

1. RELIGIOUS RITES ON RECOGNITION OF PREGNANCY

THE beginning of pregnancy is, in many nations, the occasion for giving thanks to God with religious sentiment and for recommending to the further protection of the Godhead, by a special consecration, the woman herself as well as the new life germinating within her.

In ancient Mexico, when the first signs of pregnancy were found in a young wife, the fact was celebrated with a feast. At a later feast, amid discourses similar to those delivered at the previous one, a midwife was installed with her, by whom, Waitz reports, she was bathed and from whom she received much advice.

Also among the ancient Jews, the child was prayed for during pregnancy and special forms of prayer for the different stages of pregnancy were prescribed by the Talmudists. These have already been quoted in an earlier chapter.

Greek women in pregnancy celebrated the festivals in honour of Aphrodite Genetyllis in order to entreat a fortunate delivery. A custom of modern Greek women for the same purpose has been already mentioned above, namely, sliding down the Hill of Nymphs near Athens (see Vol. II., p. 305). With them also existed the custom of sacrificing a cock at the end of pregnancy. Many people believe that this is related to the cock-sacrifice offered up to Asclepius in ancient Greece (*cf.* Wachsmuth.)

Roman women sacrificed to two sister goddesses, Porrina or Prorsa, and Postverta. The former could bring about the proper presentation of the child at the delivery and the latter took care that, if the child had unfortunately assumed a wrong position, the confinement should still have a happy ending. According to Varro, they had an altar in common in Rome (see Hederich).

Of the Hindus in Madras, Best reports as early as 1788, that husbands used to arrange a feast of rejoicing on the occasion of their wives' first pregnancy; and then, in the seventh month, the whole family made offerings to the gods.

Among the Badaga in the Nilgiri Hills, when a woman is in the seventh month of pregnancy, then a second marriage takes place as confirmation of the first: friends and relations assemble, the guests sit at one wall, the husband and wife at the other. The husband asks his father: "Shall I put this string round the neck of your daughter?" If the answer is in the affirmative, then the string is tied round, and after a few minutes is taken off again. In front of the couple stand two dishes into which the relations put gold pieces for the wedding couple, and then, according to Jagor, a feast takes place.

Among the Lamaists in Tibet and Mongolia, prayers are permitted to be made for the fortunate delivery of pregnant women, but, states Koeppen, the permission must be paid for.

We shall see later that in Japan, the pregnant woman puts on a girdle. This was, in earlier times, associated with numerous ceremonies which were described by Kangawa in his work, *Sanron*. Miyake, who made the contents of this work known

to us, unfortunately omits to give us exact information about these ceremonies, as they vary very much in the palaces of the shōgone and daimyōs, according to time and place. In Japan, pregnant women, shortly before their confinement, swallow a piece of paper on which the patron saint of pregnant women is portrayed, in the hope of having an easy confinement by so doing.

In Java, as is mentioned in the report of the voyage of the *Novara* (*Anthrop. Th.*, III., 79), when the woman is in her third month of pregnancy, this is announced to all her friends and relations, and then various presents are offered. In the seventh month, all the relatives are invited to a gala dinner. After it, the wife bathes in the milk of an unripe coconut which her husband must have opened. On the shell two beautiful figures, a male and a female, were carved beforehand, so that the pregnant woman should contemplate them and bring a beautiful child into the world. She now puts on a new dress and presents the old one to one of the women with her who has been helping her with these arrangements. In the evening, a shadow play (*wayanspeel*) is given for the guests, which has for subject the life and adventures of an ancient hero (see Raffles).

The ceremony of rope-making (which takes place among the natives on Celebes when pregnancy has begun), has already been mentioned in an earlier section.

On the Islands of Ceram Laut and Gorong, according to Riedel,¹ a woman, when she finds herself pregnant, must take a piece of ginger to the priest to have it consecrated by him. The priest does this by blowing on it three times and reciting the 112th Sura of the Koran. The woman keeps the ginger permanently by her in order to ward off evil influences: sometimes she chews pieces of it and spits them away. On Tenimber and Timor Laut, when a woman feels herself pregnant, she must bring an offering and have her teeth filed, if this has not been done at marriage. If she does not do so, then she is despised as one who insults the *mores majorum*. On the Islands of Romang, Dama, Teun, Nila and Serua, the pregnant wife, as soon as she perceives her condition, must kill a fowl and offer the head, a piece of the tongue and the liver to Upulero at the usual place of sacrifice. On the Kei Islands, when the first signs of pregnancy are perceptible the blood relations must be informed of it, but special ceremonies are not celebrated.

The bringing of offerings, or the performance of special ceremonies in certain months of pregnancy, is very usual in the Dutch East Indies and the neighbouring countries, as *e.g.*, among the Orang Mantra in Malacca, among the Buginese and the Macassar in South Celebes, among the natives of North Nias, the Olo Ngadjoe in Borneo, the Menangkabo Malays, and in the department of Kaer in Sumatra (see Pleyte) and, according to Jacobs,² also among the Achinese on the same island. The month of pregnancy chosen for the ceremony is not always the same. It is, as in Java, the third month with the Mentra, the fourth in Nias, the fifth or sixth among the Menangkabos, the sixth also in Kaer and the seventh and eighth among the Macassar and the Buginese.

In the Island of Rotti, when the woman enters upon the seventh month of pregnancy, the husband, according to Graafland, brings an offering which consists of a red fowl, a cluster of plantains, seven *sirih* fruits, a plate of uncooked rice and a coconut shell with a twig of the *tuak* tree. This offering is for the spirit Tefamuli or Kekelateik, to get him to help the wife to have a fortunate confinement.

From Samoa, Krämer reports:

“When the married woman becomes pregnant, *i.e.*, when menstruation fails to appear for the first time, a little festival takes place.”

Likewise, states Parkinson,² in South Bougainville, during pregnancy, a festival (*marro-marro*) is arranged in which only the women take part.

On the Gilbert Islands, according to Parkinson, pregnant women let their hair grow, which is otherwise closely shorn, and do not cut it again until their child is about a year old. They have, besides, as the same author reported, all kinds of remarkable customs. He writes :

“ At the first pregnancy, as early as the second month, an old woman is called in who is later to act as midwife. She has a pyramid made of the husks of about 50 coconuts, at the apex of which the innermost leaf of a coconut is inserted. The young wife sits down on a mat near it. The old woman takes from a loaf of bread, which has been specially made for this occasion out of grated pieces of *taro* and coconut, a piece about a foot long, 2 inches wide and 1 inch thick, rolls it between her hands, and with it touches the young wife's body at different places. While doing so, she murmurs a prayer to the goddess of pregnant women, Eibong, in order that she may make the child beautiful and well formed, that, if it be a boy, it may later win the love and liking of young girls, and if it be a girl, that she may win the love of a rich man or a brave warrior. Then she breaks off a piece of the bread, hands it to the young wife to eat, and the husband consumes the rest. Until the morning of the fourth day, the old woman sleeps with the pregnant woman every night near the coconut pyramid. Adopted parents now announce themselves for the child, as it is the custom for it to be handed over to other parents when the period of lactation is ended.

“ At the end of the third month the husband and wife, along with the old woman and all their relatives, betake themselves to an uninhabited place. Food and drink are placed under a tree round which the adopted father of the husband of the pregnant woman goes three times ; then both sit down under the tree and are served by the old woman with the best of the viands. Then follows a general feast with singing and dancing. At the end of the fourth month the old woman goes with the pregnant wife and her husband's adopted father to a cross-roads. Here the young wife's clothing is taken off and burnt. The father-in-law, however, has brought a new garment with him, which is fastened by the old woman round the young wife's hips. Whilst this is being done, she is told that she will be reckoned as with the old women from now onwards, that with her old dress she has also put aside her childhood, and from now on she is to think only of how she can be pleasing to her husband, and, above all, that she must remain faithful to him. Then they go home, where the relatives are already awaiting them for a carousal.”

In Africa also, Last states that characteristic customs occur among many tribes. Among the Masai in East Africa, if a woman has conceived, her husband fetches a big pot of honey, mixes other things with it and stirs it until the mass is quite thin ; then he calls the headmen together. Husband and wife sit down, the headmen take some of the honey and spit it out over them. After this they say a prayer for the welfare of the parents and the expected child, and then each makes a speech, after which the rest of the honey is drunk.

Among the Wandorobbo, a tribe related to the Masai, a woman pregnant for the first time is given presents by all the people of the camp (men, women, boys, girls), and their friends in neighbouring camps, about the middle of pregnancy. Merker, to whom we are indebted for this information, enumerates as such presents : a leather apron, a pair of ear ornaments, pearls, little chains or even a head of small cattle.

The Irish and the Scandinavians, until a short time ago, still kept Baal's Day on Midsummer night or, as it is called by the Norwegians “ Balder's Day,” by lighting fires on Midsummer night on hills and dancing round them. On these occasions people who had a special wish ran through the fire and one saw pregnant women going through it in order to obtain a successful confinement (*cf.* Wild, Nilson, Frazer¹).

In Austria, beyond the Enns, one comes, at Falkenstein, to a chapel in which the holy Wolfgang is supposed to be hidden; here there is a stone through which pregnant women crawl in order to have a successful confinement (Panzer). This crawling through a narrow cleft, often through or beneath an altar, is a widespread custom in order to obtain blessing or healing.

In Swabia, pregnant women make a pilgrimage to Saint Margaret with the dragon—we see a picture (Fig. 652) of this from a Nüremberg *passional* of the fifteenth century—(e.g., to Maria Schrei near Pfullendorf) or to St. Christopher (at Laiz near Sigmaringen) or to St. Rochus, in whose chapel consecrated iron toads hang as symbols of the womb (Buck).

2. PROTECTION AGAINST EVIL SPIRITS AND DEMONS DURING PREGNANCY

Belief in the power of demons appears in various forms among most primitive peoples and also in civilised nations, and it has been retained up to our time, among the less cultivated classes. Danger, distress and fear, produce and maintain this belief, for everything bad which happens to human beings, every illness and every trouble are regarded as caused by demons. Hence, in cases of illness, and in all kinds of abnormal phenomena, it is necessary to banish and appease the evil spirits, and to make their harmful influence ineffectual by taking the appropriate precautions. The means employed for this are extraordinarily varied. Amulets, exorcisms and magical specifics, but also the noise of weapons and the use of smoke play a prominent part in this.



FIG. 652.—St. Margaret with the Dragon. (From Koberger's *Passional*, Nüremberg, 1488.)

Demonology fashioned the spirits which occupy themselves with pregnant women in many varied forms. Not infrequently they are aerial spirits which surround the house of the pregnant woman and threaten them banefully; this is the case, e.g., among the Kalmucks, the Persians

and also among a few other peoples.

There exists in the Philippines a peculiar tale :

“ They say, Aswang was a Visaya (inhabitant of the islands between Luxon and Mindanao), who made a pact with the devil. He set foot neither in churches nor any other holy places. Under his armpit, he had a gland full of oil which enabled him to fly wherever he wished. He had claws besides, and an immensely long black tongue, soft and shining. His chief duty consisted in tearing the fœtus from the body, and this was done by touching it with his tongue. In this way the death of the pregnant woman was achieved, so that Aswang could then quietly devour the fœtus. A night bird, called by the Tagales *tictic*, gives warning of Aswang; when it sings, then people know that Aswang is about ” (*Oceania Esp.*, 1884).

Of the Dyaks in Borneo, Hein says :

“ Pregnant women offer up to the *djata* (see Vol. II., p. 305) (water spirits) and *panti*, little huts called *balei-panti*, which are either sunk in the river or hung on the top of a tree near the house; the same purpose, to ward off evil spirits from the bodies of the pregnant,

is served by a sort of hut, *pasah kangkamiak* in which fowls are sacrificed to the *hantoes* " (Fig. 653).

He continues, "The *Kamiak* is a very evil-intentioned spirit who has the gift of flying, and he is feared intensely by pregnant women, as he always endeavours to penetrate invisibly into their bodies and either to make the birth of the child difficult or else quite impossible. Sacrifices are made to him in little houses of a similar kind to those for the *djata*."

According to some authorities, the *kamiak* or *kangkamiak* are the female *hantoes* (spirits) who died in childbirth.

In another passage there is a report by Hein about the offering by pregnant women of fowls, or by others for them. This has, he thinks, its reason in the belief that the female *hantoes*, while dying in childbirth, were changed into evil spirits, *kangkamiak* or *kamiak*, which generally try to enter pregnant women in the form of a fowl to hinder their delivery; even the voice of the *kangkamiak* resembles the cry of a hen. Therefore, offerings of fowls are also made to the water spirits, *djata*, who protect the pregnant from evil spirits and facilitate their confinement.

The period of pregnancy, says Howell, is passed in great fear of the *hantoes*; they must be appeased by offerings of fowls at every opportunity, *e.g.*, when dreams occur. One can often hear one woman telling another how many fowls were necessary for her.

The Dyak woman, however, seems not to feel herself perfectly safe in spite of all these precautions; for, according to O. v. Kessel, the young wife, as soon as she is pregnant, never leaves the house without taking with her, for fear of evil spirits, a talisman (*ejun* or *upuk*), *i.e.*, a little basket hung with leaves, roots, bits of stick, but specially with numerous snail shells.

Van Hasselt reports from Central Sumatra that:

"Mambag is a *djinn* which is hostile to pregnant women and in Lebong is called Tindoeng: it enters the body of the mother in order to devour the child."

The Achinese women, from the fourth month of pregnancy, wear an amulet tied round the hips to protect themselves from demons and evil influences. In addition, they often wear other amulets which they hang on breast, neck, arms and legs. These amulets consist of little strips of paper, on which is written a formula of exorcism or some meaningless and undecipherable Arabic characters which are, of course, prepared by the people who are learned in magic. These strips are then rolled up and kneaded into a firm mass with the help of Chinese gum.

The Achinese, as we shall see, should really not leave his pregnant wife at all. But, if he is obliged to go out, he must, when descending the house ladder (the Achinese live in pile dwellings), miss a step here and there. This is done so that the spectres which might follow him, and which are dangerous to his wife and the embryo, may be misled. If he brings his wife some cooked rice from a feast he must stick a few thorns into it, and, before any of it is eaten, must throw some of the



FIG. 653.—*Pasah kangkamiak*. Votive hut of the Olah Ngadju in Borneo. Sacrifices of fowls take place within as a protection of pregnant women against the demons. (After Grabowski.)

rice under the hut. This is also done so that no demons may adhere to it. For the same reason no male visitor may enter without ceremony the house where a pregnant woman is living; he must first be announced, and even then he must stay a while in the house before the pregnant woman may see him (*cf.* Jacobs²).

Among the non-Mohammedans in Limo lo Pahalaâ in Northern Celebes, the pregnant woman must avoid going about with her hair loose. Probably at the root of this prohibition lies the belief that, in this loose hair the evil spirits can settle very easily. (In Bohemia and Moravia the pregnant woman must cover her hair carefully or else she will bring a dead child into the world. Probably the original reason for this view also was a similar process of thought.)

The pregnant "Alfoor" in Celebes may not go out of the house in the evening, states Riedel, or when it rains, so that the fœtus may not be disturbed or mishandled by the *walaolati*, or the devils lurking in the dark places.

This recalls a belief of the nomad gipsies, recorded by v. Wlislöcki, that a pregnant woman loses her child if she goes into the open air in the moonlight.

According to Jacobs, the pregnant woman in Bali sees in many very natural things evil signs for her confinement. He writes:

"In her thoughts, she peoples her surrounding with hundreds of *kalas* (evil spirits) which have designs upon her life and that of her child and which will make her pregnancy difficult. The howling of a dog, the croaking of a bird, the working of a crater, etc., terrify her. Her personal enemies, or the neighbours with whom she is not on a very friendly footing, try to bewitch her in every way to bring her life and that of her child into danger; and in despair she resorts to one of the specifics known to her and sacrifices her new-born child in order to save her own life."

It is for very similar reasons that going out at night and especially passing graves are forbidden in the South-eastern Group of islands of the Malay Archipelago. If pregnant women in the Watubela Islands leave the house by day they must always take a piece of iron with them so that the evil spirits may not torment the fœtus. Likewise, on the Amboina Group, on Keisar and Nias, pregnant women may not go out unless armed with a knife. Also on Ceram they must protect themselves against evil spirits by all sorts of devices.

The women of Ceram Laut often wear, beside the ginger already mentioned above, a piece of paper with a passage of the Koran written upon it and wrapped in linen in order to be proof against the injurious influences of evil spirits.

On Rotti pregnant women chew the straw of their house and spit it about them from time to time to ward off evil when they have to go outside the house in the dark. Here, no doubt, it is the guardian spirit of the hut, represented by the straw, which grants pregnant women protection from the demons which beset the house.

On Nias pregnant women make offerings to the Adú Sawowo in order to guard against miscarriages. They must also always be armed with a knife in order to protect themselves from the mischievous spirits called *béchu matiana*. These are ghosts of women who have died during confinement, and which now try to rend the fœtus from pregnant women and cause abortions (*cf.* Modigliani).

Among the Cambodians one must beware of leaving an object made of tamarind wood in the house of a married man, otherwise the *préai*, the spirits in this wood, will twist the child in the womb and bring about an abortion in every pregnancy (Aymonier).

The Annamites, according to Landes, were extraordinarily afraid of the spirits,

Con Ranh, which are always striving to incarnate themselves. For this purpose they seek out the body of an embryo in the womb. If they succeed in this, however, they are not able to remain alive, but the mothers in whose wombs they have found the embryonic bodies are delivered of a dead child and now the search of the *Con Ranh* for another body begins anew. Landes continues :

“ The demon which causes premature death is called by the Annamites, Me Con Ranh, the mother of the Ranh. It is claimed that it can be seen in solitary places in the form of a woman dressed in white, sitting on the trees, chiefly on the *giá* and busy rocking its children. It was, they say, a woman who lost five children in succession and died in giving birth to the sixth.”

A superstitious custom, no doubt intended to ward off demons, exists amongst the aborigines in Victoria, Australia. There Oberländer saw a medicine man performing a peculiar ceremony on three native women who were pregnant. They stood before him and looked him firmly in the eyes. Then he withdrew, muttering, to a tree stump, and then again stepped up to the women and blew on their bodies. All this was doubtless intended to effect a safe and successful confinement

In Africa the meaning of certain peculiar customs is probably a kind of exorcism of demons. On the Gold Coast, when a negress is pregnant for the first time she is driven with dirt throwing and scoldings into the sea where she has to be immersed. After this ceremony is over everyone leaves her unmolested, only a fetish priestess does all kinds of things with her in order to protect her from the influence of evil spirits, according to popular belief (Brodie Cruickshank). Women of high position in Guinea, as Römer relates, are led, shortly before their confinement, through their district quite naked in the presence of many people. Bosman makes the same observation, but adds that, as on the Gold Coast, a number of young people throw dirt at them and they are then bathed on the seashore (*cf.* Klemm).

Among the Ewe negroes on the Slave Coast, when a woman feels she is going to be a mother, she brings an offering to the gods and has a number of magic symbols hung on her body by the priest.

Not far from Malange, near Angola, according to Lux, pregnant women always carry with them a little calabash which is filled with earth, nuts and palm oil, in order to be sure of an easy confinement. Among the negroes whose customs were observed by Buchner, *pemba* played an important part as amulet.

“ *Pemba* is a fine white kaolin-like clay, which is not to be found everywhere, and is therefore often brought from a distance and forms an article of trade. Its use brings to mind in many ways the holy water of the Catholics, and the expression *pemba* is often used in the sense of happiness or blessing. They say ‘ Give *pemba* ’ when people smear each other on the arm or breast with the moistened substance. Pregnant women as well as sick persons often smear their whole face with it.”

Among the Negro tribes of West Africa the pregnant woman hangs magical symbols and magical strings on neck, arm and foot, and she has bracelets made of bast put on her hands and knees by a priestess, which are supposed to guarantee her a successful confinement.

If a native woman of Algeria, after she has already undergone a difficult confinement, is afraid to encounter such another again, then, to make it easy, she wears in the folds of her haik during pregnancy a mixture of oil and ashes of acorns (*bellouth*) or she ties a flint to one of her ankles, also she may wear on her right ankle, as well, her own hair comb, on which are inscribed the words :

“ Let him whose name consists in truth be favourable to the child which is in thy body and all will go well. May the mother be safe ” (then the name of the latter) (see Bertherand).

Very interesting is a discovery made by Vaughan Stevens among the Orang Semang in Malacca, about which also Grünwedel reports. With them, pregnant women wear hidden under the girdle a piece of bamboo, called *tahong*, in which geometrical patterns are carved.

“ The cavity of the bamboo, after each end has been closed with a stopper of wood or bark, is used as a box for stone and steel for kindling fire, etc. The design (see Fig. 654) consists mainly of two parts: the upper part, comprising zig-zag lines, is a charm against nausea and vomiting which some pregnant women have to endure; the lower part contains a number of columns each of which represents one of the states which a pregnant woman has to go through from the moment of conception till the birth takes place. It is difficult to define these stages exactly, as the Semang people often put the seat of the indisposition at a place other than that which is actually the case. The following is certain. The collar-like drawing at the top of one of the columnar lines at the end of the black tooth-like line is the child in the womb. The black teeth form the connection between child and mother and go from the side of the child down to that of the mother, this part being represented to a larger scale. To the right of this vertical row of teeth is the column of disc-like figures which are depicted only on the side of the mother, the representation being the loss of blood by the rending of the vessels at birth.”

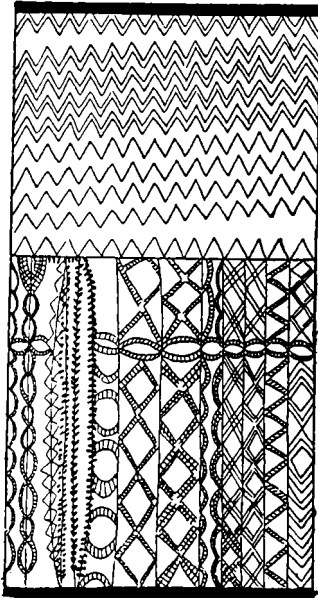


FIG. 654.—Pattern on a bamboo talisman for the protection of pregnant women, Orang Semang, Malacca. (After Grünwedel.)

As already mentioned, the *tahong* of the Semang women is carefully hidden under the girdle and must not be seen by any strange man. The husband cuts the pattern, and a pregnant woman who lets herself be found without *tahong* is regarded by the other Semang women somewhat as a mother in Europe without a wedding ring. The pattern of the *tahong* varies only with the husband's skill in carving, who follows generally the recognised pattern. The chief possesses the orthodox pattern, and is always able to give the only authentic design in case it is required.”

3. PREGNANCY DEMONS AMONG CIVILISED NATIONS

The belief in evil spirits which injure the pregnant and their offspring is very ancient and deep-rooted in the mind of man. It is even preserved among nations of a high degree of civilisation.

Among the ancient Babylonians and Assyrians the *labartu* was especially dreaded. This was a demon horrible in appearance, but of divine origin (a daughter of Anu) who was regarded as an alien (*Elamite, Susian*), and who dwelt in mountain regions and in reed-grown thickets, and wherever she went spread terror and desolation; however, she was expressly dangerous to little children and their mothers (*cf.* Weber).

“ She goes round within those in labour
Tears out the child from the pregnant.”

Thus she caused abortion and miscarriage. In the so-called *Labartu* texts from the library of Assur-bani-pal, altogether 400 verses in Semitic script, means of

fighting her are given (see Figs. 655 and 656). Incantations, talismans and sacrifice ; a figure of the demon is made, placed for three days at the head of the sick, then destroyed and buried at the corner of a wall ; again, it is prescribed that a young pig must be killed and its heart laid in the demon's mouth, etc. (see O. Weber).

European nations, too, moreover, are not free from such superstitions. In modern Greece it is believed that the Nereids possess a harmful power over the pregnant. They therefore try to make themselves secure by means of amulets, among which jasper plays a prominent part. It is unlucky if anyone steps over a pregnant woman, he thus opens the way for the Nereids : in order to turn their



FIG. 655.—Labartu Demon. Front view. (After Jastrow, jun.)

evil influence aside he must step back over her again. Likewise, a pregnant woman must not go under a plane tree or poplar or encamp by streams or other running water, because these are the places where the Nereids are in the habit of staying.

The pregnant Esthonian woman is in the habit of changing her shoes every week in order to put the devil off her track because people believe that he is always pursuing her in order to get the child into his clutches as soon as possible.

In Russia, belief in the "evil eye" which the Russian simply calls "glass" eye, used to be very widespread ; but women who were pregnant were particularly afraid of it ; for then they feared it on their own account as well for their child, which they would then bring forth with great pain.

The pregnant Spanish Jewess in Bosnia and Herzegovina, according to Glück, is more exposed to "defamation" than other people. But of the actual Bosnian women, Glück says :

"If man generally is beset by a whole crowd of enemies of his own race and of evil spirits who embitter his existence as, and when they can, these are increased many times in the case of a pregnant woman. Wicked women will not let her be happy and try to bewitch her and decry her ; hostile spirits, like the various *vile* and *djinn*, put all sorts of difficulties in her way in order to bring about only an abortion, it is true. Satan alone loses his power in the case of a



FIG. 656.—Labartu Demon. Back view. (After Jastrow, jun.)

pregnant woman ; for she is made holy by the blessing of God which she carries under her heart. The whole collection of protective measures is used against scandal, bewitching, and the influence of evil spirits. These measures take the form of various ornaments such as talismans and amulets for the purpose of protecting the pregnant woman from harm. At night a pregnant woman never dares leave the house alone ; if she has to do so, then she must not forget to take a piece of bread with her under her right armpit, otherwise she becomes the victim of a wicked magician."

According to v. Wislocki,⁴ the fear of demons is to be found in pregnant women among the wandering gipsies in Transylvania. There, when a woman who is pregnant yawns, she must at once hold her hand before her mouth so that evil

spirits cannot step into her body. She must wear next her skin some red hair from beard or head, sewn into a little bag "so that no danger may arise for mother and child." The pregnant must also carry powdered stag beetles and crayfish shells. This is in respect of a demon who bears the name of Tçulo, the thick or fat, and is the son of the Keshalyi queen, Ana. He is married to his sister Tçaridyî, "the hot glowing," and begot numerous children by her, all of whom, like their parents, torment women in pregnancy specially. The Serbian gipsy women make offerings of a special egg cake on the day of Mary's conception with the aid of a witch. The cake is thrown into a hollow tree round which they then dance. The witch, standing in the midst of the dancing women, then utters the following prayer :

"O ye sweet Keshalyi ! May your queen, the good Ana, be praised ! Let her be praised from morning to evening, from evening till morning ! Let her be praised continually, let her be praised for ever ! May she have mercy upon us, may she turn the Tçulo and Tçaridyî from us, may she pacify her grandchildren and their children so that they do not harm us ! That they spare the fruit of our bodies ! Our husbands are stoned by the wayside ! Everybody avoids them, everybody treads them underfoot ! We are poor black women, everyone spits on us, mocks and laughs at us, beats and torments us ! We have sinned and may not rejoice ! When we are pregnant, we poor black women, then come evil spirits and plague and torment us. We give you cake, we give you everything which we poor women possess ! Spare our body ! Spare our limbs ! Misfortune in life, suffering in death ! That is the lot of the poor black women ! Have mercy upon us ye benevolent Keshalyi !"



FIG. 658.—Amulet, cast in silver on one side and arranged for suspension by pregnant women. (After Pachinger.)

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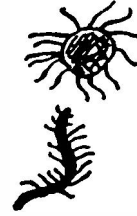


FIG. 657.— Pattern for embroidery used by the Transylvanian gipsy women. The upper figure represents the demon Tçulo and the lower Tçaridyî, both believed to torment pregnant women. (After Wlislöcki⁴.)

Pregnant women are accustomed to sew linen strips about 2 cm. wide on the baggy sleeves of their chemises from shoulder to wrist ; in these strips the figures of Tçaridyî and Tçulo are embroidered in black wool. A Tçulo alternates with a Tçaridyî the whole length of the strip. In the Tçulo, a prominent knot is sewn with wool on which threads of wool are then fixed, which hang down loose and are supposed to indicate the numerous spikes of Tçulo. In the representation of Tçaridyî, a figure resembling a woman is sewn, to which many thin threads are fixed, which also hang down loosely and are supposed to indicate the many hairs on the body of Tçaridyî. These embroideries may often be seen on the chemise sleeves of the gipsy woman of Serbia and South Hungary. These embroidered strips are supposed to be the two demons of sickness, or the members of their families favourable to the pregnant women concerned. Such strips are called *pçarmakelyi* = pregnancy stuff (cf. v. Wlislöcki⁴).

Fig. 657 reproduces the pattern of these embroideries in the natural size ; above is the Tçulo, below the Tçaridyî.

Many Transylvanian tent gipsy women, according to v. Wlislöcki,⁶ wear on the abdomen during pregnancy a little tablet cut from the shoulder blade of an ass. This is sprinkled with a few drops of a child's blood when the moon is waxing ; it is fastened to the body by means of a string made from the hair of the tail of the ass. Another protective amulet is reproduced in Fig. 658. It is of silver and is arranged as a pendant.

4. THE GIRDLE OF PREGNANCY

We see the girdle play in pregnancy a peculiar and, to some extent, a cultural part in various nations (see Dilling). As we shall learn, it is worn not only as a thing with a mechanical effect but many supernatural and superstitious connections are ascribed to it, by which it is able to ward off in pregnancy as in labour, all kinds of injuries and dangers. A discussion of it can have no better place than as a supplement to the foregoing section, which dealt with the description of the precautions by which evil spirits and demons could be kept away from the pregnant (M. Bartels).

Now the girdle is not always of the same kind. Sometimes it is a usual part of the dress which the woman has worn before the beginning of pregnancy ; again, it is a special binder which is given to her because she has become pregnant ; in other cases it is a girde or belt which ordinarily has no place in the woman's dress ; and, finally, it may be a girde which has no personal connection but a purely mystical one with the pregnant woman.

To undo a woman's ζώνη, *cingulum*, or girde, was regarded in classical antiquity as equivalent to performing coitus. The one could not be thought of without the other. It is not improbable that a custom practised by the women of ancient Greece is connected with this. When they became pregnant for the first time they themselves unfastened their girdles and consecrated them in the temple of Artemis.

Among the Roman women the custom had been adopted of putting a girde, in the form of a binder, round the body in the eighth month of pregnancy. Soranus of Ephesus, likewise, recommended this use of a binder. He would not, however, allow it longer than to the beginning of the eighth month so that the weight of the child might be able to assist in the hastening of the approaching birth. Now, since at the beginning of confinement, the binder was unfastened and taken off, gradually the epithet of the untier of the girde was adopted for the goddess of birth. Possibly we have here an indication that originally the putting on of the girde was connected less with the idea of its mechanical effect than with certain supernatural divine connections. Moreover, there is no doubt that it was due to the influence of Roman views on later medicine in the rest of Europe that, even as late as the Middle Ages, the binder of pregnant women was recommended as a means for expediting delivery, and even in the sixteenth century in France, the famous surgeon Ambroise Paré advocated its use.

We come across the binder also in the lands of Eastern Asia. The Chinese physician, whom we have already often cited, also recommends his patients to wear a binder, 12 to 14 in. in width, during pregnancy. On the use of such a binder to the pregnant woman he expresses himself as follows :

"First of all, the loins are strengthened by it. Then a binder of this width holds the body of the pregnant woman together, and when it is undone (as it must be before confinement), then the abdomen expands and the fœtus thus gets room to turn round."

Burmese women also have the custom of putting a girdle round their bodies in pregnancy. They put on these binders only after the seventh month, and tie them firmly round the body with the intention of hindering the rise of the womb. For



FIG. 659.—Japanese wearing the girdle used in pregnancy. (From a Japanese woodcut.)

they think that the higher the foetus rises in the abdomen, the longer the way it has to descend and the more difficult the delivery (Engelmann²).

In Japan, perhaps originally due to Chinese influence, also prevails among pregnant women the custom of wearing a binder or girdle, and there is no doubt that this custom comes from a very ancient period.

On this point, Verrier found the following statements in a report of Guido Guelteri on the arrival of a Japanese embassy in Rome in the year 1586 :

“ And before they are pregnant (the Japanese), they wear a wide, loose girdle ; but as soon as they become aware of pregnancy, they tighten this girdle so much that they look as if they would burst. In spite of that, they say, we know by experience that, if we did not lace ourselves so tightly, it would result in a bad confinement.”

In Japanese illustrations, the girdle is not always represented in the same way. In Fig. 659 (according to the kind information of E. v. Baelz), a pregnant woman is portrayed who has put on the girdle used in confinement. The picture comes from a Japanese book which bears the title : “ How to Proceed with a Sick Family.” Other Japanese representations of the girdle are about to be discussed.

In his efforts for reform, Kangawa fought against the wearing of the binder in Japan. He says of the origin of this custom :

“ In Japan, it is the common custom for the woman to bind her body firmly with a silken cloth from the fifth month onwards ; the purpose which they try to achieve with this is to quieten the foetal phantom (spirit, vitality) so that it does not ascend. They say that this custom comes from the time of the Empress Djin-go-kogu who, in the war against Corea, as commander-in-chief herself, wore a coat of mail which, as she was pregnant, she fastened to her body by means of a folded silken cloth. After the conquest of Corea, she gave birth successfully to a prince, later the sixteenth Emperor O-djin (afterwards elevated to god of war). In honour of the Empress, pregnant women then put on the binder in the hope of perpetuating peace and good fortune ” (Miyake).

According to this, the custom arose about A.D. 200. However, this is not correct, since, as Kangawa says, the binder is not mentioned in historical sources till A.D. 1118, for soon after this time it is recorded that the wife of Yoritomo in her pregnancy put on the binder with special ceremonies.

From the Japanese book, *Shorei Hikki*, Mitford (II., 260 ff.) translates :

“ In the fifth month of a woman's pregnancy, a very lucky day is selected for the ceremony of putting on a girdle, which is of white and red silk, folded, and eight feet in length. The husband produces it from the left sleeve of his dress ; and the wife receives it in the right sleeve of her dress, and girds it on for the first time. This ceremony is only performed once. When the child is born the white part of the girdle is dyed sky-blue, with a peculiar mark on it, and is made into clothes for the child. These, however, are not the first clothes which it wears. The dyer is presented with wine and condiments when the girdle is entrusted to him. It is also customary to beg some matron, who has herself had an easy confinement, for the girdle which she wore during her pregnancy ; and this lady is called the girdle-mother. The borrowed girdle is tied on with that given by the husband, and the girdle-mother at the time gives and receives a present.”

E. Schiller reports, in addition to this :

“ Often an *Obino Oya* (girdle-mother) is chosen who helps to put on the girdle. This is either a relation, or a woman of high standing, who has already had a successful confinement.”

According to Schiller, the ceremony of putting on the girdle is called *Iwataobi no Iwai*. The girdle itself is called *Shitaobi* = under-girdle, or also *Iwataobi*. “ The word *Iwata* is variously explained. Some trace it to *yuwaera* = to bind and *atahada* = naked ; others to *iwa* = stone, and give the word the sense of *hard* or *strong*, because they wish the woman to remain well and strong.”

Kangawa declares that the binder is harmful. Nature has full power to let everything living grow and develop : the binder, however, can only hinder this

natural development, just as if one puts a stone on the root of a plant and hinders its growth. The animals bring their young into the world without the help of a binder. The binder has only harmful results, for it disturbs the circulation of the blood, produces giddiness and hæmorrhages ; it causes wrong positions of the child, and all kinds of other troubles. Kangawa concludes his condemnation of the binder with these words : “ Unfortunately, I alone, such a small person in the great world,



FIG. 660.—Pregnant Japanese woman having the pregnancy girdle tied on. (From a Japanese woodcut.)

cannot spread my method abroad ; nevertheless, I hope that it will gradually succeed.”

All such rational innovations in Japan as everywhere else succeed rather slowly. Even in the twenties of last century, the Japanese doctor Mimazunza declared :

“ Formerly pregnant women wore the binder from the fifth month onwards, but now, owing to the influence of the Kangawa-Gen-Ets, it is abolished.”

On the other hand, this custom was widespread in Japan in the sixties of last century, according to the dictum of a Russian doctor who says :

“Pregnant women in the fifth month bind their bodies very firmly in the epigastric region with a narrow girdle, with the idea that the fœtus will not grow too big and make the birth more difficult.”

Putting the girdle on a pregnant Japanese woman is shown in a woodcut in a Japanese work which is in the possession of the Ethnological Museum in Berlin. The pregnant woman (Fig. 660) kneels upright on the floor of the room with her dress open in front so that her breast and abdomen are quite bare. Before her kneels another woman, perhaps a relative or a midwife, who winds the binder round her body. A young girl, also kneeling, looks at this procedure.

In Fig. 625 we saw a pregnant Japanese woman, according to the drawing of Hokusai. There we pointed out that the girdle wound round her body must be regarded as a sure sign that she is really in the condition of pregnancy.

The Chippewa Indian women, according to Parker, are accustomed to put a more or less ornamental bandage of buckskin, or similar firm material, round their bodies shortly before delivery and after confinement. It is called the *wives' girdle*.

On the Gilbert Islands, the woman who is near her confinement often puts on a binder, *apaiárno*, of pandanus leaves (see Krämer²).

Here may be recalled a custom which the Buginese and Macassars in the South of Celebes have. With them, as we shall see later, there is a custom, when confinement is near, of having a feast and during it massaging the body of the pregnant woman. When this has been done, they push under her as she lies on her back on the marriage bed, a kind of abdominal binder, fold the ends over her and press them gently down over her body. Along with this, the woman is carefully shaken to and fro, and, finally, the binder is stretched out on the stairs. The pregnant woman also is shaken at the door in order to drive away evil spirits, as much as possible. This is done three times on the first day, but only once on the second day (see Matthes).

Apart from the measures just described, the custom of wearing an abdominal binder during pregnancy is also known. The same is true also of the Javanese, the Orang Benua of Malacca and of the Badu. Among the last-named, this girdle must consist of fine strands of *kapa* twisted together, of which each again consists of many strands (*cf.* Pleyte).

According to Stern,² the Jewesses in Palestine during pregnancy put on a girdle in which a Torah roll in the synagogue was wrapped; but they also wind round their hips a silk thread with which they have measured the walls of the Temple.

Stern continues, “among Turkish women, in the fifth or sixth month of pregnancy, the body of the mother is tied up in a tight binder; this pressure on the woman is continued until the end of the period of gestation, so that the child may not grow too big.”

Christian points out in the preface to his edition of Ossian, “that the ancient Celts of Caledonia attributed marvellous virtues to certain belts.” According to an utterance of Ossian, which he quotes, they were good for accelerating the birth of heroes. The same author adds that not long ago in the North of Scotland, people still preserved several of these belts; one saw traced on them mysterious figures, and they were put round women with actions and words which proved that this custom came originally from the Druids.

Bonnemère, who quotes this, was persuaded, on account of it, to put before the Anthropological Society of Paris a girdle such as is made by the Ursuline nuns of Quintin (Côtes du Nord). He said:

“These nuns keep one of the principal houses of education in Brittany. When, after

leaving the convent, a girl whom they counted among their pupils marries and comes to be pregnant, the pious nuns send her a band similar to that which I have the honour of laying before you to-day. It is of white silk, and the skilful brush of the best writer of the community has decorated it with a beautiful inscription in blue letters. Before sending it, they are very careful to make it touch the reliquary of the parish church in which is preserved a precious fragment of a girdle which belonged to the Holy Virgin. Numerous parchments guarantee the authenticity of this piece of material. The inscription painted on this silk, of which I have spoken to you, is as follows: 'Our Lady of Deliverance protect us.' The young wife who receives the blessed ribbon, hastens to put it round her body in order that her confinement may take place successfully."

M. Bartels was unable to say with certainty whether this could be regarded as an interesting survival from heathendom, although this theory has undeniably much to commend it. However, in Catholic Christendom also, as in many other countries, we find holy girdles playing a very important part, especially in difficult confinements. Thus, there was in France, according to Witkowski, the girdle of Saint Oyard, Abbé de Condat, and the cordon of Saint Joseph, which can still be bought. In England, in 1159, the girdle of the Abbot Robert of Newminster, and in Swabia, even to-day, as we shall see later, the girdle of St. Margaret is held in high esteem.

In an old manuscript of the fourteenth century, which is preserved in the monastery of St. Florian at Lenz, a cord is spoken of, which pregnant women were supposed to tie round them in order to make their confinements easier. This cord has to have exactly the length of the standing figure of St. Sixtus:

"Item pregnant wives measure a thing according to the length of a figure of St. Sixtus, and girdle their belly so that the birth may not be a failure for them" (see Fossel).

A girdle about 10 cm. wide, embroidered with special ornaments, also plays a part among the gipsies of the Danubian lands. v. Wlislöcki depicts these embroideries designated as "cross" or "luck," and says that pregnant women wear these girdles round their bodies. The crosses are sewn in green wool and the surfaces with red or yellow.

"It may be observed that the girdles of the Hungarian and Transylvanian gipsies usually consist of strips of coarse linen $1\frac{1}{2}$ –2 m. in length, and rarely of soft dressed calf-skin. To these girdles are attached also some bear claws and children's teeth or hares' paws, so that the woman concerned may bring into the world a healthy, strong, alert and lively child."

Serbian and Bosnian gipsies, as soon as they find themselves pregnant, wear a girdle made from the hair of a donkey's tail, about 5 inches wide, on which is embroidered in red cotton a star and a waxing and a waning moon successively. They think that by wearing this girdle, the approaching labour pains can be alleviated and the demons of disease kept away from their body. Girdles set with bear claws and worn over the outer garment and not on the bare body are supposed to serve the same purpose (see v. Wlislöcki⁶).

The bears' claws are connected with a gipsy myth of a very strong queen who brought bears into the world. Therefore, it runs thus in a gipsy folksong:

"Yea! Ye may well regard me,
Motherkin whose claws of bear
Strong am I thence, as the oak,
Devils themselves I don't fear," etc.

We come across a few peculiar ramifications of these ideas of the helpful power of the girdle in pregnancy and at confinement in the Italian Province of Bari and in Brandenburg. In Bari, a successful confinement is assured to the woman in labour if there is put round her waist a cord which has been used to tie the feet of the sheep at shearing time (see Karusio), and, in Brandenburg, according to Engelién, pregnant women try to get an easy delivery by tying round their bodies the skin of a snake which they have found. It may be presumed that something mystical, presumably coming from pagan sources, lies in the background of these customs. M. Bartels was of the opinion that this theory could safely be assumed.

5. THE LEGAL RIGHTS OF PREGNANCY

Most peoples allow their women to go on with their work during pregnancy up to the beginning of their confinement. In itself, this is not at all harmful, so long as they are not overburdened. Rigby, in 1857, and many other obstetricians have, indeed, found that birth takes place most easily and gives the best results where the woman has gone on with her usual employment up to the last. This observation every doctor will find confirmed in his practice. On the other hand, the more highly placed ladies who do not utilise their physical strength to any great extent, but rather anxiously avoid any exertion, especially during pregnancy, who lead as restful a life as possible, are little fitted for going through the labour of birth easily and without assistance. In Germany also, the women of the people work industriously while they are pregnant, generally right up to the last hour before confinement. This, naturally, may be carried to excess in many places.

Where, however, the social position of the wife and mother is respected, her treatment is not harsh, and an increased consideration is shown her in the condition of pregnancy, whilst among the most uncivilised peoples, she is burdened with the same toil, and the same exertion is expected of her as her husband imposes when she is not carrying a child. The more civilised a nation is, the more developed is the sense of the family, and the more considerately are the pregnant treated. The indulgence shown to pregnant women depends upon how much the expected child is esteemed.

Among the Indians in South America, whom Prince Max zu Wied visited, the women were ordinarily treated almost as beasts of burden. This, however, is changed at once when pregnancy sets in; then her life of toil is made easier.

Engelmann says of the North American Indians, that among the wandering tribes, little or nothing is thought of the state of pregnancy. More attention is paid to it among the settled population, as among the Pueblo Indians or the Mexican natives. Pregnant women are not allowed to over-exert themselves, and they have to indulge frequently in warm baths.

On the Caroline Islands, the husband, who at all times pays great attention to his wife, is doubly considerate and tender during pregnancy. As soon as he notices this condition, she no longer works and remains almost all the time in the house wrapped in mats; at this period, she is waited on by her husband.

Also in the Pelew Islands, the pregnant woman is set free from heavy work and she is taken charge of by an old woman.

In the year 1788, C. C. Best found that in Madras, not only the family but the whole village community treat the pregnant woman with respect. Everything that

may be dangerous is removed ; everything that can contribute to well-being is procured.

Of the Chukchee, Nordenskiöld reports that the husband always behaves with great consideration towards his wife when she is pregnant. He keeps her company in the tent, embraces her, and showers endless tenderness on her even in the presence of strangers ; he even seems very proud to show them his wife's condition.

The wives of the Battak in Sumatra do not discontinue their work in the fields during pregnancy ; only the wife of the chief has the right to remain at home during the last three months.

Not only on the Carolines, but also on the Marianne, Marshall and Gilbert Islands in the Pacific Ocean, pregnant women are well cared for, but they have to submit to many religious limitations with regard to food and to being with their husbands, etc.

The Annamite woman in Cochin China, in general, does not consider a special mode of life necessary during pregnancy (with the exception of a few considerations with regard to food, which will be mentioned later), but from the sixth or seventh month onwards she is relieved from household cares.

Apart from these arrangements, which belong more to the province of health measures, the laws of many nations assign to the pregnant woman in other respects a position of exceptional consideration. Thus among the Southern Slavs there exist the Zadruga, a family community which, in certain circumstances, is accustomed to divide food according to heads ; and again, according to Bogisič,* in the Shabats district of Serbia, every pregnant woman gets for the unborn child as much more as she can carry away in her skirt.

Among the Romans pregnant women enjoyed certain privileges in so far as they could not be brought before a judge until they had recovered from their confinement. Plutarch tells the same of the Greeks ; but here it extended so far that even where there was suspicion of pregnancy, the proceedings were put off till later, and according to one statement, the law goes back to the ancient Egyptians. Also the ancient Germanic legal observance gives special consideration to pregnancy. Punishment was carried out after confinement only in trial for witchcraft, in which, as serving Christian " ideals," no indulgence was shown (*cf.* Weinhold).

With the Annamites, if a woman commits a crime which is punishable with beating, the judge may not have this executed so long as the woman is pregnant ; the punishment, also, must further be put off till a hundred days after the confinement. If the judge acts contrary to this regulation and a miscarriage afterwards happens, then he himself gets a hundred strokes and three years' confinement in chains. Likewise, in the case of the death penalty in the case of pregnant women, Mondière states that it is put off till a hundred days after confinement.

We find it prescribed in nearly all the island groups of the Malay Archipelago that in no case may a pregnant woman appear as a witness. Also in Oldenburg, according to popular belief, the pregnant woman may not take an oath before a judge. The same is reported from Upper Austria and Salzburg ; a pregnant woman must beware of going to court to take the oath, as otherwise the expected child will have many legal disputes in its life (Pachinger²). Perhaps it is not going too far to try to explain, as originally derived from a similar process of thought, the custom so often met with in Europe that a pregnant woman may not stand as godmother ; that is to say, that she is prohibited from acting as baptismal witness (East Prussia, Pomerania, Silesia, Vogtland, Little Russia). In any case, people now ascribe the cause for this

* [No reference is given.]

to the belief that such sponsorship would infallibly bring death to the future citizen of the world.

Thus people in White Russia (Smolensk) think that the child in its mother's womb would be smothered when she held the child for baptism (see P. Bartels³). Similarly Andree⁵ reports from Brunswick that there the child can be protected from injury if the mother puts on two aprons instead of one.

In Burma the first day of the year is celebrated by a great festival at which anyone who is seen on the street, however high his rank, is immersed in water; pregnant women alone are exempt from the ceremony; they have only to indicate by a sign that they are to be respected (see Hureau de Villeneuve).

Among the Northern Slavs pregnant women are regarded as bringing luck. Young Slav couples in Bohemia and Moravia are very pleased when a pregnant woman visits them, for she brings the young wife an auspicious fertility (*cf.* Grohmann).

A peculiar influence is ascribed to pregnant women among the Bhandari in Bengal. They believe that a snake on which the shadow of a pregnant woman falls becomes blind (see Schmidt⁹).

6. PROHIBITIONS DURING PREGNANCY

Attention was drawn in an earlier section (Vol. II., p. 344) to a remark of Pliny, who says: "besides woman" very few animals have coitus when they are pregnant. This assertion requires very considerable limitation for there are a great number of peoples in all parts of the inhabited globe among whom coitus with a pregnant woman is most strictly forbidden. In most cases, too, this rule is not broken, but is kept by the husband with the greatest punctiliousness and strictness. The separation is not always only that of the bed, but also that of separation at meals; for, just as in menstruation, the woman is often not permitted to have her meals with her husband, or even also with the other members of the family, so also sometimes she is not even allowed to stay under the same roof with them.

This separation does not always take place in the beginning of pregnancy. Among the Swahili in East Africa, for example, as Kersten states, the woman is used sexually by the husband till the sixth month after conception. Then he must certainly exercise restraint because it is supposed that otherwise the consequences will be a difficult confinement.

Among the Parsees it is only permitted to have sexual intercourse until four months and ten days have passed from the first sign of pregnancy. Intercourse after this time is regarded as a crime deserving death for, according to A. du Perron (p. 703), they believe that by it the foetus may suffer injury. In other tribes, however, the husband must carefully abstain from his wife during the whole period of pregnancy. Such abstinence is practised by the Ashanti and, according to Holländer, also by the Basutos; the same is true of the Indians in North America and of the aborigines of the Antilles. In Florida the separation even extends to a period of two years after the confinement.

Likewise on the little islands of the Malay Archipelago the abstinence from sexual intercourse during pregnancy is general, and strictly carried out, and the desire to be free from this irksome prohibition sometimes makes the wives resort to artificial abortions.

Sexual intercourse with a pregnant woman was strictly forbidden by religious law among the ancient Iranians, Bactrians, Medes and Persians; anyone who had

such intercourse received, according to the Vendidad, 2000 strokes ; moreover, in expiation of his crime, he had to bring 1000 loads of hard wood and as many of soft wood for the fire ; to sacrifice 1000 head of small cattle ; to kill 1000 snakes, 1000 land lizards, 2000 water lizards and 3000 ants ; and put 30 foot bridges over running water. The seed of life was not to be wasted, and the already existing new life was not to be injured (*cf.* Duncker,² II., 354).

The Rabbis of the Talmud drew up similar rules :

“ In the first three months after conception, coitus is very injurious both for the pregnant woman and for the fœtus ; he who does this on the ninetieth day, commits an act like that of annihilating a human life.” The careful Rabbi Abbajé adds : “ Since one cannot always know this day exactly, may God protect the innocent.”

Also among the Hindus, Suśruta advises against sexual intercourse during pregnancy ; and likewise the Chinese physicians stated as “ the first and most important rule ” during pregnancy, the total abstinence from physical love (*v.* Martius).

The pregnant Annamite woman who is separated from her husband finds for him, according to Mondière (p. 36), the so-called “ *nô bé*,” *i.e.*, a wife of lower rank, who acts at the same time as servant and bedfellow.

Among the Masai, according to Merker, husband and wife are separated until the end of the period of lactation, which lasts for about one to one and a half years. Neither the husband nor any other man may touch the woman during this period. She takes off the ornaments which she has hitherto worn ; and the Masai explain this by saying that the woman must avoid everything that is likely to attract men. Therefore polygamy is a blessing for these peoples, for it protects the pregnant woman.

On Yap in the Caroline Islands, when a woman feels the first signs of pregnancy she refrains from further intercourse with her husband, and remains apart from him also for eight to ten months after her confinement. The husband, who belongs to his club (*bai-bai*), has one or several lovers there, and acquiesces in this custom without grumbling (see Miklucho-Maclay).

It can be deduced from these customs that, according to the belief of some peoples, the pregnant are in a state of uncleanness. Of a few tribes this is actually stated. Thus this is reported of the Siamese women (Schomburgk), of the women of the Marianne, Gilbert and Marshall Islands (Keate) and of the women of New Caledonia (*de Rochas*).

Especially of the Gilbert Island women, Krämer reports that during their pregnancy, they betake themselves to the house of relations whilst the man cohabits with another woman. M. Bartels very justly remarks : “ Whether this can simply be explained as ‘ uncleanness ’ seems to me questionable, particularly as Krämer says in another place that coitus before confinement is not forbidden.” It is important that the morals of Christians and those of other peoples should each be judged from their own standpoint, which Krämer unfortunately often does not do.

The isolation of the pregnant woman from the usual dwelling-place does not prove that she is regarded as unclean. Schütt says of certain natives in West Africa :

“ Every negro regards the woman who is going to have a child as unclean ; three weeks before her confinement, she has to leave the village, and nobody may associate with her. She generally goes through the difficult hour without any assistance.”

In early times in China also, the woman was isolated during the last period of pregnancy. The *Li-Chi*, part of the Confucian canon (in Ch. *Nei-tse*, 12 fol. 73 v.) says :

“ If a woman is about to give birth to a child, she lives in a house apart for one month. The husband sends somebody twice a day to ask for her, and he himself asks for her ; his wife, however, dare not see him, but sends the *mu* to answer his questions until the child is born.”

Now (according to information given by Grube to M. Bartels), it is customary in Peking for the woman, when she feels she has become pregnant, to separate from her husband and sleep in a special bed. From this custom pregnancy is also called by the Chinese *bed separation*.

The Yakuts regard pregnant women as unclean and do not allow them to eat at the same table as the rest. They are believed, states Sierochevski, to spoil the huntsman's bullets and lessen the strength of the manual worker.

Among the Pshavs in Transcaucasia, the uncleanness during pregnancy, according to a statement of Prince Eristow, extends in a certain respect also to the husband. Both husband and wife are, at this time, excluded from all festivities, and that is the reason they try to keep a pregnancy secret as long as possible.

In part of the Mandated Territory of New Guinea (Bukaua), the husband of a pregnant woman may not go fishing ; he has *gina* (fish taboo). The foetal blood is supposed to accompany the husband and as soon as the fish perceive its appearance they vanish into the depths. Likewise, no pregnant woman may get in the way of the men going to fish. In order to be sure of getting fish many women, states Lehner, therefore put an end to their pregnancy by abortion.

In Central Africa the pregnant woman lives in retirement. Barth asserted, in apparent opposition to Ploss, that “ he was struck by the fact that he could not remember ever having seen once a woman in advanced pregnancy, a condition which, owing to the sparse clothing, must all the sooner draw one's attention to it.” He explains this circumstance by the fact that, among the tribes which have gone over to Islam, the woman in advanced pregnancy no longer goes out as the narrow doorway of many dwellings does not permit of it, and a similar position seems to exist among many pagan tribes. According to Barth abstinence from coitus exists here also, but an “ uncleanness ” in the pregnant woman was not assumed.

We shall have to regard as a ramification of the belief in uncleanness the fact that in many places and in certain circumstances, people regard the pregnant woman as a carrier of harm to her fellowmen.

We saw this in the case of being godmother, which was supposed to bring an early death upon the god-child. Among the Magyars this misfortune falls upon the godmother's own child, for if a pregnant woman stands as sponsor, she will later give birth to a dead child (see v. Wlislöcki).

Among the Southern Slavs a girl who has become pregnant may not take part in the general dancing. This is expressed in one of their songs :

“ Oh thou maiden, thou yellow pear !
In thee is a manly child.
Go home and have it,
Then come and lead the dance.” (Krauss ¹⁷.)

In White Russia also, Sumzow states that a pregnant woman may not be present when the cap is put on the bride, otherwise the young wife will be sleepy the whole year through.

It is difficult to say whether we are to assume among the Jekris on the Niger Coast a special care for the pregnant woman or a protection against coming in contact with her, when we hear through Granville that, in this tribe, a pregnant woman must always carry a little bell. As soon as this announces her approach place is made for her so that people may not push against or collide with her.

Among the Mosquito Indians, M. Bartels⁴ stated that sick people are sometimes lodged in special huts. According to Bancroft, a pregnant woman must never pass by one of these huts if the patient is to recover.

That the woman's pregnancy has a harmful effect on her husband also is possibly shown in certain ideas of the Masai and the Wandorobbo, of which Merker reports. Among the Masai the husband does not go to war because he would die on the way ; with the Wandorobbo he does not follow a wild animal he has shot, because people believe that, owing to his approach, it resists the poison and escapes ; hence he goes back to the camp after he has shot anything and sends out another man to look for the animal. In preparing the poison no female being must be near ; the woman who brings food and firewood therefore puts it down within call. Similarly, when a pregnant woman visits another settlement she makes her condition known by putting white clay on her forehead. Moreover, she gets a little girl to accompany her on the way there, who leads her by the hand. The reason advanced for this is that a miscarriage would result if the woman were to go without the girl and were to see or hear the weaver bird on the way ; yet it is quite obvious that originally a deeper connection existed.

CHAPTER XVI

THE HYGIENIC TREATMENT OF PREGNANCY

1. MEDICAL PRESCRIPTIONS

THE rules of continence and the customs with regard to the isolation of the pregnant woman which we discussed in the foregoing chapter appertain to the realm of primitive hygiene and are in conformity with the notions of peoples of a low degree of civilisation. These hygienic rules are very quickly fixed by inflexible popular custom and sometimes also extended by ritual instructions. Besides the things already discussed we find in use for the period of pregnancy further regulations likewise of an hygienic nature, and we may therefore designate them as medical, even if their existence is not in every case due to the medicine man. In individual peoples, of course, they really do originate from qualified representatives of the native medical art.

Suśruta advised Hindu women thus :

“ The pregnant woman should, from the first day, be gay, wear bright ornaments and white clothes ; for peace of mind, she should think only of lucky things, gods, Brahmins and of persons held in respect ; she should come in contact with no dirty, deformed or defective bodies, avoid bad smells, ugly sights and exciting stories. . . . She should avoid going out, or taking refuge in empty houses, in tombs, in places for burning corpses, and under trees. She should avoid anger, fear and dirt (?), heavy weights, loud speaking, etc., and everything that kills the fœtus. She should not have frequent rubbing and anointing with oil, etc., nor over-exert herself physically, and she should avoid the things mentioned above. She should provide her couch with white covers, not make it too high, employ a support, and see that it gives plenty of room ” (see Schmidt ⁸).

The ancient Chinese considered it very beneficial for the growth of the child that the pregnant woman keep as quiet as possible, physically and mentally. The book of the famous women of the Lieuhiang, in the Siao-hio says :

“ At one time, a pregnant woman did not dare lie on her side at night, or bend her body when sitting (on the mat), or stand on one foot, or partake of unhealthy or badly carved food, or sit on a badly made mat, or look at any offensive object, or listen to sensual sounds. In the evening, the blind (musician) had to sing the first two odes in a song-book (which treat of household rules), and she had proper stories read to her. Thus a well-made and clever child was born.”

The Chinese physician, whom v. Martius quotes, declared the chief rule for pregnant women to be “ a moderate movement which is not too fatiguing.”

When, with a Chinese woman, sickness sets in after three months of pregnancy, as M. Bartels learnt from Grube, a physician is summoned who must find out if the pulse is normal or not. In Northern China this doctor is called *Tao-tai*, *i.e.*, protector of the embryo. The doctor forbids pregnant women to climb or stretch out their arms. In South Shantung there is a rule that the pregnant woman is to beware of heavy work in the third, sixth and ninth months because then miscarriages occur most easily (see Stenz).

The Japanese had formerly the custom of insisting that a woman lie with her knees up during pregnancy ; they even kept the pregnant woman's legs in this position during sleep by means of a band put round the knees and the back of the neck. The reason for this measure lay in the remarkable idea that the embryo might put its own legs into the mother's outstretched legs as into trousers, which, of course, would make delivery very difficult or even quite impossible. Kangawa fought against this, and declared that this custom was more harmful than useful, for the embryo's legs were pressed upwards by the mother's bent thighs, and in this way a transverse position could easily be caused. This could also arise from eating too abundantly (see Miyake).

The medical science of the Romans, according to the example of Soranus of Ephesus, divided pregnancy into three periods. Each of these, according to him, required special medical measures.

In the first period, it was a question of the retention of the embryo ; in the second, of the alleviation of the phenomena connected with pregnancy, such as desires, etc. ; in the third and last period, of the preparation for a favourable delivery. The first period requires avoidance of all physical and mental excitement : fear, horror, sudden, violent joy, etc. then coughing, sneezing, falling, carrying heavy weights, dancing, the use of abortifacients, drunkenness, sickness, diarrhoea, etc. ; in short, everything which might cause miscarriage. Quiet behaviour and moderate movement must alternate, but any rubbing of the lower part of the body should be avoided. She might only smear her body with oil freshly pressed out of unripe olives. During the first seven days, the woman is not to bathe or drink wine. She may not also eat over-fat meat, or fish, and pungent food and spices are forbidden her.

A very detailed discussion of the time in which the so-called desires appear (about the second month) is to be found in a special chapter of this book, to which we shall revert later.

Now, when this period is past, the woman's constitution is strengthened, and the growing child needs a more abundant supply of food. There is no need for so much care about eating and drinking wine, or about lying down, sleeping or bathing.

From the seventh month onwards, however, it is again recommended that the pregnant woman refrain from violent movements on account of the danger that the embryo may separate from the uterus, although experience shows that a seven-months child may live. Pressure upon the breasts, and lacing them, is forbidden as harmful and a possible cause of abscesses. In the eighth month, popularly called "easy" in the time of Soranus, but which also has its difficulties, the quantity of food must again be reduced. The woman should now lie down for a longer time, not walk much ; and cold baths, which were much liked by the people of that period, are forbidden. In the last months, if the abdomen is too pendent, the woman has to support it with a binder and anoint it with oil ; after the eighth month, however, this binder is to be removed, and then warm baths are to be taken, and even swimming in clean warm water is permitted in order to make the body supple ; for this purpose fomentations are of use, and hip-baths with decoctions of linseed-meal, mallow, etc., together with injections of sweet oil and pessaries of goose fat.

Very doubtful is Soranus's instruction to midwives that, in the case of primiparæ who have firm muscles and a hard cervix uteri, they should anoint the orifice of the womb with the finger, and open it.

In the Middle Ages and among Arab physicians similar views were prevalent, and also in the earliest German books on obstetrics we encounter the same theories. For example, Rösslin says in his *Rosengarten* that the pregnant woman is not to be lazy and idle, but go about gently, and leave off excessive pressure and jumping. People must guard against striking her on the shoulder or the nape of the neck. When the confinement is near, then she shall sometimes sit for an hour with legs outstretched, and then quickly stand up again, climb up and down, sing or call out

loudly. In the poem of instruction which Rösslin has appended to his little book of midwifery it runs, after the diet of the pregnant woman has been given in detail :

“ Then, when their time is near
That from the fruit they sever,
Then shall they go walking,
The stairs go up and down.
That they be light and ready
To bear without all troubles.”

This differs from the rules of Suśruta in that here somewhat strenuous movements are ordered, which in Rösslin's eyes have doubtless the significance of gymnastic exercises.

Also the women on the Andaman islands, as Man reports, have the custom of doing physical exercises during pregnancy, because they believe that by this means an easy confinement is assured.

Likewise among the Ainu on Sakhalin a great deal of action is recommended to the pregnant. “ The foetus,” says Pilsudski, “ is supposed then to be small and delivery takes place quickly without special pain. The nearer the time of confinement, the more active shall the woman be. If she sits much during her pregnancy the foetus gets too big and the woman suffers for some days before the delivery takes place.”

Krämer got the following report by word of mouth from the natives of Samoa : “ When a girl cohabits with a man for the first time, it happens that one day ‘ the illness ’ appears in her. Then her parents say to her : ‘ Girl, look well after yourself in your illness ; know that you can easily die in this illness.’ When she approaches her confinement, and the illness is very strong in her, she may no longer eat alone, and no longer also drink coconut milk alone, if she does not know for certain that somebody else has already drunk of it ; then only does she drink it. Moreover, she no longer walks alone, but always in the company of another person, even when she goes into the bush ; she no longer carries burdens on her back but puts them on her hips.”

Pregnant women in Uganda, states Roscoe, are given a mild aperient periodically, and when their confinement is near they are anointed with oil to make the parts supple.

2. DIET IN PREGNANCY

We have already mentioned rules about the diet of pregnant women in the foregoing section. They were more of a general nature. We wish now to draw attention to the fact that among many peoples pregnancy is accustomed to revolutionise woman's diet so that she has to avoid ordinary daily food, and in its place, foods are prescribed for her which at ordinary times she never, or only on rare occasions, eats.

Care of health also unconsciously plays a part here. Frequently, however, only vague mystical ideas lead to such prescriptions. Thus we have already seen above that in many tribes the pregnant woman must carefully avoid eating fruits which have grown together, because otherwise she would without any doubt bring twins into the world. (Vogtland, Mecklenburg, Ceram Laut and Gorong islands, etc.)

Of these connections between certain food materials and the pregnant many



Injected embryo. (Spaltelholz Preparation. Hygiene Museum, Dresden.)

examples have been brought forward. Usually, the harm is done not to the pregnant woman but to her child.

Thus, a pregnant Serbian woman must not eat pork, or her child will have a squint ; and she must not eat fish, or her child will remain dumb for a long time.

The eating of fish is forbidden for the same reason to the Transylvanian gipsy woman during pregnancy, and she must also avoid cooking snails or her child will have difficulty in learning to walk (see v. Wlilocki).

In Bari, in Southern Italy, Karusio states that the pregnant woman must avoid eating wolf's flesh, because otherwise she will bring a ravenous child into the world. In the district of Pola, a fondness for dainties on the part of the mother has an unfavourable influence on the physical development of the embryo (see Mazzuchi).

According to Maass,¹ the Mentawai Island women "during pregnancy, eat everything but the cuttlefish because these live in the cavities and among the coral. During the ebb tide, it keeps its head out and is difficult to get out of its lurking place because it swells up. The wives of the natives think that if they eat this fish, a similar thing will happen with their children at birth."

On the Amboina Group, the rule holds that a woman must not eat too much whilst she is pregnant, or her child will be greedy.

The pregnant Japanese woman gives up eating dog and hare for fear that her child may get a hare-lip.

On the Admiralty Islands, states Parkinson, pregnant women eat only fish and sago. They do not eat yams so that their children may not be long and thin ; nor do they eat taro-tubers so that they may not be short and fat ; also no pork because otherwise their children would have bristles instead of hair.

The Indian women of Gran Chaco do not eat mutton when they are married, because they think that their children would then be pug-nosed (*Globus*, 1882, 42, p. 185). The pregnant negress of the Loango coast stops drinking rum because the child might get birth marks from it. This superstition is, nevertheless, not generally respected as different conduct was observed by Pechuel-Loesche.¹

In Uganda, in Central Africa, Roscoe^{1, 2} states that women must avoid during pregnancy, salt, hot foods and certain fruits, because it is believed that otherwise they would have still-born or delicate children.

Among many peoples we find similar prohibitions with regard to food without our having learned the exact reason for them.

On Ceram Laut and Gorong, pregnant women may not eat *kalapa* and *kanari*, and only a little salt and Spanish pepper ; and on the Watubela Islands, *volvoli* and *raspen* as well are forbidden them. Among the forbidden foods are included certain fish with a small snout, and the flesh of all slaughtered animals as well as of the opossum.

Shark and eels are forbidden foods for the pregnant in parts of Celebes ; moreover, she may also eat no eggs, venison or buffalo (Riedel¹¹). The Sulanese women also, in this condition, have to avoid venison.

The Indian women of Brazil abstain during pregnancy from the eating of meat generally ; and the same thing takes place in some parts of Japan.

On the Andaman Islands, according to Man, the pregnant Mincopi woman may not eat honey or pork, palm-civet or lizards.

Of the Tengerese in Java, Kohlbrugge² says : "During the first month the pregnant women may not eat anything heating ; forbidden fruits are durian (*Durio zibethinus*), nanas (*Ananassa sativa*), lombok (Spanish pepper), ragjak (pungent spiced dish), maritja (pepper), djaë (ginger). They believe that the child cannot bear pungent food."

On the northern part of Celebes native women have to abstain from eating

fruits with a strong smell, *e.g.*, durian or kuini, and, besides, crabs, lobsters, eels, etc. (*Zt. f. Eth.*, 1871, p. 403). On the Banks Islands, in the western part of the Pacific, the women must never eat fish which are caught with the snare, the net or in a trap. However, in this case this food prohibition is valid only for the first pregnancy. Similar customs are also known of the Fiji islands (see Eckardt).

The women of the Caroline Islands, according to Mertens, are not allowed to eat several kinds of coconuts and bread fruit during pregnancy.

The pregnant Jewess is forbidden in the Bible (Judges xiii. 7) wine and other strong drinks.

In Germany in the sixteenth century, on the advice of doctors (*e.g.*, Rösslin), pregnant women did not partake of highly seasoned food towards the end of their pregnancy.

At the beginning of pregnancy nothing in the mode of life of the Annamite women is altered. Only by some nervous women a special dietary prescribed by old women is followed: these abstain from eating beef and papaya fruits; they believe that the beef brings about abortion overnight, whilst they fear from the fruit a similar effect, from the stoppage of the milk through excitement. But the great majority continue with the usual diet, expecting the child to go on quietly developing (see Mondière, p. 36).

Among the ancient Hindus, as Suśruta prescribes, the pregnant woman was not to eat any dry, stale, or smelly food which had begun to decay (*cf.* Schmidt⁸).

Alongside these prohibitions, however, we also find quite definite rules with regard to the food to be chosen.

In this case too, we again begin with Suśruta's prescriptions. He says that she may enjoy tasty, liquid, rather sweet, and not too highly seasoned food which is easy to digest. In particular, however, the pregnant woman may eat in the first, second and third months, chiefly sweet, cold and liquid food. (Some lay down, however, that in particular, she is to eat a concoction of Shashtika rice with milk in the third month, with curd in the fourth, with milk in the fifth, and with clarified butter in the sixth.) In the fourth month, she may have milk and fresh butter with her meals, and eat savoury cooked rice with the flesh of wild animals; in the fifth, meals with milk and melted butter; in the sixth, give her a quantity of melted butter which is prepared with svadamstrā (*Asteracantha cordifolia*), or drink rice-flour broth; in the seventh, melted butter which is dressed with pithakparni (*Hemionitis cordifolia*). In this way, the fetus thrives. In the eighth month, in order to get rid of retained excrement and to bring the wind in the proper direction, let her be given an enema of badara (*Zizyphus Jujuba*) water mixed with bala (*Sida cordifolia*), atibalā (*Sida rhombifolia*), satapuspa (*Anethum sowa*), ground sesame seeds, sweet milk, sour milk, sweet cream, oil, salt, the madana fruit (*Vanqueria spinosa*), honey and melted butter. Then give oil enemata prepared from a decoction of milk and syrup. Then if the wind breaks in the right direction, the woman will have an easy confinement, and be spared mishaps. From then on, let her be given rice-flour broth and venison soup. If she is treated in this way until her confinement, then she will be supple and strong, and have an easy delivery without suffering a mishap (see Schmidt⁸: Suśruta, II., 217, ff.).

On the Malay Islands Romang, Dama, Teun, Nila and Serua, the pregnant woman must eat daily raw fish with the juice of *Citrus hystrix*.

In the Caroline Islands, the pregnant woman may have as drink only the milk of coconuts.

In Java, Kögel states that pregnant women have a very favourite dish of which they are specially fond, called *radja*, and which is prepared from three various kinds of unripe fruits; these are peeled, cut in pieces and crushed. They are then eaten mixed with salt and plenty of Spanish pepper pods.

A Chinese doctor states that, "as the appetite in pregnancy is weak, the woman does not eat much; she likes best chicken-broth, fruit cut in sections, but never fatty foods."

From another Chinese medical treatise, v. Martius ² (p. 62) quotes the following :

“The pregnant woman may eat only sweet, fresh things, more vegetable than animal, but nothing at all that is obnoxious or injurious. She must refrain from eating, in particular, all fatty foods, everything bitter, everything very salty, as well as all very hot dishes. Garden produce increases the juices of her body and forms a light joyous-flowing blood. Specially to be recommended for pregnant women is a thin pea soup, young cabbage, along with other easily digestible fruits and roots. Of meat, the pregnant woman can choose to eat all that is easily digestible. Especially useful for her are fowls, ducks, pigeons, young dogs and lean sucking pigs. Everything, however, must be made as appetising as possible for her, and the scum must be taken off beforehand. Specially good for pregnant women are all kinds of milk foods. On the other hand, all indigestible and heating foods are forbidden ; among these are ginger, zedoary, galanga, pepper, cardamon, etc. Unwholesome for a pregnant woman is, moreover, the flesh of dog, ass, horse and pig, as well as that of wild animals ; likewise also, that of hedgehogs, rats, mice, turtles, otters, frogs, crayfish, grasshoppers, mussels, etc., also pigs' blood, ducks' eggs and, finally, everything that is fried in butter. A pregnant woman may drink anything light and palatable and not intoxicating. Wine, however, beer, or even brandy and arrack, as well as every other heating drink, may never be permitted to a pregnant woman.”

Stenz mentions from South Shantung that the pregnant woman must avoid hare, or else the child will get a hare-lip ; and turtle, or it will not come into the world ; for the rest, *yu schymo*, *tsch'y schymo* = what she gets, she eats.

According to information given to M. Bartels by Grube, doctors in northern China forbid pregnant women both salty and spiced foods.

Among the Laplanders, Passarge ¹ states that pregnant women drank *sarakka* wine before their confinement, and ate *sarakka* groats after it. *Sarakka* was the actual goddess of birth of the Laplanders ; she protected all growing things, but especially the fruit of the body. To her, prayers were made during pregnancy, and a tent was erected for her nearby until the hour of delivery was come (p. 564).

According to C. le Beau (II., p. 199), the Indian women in Canada eat little, and the Guarani women even go through a regular fast. Also Paiute Indian women in North America fast at least in the last weeks before confinement. According to Engelmann, this mortification of the flesh is intended to make the soft parts of the birth passage shrink, and thus to widen the gate for passing of the offspring. Besides this, it is intended to urge the embryo in this way to try as soon as possible to enter the light of day in order to enjoy the mother's milk.

The Masai, according to Merker, have similar intentions when they arrange the diet of the pregnant as follows : “During the first five months of pregnancy, the woman has the usual food and drink. Then she gets a broth of lungs, liver and kidneys cooked with a bitter tree bark (from *Albizzia anthelmintica*) called *ol mokotan* and milk. The woman is supposed to get as thin as possible by taking this so that the birth takes place more easily.” The Wandorobbo do the same.

Popular medicine also in Germany is not wanting in definite rules of diet.

Thus, according to Wegscheider, it is a common custom, especially in the country, for pregnant women to drink a great deal of spirits on the assumption that the child will then be beautiful and have a delicate and fine skin ; others eat a great deal of butter, dripping and honey so that the child will slip down better ; or a great deal of fruit so that it will be pretty.

In Berlin and Potsdam, the women in pregnancy are supposed to eat the top and bottom crusts of the bread because they then get strong children.

In the Palatinate of the Rhine, the pregnant woman takes brandy in order to get a beautiful child (*Landes-u. Volksk. d. Bayr. Rheinpfalz*, 1867, p. 345). In Pongau in Austria, on the other hand, pregnant women drink a great deal of brandy and bleed themselves so that the foetus may remain small, and thus the delivery will be easier (see Skoda).

Rösslin recommended for the pregnant, nourishing food, and to give them strength, a

powerful fragrant wine, claret from ginger, cloves, galanga, lovage, white caraway and white pepper.

In ancient times, there was prevalent among the Russian nobility the conviction that a pregnant woman has a good appetite, and must eat unlimited fatty and nourishing food. In order to do this forty pieces of bread were taken from beggars and the woman had to eat it.*

The ancient Hindus had special rules of diet for every single month of pregnancy. There was a general rule with them that up to the eighth month, a pregnant woman should eat only such food as could contribute to the growth of the embryo ; from that time onwards, however, she was to choose a diet which could also give it strength.

In Suśruta's Ayur Vedas it reads : "The pregnant woman must partake of pleasant and sweet-tasting, mild, aromatic food. Especially in the first three months of pregnancy, let the food be sweet and refreshing ; in the third month, rice cooked in water, in the fourth in curdled milk, in the fifth in water, in the sixth cooked with clarified butter. This, according to some, is the diet of the pregnant."

Suśruta then continues :

In the fourth month, she may have water mixed with fresh butter and partridge flesh ; in the fifth, a food made with milk and butter ; in the sixth, an extract made from butter prepared with *Flacourtia Cataphracta*, or rice-water ; in the seventh, butter seasoned with *Hemionitis cordifolia*. All this is said to contribute to the growth of the fetus. From then onwards, the fœtus is made strong if the woman has in the eighth month, water and *Zizyphus Jujuba*, *Pavonia odorata* Willd., *Sida cordifolia*, *Anethum sowa*, meat broth, curdled milk, whey, sesame oil, sea salt, fruits of the *Vanqueria spinosa*, honey and clarified butter. Finally, she may have, until confinement, soft water with fermented rice and partridge (according to Vullers : antelope) broth.

Among the Athenians, the pregnant woman ate, for the better growth of the child, cabbage (cf. Athenæus *Deipnosoph*, IX.), mussels and apple peel, and she got a drink made from dittany (cf. Bartholinus,² p. 12). According to Ehippus, she ate the cabbage with oil and cheese :

"For at the feast of the Amphidromia," he writes in *Geryones*, "it is the custom to toast slices of Gallipoli cheese and boil a cabbage in glistening oil."

And in Q. Sammonicus Serenus also we read :

Atque ubi jam certum spondet prægnatio foetum,
Ut facili vigeat servata puerpera partu,
Dictamnum bibit, et cachleae manduntur edules.

(*De med.*, cap. 33, p. 311.)

The pregnant gipsy-woman in South Hungary eats, when the moon is waning, pieces of quince sprinkled with the blood of a strong man, so that she may bring strong children into the world.

As early as in the *New Kräuterbuch* of Leonhard Fuchs (1543), the observation is to be found : "If pregnant women eat quinces they will often give birth to clever and skilful children."

On New Year's Day the pregnant gipsy may eat only the flesh of a fowl or a cock which has been used as sacrifice in connection with the supernatural determination of sex (see v. Wlislöcki).

The Icelanders, likewise, have all kinds of food prohibitions for their pregnant women, which the reader may find in the paper of Max Bartels, *Islandischer Brauch und Volksglaube in bezug auf die Nachkommenschaft* (M. Bartels¹²). For the most part the reason for the prohibition can easily be found from the fact that certain injuries, which developed in the child, had a certain superficial resemblance to the forbidden foods, etc.

We have heard how and what the pregnant woman is to eat ; we shall now also get a cursory glimpse of *where* she is to eat her food and where she is not to eat it.

* [No reference is given for this statement.]

That a pregnant woman may not have her meals in the usual eating place in all the localities where she is considered unclean, but that she is obliged to find a separate corner for herself goes without saying.

In the Caroline Islands husbands are strictly forbidden to eat in company with their pregnant wives, but the little boys, who have not yet begun to wear a loin cloth, may do so, and they also have the duty of providing them with plenty of coconuts (see Mertens).

The pregnant woman on the Amboina Group may not sit on the steps of the house to have her food or else her child may get a hare-lip ; she may not eat from a pan or sieve on Ceram Laut and Gorong, and this is also forbidden to the Sulanese women ; in the Saxon Ober-Erzgebirge and in Vogtland she may not stand before the bread cupboard, or her child gets worms, and, according to the opinion of the people in Fahrland near Potsdam, the pregnant woman may not eat from the cooking spoon or she will get a bad breast. If the pregnant Wend woman in Hanover drinks straight from the bottle then her child gets difficulty in breathing (see Wendland).

Many more of these prohibitions might be added.

3. DRESS IN PREGNANCY

In most European nations, at least in the upper classes, the custom has gradually grown up that pregnant women must have all kinds of alterations in the make and fashion of their clothing from that to which they have been accustomed. These changes in toilet have for the most part a double purpose : in the first place to make the costume as comfortable as possible for the increasing size of the body ; and secondly, in the generally unsuccessful attempt to disguise and conceal as far as possible the change in the woman's condition. In the proletariat it is often poverty (but also very often indifference) which leads pregnant women to go on wearing their ordinary clothes. Thus is presented the appearance so often caricatured in poetry and art in which the dress is too short in front and too long behind. One cannot, it is true, call it beautiful, and even the Rabbis in the Midrash Shir ha-Shirim said :

“ For so long as the woman is pregnant, she is ugly and unpleasant ” (see Wünsche ⁴).

Young wives in their first pregnancy often, unfortunately, make the great mistake of lacing and confining their growing bodies especially tightly “ so that people may notice nothing.” This false modesty has already brought much mourning and unhappiness upon families, for the tight clothing, as may easily be understood, hinders the normal development of the embryo, and many forms of congenital monstrosities have possibly been caused by this mischievous custom.

In Iceland, M. Bartels ¹² states that the pregnant woman is advised to avoid clothes which are thus cramping.

Primitive peoples who are accustomed to go about without actual clothing are in a more fortunate position in this respect. For even during pregnancy the women are accustomed not to cover their bodies. As an example of this, we have the Fuegian woman (Fig. 649) who is in the seventh month of pregnancy. The illustration is taken from the work of Hyades and Deniker. It is a woman about 25 years of age, who is pregnant for the first time : but, except for her narrow bracelets, anklets and the apron fastened by a narrow cord round her hips, she has no clothing and is exactly like her non-pregnant fellow tribeswomen.

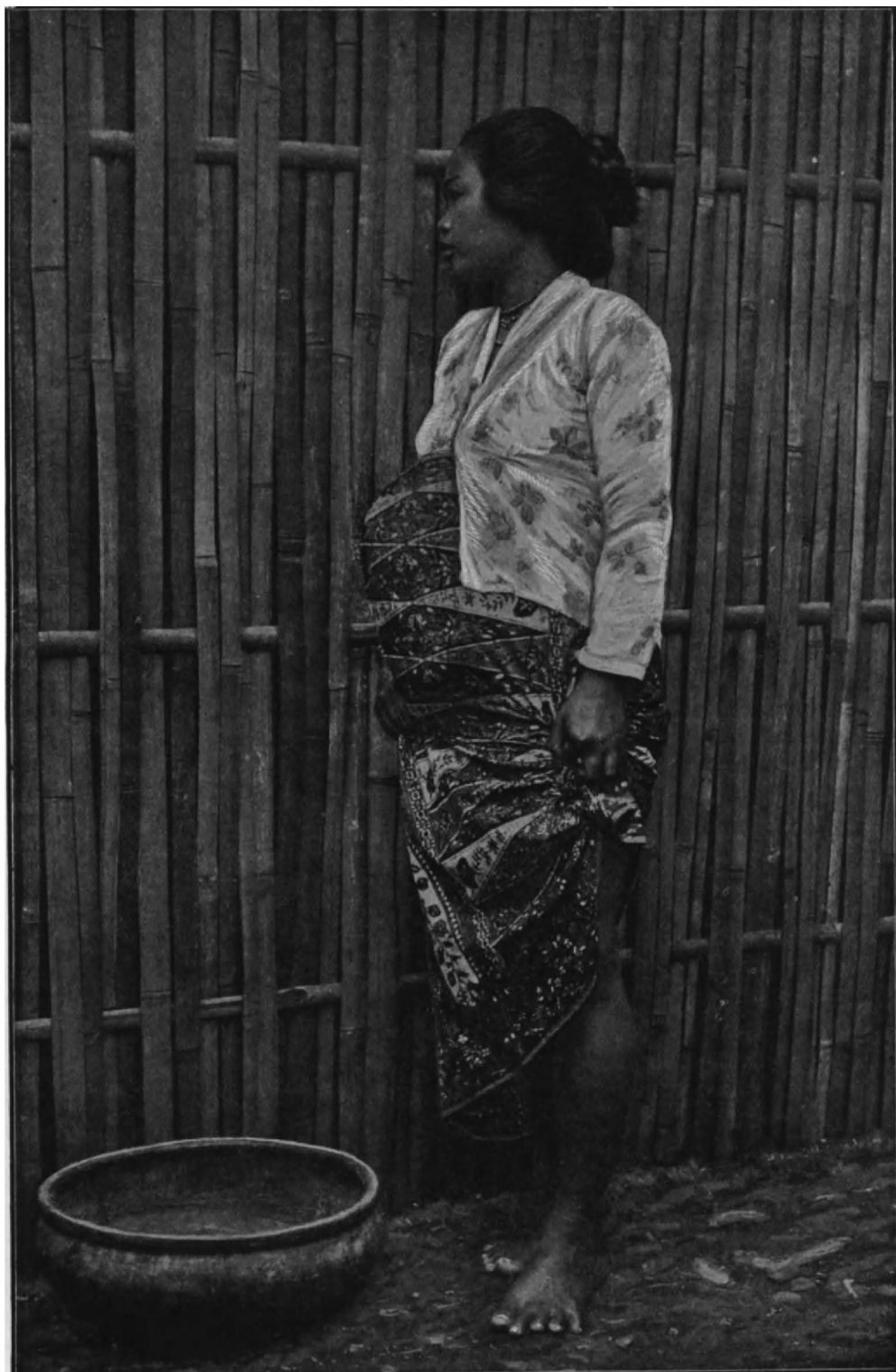


FIG. 661.—Javanese woman, eight months pregnant. (Photo : F. Schulze, Batavia.)

We have already seen in an earlier section that the negroes in Old Calabar refused to allow their pregnant wives to put on clothes, because they were otherwise unable to perceive the signs of pregnancy in the body and breasts (*cf.* Hewan).

Even among those primitive peoples, however, among whom clothing has long been customary, the women very sensibly avoid having a tight style of clothing. They realise that the body of the pregnant woman must not be subjected to pressure. Such a loose garment is shown us in Fig. 661. Here we have a Javanese woman from Buitenzorg, who is in the eighth month of pregnancy.

Likewise, the Achin women, according to Jacobs,² are accustomed, when pregnant, to make no change in their dress, as it is already sufficiently comfortable not to hinder the development of the fœtus. In the last months, however, when the abdomen becomes very big and makes walking and the daily tasks difficult, then the woman winds the upper end of a sarong over the breasts and thorax, and binds the lower end firmly round the abdomen, which is then carried as if in a sack.

Many of these customs and examples of primitive hygiene might be taken as a good example by women in Europe.

4. THE LONGINGS OF PREGNANCY

From the earliest times pregnant women have been reputed to be possessed at times by so-called "appetites," *i.e.*, by the unconquerable inclination to eat and drink certain things which are either very difficult to digest or are forbidden or are unobtainable, or which are not really edible. An appetite of this kind, the chief time for which is, as we have seen, from Soranus, in the second month of pregnancy, and is extended by others to the third month, must never, according to popular opinion, be opposed in any circumstances, because otherwise both the mother and the child in her womb might be injured in life and limb. At the very least, the child would be "birth-marked," whilst the mother, by being refused or unable to obtain satisfaction, would be disturbed and excited in a way dangerous for her. The ancient physicians called these appetites *pica*, also *citta* or *malatia*. David Herlicius of Stargard, wrote thus about this :

"It is sometimes reported that generally in the second or third month they desire to eat nasty and improper things such as chalk, coal, yarn dye, pitch, flax, cart grease, raw meat, fish, and crayfish, much salt, and so on. This is no doubt often a fancy and idle purpose of mischievous women."

He then gives "sensible" advice :

"People should be careful to keep such things from the sight of these women, and talk them out of their minds as far as they can, and not bring such things to mind in their presence, and set them against such things by contempt, and also show what harm and danger may come from them."

Now, however, in order that there may be no harmful effect from refusing them, they must be given an infusion of young vine leaves, which have been gathered in May. This they must drink three times in succession.

The longings of pregnant women were well known to the ancient Hindus ; they, however, had the strange idea that it was not really a question of the woman's desire but of that of the embryo. On the development of the embryo Schmidt⁹ records the following passage :

“ In the fourth month the partition in the head and neighbouring members proceeds perceptibly ; and since the fetus now clearly possesses a heart, obviously the substance for forming ideas is present, because it has its seat there. Hence, in the fourth month, the foetus shows desire for things of the senses, and such a woman with two hearts is called (*dvihrdayā*), i.e., afflicted with the longings of pregnancy.

If the woman's longings are not satisfied she gives birth to a hunchback with paralysed arms, hobbling gait, weak-minded and dwarfish, either with malformed eyes or eyeless.

The well-known tendency of the ancient Hindus to pedantic classification has here also led to the collection of a whole list of such longings and, at the same time, to a statement as to their significance and consequences. This also is quoted here, according to Schmidt ⁹ :

“ Whichever sense has been left unsatisfied in a longing of pregnancy, the corresponding organ of sense in the child gets a deformity. If the woman feels a desire to see the king, then she gives birth to a son who will be wealthy and exceedingly distinguished. In a case of a desire for fine things and textures, silks, ornaments, etc., she bears a son who will want fine clothes and will be elegant. In the case of a desire for an image of a god, she bears a son who will be like those present at a meeting. In the case of a desire for the sight of beasts of prey, she bears a son who will be bloodthirsty. In the case of the desire to eat lizard flesh, she bears a son who will be sleepy and will hold fast to whatever he gets possession of. In the case of a desire to eat the flesh of a cow, she bears a son who will be a hero, red eyed and hairy. In a case of a desire to eat the flesh of a boar, she bears a son who will be courageous and good on foot and will always reside in the woods. With a desire for *śrmara* (?), she bears a son who will be confused in mind ; if for partridge, one who will be continually afraid. For whatever other things the woman has desires, she will always give birth to a child who will be like them in body, bearing and nature.”

Now there comes a still more remarkable statement which proves that the ancient Hindus connected the desires of the pregnant with predestination :

“ In order that the impending fate decreed by Karma for the future being may be fulfilled, the desires of pregnancy are produced by divine ordinance in the heart of the pregnant.”

The cause of these desires, as physiology has shown, is to be sought in states of nervous stimulation, and there is naturally no need for further assurance that a woman of strong will can suppress them without further ado.

Among the lower classes, especially in the country, the desires of the pregnant play a great part even at the present day ; and this goes so far that, e.g., in the Black Forest, a pregnant woman, if she is afflicted with the desire, is justified in taking fruit from a stranger's garden without further ceremony. In this case, however, the condition is understood that she must eat it on the spot. Also, according to precedent, as Grimm reports, pregnant women might, if they liked and without being liable to punishment, satisfy their desires for game, fruit and vegetables even if they belonged to other people. Markgraf has published some examples from the *Weistümern* * of the Moselle district. The ancient *Weistum* of Rommersheim (1298) forbids, on pain of punishment, all fishing in the streams of the landowner for whom alone this right was reserved, with only one exception, namely, that the pregnant and the women in child-bed might fish with one foot in the water and the other on the land. The *Weistum* of Galgenscheid, on the lower Moselle, ordained : “ If a woman were with child and had a desire for game, she might send her husband or servant to catch and take as much game as might satisfy her desire.” In Brandenburg, if a pregnant woman suppresses her desires, it is feared that her child will never be able to eat the food in question. In Swabia, people believe, according

* Abstracts of special legal usages in certain districts.

to Buck, that a pregnant woman whose longing for certain food remains unfulfilled will give birth to a child with a birth-mark, the form of which will suggest the food concerned.

The desire of the pregnant, *la voglia*, as it is called, is very well known also to the Italians, and in the Province of Bari whoever refuses them food for which they have a morbid desire, will get a sty in the eye. For if such a desire remains unsatisfied, the child will infallibly get some mole or mark on its body as a result. Now if the desire absolutely cannot be satisfied, then the pregnant woman must scratch her buttocks ; by doing this she can avert the harmful influence from the child in the womb (see Karusio). In Pola, Mazzuchi records similar views, but here the desires never extend to things which are only to be bought in the shops.

In Lebanon, Chémali states that the desires of the first month are considered specially urgent ; they must always be satisfied, otherwise the child will suffer. People point to children with congenital defects as sacrifices to the unsatisfied desire of the mother.

As the ancient Hindu physicians thought that the desires of the pregnant woman must be satisfied, so the Jewish physicians of the Talmud laid down the same principle. In the case of non-observance of this, they considered that the life and health of the pregnant woman or her offspring were endangered, so that, in case of need, the day of atonement might be desecrated and the food laws be disregarded.

It must not be thought, however, that desires occur only among pregnant women of more highly civilised nations. The women of primitive peoples are sometimes much more afflicted with them, and among them also the opinion prevails that it harms the child if the pregnant woman is denied the strange foods for which she craves.

Thus, according to the evidence of P. S. Gilij, the Indian women on the Orinoco were not a little plagued by desires ; and of the Indians who formerly inhabited Pennsylvania, Heckewelder states that when a sick or pregnant woman has a desire for any food, the husband at once sets about providing it for her. He quotes examples where the husband ran 40 to 50 miles to get a dish of cranberries or a meal of maize. Acorns, ducks and such delicacies are the things after which women usually hanker in the beginning of pregnancy, and the husband spares no pains to get them for her.

The desires of the pregnant are by no means always for edible things, but at times the pregnant woman desires the most peculiar victuals. In the Nile countries, where, according to Robert Hartmann, these circumstances are not uncommon, they are named *tama* and in the Sudan such pathological desires of the pregnant are satisfied as far as possible.

Of the women of the Wakissi (East Africa), Fülleborn² says that, during pregnancy they are said occasionally to eat earth.

During pregnancy the women of Lucknow, in India, also are accustomed to eat earth, which they devour in little lumps. In Bengal, on the other hand, this earth is made into little slices of ornamental shape. These they eat in great quantities, Jagor states, in spite of being forbidden by their husbands to do so.

In Persia also, according to Polak, pregnant women eat much earth and tabasheer during the last months especially. There is a more superstitious significance in a perfumed stone called *tubaret homra*, which, it is reported, the pregnant women of Damascus eat in powder form for their health. The pleasant smell also is a reason for the powder being eaten.

The Mincopi women on the Andaman islands have the custom of nibbling, from time to time during pregnancy, small quantities of a white clay, which they also

use to daub over their bodies. They have the belief that this is good for their condition.

The Sulanese women sometimes get a desire during pregnancy to eat tree resin.

It is a question also of genuine pregnancy longings among the women of the little islands of the Malay Archipelago. We have already mentioned above some food prohibitions which are in force for these women during pregnancy. But all these are untenable as soon as one of these women is a prey to desires. Then she can eat anything, *e.g.*, on Ceram, unripe and sour fruit; on the Amboina Group, besides unripe fruit, even baked clay and fragments of pots and pans. On Keisar, however, in spite of every other indulgence, the desire for pineapple is strictly forbidden to the pregnant and, on the islands of Leti, Moa and Lakor, the ground nut (*Arachis hypogaea*), because it is supposed to cause fever.

Worthy of mention, also, is the belief of the Buginese and the Macassars "that the husband during the pregnancy of his wife, often behaves capriciously like she does, and has hankerings for foods which are otherwise not eaten" (see Schmidt ⁹).

5. MENTAL CARE IN PREGNANCY

The ancient Hindu physicians begin their good advice for the pregnant by recommending them always to be gay and good tempered; to beware of fear, anger and even of talking loudly (*cf.* Hessler; Vullers).

The authors of our oldest midwifery books (in the sixteenth century) declare that the pregnant woman shall live in "joy and pleasure." They advise her to avoid everything that smells nasty, and the Hindus also thought that pregnant women should keep away from bad smells. The old Hindu physician Suśrata warns her against burial places, and a Chinese physician, according to v. Martius (p. 64), says: "A pregnant woman should avoid places where a grave is being prepared or a corpse buried, etc."

The prohibition against tarrying by graves and seeing corpses is a widespread one. We come across it in the Malay Archipelago on Ceram Laut and Gorong, and likewise in Silesia, Pomerania, Thüringen and Vogtland. Here it is also assumed that visiting the churchyard might give the growing child a deathly complexion for life, or even cause the death of the pregnant woman herself. Very similar motives no doubt lead to the following custom reported by Katscher. In many parts of China, when women members of a mourning family are pregnant the funeral is postponed until after the birth has taken place. The grandmother of an intimate friend of Gray remained unburied for several years because one or another relative was always pregnant.

The pregnant woman must avoid strife and quarrelling, and she herself must, above all, not scold or get violently angry, otherwise her child also would be angry (East Prussia, Archangel, Luang, Sermata Islands, Ceram Laut, Gorong). Just as little may she fret (Brunswick), otherwise her child will be a crying child (R. Andree ⁵). It has already been mentioned that perhaps the anxiety to keep pregnant women calm and happy is one of the reasons that with so many different nations she is not allowed to appear as witness in court. Likewise, the prohibition for pregnant women from killing animals must here be taken into account. This we find on Ceram Laut and Gorong, and also in Bavarian Franconia. Here they may not throw kittens or puppies into the water to drown them: should they do so,

then they will not bring a living child into the world. On the Amboina Group they may not even cut raw meat.

As is well known, people in classical antiquity were convinced that it was beneficial for the pregnant woman if her eye rested on beautiful objects. It was supposed to have the effect of causing the development of a beautiful physical form in the child. In this connection a passage of the Talmud is very characteristic. It is contained in the Bērākōth Tractate and is as follows, according to v. Pinner's version.

“ R. Jochanan was in the habit of going and sitting before the door of the baths. He said : ‘ When the daughters of Jizrael come out from the bath, they may look upon me, so that they may get children who are as beautiful as I.’ The Rabbis said to him : ‘ Are you not afraid of an evil eye ?’ He said to them : ‘ I am descended from the House of Joseph which an evil eye cannot affect.’ ”

On the other hand, the Rabbis seem not to have been entirely convinced that the mood of the pregnant should be happy. For in the Midrash Shir ha-Shirim, in explanation of a passage in the Song of Solomon, it states, according to Wünsche :

“ Later, however, he was full of anger towards me, like a pregnant woman.”

The solicitude for the good humour of the pregnant requires that none of her wishes be denied. Among the White Russian peasants, if she asks for money and is refused, then mice or rats will gnaw the clothes of the hard-hearted person. Anyone who is unable to comply with her request must at once throw to the woman a little piece of coal, some earth or some rubbish.

CHAPTER XVII
DANGERS AND HELP IN PREGNANCY

1. SHOCKS IN PREGNANCY

THE belief that the sudden sight of something ugly, of cripples or of deformed people, which shocks a pregnant woman and brings harm to the embryo so that the child get a malformation in some part of its body similar to that seen, is diffused throughout the whole of Germany; it is also found, moreover, in many extra-European nations. It is not so long since that not only the cultivated public but even medical men were at pains to account for every monstrosity, every deformity, from the mother "having had a shock"; and, of course, a young mother who had brought a deformed child into the world found it fairly easy to recall that during the nine months of her pregnancy she had seen something repulsive or had been shocked by something on which she was only too willing to lay the blame for the anomaly in her child.

Thus it is generally believed in Germany that vascular *nævi* marks arise if the pregnant woman has been frightened by a fire or if she gets a fright by suddenly seeing someone bleeding. Then the red birth-mark is supposed always to reproduce the blood-covered place. Fright from animals is also very dangeous because the pregnant woman has likewise a shock from it; and then the children, according to the species of animal, are born with hairy birth-marks, with-hare lips, with pig's tails or goat's hairs; and if the animal which has caused the fright happened to be freshly killed then they were born also with open belly and exposed entrails. Again, in Spreewald, it is thought that if the mother is frightened by a hare, then the child gets a hare-lip, and it can also get a hare's head. From the abundance of examples known in Europe only a few can be quoted here.

When the pregnant Serbian woman treads in the blood of a newly killed pig then her child gets a red mark from this.

In Iceland, if a pregnant woman touches a mouse or a strawberry by mistake, she must, as quickly as possible, touch wood with the hand concerned before touching herself anywhere. Otherwise there develops on the same part of the body of the child the form of a mouse or a strawberry (see Max Bartels¹²).

In Little Russia, too, people believe in the shock to a pregnant woman. There it is considered specially dangerous if she sees a burning house; for then the child gets a black streak on its brow or a dark red spot on its body. In Kharkov pregnant women avoid looking at very ugly people, especially those who have scars or something similar on the face.

According to beliefs in earlier centuries, pregnant women might get a fright from pictures and images. Thus, the Talmudists in the Midrash *Bērēshith Rabba* have told the following story:

"There was once a Moor who married a Moorish woman and begot a white son by her. The father took the son and came to the Rabbi and spake thus: 'This is perhaps not my son.' Then he asked him: 'Hast thou images in thy house?' 'Yes.' 'Are they black or white?' 'White.' 'Hence,' then said the Rabbi, 'thou hast the white son.'" (cf. Wünsche).

In the thirteenth century Pope Martin IV. had all the representations of his heraldic

animal, the bear, removed from his house, because a lady of his court had got a fright from it and was delivered of a son entirely covered with hair.

In Old Prussia, to prevent such fright, there was in force a rule that as soon as the woman met a cripple, etc., she was at once to look towards the heavens or at her finger nails.

In Schässburg and in Unterwald in Transylvania pregnant women are advised to look very firmly at things which might frighten them, or to turn their eyes away from them at once. If the woman is afraid that she will get a fright from something, she is to grasp her buttocks at once and remind herself that she will not be frightened. It will then have no effect and the child will not have the "birth-mark" on that part of the body. Another specific is to climb the tower and look down from there.

So far, we know little about this matter in extra-European nations.

According to Max Bartels the ancient Hindus also perhaps believed in the shock to the pregnant, for Suśruta (II., 216) warned pregnant women against touching dirty, "deformed or maimed" persons. The Chinese physician, before mentioned, says: "Let people guard against letting a pregnant woman see hares, mice, hedgehogs, tortoises, otters, frogs, toads and such-like things." Likewise, on the Amboina Group the pregnant woman must carefully avoid meeting snakes or apes when she goes out.

The Achinese, according to Jacobs,² believe firmly in the shock to the pregnant, and almost every native can bring forward examples where someone has the nature of an ape, is like a snake, lies in the water like a crocodile, or is like some other animal in the face, in consequence of a shock to the mother. But they regard this shock as possible only within the first 140 days of pregnancy.

Also among the American aborigines belief in the shock is indigenous, *e.g.*, among the Indians on the Orinoco, according to Gilij.

Likewise the Maoris in New Zealand believe, according to Goldie, in the shock to the pregnant.

To the Wakamba in East Africa, according to Hildebrandt, the shock is also a well-known phenomenon. If the woman perceives in time that she has been frightened, she must move her arms backwards and say "Taken off," and then the shock is harmless.

Now there is no doubt that fright and excitement must, of course, have an irritating effect on the nervous system of a pregnant woman, which may really lead to disturbances in the growth of the embryo; and among others the Leipzig gynæcologist Hennig defended the harmfulness of a shock to the mother for the child in the uterus.

What upset, however, the theory regarding these shocks in pregnancy was the circumstance that the mother's fright, which was supposed to have caused the malformation of the child, in most cases happened in the last months of pregnancy, whilst the deformities concerned, as the history of evolution incontestably proves, correspond to certain stages of our development in the womb, which come in the very first weeks of embryonic existence.

These stages, through arrested development, have, as Max Bartels points out, been retained in these monstrosities. Thus we remain very sceptical towards the ever-recurring attempts to see more in the results of these frights than mere superstition. Agnes Bluhm, in her article on telegony, already quoted, says that an idea relating to telegony, but from the biological standpoint still more romantic, is the so-called fright in pregnancy. Impressions of things seen by the mother, especially when connected with strong psychic excitement (shock), are said to be expressed in the outward appearance of the child. A special favourite is the tracing

back of birth-marks to the fearful sight of a cat jumping over the hearth ; or a hemangioma to the sight of a conflagration ; or a deformed limb to a fright from a cripple. Likewise, pleasant impressions are said to have an influence on the form of the child. That violent emotions, by causing circulation disturbances, may have a harmful influence on the course of pregnancy is not to be denied ; morphologic changes in the embryo, however, they cannot cause. Since pleasant impressions can raise the spirits which, in the pregnant, are so often depressed, there is nothing to be said against pregnant women surrounding themselves with beautiful pictures, etc., especially as the metabolism is doubtless influenced by mental factors. They must, however, expect little from it, for the external form of the child is determined in the nuclei of the parental germ cells. [For further details on this subject see Gould and Pyle, pp. 81 ff ; Kahn ; and J. W. Ballantyne, who gives a list of publications on the subject.]

2. SUPERSTITIOUS RULES DURING PREGNANCY

In the foregoing sections we have already heard of so many things that the pregnant woman is to do and to avoid that it might be thought that the rules of conduct were at last exhausted. That is, however, not the case, for the pregnant woman has to guard carefully against many more if she does not want to inflict some injury on herself or on her child. Now, though some of these precepts seem to us quite absurd, yet in others we can divine the train of thought which has led people to make these rules. First of all, there are some apparently quite incomprehensible rules : those, however, to which Kaindl refers may be quite expedient. Thus the Roumanian woman in Bukowina who is pregnant must never re-line the baking oven ; she must never take off anyone's shoes, and she is also not to hand anyone water over the hedge. Kaindl, who reports this, adds : " Activities are forbidden which might cause bending and pressure of the abdomen and might injure the foetus." Hence, in such cases, it is no mystical reason, but quite a reasonable and natural one, which causes the people to establish these rules ; whether conscious or unconscious we must leave undecided. The matter is different in many other cases where there can be no question of a natural explanation.

The idea underlying the widespread dread of closure by tying or knotting, and the like, is fairly clear. All tying, knotting and joining bring about a closure, and must, therefore, be omitted by the pregnant woman unless she wants to be closed herself, or, in other words, if she wants to avoid a difficult confinement. Hence, on the Luang, Sermata and Babar Islands she must not weave cloth, and on the last named she must also not weave mats. In Franconia, for the same reason, the pregnant woman must not step over a plough furrow, or if she has done so by mistake, it must be raked together again.

Probably for this reason the Songish Indian women in Vancouver, and also the wives of the Nootka Indians, when they are pregnant take off all their bracelets, anklets and necklaces, as Boas reports.

Another idea is that all crawling and wriggling make the navel cord twist round the child (Majer). Hence, in the Palatinate and in Brunswick, the pregnant woman avoids creeping under a clothes line ; she may not also weave, wind a reel or twist yarn (Pauli, R. Andree ⁵). In Bavarian Franconia also she must not creep under a rope or a plank, and the same fear is the reason that among the Esthonians, pregnant women, when washing and rinsing clothes, make no circular twisting movements.

Of the Saxon woman in Transylvania v. Wlislöcki ⁵ says :

“The pregnant woman may not wind thread or wear pearls round her neck, otherwise the navel cord will wind round the child's neck at birth ; the same thing happens if she jumps over the shafts of a cart.”

This holds good also for Oldenburg, where the pregnant woman may not go under an outstretched line or under a horse's head, for as often as she does this the navel cord will wind round the neck of the fœtus.

Just as clear as in this first group of rules is the train of thought which suggests that the Transylvanian Saxon woman would bring a child into the world in a wrong position if she rode in a carriage with her back to the horses ; or the pregnant woman in Esthonia and on the Luang and Sermata islands would do the same thing if the firewood is put into the fire the wrong way or against the grain.

The pregnant woman in Achin also, when cooking rice, must not put a branch into the fire by the point, or she will have a birth with a foot presentation. She must wear no ornaments round her neck, for otherwise the navel cord will twist round the child's neck ; she must not also sew her clothes on her body, for by so doing she will bring about a long confinement (see Jacobs,²). It is more difficult to understand why a foot presentation will develop in the Transylvanian Saxon if, while baking, she steps over the bench by the stove (v. Wlislöcki ⁵).

With the Bulgarians the only rule quoted by A. Strauss is that the pregnant woman will have a difficult delivery if she steps over a piece of wood. The same misfortune, however, befalls her if she sits with crossed legs.

In Japan ten Kate states that the pregnant woman must not step over a bamboo broom because this would cause a difficult confinement. As, however, this *hoki* is said to exert a favourable influence at the birth some connection is wanting here. Another not quite comprehensible rule is that the pregnant woman must not tread on egg shells because that results in a difficult confinement or leucorrhœa (*shirachi*).

Apart from these aggravations of confinement careless conduct on the part of the pregnant may cause all sorts of other harm to the child in process of formation. Wegscheider relates that he came across, in Berlin, the superstitious belief that a pregnant woman must have no teeth drawn, otherwise the child will have an injury in the back and not learn to walk. Again, the Magyar would quite certainly have a crippled child if mice were to nest under her couch and she were not to defæcate or urinate in their holes. On the Amboina Group, on Ceram Laut and Gorong and on the Watubela islands, a crippled child comes into the world if the pregnant woman makes fun of a crippled person.

Flowers must not be thrown at the pregnant Saxon in Transylvania, or her child will have a birth-mark at the place where she is struck. She must not put beans in her apron and also not urinate on hemp leavings, otherwise the child gets a skin rash. The same thing is caused by the tent gipsy in Transylvania if she carries millet, hemp seed, pearls or other small grained objects in her apron. If the blood of a slaughtered animal happens to spurt on her face, then red spots will come out in her child at the same place, unless she wets the spattered part of her face several times with salt water by a waning moon.

Various things are forbidden to the woman in Upper Austria and Salzburg during the period of pregnancy, according to Pachinger, as otherwise the child is harmed. She must not put her hands into dirty water or the child will have ugly hands ; she must not wipe anything with her apron or the child will get a rash on its head ; she must not put a nosegay of flowers in her bosom or the child will get

evil-smelling breath ; and if the mother pilfers something the child will be thievish ; if she wears black aprons it will be timorous, etc.

The child of the Wend woman in Hanover gets freckles and moles if, while pregnant, the woman cooks anything that splutters, or if she peels yellow turnips. The gipsy child gets scabies if the pregnant woman meets a frog and if she spits on it. Similar apprehensions may be the reason that on the Amboina Group the pregnant woman must not let lepers or people with open ulcers pass behind her back.

On the Amboina Group the woman, during pregnancy, avoids sitting with her back to a cooking pot because otherwise the child would be black. The Transylvanian Saxon must not push a pig with her foot or the child will have bristles on its back ; she must not hit a cat or a dog or hair will grow on the child's face. In Spreewald, if the pregnant woman creeps into the baking oven to dry the flax the child will get red hair.

In Brunswick and Prussia, in order that the child may not have a squint the pregnant woman must not look through a hole in a branch or a key-hole, or into a bottle ; in Serbia the woman must not step over a hay fork (see Petrowitsch) ; and in the Amboina Group the pregnant woman must not fish on reefs.

If the pregnant Serbian kisses the cross the child will be epileptic ; it dies of asthma if the Transylvanian Saxon while pregnant cleans the stove. If she drinks from a wooden can or from a well bucket, the child will have a flow of saliva. If the pregnant gipsy in Transylvania sees the open mouth of a dying animal, then her child gets an ugly mouth. The Esthonian woman believes that when cutting a loaf of bread she is producing a well-shaped mouth in her child if she cuts only a small piece first of all.

It is regarded as a very serious offence among the Magyars or the Transylvanian Saxons if the pregnant woman denies her condition. Among the former the children are, as a result, late in learning to speak ; among the latter they do not learn to speak at all.

Bulgarian women also believe, according to Strauss, that a dumb child will be born if pregnancy is denied.

The tent gipsy woman of Transylvania, during pregnancy, is supposed to tread under foot every snail she sees, or else her child will have difficulty in learning to walk ; and the Saxon, in the same place, must when in this condition avoid treading on an animal which has been killed, as otherwise her child will not learn to walk at all. If the former spits at a toad her child will have difficulty in learning to speak ; and if, on hearing the cry of a cornrake, she does not cover her mouth quickly with her left hand, then she will give birth to a child which will cry day and night.

Among the Asa and Wandorobbo, according to Merker, neither the pregnant woman nor her husband must step over a procession of ants ; the woman must also avoid coming near a chameleon or a snake or seeing the weaver bird, or even hearing its cry, as all this harms her child.

If the woman on Ceram Laut and Gorong wants to bring healthy and well-formed children into the world, then when she is pregnant she must not sit before the door, gather firewood, fish for anything prickly, or lie on her back. On the Luang and Sermata Islands there must be no cooking in the house where there is a pregnant woman. Among the Olo Ngadjoe in South-East Borneo the married couple must not light a fire for a month before the confinement, as otherwise the child would come into the world spotted (*cf.* Schmidt ⁹).

The pregnant Mentawei women, according to Maass,¹ must not fetch water

from the river in "a bamboo vessel in which there is a knot on the outside of the bottom ; it must be quite smooth if the woman wants an easy confinement."

Maass ¹ reports further of the Mentawai women :

"If a woman or girl finds herself in this condition (pregnancy) and needs a new hip apron or has a desire for one, then she makes one in the garden and spreads out the old one. This may, however, be done at another place, while in other, non-pregnancy cases, the apron is simply thrown away. The reason for spreading out the apron is to be found in the belief that by so doing the child will be born straight and not bent, and all the things which they use during this period they try to put down straight."

On the island of Nauru, according to A. Brandeis, there exist certain rules which, especially in the case of primiparæ, must be most strictly observed. "No nuts may be touched which have fallen within a circumference of 100 feet round the hut. The woman must eat nothing which husband, father or mother have touched. From the fifth month onwards no nail must be hammered in the house, and not the least noise may be made. Nothing may be taken from the wall till the child is born."

Likewise, on the later moral character of the child, careless conduct on the part of the pregnant woman may have an influence. Among the Transylvanian gipsies, if she wears the feathers of a bird of prey, then the child will be a great thief and it will end its life either in prison or on the gallows. In Bavaria, if the pregnant woman follows a poor sinner on his last journey, then the child will go the same way. In Brunswick, when sewing she must not, as usually happens, hang the thread round her neck, or else the child will hang itself later (see R. Andree⁵). She must not take anything away from anyone, or eat in secret, or the child will have an inclination to steal (East Prussia) ; for the same reason on the Amboina Group, she must not hide anything.

During pregnancy the gipsy woman must not play with a cat, or even take it in her lap, or the child will make many enemies in life. In the district of Modena a mass has to be read to Saint Liberata or else the child would later come to the galley or the gallows (see Riccardi).

A pregnant Magyar must not look at lightning or her child will be a restless wanderer and never return to her. And yet, with them, chips from a tree struck by lightning are a lucky amulet for a successful birth.

A similar remarkable idea in Samoa is due to the view, as v. Bülow ² reports, that birth-marks, with which new-born children come into the world, are a consequence of certain transgressions of the mother.

"The Samoans maintain that if the pregnant woman steals food in order to eat it in secret, or if she pilfers any of the food common to the members of her household in order to eat it secretly, or if she takes an egg from a hen's nest and devours it in secret, all these objects which she has secretly used for herself without giving any to others are delineated in black pigment somewhere on the body of the unborn child, and so make the mother's faults public."

Thus v. Bülow once saw a mole of this kind of which it was asserted that it represented the lobe of the liver of a pig which the mother had pilfered and eaten secretly ; another time such a mark was said to represent the head of a hen, and the reason for this was stated to be that the mother had had a violent quarrel with a neighbour about the ownership of a sitting hen.

The pregnant women of Orang Panggang in Malacca, as Stevens reports, lay flowers down beside a tree which belongs to the same species as their so-called tree

of life. On this tree the soul of the future child waits in the form of a bird until it is eaten by the pregnant woman.

“The bird which possesses the soul for the child of the pregnant woman always inhabits the same kind of trees as the tree of birth (tree of life); he flies from one to another and follows the as yet unborn body. The souls of first children are always young birds just out of the eggs; the brood of a bird which possessed the soul of the mother concerned. The birds are able to differentiate between the placenta of a boy and that of a girl. The birds received the souls from *Keii* (the highest god)” (Grünwedel).

Women who, during their pregnancy, omit to eat the soul bird bring a dead child into the world, or else it dies soon after birth.

A peculiar ceremony during pregnancy is reported from Java by Pleyte, according to Poensen:

“In the seventh month of pregnancy the married couple repair to a well or to the bank of a stream. In doing so, husband and wife have the upper part of the body naked. Young plantain leaves are tied under the woman’s arms, a little opening or fold being left in front. They sit down facing each other. The man then takes a bobbin and lets it fall from above through the fold. But then an old woman is at hand who catches up the bobbin, takes it caressingly in her arms and says: ‘Ah, what a dear little baby! Oh, what a lovely little child!’ Then the man lets an egg slip through the fold, and if this, as symbol of the afterbirth, lies on the ground, he takes the kris and cuts the plantain leaf at the place of the fold. When that is done, all the women present come to this place and eat rice with *rudjaq*.”

In the following section we shall hear of a number of other influences harmful to the growing embryo.

3. DUTIES OF THE HUSBAND DURING PREGNANCY

In many nations the beginning of pregnancy imposes quite definite obligations not only on the wife but also on the husband; and among these must be reckoned the rule already mentioned, that, during pregnancy, the husband must avoid coitus and sometimes even every kind of intercourse with his wife. Among the Pshavs, in the Central Caucasus, the uncleanness of a woman during pregnancy passes also to her husband, and he is then likewise excluded from all festivities.

In several South American Indian tribes the husband, as well as the wife, refrains from eating meat during her pregnancy; *e.g.*, among the Guarani the man does not go hunting so long as his wife is pregnant. In other tribes, *e.g.*, the Mauhe (according to J. B. v. Spix), the husband has to fast and live only on fish and fruit. The ancient Peruvians in the realm of the Incas made the husband fast in order to prevent the birth of twins or a miscarriage. On the Amazon there are said to be tribes where the husbands of pregnant women are forbidden to eat fish, male turtles or turtle eggs, and also are forbidden strenuous labour. The Caribs, also, with whom, too, there is the custom of couvade, are specially careful in this respect of the well-being of the expected child.*

In Greenland also the husband must refrain from work until the confinement, as otherwise the child would die. And in Kamchatka a husband was made responsible for the wrong position of the child at birth, because he had bent wood over his knee at the time of his wife’s confinement (see Steller).

On the Andaman islands, Man states that the husband as well as his wife

* Cf. W. R. Dawson.

must not, during the latter's pregnancy, eat palm civet (*paradoxurus*), or lizard (*ingua ja*).

The savage Dyaks in the interior of Borneo must not work with sharp instruments, must not kill animals, and must not fire a gun (see Riedel ¹¹).

Howell also brings forward many more things which are forbidden the Dyak husband for the period of his wife's pregnancy and confinement. These, however, can be got over very simply. If, for example, a man, who must not kill a certain animal, does so unintentionally, he runs quickly away, returns the same way shortly afterwards, and if he then cries aloud with astonishment: "Whoever has killed this animal?" then he has nothing to fear. (The child would otherwise be malformed and would come into the world with its nose bleeding.) Or, if it be ordained that he must not drive a nail, he does it first very softly, then draws the nail out again and then drives it in with force.

Among the Topantunuasu in Celebes the husband, whose wife is pregnant, is forbidden to kill animals or to cut off heads, in short to shed any blood; also in some tribes, he may not have sexual intercourse with another woman (see Riedel ¹¹).

The dweller by Doreh Bay in Dutch New Guinea is during the pregnancy of his wife obliged to submit to certain food prohibitions. He must not eat a certain turtle soup and a certain kind of fish: these latter are called *ikan loeja* (van Hasselt ²).

During the pregnancy of a Kota woman in the Nilgiri Hills her husband must have neither his hair nor his nails cut, according to a report by Mantegazza.

Concerning the inhabitants of the island of Nias, we have the following statements by the missionary I. W. Thomas:

"When a Nias woman is pregnant, she as well as her husband must abstain from such a number of things which in themselves are by no means evil, that one could not help thinking that they must live in continual fear during the whole time of pregnancy. They may not pass places where the murder of a human being, or the slaughter of a caribu, or the burning of a dog (as happens in certain cursings) has taken place, because otherwise there would be something in the expected child of the contortions of the dying person or animal. For the same reason (and others beside) they do not stick a wild or domestic pig, or cut it up, neither do they kill a fowl. And if they are unlucky enough to kill a chicken by treading on it, that is, of course, something wicked, and the mistake must be made good by sacrifice just like any other error. They may not do any woodwork on a house, or roof it, or drive in nails, or stand in a doorway or on a ladder: they may not break off either tobacco or sirih leaf in the betel bag, but must first take it out; all this because otherwise the child cannot be born into the world. Nevertheless, a liberal-minded native did carpentry with me; but when his wife could not bring forth the child, he came and asked me whether he might pull out a nail; he got suitable instruction from me, but also the freedom to act according to his belief; so he drew out a nail and soon he was a happy father. They do not look in a mirror or into a bamboo cane, or else the child will squint; they eat no *bujuwu* (a kind of bird), for then the child would not speak but croak like this bird. They do not take hold of an ape, or else the child will have both eyes and brow like an ape. They do not go into the house where a dead body lies, or else the foetus dies also; they do not eat of the pig killed for a funeral, because, otherwise, the child gets scabies; they plant no plantain trees, or else the child will get ulcers. They eat no *era* (a kind of wood beetle), or else the child will be consumptive. They catch no *baiwa* (a certain fish); they kill no snake because, otherwise, the child will have a weak stomach; they also press no oil, for, otherwise, the child will get pains in the head as a result of this pressing, and they do not cook oil, or else the child gets a headache. They do not go past any place struck by lightning, or else the child's body will be black. They do not set fire to a field, for by so doing rats and mice might be burnt and the child be ill. They do not step over the outstretched legs of another person, or else the child cannot be born. They eat no owl, or else the child will cry like one. They put no salt in the pig's food because, otherwise, the child will get ill; for the very same reason they do not eat

carrion or swear. They do not eat from a cooking pot because, otherwise, the child will be attached to the afterbirth."

During the pregnancy of a Mentawai islander the husband must do certain work which otherwise falls to his wife. He must clean the dishes after eating whilst his wife sits in peace on the verandah of the house.

"The husband therefore," states Maass,¹ "performs all the little household functions so that the mother's child does not turn round in the womb, and that the mother should have no pain when the child moves through the mother working. Neglect of these rules, however, might have the disadvantage that the placenta would follow and the mother would be ill."

The Achinese must not leave his wife alone from the moment that the pregnancy is diagnosed till the forty-fourth day after the delivery, and especially in the interval between sunset and sunrise, in order to protect her from all kinds of ghosts which threaten to endanger the pregnant woman. If the man has two wives, then the rule is that he stays the night, or most of the night, with the pregnant wife. If, however, both are pregnant, then he divides his nightly society between the two. In the first five months of pregnancy he must not kill an animal, not even a snake or a tiger, or else the confinement will be difficult, and the child will assume the characteristics of the slaughtered beast (see Jacobs²).

In Tonkin the prohibitions extend to both parents; sewing, nail-driving, digging and wood cutting are forbidden; the child would suffer from them. In many tribes, *e.g.*, the Mán Kwán Kòk, they are also not allowed to enter certain parts of the house, and that is understood according to the month of pregnancy: there exists, therefore, in order to avoid the proper places, quite a complicated system of reckoning (on the fingers of the left hand) according to the month of the appropriate cycle in which the child is conceived. The sign which is thus reached gives the particular part of the house which is prohibited (*e.g.*, north-west) on a plane which bears the identical sacred signs as they are indicated for the various parts of the hand (see Bonifacy).

Of the Jakûn in the Malay Peninsula, Stevens reports:

"A Jakûn husband never, if he can avoid it, goes out of sight of his wife when she is pregnant. This often made difficulties for me in obtaining men as bearers or guides. The presence of the husband is supposed to contribute to a certain extent to the growth of the unborn child in the womb."

On the Amboina Group the husband may not urinate in the moonlight, for, by exposing his genitals he offends the women in the moon, who could bring about as a result a difficult confinement for his wife.

Further, the husband is here prohibited from constructing tables, chairs, doors, windows and the like, and from driving a nail, etc., because this, too, would also impede the confinement. He must not split bamboo cane to make an axe, for example, as otherwise the child would get a hare-lip. He is also not permitted to open coconuts, to cut hair, or to hold the rudder of a boat (see Schmidt³).

In New Britain, according to Powell, the husband of a pregnant woman may not leave the house.

Among the Yap islanders (Carolines), from the fourth month of pregnancy the husband of a pregnant woman may not eat bananas or fallen coconuts, or pull down a house, because, otherwise a miscarriage occurs; he may not fell trees, or else the child's limbs would break and it would get a hare-lip; or eat plaice because the child would have no strength; or turtles because it would be born without fingers;

or crabs and speckled fish because, otherwise, the child might come into the world speckled ; no string must be twisted as the consequence would be the twisting of the umbilical cord round the child ; also, he may not give away stones, coloured cloth and the usual little articles which he is accustomed to carry about with him in a basket (see Senfft). It is remarkable that the prohibition regarding the eating of bananas is to extend only from the fourth to the sixth month ; the connection here is not apparent.

On the island of Nauru, Brandeis states that the husband who is otherwise accustomed to wear his hair short, leaves it uncut till the child is born.

In Massaua, the man must beware of killing an animal while his wife is pregnant, because otherwise she might easily lose the child (see Brehm).

Among the Asa and Wandorobbo, the husband must avoid the same injurious things as the pregnant wife (Merker) as we have already learnt from the foregoing section.

With the Masai, Merker states that the husband must not leave the kraal or its neighbourhood. He must beware of laughing at a crippled man because of his infirmity, as otherwise the child also would come into the world as a cripple.

CHAPTER XVIII

THE THERAPY AND PROGNOSIS OF PREGNANCY

1. MECHANICAL AND PHARMACEUTICAL TREATMENT

WE have seen how, even among many primitive peoples, the opinion has gained ground that physical over-exertion during pregnancy causes harm to the mother as well as to her child. But, on the other hand, the fact must not be overlooked that a great weakening during pregnancy generally makes the confinement difficult. The English obstetrician, Rigby, pointed out in 1857 that pregnancy and birth pass off most easily where pregnant women continue their usual employment until confinement; also, observations confirm the fact daily that our working woman ordinarily gets over her confinement more easily than the ladies of high position, who in pregnancy lead as quiet a life as possible.

In the earlier cultural stages, however, we continually observe protective measures which are supposed to further the well-being of the pregnant.

Suśruta advised the ancient Hindu women to use a bed provided with bars in which they had to sleep propped up in a sitting position. The Chinese physician quoted by v. Martius advises the pregnant woman to lie on each side alternately, but never to sleep on one side only. He advises lying on the back as advantageous, but on the abdomen as very harmful.

In an earlier section (Vol. II., p. 434), the use of the binder, especially as it is used by Japanese women, was discussed. By means of it a continual and fairly uniform pressure is exercised on the lower part of the body. With many other peoples, it is customary to employ a periodic, interrupted pressure by means of manipulations, which belong to the category of kneading and massage.

In the Malay Archipelago, the use of massage is widespread, and during pregnancy also, it is employed by women doctors or midwives.

Of the natives of Celebes, Riedel reports that they too practise massage on the pregnant. Matthes gives the following description of the procedure among the Buginese and Macassars in South Celebes :

“ Shortly before the expected confinement, a feast is held at which assist all the friends who have sent all kinds of appetising fruits beforehand. The husband and wife sit on the marriage bed, which has been festively decorated. The male guests soon withdraw and proceed to games and cock fighting. Not much time then elapses before two of the four women skilled in medicine sit down on the left and right of the pregnant woman. The latter is laid on her back with her knees flexed and close together, and now the medicine women rub the abdomen well in order, as they assert, to get the child into the right position.”

On Nias, according to Modigliani, pregnant women are firmly convinced that their expert fellow villagers were able to tell them whether the child in the womb was in the proper position, and that, in case the child should be in a faulty one, they knew how to turn it round and assure them a successful confinement. The change of position is accomplished by massage of the body and rubbing with coconut oil.

From this may perhaps be explained the native names commonly given to these

midwives, *salomo talu* and *sangamāi talu*, for *talu* signifies abdomen, *salomo* means rubbing, and *sangamāi* means the maker.

The midwife among the Masai in East Africa follows quite a rational procedure (Merker). At the beginning of the last month of pregnancy, she examines the pregnant woman several times to discover by palpating the body the position of the child. The most favourable position is considered the head presentation; and should the necessity arise, she tries to bring about this position by massage.

In Uganda, massage begins, according to Roscoe, a few days before the confinement; in this case also, the "putting the child in the right place" is obviously the aim.

A similar custom of the midwife in Mexico is reported by v. Uslar. In Guatemala also, according to Bernoulli, the midwife rubs and shakes the pregnant woman's abdomen in order to give the fetus the proper position.

Russian women in Astrakhan will "in the case of the foetus sinking too early or being in an unfavourable position" have their abdomens prepared (in Russia it is called *pravit*). This operation is performed by old women who, with the right hand above and the left hand below, gently knead and palpate (see Meyerson).

In Japan, too, massage is known, and is there called *ambuk*.

A report of Engelmann states that there the assistant palpates the abdomen of the pregnant woman who hangs on to his neck; he supports his shoulders against her breast and his knees between hers so that he has her in a firm grip. Then he begins to knead laterally with his hands; rubs from the seventh cervical vertebra downwards and forwards, and also the buttocks and hips with the palms of his hands, and repeats this treatment every morning after the fifth month 60 to 70 times."



FIG. 662.—Massaging a pregnant Japanese. (From a Japanese woodcut.)

Japanese illustrations, however, show that the massage of pregnant women is also carried out in a squatting position as is represented in Figs. 662 and 663. In Fig. 662, the massage is done by a man, and while it is being carried out, the binder is merely pushed down a little. In Fig. 663, a woman is massaging the pregnant woman who squats before her, whilst the binder has been taken off and is lying on the ground nearby.

In the Sabbioncello Peninsula in Dalmatia, pregnant women consider it necessary to put a pitch-plaster on the small of the back in order to be able to carry the foetus better. O. v. Hovorka, who reports this, also writes further:

"Because of the unaccustomed feeling of burden and strain which inexperienced women, pregnant for the first time especially, have to endure, the midwife is often visited, and she, after an external examination of the abdomen, announces her diagnosis with an important air, namely, that the child has sunk; or another time, for variation, it is the womb which has done so. In this case it is absolutely necessary for the child to be 'raised.' For this purpose, a cake is made of baked beef or mutton strewn with cinnamon and fastened tightly over the lower

abdomen with a binder. In Trstenik I noticed salt meat baked in vinegar used for the same purpose."

In many nations, however, people go much further with those mechanical aids which are supposed to prepare a successful confinement and even introduce the practice of artificially enlarging the birth passage.

The Roman midwives, as we have seen above, used to insert pessaries of fat during the ninth month and to induce stimulations of the os uteri. On the island of Yap in the Carolines, about a month before confinement a roll of leaves of a plant not to be found everywhere on this island, is introduced into the os uteri, and is continually exchanged for new and thicker rolls. These are supposed to be intended to enlarge the orifice in order to make the delivery less painful (v. Miklucho-Maclay).



FIG. 663.—Massaging a pregnant Japanese. (From a Japanese woodcut.)

Thus, in this respect, these arrangements are very similar to the compressed sponges, laminaria or tupelo tents used in European gynæcology.

2. BATHING AND RUBBING WITH OINTMENT DURING PREGNANCY

The idea that baths and rubbing with oil may be beneficial to pregnant women is easy to understand, and hence we find them everywhere extensively employed. With the Orientals they are much in use, especially during the final period of pregnancy, but many other peoples employ them also. As is still the case in India, so no doubt in the earliest times, these specifics were employed in the country of the Ganges.

Yet, according to Vullers, Suśruta considered it harmful for pregnant women to rub themselves with ointment. Not only in the higher castes of India is bathing much in vogue during pregnancy, but also the Nayar women take baths frequently when they are pregnant, and are careful to keep their bodies generally in good condition.

Baths and rubbing the body with fat were also ordered in the ninth month of pregnancy by the Roman physicians; the Arabs, however, following Rhazes, permitted this only in the last 14 days.

The use of warm baths was recommended to pregnant Japanese women by Kangawa ; and in China they are advised to take cold baths and sea baths ; in other places, however, people are afraid of doing harm by bathing.

Very uncivilised communities also have similar hygienic customs. On the Tonga islands, the women, when pregnant, rub their abdomens with a mixture of oil and curcuma to guard against catching cold (Rienzi [Germ. ed., III., 70]). Likewise, on Ceram Laut and Gorong, as well as on the Amboina Group, pregnant women have to bathe very frequently, and on the latter islands they have to rub their bodies twice daily with finely crushed pine and *warear* leaves.

The pregnant Sulanese women, according to Riedel,¹⁰ have to bathe daily and wash their bodies with *kalapa* nut.

Among the Russian women in Astrakhan, the care of the body consists chiefly, according to Meyerson, in rubbing the abdomen with oil or butter.

With the pregnant gipsies in Transylvania, washing the abdomen in water from a spring rising on a so-called lucky mountain is very popular, because, according to the generally prevailing belief, strong and beautiful children will be born after doing this.

The French obstetricians and Ambroise Paré, as early as the sixteenth century, recommended rubbing fats into the thighs, the pelvic region, the perineum and the genitals during pregnancy to make the confinement easier. In the oldest German midwifery book by Rösslin, however, we find the prohibition : " She must also take no steam baths or engage in anointing the abdomen and head." On the other hand, in modern Germany, tepid baths are very popular with well-to-do town women at the end of pregnancy, in order to soften the genitals and alleviate the strain on the skin of the abdomen.

Certain gipsy women, states v. Wlislöcki, use vapour baths if the genitals swell in pregnancy. Then they take a dish filled with the warm milk of some asses or mares, which has some human blood mixed in it, and place themselves naked over it.

3. BLOOD-LETTING DURING PREGNANCY

As is well known, blood-letting played a very special part for centuries among civilised nations (Fig. 664) and also during pregnancy ; until not so very long ago it was a popular precautionary specific. But, among primitive peoples, too, we find isolated traces of the idea that bleeding is necessary in pregnancy. In Brazil, among the Mauhe Indians, many pregnant women make cuts on their arms and legs for this reason. It must, however, be taken into consideration that this bleeding may also be a sacrificial rite and must, therefore, as von Martius points out, be very accurately observed.

Occasionally, in China, too, bleeding is performed during pregnancy, an operation which was first introduced into China by missionaries, and was therefore called " the foreigners' specific." The people believe that a pregnant woman should never let a man open the vein, and the midwives, of course, keep up this belief for their own advantage (see Hureau de Villeneuve).

Blood-letting is very popular even to-day among many Oriental peoples, and, especially with the Persians, it is frequently employed by the female sex. Likewise, during pregnancy, blood-letting is carried out, particularly in the sixth and in the seventh months. But bleeding in the early months, especially towards the end of the third month, is regarded by the Persians as harmful.

Among the Dalmatians, blood-letting during pregnancy is very common. There, as Derblich reports, if the confinement is to proceed without accident, pregnant women must be bled twice and have at least a few pounds of blood drawn off. It takes place once within the first five months, in case sickness, giddiness, backache or pains in the chest set in. If, however, these misfortunes do not manifest themselves, or only very slightly, then bleeding must only be resorted to in order to prevent these unpleasant symptoms. The second time blood-letting takes place in the last weeks of pregnancy, and it is regarded as a preventive of cramp, hæmorrhage and apoplexy if the pregnant woman has the blood-letting bandage on when her confinement begins.

The opposition of physicians to this mischievous but popular custom in respect of pregnancy began quite early, and even Susruta declares blood-letting in pregnancy to be harmful. Whether the Brahmin physicians who succeeded him followed his lead in prohibiting it, we do not know. There is, however, no doubt that at the time of Rhazes this evil custom must again have been widely prevalent, for he had to renew the warnings against it.

According to the regulations for midwives of Lonicerus in 1573, the pregnant woman is "not to be bled in the first four months, and also is not to have purgatives, for in these months the connecting tissues of the embryo are very soft, delicate and weak."

In the beginning of the seventeenth century, however, Hippolytus Guarinonius, in his great work, gave warning of the harm both for the mother and child which arises from blood-letting. He entitles the appropriate chapter: *Von dopelt-Tyrannischen, dopelt verwegenen, aller gebür straffwürdigen Aderlass-Grewln der schwangern Weibern.*

In spite of this, the evil custom was not yet eradicated even in Germany, and,

even until recently, the women in Frankenwald believed that they could not do without repeated bleeding during pregnancy, just as the Dalmatian women thought it proper to be bled shortly before confinement so that they could begin in childbed with the bandage on their arm (see Flügel). Pauli reports the same thing from the Palatinate; there, pregnant women in the country, almost without exception, undergo blood-letting.

The pregnant gipsy, on the contrary, states v. Wislocki, dreads the loss of blood so much that she even catches the blood in a rag if her nose bleeds, and ties the rag to her abdomen "so as not to deprive the child of strength".



FIG. 664.—Cupping during pregnancy. (After Rösslin.)

4. MEDICAMENTAL TREATMENT IN PREGNANCY

In Germany in the sixteenth century, the midwives had a well-supplied outfit of medicaments for the pains of pregnancy, both small and great.

If the pregnant woman fell, or had a fright, so that a miscarriage was feared, then, as a preventive measure, according to the instructions of the old midwifery books, she is to have her genitals perfumed and her abdomen washed with water in which alum, gall-apples, comfrey, wine and vinegar had been boiled. Women who are usually confined too soon are, during pregnancy, to have prepared for them every day, a foot-bath of agrimony, camomile, dill, saxifrage and salt in equal parts and are advised to warm their feet in it one hour before the evening meal and three hours after it, and to dry them with warm towels. Every day, also when fasting, they must take some of the dried inner skin of the stomach of a fowl, to the weight of one gold piece, and mixed with wine. In constipation, according to the rules for midwives of Adam Lonicerus, the pregnant woman was to use a cordial made from borage with butter or lettuce, also, if necessary, suppositories of honey and yolk of egg, or of Venetian soap; if that was not successful, then, with the advice of a doctor, she was to take a purgative of manna and senna. If the woman is troubled with giddiness after conception, she is to drink a mixture made of rose water, dock water, cinnamon and castor-oil cakes. If she has "disinclination for food," she is to have in the morning a drink made from pomegranate syrup, cinnamon sticks and dock water, or a good 'Moret drink,'* to put on a stomach plaster and rub the pit of the stomach with mastic oil, balsam oil, wormwood oil, quince oil, etc. If a woman in this condition menstruates as usual, she is to have put under her to make her perspire a sheaf of the following: plantain, oak leaves, bramble leaves, cinquefoil, pigeon droppings, with bean straw and oat straw in equal quantities boiled in water: she is also to have all her food cooked in water in which a hot steel has been quenched.

Now all kinds of specifics for the troubles of pregnancy are known among the country people in Germany. In the Palatinate, for sickness, midwives generally advise camomile, peppermint and cinnamon tea or a spoonful of Malaga wine, also aromatic pieces of gingerbread, brandy, cloves, cinnamon, nutmeg or blotting paper with cherry brandy. "Sympathetic" specifics also are now and again not altogether despised.

The constipation which sometimes occurs towards the end of pregnancy is treated with a glass of hydromel drunk in the evening before going to bed, or by senna leaves and currants with plum water, drunk in the morning; also sometimes by Epsom salts in beef tea; and enemas are also employed. For troubles of urination, pregnant women use, in a kneeling position, steam from camomile, bran and elder; rubbing with oil of white lilies is also employed as well as drinking almond-milk. For varicose veins, rubbing with spirits is used; in œdema of the labia, dry aromatic fomentations and also local steam baths. In cases of palpitation of the heart, midwives give a drink of cold water or sugar water (see Pauli, pp. 96 ff.).

Aperients for the "purification of the blood" were very popular with pregnant women everywhere in Germany, and Lonicerus, in 1753, had to give a grave warning against them. Even earlier, the Arab physician, Rhazes, warned people against the misuse of purgatives towards the end of pregnancy.

Likewise, in the Talmud, in the Pēsāhim Tractate, it was pointed out that strong aperients were likely to produce a miscarriage.

Among the Romans, pregnant women ate snails and drank a concoction of dittany and pomegranate skins as a preparation for a successful birth, and also to prevent the premature birth of the embryo. Among the superstitious specifics

* [The "Moret drink" was a cordial made from various herbs and mixed with honey or syrup. It was also called Mulberry drink.]

were also ashes of the ibis, stones found in trees, the eye of a chameleon, the first hair cut from a child's head, urinary calculi, etc.

Many modern Greek women have such a dread of medicines in pregnancy that they will not let themselves be treated by a doctor even in cases of illness, states Damian Georg. Every medicine, in their opinion, inevitably results in an abortion.

Japanese women, when they are pregnant, drink a concoction of dried and powdered unborn deer calves.

If the Chinese woman when pregnant is inconvenienced by the movement of the fœtus, she drinks an infusion of sea-kale and white mountain thistle and red lead as well, which is called *Ning kuen-tshi-pao-tan* (see Schwarz). In China, if a pregnant woman is overtaken by illness, the doctors are careful not to order the remedies which give relief in the normal condition, for they believe the nature of women is completely transformed by pregnancy. In this case they prescribe special medicines, some of which are also known to us. Ginseng acts as a tonic; pepper and ginger as opening medicines; rhubarb as purgative. The Chinese say that they are successful in checking the sickness of pregnant women by means of arsenate of iron, which they use also as an aperient; besides this, they give arsenious acid, which they regard as better than quinine in intermittent fever. The Chinese physician, quoted by v. Martius, declaims against excess of medicine during pregnancy. If the pregnant woman has pains in the womb or in the lumbar region, the midwife uses the acupuncture, in which she pushes the needles right up to the uterine cavity; indeed, she even tries to quieten too lively a fœtus by pricking it (see Hureau de Villeneuve).

Among primitive peoples, according to the reports of travellers, medicines are seldom made use of in pregnancy. Nevertheless, some observations in regard to this are noteworthy.

Modigliani² states that the women of Toba, in Sumatra, when they are pregnant, are accustomed to eat a kind of soil named *bange*, which is said to have the virtue of checking vomiting.

Among the Ashanti, if the pregnant woman has pains in the abdomen, an infusion is made of the leaves of a tree (*Leea sambucina*, Willd.), and she has to drink some of this every morning (Bowdich).

The negresses in Old Calabar, according to Hewan (p. 233), are supposed to have a special purpose in taking medicines during pregnancy. That is to say, they want to find out by this means the methods for testing conception. He states that three kinds of pregnancy are regarded by them as disastrous: *i.e.*, that with twins, that with a dead embryo, and that with a child which will die soon after birth. The medicines are supposed to interrupt the development of those embryos which are destined to die, and these people are convinced that an embryo which resists these medical investigations must be healthy and strong. If, then, the ovum is expelled, it is regarded as belonging to the unfortunate rubric. The specific is first introduced through the mouth and rectum, afterwards, however, through the vagina; and, in case of a hæmorrhage following the first, it is applied to the orifice of the womb itself. For this purpose they use three plants, one leguminous, a species of milk weed (*Euphorbia*), and an amomum. The stem of the milk weed, dripping with juice, is pushed into the vagina; on the stem of the leguminous plant some chewed and salivated Guinea pepper is smeared, and then the miscarriage results in a few days. The specifics used often act so violently that a general indisposition, and sometimes even death, ensue.

Nevertheless, as M. Bartels has pointed out, it cannot be denied that these statements sound very improbable. They give the impression of being measures for bringing about an abortion, the real reason for which has not been imparted to the travellers.

5. THE SUPERSTITIOUS PROGNOSIS OF PREGNANCY

We have already heard of many things which can guarantee to the pregnant woman that her pregnancy will reach a happy ending ; and if she neglects the appropriate rules, she has, according to popular belief, only herself to blame if she cannot carry her child to full time, or if her confinement is very difficult, or if the child comes into the world with a deformed or crippled body. There are, however, as it happens, still more signs which foretell the issue of the pregnancy.

Such oracles are known to us, especially those of the wandering gipsies of the Danube lands. An easy and successful birth is indicated if, during pregnancy, they see a stork fly up, or if they hear a horse neigh by day ; but the confinement will be unfortunate if the cry of a nocturnal bird of prey is heard. If the pregnant woman comes across a turtle, she will have severe labour pains ; only if she spits on it can she avert the mischief. If a butterfly settles on her, she will die at the confinement unless she washes that part of her body or of her clothes touched by it.

If a pregnant gipsy hears the cry of a quail, then she will bring a still-born child into the world if she omits to spit at once. The same misfortune happens if sheep run after the pregnant woman. However, here too there is a means of escape. She must drink some milk from these animals, or if this is unobtainable, she must carry some of their hair with her for nine consecutive days (see v. Wlislöcki⁴).

The nomad gipsies in Transylvania and in Roumania have, according to v. Wlislöcki,⁷ still another oracle for the prognosis of their confinement. On the second Easter feast day, they celebrate their actual spring festival, the festival of Green Georg. The evening before, a little willow tree is cut down, and decorated with wreaths and garlands.

“Pregnant women put one of their garments under the tree overnight ; if they find a leaf from the tree lying on the garment before sunrise next morning, the birth will take place successfully.”

The premature death of the child is indicated in Upper Austria and in Salzburg, according to Pachinger, if the mother dreams of a dead fish during pregnancy, or hears the cry of a night owl.

Amulets are in many places supposed to effect a favourable outcome for pregnancy. These have already been discussed. A few more measures may be mentioned here.

Jewish women living in Bavarian Franconia are accustomed, states Majer (p. 18), to bite off the stalk of the tomato in order to have an easy and successful delivery.

In Bavaria, pregnant women sleep on yarn which has been spun by a girl not yet seven years old, because it brings luck.

Among the gipsies, if a pregnant woman meets a snake, she must turn round, otherwise she will have an accident.

It deserves mention here that in the districts of Treviso and Belluno, according to Bastanzi, it is just as unlucky for a hunter to meet a pregnant woman as it is to meet an old one, and in Bari people believe, as Karusio reports, that if a pregnant woman mounts a mare or an ass with foal, it is certain to have an abortion.

The midwives in Annam do not make a prognosis of the course of birth until they are summoned to the confinement. Cadière reports thus:

“She (the midwife) first consults the oracle with two coins ; that is to say, she takes two coins, the head side of which has been whitened with chalk, and lets them fall on a plate. If they fall on opposite sides, *i.e.*, one head, one tail, the operation will be successful. But if both

come down alike, *i.e.*, both heads or both tails, it is a bad sign. She does it over again until she gets a favourable decision."

Among the Macassars, when the feast of the massage of the pregnant takes place and the massage is finished, coloured rice is sprinkled on the abdomen of the pregnant woman, and they get a cock and a hen to pick it up. This is done, they say, to drive away all bad luck and everything repulsive. If the birds, however, are, unfortunately, not hungry, that is a very bad sign, and it is feared that the expected child will not remain long alive (*cf.* Matthes).

When the Jakûn women, as described above, sit at night listening to find out the sex of their coming children, it is considered, according to Stevens, a bad sign if the call of the oracle animal does not sound from one side or the other. That is to say, if it comes from the front, that shows that the child will not live to reach puberty. But it is even worse to hear the call from behind, which foretells that the child will be still-born, or will die soon after birth. In this case, the listening people wake with their lamentations the husband, who has now to get up quickly and chase the animal away so that its cry now sounds from the side.

CHAPTER XIX

PREMATURE DELIVERY AND MISCARRIAGE

1. VARIATIONS IN PREMATURITY

As is well known, every coitus does not normally lead to a conception, but just as little does every conception and pregnancy lead to a normal birth. As the fruits on the tree do not all reach maturity but part of them fall off prematurely, so it happens, comparatively speaking, that not infrequently the human fruit is expelled from the womb before the time of maturity is reached.

If this expulsion of the immature foetus occurs at a stage where, under specially favourable conditions, it can still be kept alive, then one speaks of a *premature birth*. A miscarriage (abortion), on the other hand, is what one calls the birth of a child at a time when it is still unable to lead an independent life outside the uterus.

There is a widespread belief that something externally harmful must always have affected the pregnant woman when she has been unable to carry her child till the normal time. This is not the case, for very often the reason for the untimely birth is to be found in the organism of the mother, or even in that of the father.

Both kinds of premature birth, however, may be caused intentionally, sometimes by the mother herself for social reasons, or sometimes by the art of surgery in order to save the mother's life.

Now we must first of all put the question as to when the foetus is actually viable. From that we shall proceed to discuss premature and still-births.

2. WHEN IS THE FŒTUS VIABLE ?

Long treatises have been written on the question of when the foetus may be regarded as viable, or, in other words, expressed less scientifically, at what period is independent life given to it ? Even up to the present day, we have neglected to differentiate between a "living" tissue as an appendix to the mother and an independent, "living" *individuality*, *i.e.*, a person. It goes without saying that the concept *living* can only be used for the latter, and that the other interpretation is a misuse of the idea, for the second concept only can really be designated as having been "given life" or "*animated*."

In order to make this clearer, we shall give the history of this controversy which has been so much exaggerated on the religious side, and to which we have referred above (see Vol. I., p. 481, etc.).

Luigi Bonaciolo (1639) is of the opinion that the male and female semen need 45 days to form sap, blood, flesh and the remaining parts of the embryo.

"Tunc anima rationalis a sublimi Deo creatur, creataque infunditur."

This question was of the first importance in ritual and forensic matters. Very interesting for the importance of this with regard to social life is a story from the Talmud.

“ We were taught that Rab Jehuda said : Once the maid of a wicked Jew at Rimon had had a premature birth, and thrown it into a pit, and then came a learned priest and lay down over the pit to see whether the premature birth was male or female, so as to determine the period of uncleanness for the maid. But he found nothing in the pit, and when he came before the wise men, they declared the priest clean, although he should have been unclean because he had lain over the pit in which was a dead child. But, since the priest saw nothing in the pit, the wise men said perhaps there were rats and mice in the pit which had devoured or dragged away the child. It is certain that the premature birth was in the pit, and uncertain only whether rats and mice had devoured it, and, nevertheless, in this case, uncertainty produces certainty ? No, that was not the case. There was not a child here, but a blood clot or mole, and by this the priest does not become unclean.”

This implies that the “ child ” was not yet sufficiently formed, and therefore not regarded as a dead child ; that is, not a person who could have made the priest unclean. An already formed child which had died, makes for uncleanness, however, even when it was still in the womb. Thus it reads in Midrash Bemidbar Rabba :

“ If a child in a woman’s uterus has died, and the midwife has touched it with her hand, then she is unclean for seven days, but the mother is clean until the child is out (out of the womb) ” (see Wünsche ¹⁰).

The ancient Hindus said :

“ In the eighth month, life is still feeble. If the fœtus is born then, it does not remain alive, since the power of life is lacking, and it has fallen to the demon of corruption ” (Schmidt ⁹). The ancient Greek physicians had a similar idea.

Hippocrates had established the principle that a fœtus born in the eighth month (*foetus octimestris*) is not viable ; a seven months’ fœtus, on the contrary, can continue to live. Aristotle (*Hist. Anim.*, VII., 4) did not feel quite certain in the matter, for although he declared the eight months’ fœtus to be viable, he added that it was especially so in Egypt, but, on the other hand, less so in Greece. Galen follows this opinion.

Pliny states that before the seventh month no child is viable. In the seventh month a birth does not take place unless by day, or after the full moon, or also in the new moon. It is known that in Egypt births in the eighth month are successful, and even in Italy such children are viable although the ancients maintained the contrary. Moreover, such events take form in manifold ways : Vestilia, the wife of C. Herditius, later of Pomponius and then of Orfitus, three famous citizens, was confined by the latter four times in the seventh month ; then in the eleventh, she gave birth to Suillius Rufus, in the seventh to Corbulo, who were both consuls, and later in the eighth to Cæsonia, the wife of the Emperor Caius. All those born in one of the later periods hover in the greatest danger for 40 days. Pregnant women, however, are in danger in the fourth and eighth month, when premature births are fatal (*Nat. Hist.*, VII., 5).

This opinion of the non-viability of an eight-month child was shared also by the Talmudists. As this theory was not supported by experience, they got out of their embarrassment in their clever dialectic by declaring that a child which was born alive in the eighth month was only a seven months’ child, which had merely tarried a month too long in the uterus.

In the Midrash Bemidbar Rabba, we find that very strange conclusions were drawn from these views. They are a proof of what inept and even absurd results may spring from superstition and religious thought. The passage runs :

“ It is there taught : In the case of a child which comes into the world in the eighth month, the Sabbath must not be profaned, neither must its umbilical cord be severed, nor must it even be carried from one place to another, but its mother must crouch over it to suckle it, and anyone

who carries it from one place to another on the Sabbath is regarded as if he were to carry a stone on the Sabbath. The same holds good when any doubt prevails as to whether it was born in the seventh or eighth month ; the Sabbath must not be profaned for it ; its umbilical cord must not be severed, or its afterbirth hidden, and also it must not be carried from one place to another. But if it is certain that it is a seven months' child, and it is regarded as viable, then the Sabbath may be profaned for its sake, its cord may be severed and its afterbirth removed from sight, so that the newly-born child may not die of cold, and it may be carried from one place to another. *Why may the Sabbath be profaned for a seven months' child ? For this reason, because it is viable.* But a child which is born in the eighth month has not finished its (full) month (it is not a nine months' child) and it is not viable ; therefore the Sabbath must not be profaned on its account. Rabbi Abuhu was asked : Whence is it proved that a child born in the seventh month is viable ? He answered : From your own people. I will produce proof : ζῆτα, ἑπτα, ἦτα, ὀκτώ (He indicates the symbol ' Zêta ' for 7 (hepta) in the sense of ' Zêto ' that shalt live ; the symbol ' Eta ' for 8 (octo) in the sense of ' Hêtta ' defeat, mischance.) But how can one tell that it is an eight months' child ? If the hair and nails are not completely formed. Rabbi Simeon ben Gamliel says : A child which does not live 30 days has not finished its full month, but it is a premature birth. On what does the Rabbi ben Gamliel base his opinion ? On the Torah, because God has commanded that for the purpose of the deliverance the first-born shall not be counted till after 30 days." (see Wünsche ¹).

For a long time the Hippocratic theory prevailed. Thus we find it again with the Arab physician Avicenna, although he, like Hippocrates, admits that for Egypt, and also for Spain as well, eight months' children remain alive and can develop like a seven months' child. In the rest of Europe they were not viable.

Likewise, Bernardus de Gordonio at Montpellier supported this theory in his *Lilium Medicinæ*, composed towards 1307, and tried to prove it on planetary grounds. Jacob von Forlivio, however, living in Padua as a teacher about 1400, went much further in his belief in the influence of the stars on the life of the fœtus in the various months of pregnancy. In his exposition to Avicenna's chapter *de generatione embryonis*, he gives his opinion :

" In the first month prevails Jupiter *quasi juvenis pater* as giver of life ; in the seventh month Luna as promoter of life by her moisture and the light received from the sun : on the other hand, in the eighth month, Saturn, the cold and dry, whose nature is opposed to life with its moist and warm beginning ; hence the creatures which are born under his rule do not remain alive ; in the ninth month, however, the sustaining Jupiter rules again."

Pico della Mirandola, as well as Rueff and Scipion Mercurio, contended against these planetary influences. The theory of the non-viability of the eight months' child, however, continued to exist and stood its ground until the seventeenth century ; it is to be found both in Ambrose Paré and in Scipion Mercurio. The latter found the reasons that these eight months' babies remained alive in Egypt and in Spain whilst they died in Italy, to be in the inferior strength of the Italian women, and the greater coldness of the air, which was more dangerous in Italy to the child accustomed to the warmth of the womb, than it was in the warmer atmosphere of Spain and Egypt.

Men tried also to explain the controversy in question by the falling over of the embryo in the womb. This turning over was supposed to take place at seven months, and then the child could be born at once and remain alive. But, if it remained in the womb after turning over, then it could not have so far recovered from the shock in the course of only one month as to be able to survive the exertions of the birth, since for this two full months were necessary.

Among the lower classes in Philadelphia, according to a statement of Phillips,

there still prevailed in 1888 the opinion that a seven months' child is not viable, while on the other hand, an embryo of six months can remain alive.

Among the Kabyles, the fœtus is considered viable at the seventh month.

According to Karl Schroeder, one sees that children born before the twenty-ninth week usually perish, but also the majority of those born before the thirty-second week generally die on the first few days after birth. Those born later can continue to live if they have very specially careful and painstaking nursing.

3. INDUCTION OF PREMATURE LABOUR

Medical men acquired fairly early the knowledge of female bodily abnormalities which were found to endanger the woman's life most seriously if she were to undergo confinement at the normal time. Hence they did not hesitate in such cases (and with every right, it must be admitted) to induce an abortion artificially, because it goes without saying that the life of the mother is much more important than the life of an unborn child. Moschion also prescribed this :

“ If the pregnant woman has a hard growth or some other obstruction at the orifice of the womb, then an abortion must be caused ; for the full-grown fœtus to which she was unable to give birth would have to die, and her own life would be exposed to the greatest danger.”

Now, it was only a step from this to reflecting whether this artificial abortion could not be put off to a time when the child is already viable. Thus, from artificial abortion was developed artificial premature birth. We can devote only a very little space to it here.

Although in the abortions with which we are to deal later there is almost always present the conscious intention of destroying the life of the developing child, yet the aim of the artificial premature birth is essentially to preserve the life of the child where possible. This active intervention is, therefore, not like the induction of intentional abortion, in the hands of quacks without conscience, but exclusively in those of physicians. Only those cases are treated in which the mechanical conditions in the physical structure of the pregnant woman are such as to make impossible the birth of a nine months' child, and where the mother would, therefore, inevitably die at the delivery.

It is true that physicians of importance have, in earlier centuries, and in similar circumstances, defended also artificial abortion. And nowadays, too, needless to say, it has to be introduced to save the life of the mother in certain sudden illnesses. But to-day the attempt is usually made to preserve the life of the child as well as that of the mother. Hence the pregnancy is allowed to take its course until the time arrives when it may be hoped that the child has reached viability, that is to say, as we have seen, not before the thirty-second week. For accomplishing this, various methods are recommended which belong to operative midwifery and into which we cannot enter further here.

The first recommendation of artificial premature birth came from England towards the middle of the eighteenth century, in particular from Denman (*cf.* II., 175) and Macaulay ; in Germany, it was carried out for the first time by Menzel in the year 1804. The French, under the leadership of Baudelocque, looked askance at this operation, but, since 1831, when Stoltz (in Strasbourg) made use of it in this country for the first time, there, too, it has gradually become the common property of all gynæcologists.

4. STILL-BIRTHS

Although in the following chapters dead embryos will be dealt with as they were brought forth either by natural or wilful abortion, yet it may not appear superfluous if we come to speak of still-births once more here. Although we shall have to touch on many similar things, yet it will soon be perceived that these repetitions are in reality only apparent.

In colloquial idiom, people generally only use the term "abortion" in the strict sense of the word in those cases in which the embryo has died in the womb, and has been expelled from it by premature labour activity while it is still quite small in physical size, that is to say, where it is still at a relatively early stage of development inside the maternal organism. Now, if the embryo has existed a considerably longer time in the uterus, or if it has already arrived at the time in which normally the foetus is fully developed, or not much short of it, or if at least that month of pregnancy has been reached in which, in favourable circumstances, an admittedly premature, but still a child born alive, can be kept living, that is to say, if the physical formation and size of the embryo have already reached a fairly advanced stage, then, if the foetus is brought into the world without life, people no longer speak of an abortion but of a still-birth.

That is to say, every child with complete or almost complete physical development which is born *not alive*, is a still-birth. Naturally we have here, however, many differentiations and gradations to determine. For it need hardly be mentioned that it makes a considerable difference whether the child evolving in the maternal organism dies and the dead foetus is carried by the mother for a more or less considerable time afterwards, or whether the foetus, having reached the normal conclusion of its intra-uterine development, suffers unfortunate traumatising during the act of birth or immediately afterwards which causes its death.

Among many peoples, mothers and midwives have very wrongly designated as *still-births* those cases where they have killed the new-born child immediately after the delivery has taken place. We find such conditions in certain Red Indian tribes, but also among the Hindus, in the Philippines and in certain parts of Central Africa. This form of forcible "still-birth" is said to have been very widely diffused in the beginning of the nineteenth century in the slave states in the south of North America. Here it is said to have been regarded for a long time as the rule that the black midwives killed the children of slaves, while birth was taking place, by piercing the brain with a needle in order to save them from a horrible and unhappy fate similar to that of their parents.

The death of a living and fully developed child during birth, however, happens only with serious disturbances of the mechanism of birth, and especially through prolapse of the umbilical cord, whereby asphyxia due to the compression may occur. The foetal mortality from this cause alone is very high.

Accidents of this kind were not unknown even to the ancient Rabbis: hence we read in the Midrash Shēmōth Rabba:

"Rabbi Jochanan says: He who knows the Torah but does not act in accordance with it, for him it would be better if he had never been born, but that the umbilical cord had been twisted round his face" (see Wünsche²).

Sometimes too great a disproportion in the size of the foetus in comparison with the birth passage of the mother may make it necessary for medical men to kill, to dismember, or even to cut up the child within the uterus in order to make its emergence possible and to save the threatened life of the mother. We shall discuss this more thoroughly in a later section.

Now the causes which bring about the death of a foetus nearly at the end of the nine months' period are of very many kinds, and are, on the whole, identical with

the causes of natural abortion. First and foremost, there are strong influences acting on the maternal organism or violent psychic agitation and serious acute illnesses of the mother, but also certain constitutional diseases from which the pregnant woman or her husband suffers.

When the embryo has died, the pregnancy, at least in its physiological significance, has reached its end. That, however, by no means implies that the dead child will at once be expelled from the uterus by natural forces. It is true that the expulsion of the dead foetus may, in some circumstances, take place very soon after its death ; in an extraordinary number of cases, however, it is retained in the uterus for several weeks, or even months, and it may even happen that it continues to occupy its position in the uterus for a very long time beyond the normal duration of pregnancy.

Now it is, of course, exceedingly natural and comprehensible that, if a woman in the advanced months of pregnancy has met with any of the injuries set forth above, from which her whole organism and especially her nervous system had suffered seriously, she herself, as well as those around her, would like to be certain whether the offspring developing under her heart has been killed by these unfortunate mischances, or whether it has kept alive in spite of them. As early as several centuries ago, physicians made efforts to discover unmistakable symptoms of children having thus died in the uterus.

The great number of these characteristics which they have assembled, furnish clear proof of the extraordinary difficulty of deciding this question with incontrovertible certainty. Thus we find the following observations in Rösslin's *Rosengarten* :

“ By twelve signs given below, a dead child in the womb is recognised. First, if the woman's breasts become limp and soft. The second sign of a dead child is when the child no longer stirs in the womb but has moved before. The third : if the child lying in the womb falls from one side to the other like a stone when the woman turns round. The fourth sign : if the woman's abdomen grows cold when it has previously been warm. The fifth sign is, if an evil-smelling discharge comes from the womb, and especially if the woman has had an acute feverish illness. The sixth sign : if the woman's eyes are sunken and the white gets brown and her eyes stare, or the lips get leaden and dark blue. The seventh sign of a dead child in the womb is when the woman has great pain below the navel, and when working, her face becomes quite out of shape and discoloured. The eighth : if the woman has a desire for repulsive food and drink, such as are otherwise not taken. The ninth : when she cannot sleep. The tenth : if the woman has difficulty in passing urine, desires to defæcate and yet passes little or nothing. The eleventh sign : the woman will usually have a nasty breath and an unpleasant smell on the second or third day after the child is dead. The twelfth sign : if one tests whether the child is dead in the womb by putting a hand in warm water to warm it and then laying it on the woman's abdomen, if the child does not move because of the warmth, then it is dead. And the more of these signs to be found in a pregnant woman, the more certain one is that the child in the womb is dead.”

How deceptive and unreliable most of these signs are will be at once obvious even to the non-professional. Modern midwifery practice understands quite clearly the considerable difficulty in making an absolutely certain decision.

Certainly there are several occurrences which can arouse strong suspicion that the death of the embryo has taken place. These are, in particular, the cessation of the child's movements, and the disappearance of the cardiac sounds of the embryo.

The cardiac sounds of the embryo can be clearly distinguished by a trained obstetrician. If these disappear simultaneously with the movements of the child after they have been clearly

perceptible, then there is ground for suspecting that the death of the foetus has taken place.

The movements of the child have, in the opinion of women, a very remarkable significance. From their first appearance they erroneously reckon half the time of pregnancy ; for Busch states that the first movement is sometimes noticed as early as the twelfth week, and sometimes not till the seventh month. People used to believe that boys moved earlier than girls.

From all these discussions, the reader will have gained the conviction that an absolutely certain decision as to whether a foetus has died in the womb or not, is by no means an easy matter ; and that only a trained obstetrician can give a decisive judgment in the matter.

CHAPTER XX

ACCIDENTAL OR SPONTANEOUS MISCARRIAGE

1. SPONTANEOUS MISCARRIAGE : CAUSES AND PREVALENCE

If we take a survey of the nations of the globe, we find that, in not a few cases, spontaneous miscarriages occur with great frequency ; and there is no doubt that this circumstance is the reason why, among many peoples, such a small number of new-born children is observed. The cause of these frequent miscarriages in very many cases lies in their ill-advised methods of life.

Sometimes, also, in popular belief, the cause of the frequent occurrence of miscarriage is traced to quite erroneous reasons. Thus, Paulus instanced that the statements in II. Kings ii. 19, etc., that the spring in Jericho which Elisha rendered innocuous by casting salt into it had caused abortion in the women. But the obvious supposition is that not the drinking of this water, but probably the carrying heavy vessels filled with it, brought about the frequent miscarriages.

In the same way the overburdening of the women among primitive peoples bears a great part of the blame for miscarriages.

Thus, the evil custom of infanticide prevalent in New Zealand is certainly not alone to blame for the striking sterility in that country, but probably also the effects of the hardships of their constantly wandering life, the hard work and the bearing of heavy burdens are to be held responsible. All this, as Tuke suggests, is no doubt the chief reason for their frequent miscarriages. Whilst, according to some authorities, an average of only 20 women in 487 (1 : 24·25) are infertile in Europe, the proportion among the Maori women was shown as 155 : 444 or 1 : 2·86 (see Wüllersdorf Urbair). The Maori themselves, however, do not lay the blame on abortion, but believe that the cause of the sterility of their wives is their habit of drinking a fermented beverage made from maize.

In Australia, too, according to Gerland, owing to the ill-treatment to which the women there are subjected even in pregnancy, miscarriages are more frequent than with us.

Among the women of the Orang Bèlenda in Malacca, abortion, according to Stevens, is fairly usual in the third or fourth month.

Among the Wolof, according to A. T. de Rochebrune, miscarriages are of frequent occurrence ; and in his opinion the causes are closely connected with the women's mode of life. The chief of their domestic occupations is the exhausting pounding of millet for hours together ; on the other hand, however, they take part in festivities lasting all night at which they perform at musical dances which are combined with rotation of the pelvic region and are certainly dangerous to the pregnant.

As early as among the ancient Hindus, physicians warned pregnant women against such tiring things, for miscarriages might be brought about by rough behaviour, bad gait, by carriage exercise, riding, staggering, falling, drudging, running, beating, lying or sitting in a wrong position, by fasting or by hard kicks. Also by too coarse, sour and bitter foodstuffs from the vegetable kingdom, and by indigestible food, as well as by dysentery, diarrhoea and sickness ;

finally, too, by too many corrosives, for, by the emaciation of the embryo, it is loosened from its bonds, like fruit from its stalk by various accidents. Up to the fourth month, a miscarriage can take place, but even to the fifth and sixth in the case of a strong foetus.

Certain physical predispositions of these peoples to miscarriages must also, however, be presumed. For in the case of other primitive peoples among whom there is not less great exertion and bad treatment during pregnancy, miscarriages very seldom occur.

The mode of life of the lower classes in China also tells in favour of this assumption. For in China the women very often have to provide a very strenuous rowing service. In spite of these great exertions, abortion is not common among them. The case is, however, different among the women of higher position; the wealthy Chinese women have, because of their mode of life, a predisposition to abortion, for their deformed feet compel them to sit too much and adapt themselves to a mode of life that is weakening. Therefore, a Chinese text-book on midwifery gives a whole list of rules for guarding against a miscarriage.

As is well known, the wives of the North American Indians are generally overburdened with work by their husbands, but, in spite of this, Rusch maintains that miscarriages are rare among Indian women; and James found the same.

In spite of the fact that in Persia the women during pregnancy ride astride like men, yet, as Polak reported of Teheran and Hantzsché of Gilan on the Caspian Sea, spontaneous abortion rarely occurs with them. If it does happen, however, it is then often repeated in the next pregnancy, and Polak told Ploss that he had seen a woman there who had had twelve successive miscarriages.

As a cause for the occurrence of miscarriages we must also impute blame to certain manual methods of treatment to which pregnant women are subjected among many peoples. Thus, *e.g.*, among Mexican women, miscarriages and premature births are common, the cause of which v. Uslar ascribes to the mischievous custom of the women having to have the abdomen massaged by a midwife in the seventh month in order to get the child into a good position. Manipulations of this kind have already been discussed above. It may be stated, in addition, that in Java, according to Kögels' report, many women have premature births. The reason for this he considers to be the *pitjed*, *i.e.*, the local method of massage in which the pregnant woman is taken by the hair and limbs and her head and abdomen are pressed (see p. 470).

The bad habit of taking hot baths must, in Tunis, according to Ferrini, and in Turkey, according to Damian Georg, be indicated as the reason for the frequent occurrence of miscarriages in those places. But here, too, the bad habit of irregular diet must be added. We must regard also as an occasional cause of miscarriage the influence of an unaccustomed climate, yet here the real reason is less the high temperature than the malaria which is usually present in such countries. Those who are acclimatised run less risk than immigrants. A popular belief of the Japanese, which Kangawa strove to overcome, is that the eating of fresh-water fish brings about miscarriages. In Jaffa also, according to Tobler, miscarriage is a frequent phenomenon, and midwives are sometimes called in for it. Likewise the women in Cambodia are much subject to miscarriages. Among the Annamite women, on the contrary, abortions are extremely rare, and, as we saw on p. 441, very strict local laws exist to protect pregnant women from punishment which might cause a miscarriage. On the Fiji islands, according to Blyth, spontaneous miscarriage is very exceptional, as it is also, according to MacGregor, on the Canary islands, and, according to Paulitschke, among the Somali. According to Scherzer, miscarriage in the second or third month is said to be very common among Hottentot women. The negresses in Old Calabar, on the other hand, as Hewan reports, were especially afraid of the seventh month.

The lower classes in Germany did not think miscarriages specially worth noticing ; they say of them that " it went wrong " with the woman ; that she was " upset," or, as it is called among the Saxons in Transylvania, " wasted " or " spilt." On the island of Amrum, miscarriage is called a " useless errand."

The Esthonian (Dorpat) women, according to Holst, hardly know miscarriage at all, although during pregnancy they take no special care of themselves.

Among European women, it has been assumed of Frenchwomen especially that they are remarkably inclined to have miscarriages. Here, too, an attempt was made to trace the cause to the abundant use of warm baths.

It may be briefly mentioned here that for pregnant women in Germany the third and sixth months are most dangerous for miscarriages.

Pliny made the remarkable assertion that sneezing after sexual intercourse brings about a miscarriage.

2. PREVENTION OF MISCARRIAGE

It is certain, as has been indicated above, that a number of the complicated rules to which pregnant women are supposed to conform, arose from the idea of guarding against the occurrence of miscarriages and certainly, at least to some extent, the prohibition from having sexual intercourse with pregnant women must be reckoned among these. We sometimes, however, come across quite direct statements about the matter. The woman in Old Calabar must protect herself very particularly against the evil eye, for this is what can expose her to a miscarriage. Also, in advanced pregnancy, she has to withdraw from other possibilities of sorcery, and from the noises and excitements of the village so as not to meet with a miscarriage, and therefore she is accustomed to take up her abode in a quiet farm.

Among the ancient Romans there prevailed the custom that for protection from abortion pregnant women offered flowers to Juno in the grove on the Esquiline Hill, and, while doing so, they were not to have any knots in their garments or in their hair. In Rome, there was a story that when miscarriages occurred frequently, the women prayed to Juno in this grove for the revelation of a means of protection. The goddess cried out the rather obscure dictum : " The goat must spring upon the Italian matrons."

In Bulgaria, according to Strauss, people keep September 24th and 25th as special holidays " in honour of wolves and pregnant women," so that the latter may have no premature births.

We must, of course, reckon a great many religious ceremonies among these protective measures which are adopted by pregnant women. To assist these, prayers, as we have seen above, and sometimes also certain amulets were used and esteemed.

One such protective measure for miscarriage appears in the Talmud (Shabbāth Tractate, 66), the eagle-stone or ætites which is worn by pregnant women. Pliny, too, mentions the property of these stones as a preservative against premature births. In the *Liber lapidum, seu de gemmis* of Bishop Marbodius, who died in 1123, it is said of the ætites :

" Creditur ergo potens prægnantibus auxiliari,
Ne vel abortivum faciant, partuve laborent ;
Appensus laevo solito de more lacerto."

(Ed. Migne, *Pat. Lit.*, 171, 1755.)

We shall hear more details of this stone later.

According to Volmar, the diamond is also useful to pregnant women. He says in his *Steinbuch* :

“ And that wife the stone is on,
Who hears there is a little one,
She may well of this be sure,
That she cannot miscarry,
The while she keeps the finger ring.”

Writing in 1907 of the Jews in Russia, Weissenberg² stated that cornelians, which are said to come from the Holy Land and are usually kept as heirlooms, are much esteemed ; they give high prices for them and call them *Sternschiss* (according to this authority, probably a corruption of *Tarschisch* and *Edelstein*). They preserve the pregnant woman from every mischance, and in particular from miscarriage.

In Bohemia and Moravia, the pregnant woman must avoid kicking cats or dogs, because otherwise she will have a miscarriage. This is by no means an irrational rule when one considers that the violent movement necessary for it may have disastrous consequences.

The Hippocratic school ordered a great deal of garlic or the pistils of the *silphium* plant to prevent miscarriages, for the sap of these plants was supposed to produce wind, and everything that causes flatulence is, in their opinion, beneficial for pregnancy.

In the medical lore of the Samoans there is, according to Krämer, a medicine “ for women who are near having a miscarriage in order to check it.” It consists of young leaves of the wild pepper plant and the leaves of the wild orange. Let these be pounded together and “ then drink.”

In ancient India, if the physicians thought that a miscarriage was likely to occur, they ordered oleaginous and cooling specifics.

For the pains, they ordered *Wrightia anti-dysenterica*, *Phaseolus trilobus*, Ait., *Glycyrrhiza glabra* L., *Flacourtia cataphracta* Roxb., and *F. sapida* Roxb., to be drunk with sugar and honey ; for suppression of the urine, they gave a decoction prepared from *asafetida*, *Allium sativum* L., *Acorus Calamus* L., etc. In violent bleeding, powder of *Costus arabicus* L., *Andropogon serratus*, *Domestica terra*, *Mimosa pudica* L., flowers of *Grislea tomentosa* Roxb., *Jasminum arborescens* Roxb., etc., was given ; in the case of pains without bleeding, they gave milk with *Glycyrrhiza glabra* L., *Pinus deodara* Roxb. (4), and *Asclepias rosea*, also milk with *Oxalis* L., *Asparagus racemosus* Willd., and *Asclepias rosea*, as well as various similar combinations. If the foetus was expelled in spite of this, then they gave the woman a diet of cow's milk with *Ficus carica* L., and *Sālātū* ; but, if the foetus was dead, then the woman was given a tisane of *Paspalum frumentaceum*.

Suśruta said that, in order to guard against a miscarriage, the woman was to pass her wet hand upwards above the navel three times and murmur a prayer while doing so (see Schmidt⁹).

At a still earlier period, however, people in India took refuge in exorcisms in cases of threatened miscarriage. One such incantation is contained in the Atharva-Veda. According to the translation by Bloomfield, it runs thus :

“ The goddess Prisiniparni has prepared prosperity for us, mishap for Nirriti. For she is a fierce devourer of the Kanvas : her, the mighty, have I employed.

“ The Prisiniparni was first begotten powerful ; with her do I lop off the heads of the evil brood, as of a bird.

“The blood-sucking demon, and him that tries to rob health, Kanva, the devourer of our offspring, destroy, O Prisiniparnî, and overcome !

“These Kanvas, the effacers of life, drive into the mountain ; go thou hurrying after them like fire, O goddess Prisiniparnî ! Drive far away these Kanvas, the effacers of life ! Where the dark regions are, there have I made these flesh-eaters go.”—(Ed. Bloomfield, p. 36.)

Here the plant “prisiniparnî” (*Hemionitis cordifolia*) is used to divert the demons (*kanva*) who wish to devour the unborn embryo.

At the present day, according to Rose,² the Hindu woman uses as a preventive of miscarriage, a piece of wood from a gallows on which someone was hanged, a piece of a bier, or a piece of tiger claw. If in the Dera Ghâzi Khân district in the Punjab all the children of a woman die, then she wears on her right hip a piece of iron from a sunken boat and from which a kind of chain has been made.

Again, if a woman brings a still-born child into the world several times in succession, the people believe that the same child reappears on each occasion. “So, in order to thwart the intentions of the evil spirit which has taken possession of the child, the nose or a part of the ears is cut off and the body thrown on a dung heap” (see Schmidt ⁹).

The Olo-Ngadjoe, a Dyak tribe in the south and east of Borneo, are afraid of the *antu Kankamiak*, a horrible little demon which lies in wait for the child in the womb. In order to appease him, pregnant women make sacrifices to him (*cf.* Pleyte).

Among the Battak in Sumatra, Römer states that the *guru* or sorcerer, performs an incantation on little children so that a *tendi* (soul) may pass on the command to the unborn fœtus “not to change the clothes,” *i.e.*, to remain in the womb. In order to be pleasing to the *tendi* of such a fœtus, women, who already have children living, bring gifts to the pregnant woman in which also the *tendi* of her fœtus may find pleasure, so that the child, in case it should come to a miscarriage, will be possessed by this *tendi*.

It has already been mentioned in an earlier section that in Annam it is believed that abortion can be caused by the spirits *con rank* which enter the bodies of the embryos in order to assist them to become incarnate, but which can then never be born alive. Their magicians, the *thây pháp*, arrange a special exorcism in order to set the women free from the *con rank*. Landes describes it as follows : “Two dolls are made of straw, which are to represent the mother and child, arranged as in a situation of ordinary life, *e.g.*, the mother rocking the child or giving it the breast. Then a *con dôn* is called in, which means a person who acts as medium in the exorcism, for hypnotism always plays a prominent part in the manipulations of the *thây pháp*.

“This medium,” Landes states, “is supposed to be controlled by the demon of premature deaths. His clairvoyance is sometimes tested by making him guess something, as, for example, what has been hidden in a box. The *thây pháp* summons the demon, adjures him to stop tormenting the family where the exorcism is being done and orders him to put, as a sign of consent, his signature, that is to say, the mark of his phalanges on a sheet of paper. When the demon consents, the medium dips his hand in the ink and impresses it on the paper. If he resists, he is threatened, long needles are stuck into the cheeks of the medium and usually he ends by submitting. At the end of the ceremony the two dolls are burnt.”

They have, however, still another specific, according to Landes :

“To get rid of this curse, several practices are used. First, as a kind of preventive measure, a young dog is killed, cut into three pieces and buried under the bed where the woman is to be confined. With the blood of the dog, magic characters are inscribed on the amulets which she wears. Finally, at the entrance of the room, an inscription is carved, the purport of which is :

'When thou wert alive, thy blood has stained the magic knife of Hu'ng dao (and yet) thou continuest to try to re-enter the breast of women.' These practices are intended to remind *con ranh* of the fate which awaits him if he continues to disturb the peace of the family."

It is believed that when the *con ranh* have once taken possession of a woman, that they then enter the embryo at once in each of her successive pregnancies, and the Annamites, as Landes relates, have a special method of making sure of this supposition :

"To verify this opinion, one can make marks on the body of the still-born child, on its brow or on its arm, which marks are supposed to be reproduced on the body of the following child whose malevolent identity is thus proved."

A woman who has had the misfortune to be afflicted with the *con ranh* can, however, pass them on to another woman. The beds, clothes and dishes used for such a woman and her child are usually taken to a remote place and burnt.

"Unscrupulous people prefer to throw them away so that, being picked up by the poor, the *con ranh* attaches itself to them and passes into their family."

Such conduct is certainly regarded as extremely immoral and severely judged by public opinion.

The fear of contact with a woman who has been afflicted with the *con ranh* is, states Landes, extraordinarily strong among the Annamites :

"A newly-married woman would not dare accept a quid of betel from a woman who had had several miscarriages, or wear any of her clothes, hats, etc. People even refrain from speaking of the *con ranh* before women for fear that this subject of conversation might bring them bad luck and that the spirits might attach themselves to them."

If the wives of the Bush people, the Hottentots, the Bergdama (Haukhoin) and the Herero in South-west Africa wish to prevent a threatened miscarriage, the woman lies down quietly on her back and is covered with the skin from a freshly killed animal (see Lübbert).

3. THE DISPOSAL OF THE FŒTUS

The disposal of the dead foetus presents many difficulties in civilised countries. If the embryo does not go to some anatomical collection or other, then the midwife has to provide for a quiet interment.

We saw that among the Jews a miscarriage was thrown into a hole, as related in the story quoted above from the Talmud which Rabbi Jehuda tells (see Vol. II., p. 480).

The Talmudists, however, as we have also seen, were anxious to obtain possession of the foetus which had been expelled by abortion, in order to enquire into the degree of development, as well as to the sex for ritual purposes. On these occasions, many observations of importance to embryology were made.

The physicians of the sixteenth and seventeenth centuries took great pains to get dead embryos for their embryological studies. The first illustration of such an abortion (one in the third month of pregnancy), we owe to Count Ulysses Aldrovandi of Bologna, whose magnanimous sacrifice of money in the interest of natural sciences caused him to end his life in the workhouse of his native town. Fig. 665 shows a reduced copy of it.

Heinrich Schliemann, in his excavations in Hissarlik, found the remains of three human embryos carefully interred in urns. They were not burnt, and it was possible to reconstruct the skeletons almost completely. They are now in the Ethnological Museum in Berlin. These embryos belonged to the so-called third town, but one, of six months, was even found in the first town, and thus bears witness to the extraordinarily great age of this remarkable custom. We shall see at a later place that among the Banians in Bombay also unborn children were not burnt. Moreover, in Pliny, too, is the like assertion :

“To burn a human being before he has got his teeth is not customary in any nation.”

The clay vessel in which the embryo from the first town of Hissarlik was found is shown in Fig. 666.

The Murray Islanders in Torres Strait have the custom of desiccating a still-born child and hanging it up in the wind. Hunt states that sometimes the little corpse is painted as well.

Among the Orang Bēlenda in Malacca, when a miscarriage has taken place, it is, as Stevens



FIG. 665.—Abortus trimestris.
(After U. Aldrovandi, 1642.)



FIG. 666.—Clay vessel in which an embryo was buried.

reports, buried as it is without special ceremony after a hole has been dug for this purpose.

In an illustrated manuscript in the Department of Engravings in Dresden, there is the following observation accompanied by a picture of a Tapuya woman :

“But it is horrible and shocking to men’s ears to hear that a woman, when she has brought a dead child into the world, from that hour tears it to pieces, and at as many meals as possible, devours it, alleging that as it is her child from her own body nowhere is it better preserved than in the same place” (Richter ¹).

Bastian ⁶ says of the Siamese :

“ As dangerous enchantments can be carried out with an aborted embryo, it is immediately handed over to a reliable magician who, with a shining sabre in his hand, carries it in a pot to the river and there throws it into the water with maledictions. According to Finlayson, in Siam the hands and feet as well as the head of the child of a mother who died in pregnancy are cut off, put on the body of a child modelled in clay and set up as a charm.”

These charms with parts of the bodies of undeveloped children are known also in the popular sorcery of European peoples. Thus, in some Hungarian and Roumanian parts of Transylvania, the little finger of the left hand of a still-born child is buried in the foundation of a new building to protect it from lightning. He who cuts off this finger gets light from lightning in the dark, and it will be seen by nobody. Moreover, according to v. Wlislöcki, the heart of such a child put in an ordinary burning candle, or a tallow light, mixed with flesh and blood from its body is supposed, according to Magyar belief, to make people invisible to everybody.

The Hungarian nomad gipsies use the blood of such miscarriages for making an ointment by cooking it with the blood from the unhappy mother as well as with the male and female genitals of a dog and bitch on St. John's or St. Thomas's night. H. v. Wlislöcki writes :

“ Now, if anyone goes out to steal, he smears his hands with this ointment, and, while doing so, he repeats the following formula :

“ Of the child and mother
Dead blood
Is here united ;
Dead dog
To bitch
Here he comes !
Like animal, like blood
Here is joined
So that what I wish
Be now for me !
So that what I want
To my hands may cleave ! ”

“ Before a North Hungarian gipsy mounts a stolen horse, he smears the inner side of his bare legs with this ointment and also both sides of the horse, and, as he mounts the horse, he repeats the formula given above.”

Of the Annamites, Landes reports :

“ When a woman has several miscarriages in succession or loses several children at an early age, it is thought before the following one is born that it is the same spirit which attaches itself obstinately to the family and returns to it incessantly.

These spirits are the *con ranh* which have already been mentioned several times, and we have seen how people try to get rid of them. The belief in them requires also that aborted embryos shall be buried in quite a special manner.

“ They cut the body of the still-born child into three parts—legs, head and trunk—and bury them separately, each at a cross-road so that the spirit may have the greatest possible difficulty in finding the way back to the house. Even if they do not cut up the body, at least they bury it with the same end in view at a cross-road.”

Krämer writes of the Samoans :

“ Especially feared was premature birth or the passing of an unformed mass of blood which was specially dreaded in the case of blood relations. According to tradition, from such aborted masses numerous demons take rise, like the Soesā, the horrible Moso, the Sovea Si'uleo, and, finally, the Segā parrots, which appear so frequently in song, and the Nafaua, who were the issue as blood clots of a union between Savea Si'uleo and his niece Talafaigā.”

The Segā is the Fringilline lory of Samoa (*Coriophilus fringillaceus*).

In Dalmatia, according to v. Hovorka, an abortion must be buried quickly. If that is not done according to order, people believe that a hailstorm will soon arise.

4. THE SYMPTOMS OF INCIPIENT MISCARRIAGE

Hippocrates adduces the softening and beginning of flabbiness in the breasts as signs of incipient abortion. The influence of the mother on the frequency of abortion was well known to him. According to Diocles, cold spasms and heaviness in the limbs appear. Soranus of Ephesus is more precise in his knowledge of the symptoms of miscarriage. According to him, watery fluids first flow from the genitals, followed by blood, which appears as if mixed with water. If the embryo is detached, then pure blood issues which is accumulated in the cavity of the uterus, coagulated and then evacuated. In women about to have a miscarriage, there is a heaviness and pain in the small of the back, in the abdomen, the groins, the eyes and the limbs ; there is stomach trouble, coldness in the limbs, perspiration, faintness, opisthotonos, epilepsy, sickness, sobbing, cramp and sleeplessness (see Pinoff). According to Moschion, the signs of an incipient miscarriage are swelling of the breasts without known cause ; a feeling of coldness and heaviness in the region of the kidneys ; a discharge of different kinds of fluids from the vagina ; and finally, the discharge of the fœtus amid repeated horripilations. According to Hippocrates, says Soranus, women with medium-sized bodies have a miscarriage at the end of two or three months, for their cotyledons are too much filled with mucus so that the fœtus is not held firm in them, but is severed from them. Specifics are therefore recommended which loosen the mucus, such as particular pessaries made from colocynth, heating and drying food, friction, etc. All these are obviously specifics for hastening abortion.

Among the medical Talmudists there was a difference of opinion as to whether in abortion the uterus could or could not open without loss of blood, and whether abortion was accompanied by pain in every case. They believed, like Hippocrates, that the south wind has great influence on the occurrence of abortion. The Rabbi Jehoshuah says in the Babylonian Talmud :

“ The majority of women bear children regularly ; the minority have miscarriages and, when this is the case, they are children of the female sex.”

That does not correspond with the actual state of affairs, for it is statistically proved that among the children expelled by abortion, the male sex is far more preponderant. That form of miscarriage which the Talmudists mention as discharge of semen from the uterus (*ἐκφύσις* of Aristotle) is regarded by them as a corruption of the male sperm which the uterus expels three days after coitus. They also assume a secondary abortion. Apart from the aforementioned amulet, the Rabbis did not bring forward any prescriptions for the treatment of miscarriage.

In the opinion of the Chinese physicians, a miscarriage is threatened if the pregnant woman is shivery in the first month.

If the woman has pains in the back and sides, bleeding and retention of the urine ; if she runs hither and thither and has tearing pains in the uterus and in the intestines, she was regarded by the physicians in ancient India as having symptoms of an incipient miscarriage.

In Frankenwald, according to Flügel, the ninth day is especially feared in a threatened miscarriage, for people believe that on this day the danger may easily return.

In Galicia, the midwives try to help by anointing the abdomen and by warm cataplasms, until the uterine hæmorrhage ceases either owing to the expulsion of the embryo, or because of the death of the mother.

In the Province of Cayambe in Ecuador, Stübel observed how a man came to the assistance of a native woman who had a miscarriage. He put his hand into the vagina, and while the woman stood in front of him, drew the fœtus from her genitals.

CHAPTER XXI

INTENTIONAL ABORTION OR TERMINATION OF PREGNANCY

1. SIGNIFICANCE OF INTENTIONAL ABORTION

A CONSIDERATION of intentionally produced abortion presents considerable interest from various points of view, the most important being cultural, but also from the sociological, legal, and, finally, medical aspects.

Above all, it must not be imagined that the effect of the penal codes has been or ever will be sufficiently powerful completely to eliminate abortion. It stands to reason that it exists as a necessity of far greater range than people as a rule are willing to admit. In any case, the reduction * of the total population is thought by many to be a pressing necessity in every European nation, and whichever Government is first to recognise this, to that nation will the future belong. We need quality in the individual and not quantity in the masses which only breeds a proletariat obstructive to civilisation.

2. THE PREVALENCE OF ABORTION AT THE PRESENT DAY

In Australia it has been observed that "owing to the difficulty connected with bringing up children," the native mothers often bring about abortions (*cf.* Klemm (I., 291); Oberländer¹); similarly, in New Guinea (Keysser).

On Tami, Neuhauss² reports that the woman who has brought on a miscarriage wears a short mourning veil for some time, which is equivalent to "court mourning for 24 hours" or "half mourning."

Among the Sinaugolo in British New Guinea, according to Seligman, sexual intercourse amongst girls before marriage is common. Illegitimate children, however, are rare, for they impair considerably the value of the girls. Hence abortion is common, and if it should fail, then the girl's mother often kills the unwanted grandchild immediately after birth. In Doreh in New Guinea, owing to the heavy domestic work, the women do not bring more than two children into the world, and they induce abortion in every succeeding pregnancy. This explains the small increase in the population.

In New South Wales, according to v. Scherzer, in the account of the *Novara* cruise, the natives are rapidly becoming extinct because abortion is spreading. Missionary activity also contributes to this because it is quite unsuited to the mode of life of this people.

In New Zealand, until a short time ago, abortion was as common as infanticide. Tuke (p. 725) reports that the Maori women often cause abortion; with many of them, as he says, this is said to have happened twice or three times, even from ten to twelve times. It is true he does not know whether abortion is brought about artificially or by accident; nevertheless, one is obliged to assume that the former is often the case. In New Mecklenburg, where abortion is common, infanticide also

* [It does not follow, however, that by the legalising of abortion this would be attained.]

takes place. Domeny de Rienzi, in his work on *Oceania*, describes the privation and distress inflicted on native women by their own people both during pregnancy and birth and asks if one can wonder that many of these women deny themselves the happiness of becoming mothers and take violent measures to avert the results of their fertility. Among the natives of New Caledonia, according to the reports of de Rochas, not only do common prostitutes honour the custom of abortion, but also married women to escape the bother of suckling, and to preserve longer certain physical charms; to which assertions Moncelon also agrees. The Loyalty Islanders, according to Samuel Ella, drink the water from a hot sulphur spring in order to cause abortion.

Of the natives of New Caledonia, Samoa, Tahiti and Hawaii, it is reported that they bring about abortions so that their breasts may not become drooping and flabby.

On the Society Islands, according to F. D. Bennett (I., p. 148) abortion took the place of the infanticide which was formerly customary. On the island of Ugi, belonging to the Solomon Group, the women often bring about abortion. Elton's informant knew of several cases where abortion was caused in pregnancies of from three to seven months, but he was unable to discover what kind of specific they employed. He knows that it is a drink made from the leaves of a shrub growing in the island; moreover, they put tight bandages round their bodies. There are only a few women who know the secret, and they make a profitable business of it.

On the Hawaii Islands, where infanticide used to be customary, in later times, according to what missionaries say, only half the marriages are fertile. Rufus Anderson (p. 30) found children strangled or buried alive in Hawaii, and according to Wilkes, voluntary abortion is very common there. On the Fiji Islands, states Wilkes, there are many midwives who are mostly concerned with the business of abortion so commonly practised there. The native midwives assured Blyth that accidental abortion is quite unknown among the Fiji women and that when abortion occurs it is quite certainly intentional. Several motives seem to influence the induction of abortion. The Fiji women have an avowed dislike of large families and feel ashamed if they become pregnant too often, as they believe that a woman who brings a great many children into the world becomes the laughing-stock of the community. Hence, they try by means of abortion to lessen the number of births or to avoid having one pregnancy follow another too quickly. Moreover, they often bring about abortion to annoy their husbands if they are jealous of the latter because of supposed infidelity. The same thing happens in the case of illegitimate pregnancy in order to escape the disgrace. On Samoa, infanticide is something which is quite unheard of. Abortion, on the other hand, coupled with the use of mechanical measures, is extraordinarily common. The motives for it are various; sometimes it happens from shame, sometimes for fear of ageing too soon, sometimes, however, it is to be ascribed to dread of the difficulties of rearing children.

Artificial abortion was formerly very common on the Gilbert Islands owing to the barrenness of the ground and the consequent struggle for life.

Krämer says of Samoa that "abortion by kneading and massage is just as much in vogue nowadays as formerly when I often had opportunities of convincing myself among my patients."

On Buru in the Malay Archipelago, emmenagogues are much used in order to avoid having children, and abortion is generally tolerated and often practised on women and girls. The specifics employed appear to cause no lasting physical injury to the women. Also on the Amboina Group, on Babar, Keisar and the

Watubela Islands, abortion is much practised. On Keisar, the women do so against the will of their husbands, so as not to have more than two children. The Watubela women carry out the two children system in the same way. On Babar, pregnant women resort to abortion in order not to be excluded from coitus, which is strictly forbidden during pregnancy. The Eetar Islands women also make use of abortive means, yet quite secretly. In Galela and among the Tobelorese such are likewise used a great deal (see Riedel¹).

The Achin women, too, often practise abortion, states Jacobs.² But they do so only when the husband gives his consent.

On the island of Engano, according to Modigliani,² abortions are frequent, because many girls, when they are pregnant, practise it in order to escape bother, and to be free more quickly, but they do not practise it from fear of punishment.

Of the Aru islands, Ribbe, writing in 1888, says : " One seldom finds more than three children to one married couple : as in the whole of India, so here also abortion is permitted. It is a blessing with the over-population of India, and owing to the present administration, the deplorable state of its internal politics.

According to Stevens, no steps are taken among the Orang Lâut in Malacca to guard against children ; anything so atrocious was not considered possible. Among the wives of the Orang Jakûn, on the same peninsula, however, abortion was well known ; it took place in order to lessen the work connected with rearing children, but was, however, only rarely practised, for, if it were discovered in the case of a *married* woman, the husband was permitted to beat her severely with a club, and if she was unintentionally killed in the process, then he was not called to account for it. When a premature birth occurred, a judicial trial before midwives or older women chosen by the husband took place in order to find out whether the wife had caused the abortion intentionally. If she were found guilty then, as we have said, the husband *might* punish his wife. He was, however, not obliged to do so, and if he did not, then she got off free. If an unmarried girl had had recourse to abortion, then she lost all standing in the tribe ; she was despised by the other women and rejected as a wife by the men ; she was also exposed to the disgrace of being chastised by her parents. According to M. Bartels⁷ this, in any case, needs closer investigation.

Montano thinks that the use of abortive specifics does not exist among the inhabitants of the Philippines.

In Brunei on Borneo, there is no infanticide for the reason that it is anticipated by abortion, in which the natives have such skill that they know how to achieve their purpose without danger to the patient. As there, men of high rank are accustomed to superannuate their concubines after the first and second confinements, the women shrink from no means of keeping themselves longer in their favoured position. Moreover, half the daughters of noble birth remain unmarried ; and in order that they may not be made pregnant as a result of illicit sexual intercourse, preventive measures sometimes are used (see Sir Spenser B. St. John,² p. 745).

In Kroë and in Lampong in Sumatra, according to Helfrich and Harrebommée, abortion often takes place. Jacobs¹ states the same of Java and of Bali. He says :

" Every Bali woman knows a number of abortifacients and there is no doubt that they are often used. Hence, it happens that so few illegitimate children are born (although most of the daughters of this very voluptuous tribe practise prostitution). And not only unmarried women have recourse to these specifics." One of the Panjeroâns, *i.e.*, the servants of the princes of Badong on Bali, told Jacobs that as soon as one of them became pregnant, she had to report to the prince, who at once gave her a Chinese obat (called pênggèrèt). This " mixtum quid,"

black in colour and harsh in taste, produces a feeling of warmth, and nearly always, it is stated, has the desired result.

Among the Hindus, G. Smith states that midwives as well as women barbers were much occupied with abortion. In no country in the world, says Allan Webb of Calcutta, are infanticide and abortion so common as in India, and although the English Government has succeeded in preventing the killing of new-born children, yet it can do nothing against the abuse of abortion, which so many mothers have paid for with their lives; for everywhere, there are people who make a trade of abortion.

As a particular cause of the frequent occurrence of abortion in India, Huillet cites the custom of marrying girls at a very early age; hence they often become widows early; and in this widowed state, they resort to prostitution in order to get a living, but, if they become pregnant, they have recourse to abortion in order to avert disgrace for themselves and their family.

Among the Munda-Kol in Chota Nagpur, it happens, according to the missionary Jellinghaus (p. 365), that wives of the very poor, when they become pregnant, go to the old women and use abortifacients.

Abortion is very common in Armenia; of 400 women who had conceived, Minassian noted that almost half had had three or four abortions each.

Shortt, in 1868, reported the enormous spread of abortion in India. It was practised from religious prejudice as much among the Hindus living in the English Presidencies as among the pagan tribes.

In Kutch, a peninsula north of Bombay, Lieutenant MacMurdo found the women very licentious and abortion common. A mother boasted that she had induced abortion five times in succession.

Among certain non-Mohammedan tribes in Central Asia, Maclean reports that a woman will undertake abortion with or without the knowledge of her husband, and both she as well as the healer who performs the abortion are exempt from punishment. The killing of the child after birth, nevertheless, is regarded as just as culpable as murder.

In Cochin China also, Crawford in 1830 stated that abortion was very common and not regarded as a criminal means of making a speedy end to the inconveniences of illegitimate pregnancy.

The Chinese are known to be acquainted with abortifacients and not infrequently make use of them.

Abortions, according to Rutherford Alcock (I., 122), are very much in vogue in Japan among unmarried women. How little people think of abortion there appears from the following statement of Wernich:

“The foreigner, when he takes a Japanese woman as concubine, very often declares beforehand that he does not want any children; how the woman fulfils his desire is left to her.”

Polak denies that intentional abortion occurs in Persia among married women. Chardin, however, asserts that women try to bring about an abortion when they see that, owing to the restraint which is imposed by Persian custom during pregnancy, their husbands are inclined to have dealings with other women (see Vol. V., p. 465).

We may consider the Turks here because they really have to be regarded much more as Asiatics than Europeans. Owing to the ease and impunity of abortion in the Orient, there are no illegitimate children. But among the higher classes in Constantinople, it often happens that married women induce abortion if they have

already had two children, one of which is a boy. According to Eram, midwives are chiefly employed in this, a state of affairs which here, as everywhere, is harmful.

Thus Oppenheim (p. 64) declares :

“ In Turkey abortion is often attempted and is permitted up to the fifth month, because Mohammedans believe that up till then there is no life in the foetus. Married people often ask for abortifacients publicly and without embarrassment. Abortion is desired by the husband so that he may not have too many children to support, and by the wife (with her husband's consent) for fear pregnancy might spoil her charms. It is also employed, however, by a man who has had sexual intercourse with a slave.”

In Constantinople, at the instigation of Prado, an official investigation was made of such cases as had come to the knowledge of the courts of justice. It was found that in 10 months of the year 1872, these proceedings had, in more than 3000 cases, given rise to criminal trials.

In Africa abortion occurs in a considerable number of peoples. In the discussion of the most commonly used abortifacients, we shall revert to several of these tribes. Here we mention only the Egyptian women (Hartmann,³ p. 404) and the Algerian women (Bertherand, p. 543). In Algiers, one sees Jewesses carrying on these practices in public places.

On the Canary Islands, according to MacGregor (p. 74) the fertility of the women is very great, and even prostitutes often give birth to children if they do not use specifics to cause abortion. Abortion is often practised, and this is all the easier as, in the country, the plants and herbs by which abortion can be produced are well known ; in the towns, there is no lack of women for the purpose.

On Massaua in the Gulf of Arabia, Brehm reported that abortion is very common because fathers are obliged to hang their daughters should they become pregnant without being married.

Among the Wachaga in East Africa, according to Gutmann, abortion is common ; he states as a reason for the frequent practice of abortion even in marriage that it is considered a disgrace if a woman, who is still suckling a two-year-old child, again becomes pregnant.

The key to this explanation may perhaps be found with Nigmann. He states that among the Wahehe abortion is practised wholesale ; and also the killing of little children immediately after birth is not punishable. The practice of abortion, owing to which a woman among the Wahehe seldom has more than two children, is connected with the custom of sexual intercourse being forbidden during the nursing period. Since coloured people generally, and hence also the Wahehe, suckle for a long time, and neither party puts much value on abstinence, the obstacle is simply put out of the way.

The Swahili, according to Kersten, regard abortion as possible from the second till the fourth month of pregnancy. Among the Wolof negroes, too, it is common, states A. de Rochebrune (p. 284), but among the Loango negroes it rarely occurs.

Of the Bakongo, Pechuel-Loesche¹ (p. 28) says :

“ It appears that only single women, especially those who have for a long time led too free a life and in their riper years are afraid of being confined, try to effect abortion in secret by kneading and pressing the abdomen as well as by eating excessive quantities of red pepper.”

Büttner¹ is convinced that artificial abortion is practised also among the Herero.

That the Ovambo tribes in former German South-West Africa are acquainted with the arts of abortion is evident from Wulfhorst's report :

" A girl must never give birth to a child *before the efundúla* (the puberty festival). If she becomes pregnant, an abortion is caused either by manipulations or by a drink, and many of them die from these processes."

Of the wives of the Herero, Bergdama, Bushmen and Hottentots in former German South-West Africa, Lübbert says :

" Abortions are fairly common and are mainly artificial in origin. Convenience would appear to be the principal motive. The idea is very simple. The pregnant woman from the third or fourth month onwards has a friend of either sex tread on her abdomen. In addition to this, the abdomen is tied as firmly as possible above the uterus with a piece of string in order to check the growth of the foetus. Internally they take saltpetre or an excessive quantity of cooking salt. These measures apparently do no harm except in the rarest cases."

Las Casas (I., 229) and Petrus Martyr (*De reb. ocean.*, p. 294) corroborate the fact that abortion is practised among the natives of America. The excessive toil imposed on them by the Spaniards is said to have driven the women to this because they did not want to have their children fall into a similar state of misery. F. de Azara (II., 59, 116, 179) and Eschwege state of several South American tribes that the families rarely bring up more than two children at most ; very often it is only one child, and further pregnancies are cut short by artificial means. Among these tribes are the Lengua, the Guaycuru on the Paraná, and, according to Dobritzhofer, also the Abipones. But if the Guaycuru women become pregnant after their thirtieth year, then they bring up their children. The fact that in these tribes sexual intercourse with the husband is prohibited during the period of pregnancy and prolonged lactation is regarded as a probable reason for causing abortion.

The Mbayá in Paraguay practise abortion for the reason that the women fear to age prematurely by carrying their children for the full nine months and because, with their hardships, the rearing of children is too fatiguing. The already fast-dwindling Payagua also constantly practise abortion.

A section of the Indian women on the Orinoco believe, as Gilij reports, that by having children at a very early age female beauty is best preserved. Others believe, on the contrary, that in this very way they fade quickly and therefore they try to rid themselves of their pregnancy.

Whilst some North American Indian tribes abhor artificial abortion, *e.g.*, the Chippewa, many other tribes, owing to the custom common among them of practising abortion, are nearing extinction. Among the Winnebago, for instance, in the year 1842, each woman had, on an average, one child ; in the Oregon territory they had at most two. It is not improbable that the blame for this apparent sterility rests on spontaneous and artificial abortion. In a few North American tribes, according to J. D. Hunter (p. 195), the families bring up only three or four children ; abortion disposes of the rest. According to A. Mackenzie (p. xcvi.), abortion is common among the Cree and among the Indians of Astoria on the Oregon territory, according to Moses.

The wives of the Catawba Indians, according to J. F. D. Smyth, practise abortion extensively, especially in extra-marital pregnancy. That Smyth seldom found mothers with more than two children may easily be explained by this.

Of the Dakota, Schoolcraft reports that they use several plants as specifics for abortion, which often cause the death of both mother and child. Unmarried pregnant

women practise abortion regularly, but married women also not infrequently do the same.

Currier reports that intentional abortion occurs frequently among the Crow and Assiniboine Indians and is carried out by a woman who is especially experienced in it. In many cases a pointed stick is inserted in the womb and the ovum pierced. In other cases an arrow is driven into the ground and the patient leans her abdomen on the upper end, which is about 2 feet above the ground, and rolls herself to and fro on it until the foetus is ejected. Another method consists in the pregnant woman lying on her back on the ground and a wide board being put on her abdomen. Two or three of her friends take turns at hopping on this board until blood issues from the vagina ; or the abdomen is kneaded and trodden on till the embryo is expelled. Rough as this procedure is, it is asserted that death rarely results from it.

3. INTENTIONAL ABORTION IN CIVILISATION

It is well known that among the white people in North America abortion is a very common practice, and that particularly in all the big towns of the United States institutions exist in which women can have an abortion performed. It is said that not infrequently women visit these establishments with the knowledge of their husbands, and they find it so little immoral that, as is reported, women tell quite casual acquaintances that they did not want to have children and so they are going to St. Louis or New Orleans to have an abortion. This custom has quickly become common in the towns of California also.

[From figures published by the U.S. Department of Labour (Children's Bureau) it appears from the 1927 Reports on maternal mortality that in 1587 maternal deaths that were investigated 50 per cent. of the abortions were intentional. Of the 700,000 abortions which are thought to occur annually in the United States it is generally conceded that the most common are intentional. As a result of abortion in the United States it has been estimated that some 15,000 women lose their lives annually.]

We cannot compare the question of abortion among the civilised nations of Europe at the present day with that of primitive peoples. First of all, we lack, above all, any material with regard to the latter that is really reliable. The observers are either "explorers" with or without specially appropriate training for such questions, and in any case almost without any training in sexual questions ; or missionaries whose prejudice in such questions no one can deny. Very often, of course, it was a good thing when the prohibition of abortion was introduced among certain peoples in a favourable social condition. It is entirely different with modern civilised nations which are mostly over-populated to such an extent that a further increase in the population presents a very considerable danger. What made our German forefathers so fit and vigorous ? The sensible ratio of the total population to the factor of maintenance. In this question we may refer to various essays in *Geschlecht und Gesellschaft*, 1921, 10 : thus Kafemann, *Gesetzliche Freigabe der freiwilligen künstlichen Geburt* ; Werthauer, *Die Abtreibung* ; v. Reitzenstein, *Zur gesetzlichen Freigabe der freiwilligen künstlichen Geburt* ; v. Reitzenstein, *Zur Abtreibungsfrage* ; Stöcker, Helene, *Der Zwang zur Mutterschaft* (these last three essays in the supplement *Sexual Reform*).

In the large towns of Europe also, abortion appears to be practised much more extensively because the reasons for it are more urgent. In 1864 Tardieu showed

statistically in Paris that trials of persons for abortion carried on as a profession were increasing.

In Paris, during 1826–1830, only 12 persons were charged with causing abortion; in the period 1846–1850, however, 48 were charged, and in the year 1853, 111 persons, of whom 58 were sentenced. But the suspicion that there is an increase in abortion affects not only Paris but other towns as well. According to Tardieu, among 1000 people with severe sentences between 1854–1861 were 37 midwives, 9 doctors, 1 druggist, 2 charlatans, etc.

We have to thank Galliot for a detailed statistical work, published in 1884, on the judicial cases of abortion which have occurred in France since 1789. According to his figures, the number of cases where legal proceedings were taken between 1831 and 1880 amount to 1032. The charges are distributed according to periods as follows:

In the year	1831–1835	were	41	cases
„	1836–1840	„	67	„
„	1841–1845	„	91	„
„	1846–1850	„	113	„
„	1851–1855	„	172	„
„	1856–1860	„	147	„
„	1861–1865	„	118	„
„	1866–1870	„	84	„
„	1871–1875	„	99	„
„	1876–1880	„	100	„

These statistics need no explanation, although, since they only record cases brought to trial, they do not furnish any data on the actual number of intentional abortions during the specified periods.

The urban women in Serbia, according to Valenta, are supposed to make frequent use of methods of causing abortion in order to escape the troubles of confinement. F. S. Krauss¹ states that, as

“Jukić testifies, infanticide is the order of the day among the Slav Turks, and, as he adds with hesitation in imitation of Turkish stupidity, also among Christians. The same is true in the case of the Slavonic lowlands, where the peasant women cause abortions still more frequently. Twenty years ago the women of one whole village near Pozega were on trial for abortion. One mother had thrust a spindle into the abdomen of her own daughter to produce an abortion. The daughter died of internal injury. The husband complained of it and the whole affair came to light. Altogether about 30 women were charged. The matter, however, went up in smoke.”

Among the Southern Slavs the same author states that many callous husbands compel their wives to do heavy work so that they may have a miscarriage. Popular opinion, however, condemns such proceedings and stigmatises it as most disgraceful.

According to Maschka (p. 324), abortion is carried on as a profession in Prague, and in Italy abortion occurs frequently. Ziino, who wrote a text-book on woman in forensic medicine, reports that there are certain houses in Naples in which it is undertaken; as an advertisement these houses have elegant glass cases in which there is a collection of foeti preserved in alcohol.

[Owing to the legal position regarding abortion it is at present quite impossible to obtain any reliable figures regarding its prevalence. Statistical material supplies merely an idea of the cases brought to light in which the death of the mother is generally involved. The successful cases are not tabulated at all. The criminal average in Great Britain was 12 from 1900 to 1904 and 48 from 1920 to 1924. In Bavaria there were 72 convictions in 1916 and 690 in 1924. Heynemann gives the

percentage of criminal abortions in 1922 as 89 for Berlin, 66 for Munich and 70 for Hamburg.

Intentional abortions are more common among married than unmarried women taken as a whole, although it would appear that the unmarried are larger in the younger age groups. Urban centres seem everywhere to provide a greater number of intentional abortions than the rural districts, as might have been expected.

In Russia, where abortion by properly qualified medical persons is now legal, there is one death in 25,000 cases, according to Genss¹ (see Halle, p. 143). According to Genss¹ (*ib.*, p. 144), Russia is now the country where abortion is least practised, in spite of the fact that in 1930 there were 175,000 abortions, one *abortarium* accounting for 55,000. The result of the Russian experiment has caused a decline in the maternal death rate from sepsis, although how far harmful results arise from the abortions it is impossible to say; yet it is clear that these would probably be worse under secret abortions. In one Moscow clinic the average number of abortions per patient is seven, some women coming two or three times a year, and some having been aborted 15 times (see Halle, p. 142).]

Even in ancient Rome abortion was well known; at first morals were strict and marriage sacred, but with the over-population during the Empire, abortion became common so that Juvenal sang:

“ But in the richly gilt bed is seldom a woman in child bed.
To it is brought art, the help of doctors.
Rejoice, thou unfortunate; and whatever it may be
Hand her the potion thyself, for were she a mother,
An Ethiopian perhaps thy son to inherit
Thy whole wealth, a black boy from whom thou must fly in the morning.”
(*Sat.*, VI., 594 *ff.*)

The sorceresses and fortune-tellers in Rome, who practised abortion as a sideline or a speciality, were called *sagæ*. It is thought, states Galliot, that the French *sage-femme* is derived from this.

4. MOTIVES FOR ABORTION

It might seem almost superfluous to devote a special section to the motives which can induce wives and maidens to resort to forcible methods of abortion, but to those who have read the foregoing particulars it will long since have occurred that the motive force is not the same in all cases. “ There is always a very strong motive needed,” says Stricker,¹ “ to transform the natural tenderness of the mother towards her born or unborn child to destructiveness.” Even in fairly highly civilised nations perhaps the mother’s tenderness does not generally go very deep. The girls in Frankenwald say characteristically: “ It cannot really be murder for it has not life.” And among savage nations, as we have seen, a little conjugal quarrel is enough to move the mother to artificial abortion.

Certainly until the beginning of the twentieth century the most usual and the most widespread cause of abortion was the intention of doing away with a “ dishonouring ” pregnancy: whether it was a question of the pregnancy of an unmarried woman or that of a wife who wishes to destroy the product of adultery. That is to say, fear of disgrace or of the severe punishment not infrequent in such cases caused the mother to resort to measures for abortion. After these, together with the reduction in the infant death rate, it is the difficulty of maintenance which is

at the bottom of abortion, the feared or actual impossibility of providing the necessary means of support for a new addition to the family. [Genss,² as a result of the study of 200,000 in Russia in 1925, found that the causes varied somewhat in urban and rural districts. Thus he found :

	In Towns.	In Country Districts.
	Per cent.	Per cent.
Want	66.4	58.2
Illness	19.3	29.7
Desire to conceal pregnancy	1.6	7.3
Owing to infants at the breast	12.7	4.8

Apart from these reasons, however, and the growing weakening in moral restraint, it must be pointed out that the emancipation of woman and the propaganda put forward by feminists in defence of their "rights" have caused an increase in erotic sensibility in woman to which numbers of abortions may be ascribed. The refusal of young women to permit their temporary lovers to employ preventive measures is now sufficiently well known and their reasons are invariably that abortions can so easily be obtained that it is now unnecessary.

Moreover, the enormous prevalence in juvenile unemployment with the consequent over-stimulation in certain directions (*cf.* South Wales) must inevitably lead to a desire to prevent offspring, and thus increase the number of intentional abortions.]

In many savage tribes fashion plays its part. It is often not the custom to have children during the first years of marriage, or it is ordained that not more than one or two children should be born, and consequently the results of additional impregnations are destroyed prematurely. Moreover, the disinclination of the woman to undertake the trouble of lactation, or the hardships which, especially in the case of nomad tribes, are connected with looking after a young child, must be considered motives, as well as the effort to save the husband from the discomforts of a nursery. Jealousy and feminine vanity also are by no means blameless. The former gives a ground for artificial abortion when the wife fears that because of her pregnancy her husband might turn his attention to other women. Women also cause abortions from vanity in the hope that by avoiding pregnancy they may keep their figures young and girlish as long as possible, and especially that they may keep their breasts firm and round. The insatiable desire for sexual intercourse with the husband (who must keep right away from his wife during pregnancy) supplies, in many peoples, a strong motive for intentional abortion. Many women also who are accustomed to suckle their children for several years interrupt a fresh pregnancy artificially in order not to lose their milk because of it. As has already been said, many wives try to annoy their husbands, when they have a passing or a deeper grudge against him, by bringing on a miscarriage.

The Masai, whose hygienic and medical principles, in accordance with their comparatively advanced cultural development, are very sensible, practise, according to Merker, artificial abortion, *quoties mulier ab alio aegroto vel sene vel debili gravida effecta est*. According to the same authority, conjugal infidelity of the wife is a conception unknown in Masai ethics; yet, on the contrary, as we saw above, a prostitution of the wife is sometimes even a duty and no immorality, in our sense,

exists. The obvious motive for this procedure is a high appreciation of the national health, which is seen also in their practice of killing deformed children.

Only one other motive need be mentioned : that is, the care for the health and life of the mother, who would run a great risk by being confined at the normal time. The fact that primitive peoples also are acquainted with these considerations is proved by a statement which Engelmann¹ (p. 602) makes about the Indians of the United States. He says :

“ Among some of our Indians, especially those in closer contact with civilisation, laxer morals prevail and we find abortion quite frequent : some tribes have a reason for it, on account of the difficult labour which endangers the life of the woman bearing a half-breed child, which is usually so large as to make its passage through the pelvis of the Indian mother almost an impossibility.”

All these reasons, which Bartels wrote in 1913, are, in 1926, after the World War, almost worthless for our present European conditions, since they now have reference only to primitive peoples. Here our cultural development, *i.e.*, public and private progress, plays the decisive part.

We have already sketched the course of development in the history of abortion (see Vol. I., pp. 481 ff.), and now wish to bring forward an actual account from the Germany of our own time which best reflects the pre-Hitler development of the question ; for all the debates as to the necessity for the repeal or adjustment of §§ 218/219 (paragraphs dealing with abortion) of the State Code have found an excellent elaboration in the action, in 1924, against the chemist Heiser * in Berlin, and proved the absolute justification of the necessity for repeal or adjustment. Public interest and the relative absence of danger in the expert's hands have, in any case, been sufficiently proved.

Meanwhile his trial has taken place. It was remarkable in more than one respect. First, because there was concerned a human being who consciously and with conviction maintained the right to this succour ; secondly, because it could not be proved, even before a judge, that he took upon himself this work so dangerous for him from selfish motives in order to enrich himself by the distress of those seeking his help ; thirdly, because in his big practice no case of death could be proved (11,000 cases are claimed) ; and lastly, because of the number of distinguished medical expert opinions which were expressed which tend to a reform of § 218.

Of the experts may be mentioned here Dr. Felix Theilhaber, Dr. Magnus Hirschfeld and Professor Dührssen. Dührssen also reports on a discussion which took place recently in a medical society, in which the decrease of illegitimate births was definitely attributed to intentional abortion.

The sentence, which was pronounced by Schneider, Director of the Provincial Court, was—in spite of the Public Prosecutor's proposal of five years' penal servitude, two years' imprisonment, making allowance for one year already served, and for Mrs. Heiser, eight months for which her time of trial was allowed.

The Court, as before stated, in passing sentence, conceded to Heiser extenuating circumstances, since he had become possessed by an *idée fixe*, and stated that it had not been convinced that avarice and the exploitation of these poor women, as usually happens in such cases, was the motive with him.

* [The specific employed by Heiser, details of which have been published, consists of a paste injected into the uterus by a special syringe. It can be used up to three months, and in a revised form is no longer said to induce the cramps which occurred when the original Heiser prescription was employed.]

From the determination of the accused to conduct a campaign against the § 218, the Court deduced accordingly culpable acts.

This trial had wide publicity. Almost all the big daily newspapers, along with the report of the proceedings, defined their attitude in principle.

Meetings of all the groups and organisations specially interested in the repeal of § 218 took place. Thus the Social Democrats and the Communists held great meetings. The "Bund für Mutterschutz" (Society for the protection of mothers) had a great demonstration in the Berlin Town Hall shortly before the trial. Shortly after the trial, the "Gesellschaft für Sexualreform" (Society for Sexual Reform) made a demonstration in the great hall of the Trade Union Building against the existence of § 218 as a class law against the poor and against its operation, recalling the worst tortures of the Middle Ages.

In the discussion it was asked that women, like the workers on May 1st, should on a certain day in the year, form a crowded procession in the streets to demonstrate against this disgrace to civilisation. In conclusion, the meeting passed the following resolution :

"The meeting of protest attended by over 1000 men and women of the 'Society for Sexual Reform,' which includes members of all parties, on the 20th May, 1924, protests against the still active disgrace to justice of the R. St. G. B., §§ 218/219, and demands not least of all, in consideration of the frightful economic conditions in Germany at the present day, the immediate withdrawal from use and repeal of the paragraphs regarding abortion, and further, an immediate amnesty for men and women still in prisons and penitentiaries who were sentenced in accordance with § 218.

The meeting carried a motion to send a delegation to all parties in the Reichstag in order to insist emphatically on their demands ; and if need be, to precipitate a decision of the people on the repeal of §§ 218/219."

And in the end, what did the highest legislative organ in Germany, the Reichstag, do in regard to this vexatious question ? It was not of the opinion that quality is better for Germany than quantity, but in its party politics, on May 7th, 1926, it decided on the following resolution which was passed in the third reading :

"In division by 214 votes to 173, the proposal of the legal committee is passed, which gives the following wording to § 218 : 'A woman who kills her embryo in the womb, or expels it, or permits another to kill, will be punished with imprisonment. Likewise, any other person who kills the embryo in the womb, or expels it, will be punished. Anyone who performs this act without the consent of the pregnant woman, or as part of a profession, will be punished with penal servitude. Likewise, anyone who professionally supplies a pregnant woman with any specific or any instrument for abortion will be liable to punishment. If there are extenuating circumstances, then imprisonment for not less than three months is decreed."

5. METHODS OF ABORTION UP TO THE MIDDLE AGES

A very great number of ways and means have been discovered by the various races for extinguishing the growing life in the womb before birth. Sometimes they employ drugs and medicines for this purpose, sometimes manipulations of a mechanical nature. The more uncivilised a people is, the more uncouth are the methods of work. Many of the medicines used by us, even now, as popular specifics were used by physicians in earlier times as abortifacients. Certain methods of operative interference also, which our physicians did not use until modern times, have been in use among some nations from a very early period.

The old Hindu physicians used abortifacients mostly of vegetable extraction, which they gave when the abdomen swelled abnormally in pregnant women; yet, even at that time, some doctors maintained that this affliction sometimes disappears of itself. They considered special means suitable for each month of pregnancy; thus for the first month: *Glycyrrhiza glabra* Linn., *Tectonæ grandis semen*, *Asclepias rosea* and *Pinus Dêvandâru*; for the second month: wood sorrel *Sesamum orientale* Linn., *Piper longum*, *Rubia munjista* Roxb., and *Asparagus racemosus* Wild.—and so on to the ninth month: *Glycyrrhiza glabra* Linn., *Panicum Dactylon* Linn. (8), *Asclepias rosea* and *Echites frutescens*.

The ancient Jews, too, were acquainted with abortifacients, although their use was most strictly forbidden (see Wunderbar, Abt. 4, p. 24).

Among the Greeks, in Plato's time, midwives were permitted to bring on abortion where it appeared to them to be useful (v. Siebold, I., p. 108). The ancients divided abortifacients into *φθόρια* and *ἀτόκια*; the latter prevent conception; *φθόριον* destroys the embryo already conceived (see Pinoff in *Janus*, 1847, 2, 16).

One method of abortion, the Hippocratic collection (*De nat. pueri*, 13), recommended in the case of a dancer and, although the opinion is expressed that a *φθόριον* should not be given to any woman because it is the business of medical art to protect and preserve what is begotten by nature, yet, in this case, it seems to have been successful so that, after jumping seven times, an alleged six days' old embryo was expelled.

Among the ancient Greeks and Romans, *Mentha pulegium* and saffron (*Crocus sativus*) are said to have been used as abortifacients.

According to Duncker (II., 354) among the Bactrians, Medes and Persians there were old women who brought on abortion in pregnant maidens by means of "baga," or "fracpata," or other "decomposing" kinds of trees; the nature of which, however, is not known.

Among the ancient Romans, Soranus declared every abortion to be dangerous, although he himself made use of it in isolated cases of physical affliction. He thought it better to prevent conception than to have to destroy later the life of the embryo. According to Soranus, the removal of a dead child from the uterus should be effected by putting in the orifice dry sponges thinner at first, and later thicker, or by inserting papyrus.

For bringing on abortion he, as well as Ætius and others, recommended the compression of the abdomen by binding, severe shaking, injections of astringents, *fel tauri* and *Absynthium*: friction of the genitals, baths, astringents for internal use, plaster of cyclamen, *Elaterium*, *Artemisia* Linn., colocynth, *Coccus cnidius*, natron, *Opoponax*, etc., and also specifics for causing sickness and sneezing. Further, one is to insert a pessary of *Iris*, galbanum, *Thymelæa* berries, turpentine mixed with oil of roses and cypress, and on the following morning, to steam the genitals with an infusion of fenugreek and *Artemisia* Linn. Galen (*Gloss*, 482) speaks also of a special instrument for this purpose, the *embryo-thlactes*, the construction of which, however, is not fully known.

Bleeding, lifting and carrying heavy burdens, fasting, irritation of the orifice of the womb by a roll of paper, a quill, a piece of wood, etc., were used by Arab physicians to bring on a miscarriage when the normal delivery might be dangerous to pregnant women owing to their small size. At the same time, a great many internal medicines were used. We find these enumerated in Avicenna (*Lit. can.*, 12, 13), but also a peculiar long-necked *instrumentum triangulate extremitatis* was used by him to open the orifice of the womb, and then to inject it with material for causing the abortion.

Abulcasis, who lived in Spain in the beginning of the twelfth century, in a chapter: "De cautela medici, quod non decipiatur a mulieribus in provocatione menstrui, ne destruat conceptus," strongly opposed the widespread custom of having abortions. If artificial abortion should seem necessary, then one should get the advice of an experienced midwife.

The abortifacients of the old Arab physicians have been summarised by Pfaff. Among them are: *Calendula officinalis* Linn., *Ammoniac*, *Anagyris fœtida* Linn., *Juniperus Sabina*, Linn., *Iris florentina* Linn., *Cyclamen europæum* Linn., *Artemisia arborescens* Linn., *Adiantum Capillus Veniris* Linn., *Amyris gileadensis* Linn., *Daucus Carota* Linn., *Gentiana lutea* Linn., *nux Abyssinica*, *Lepidium sativum* Linn., *Cucumis colocynthis* Linn. (carried in the vagina kills the embryo), *Cheiranthus Cheiri* Linn., *oleum Abrotani*, *oleum irinum*, *Aristolochia rotunda*

Linn., *Crocus sativus* Linn., *Gnaphalium consanguineum*, *Aspidium filix-mas* Sw., *Seseli tortuosum* Linn. (6), *Saponaria officinalis* Linn., *Stachys germanica* Linn., *Ferula persica* Willd., *Laurus Cassica* Auct. (5), *Sesamum orientale* Linn., *Pinus Cedrus* Linn. (4), *Anchusa tinctoria* Linn., *Nigella sativa* Linn., *Laurus nobilis* Linn. (8), *Bryonia dioica* Jacq., *Rubia tinctoria* Saisb., *Mentha* Linn., *Momordica Elaterium* Linn., *Veronica Anagallis* Linn. (4), *Costus arabicus* Linn., *Hedera Helix* Linn., *Clinopodium vulgare* Linn., *Centaurium majus*, *Apium Petroselinum* Linn., *Bubon macedonicum* Linn. (1), *Daphne Cnidium* Linn., *myrrha*, *Thymus Serpyllum* Linn.

These specifics were sometimes used internally, or sometimes introduced into the vagina as irritant pessaries ; or sometimes abortion was brought about by the introduction into the uterus of little pads of wool sprinkled with irritant powder after an opening of the orifice had been effected by means of softening pessaries.

The German physicians of the sixteenth century, among other medical specifics for bringing about miscarriages, mention the smoke from ass-dung, an adder's skin, or myrrh, castoreum, sulphur, galbanum, dyer's madder, hawk and pigeon's droppings. They gave the woman wine with asafetida, rue, myrrh or sabine, also an infusion of figs, fenugreek, rue or marjoram. They put plugs of cotton into the vagina with ammoniac, opopanax, hellebore, *Aristolochia* Linn., colocynth, cow gall and rue sap ; they also smeared these plugs with rue sap and scammony with birthwort, sabine, garden cress, etc. The pregnant woman had to drink the milk of another woman ; also further, dittany juice with wine ; then followed baths with water mint, mugwort, bitumen, etc. Not until fairly late did more effective medicaments come to the knowledge of the doctors. According to Richard ergot first came into the range of the medical knowledge of obstetricians in the year 1747.

6. PRESENT-DAY METHODS OF ABORTION AMONG EXTRA-EUROPEAN PEOPLES

We come now to a survey of the procedure among modern peoples, and we shall begin with savage communities.

F. de Azara (I., 116) once asked the Mbaya women in Paraguay what they used to effect abortion. " You shall see immediately," they replied. Thereupon one of the women lay down on the ground quite naked and two old women began to deal her the most violent blows on the abdomen with their fists until the blood ran out of the genitals. This was a sign that the embryo was about to be expelled and Azara heard a few hours later that it really had occurred. At the same time, however, he was told that many of these women experience the most harmful effects from this procedure throughout their whole lives, and that many even die during the operation itself, and some from the results of it. Rengger also says of the Payagua in Paraguay :

" If a woman already has several children, then at her next pregnancy she has her abdomen kneaded with the fists in order to bring about a premature delivery, a proceeding which was imitated even by white girls in Paraguay."

Among certain of the Indians in the far North-West of America, Jacobsen has been present when medicine men kneeled on the abdomen of girls and women to suppress the growing embryo.

The Indian women of Alaska also sometimes have a miscarriage brought on in the fourth month of pregnancy. It is done by manually kneading and compressing the uterus through the abdomen (see Dall ²).

Of the Eskimo women Bessels (p. 112) reports :

“ Just as in Christianised Greenland the pregnant make use of the heart stick (a piece of wood for stretching wet foot-gear), so the Ita women of Smith Sound use either a whip-handle or some other object, and knock or press against the abdomen with it, which procedure is repeated several times daily. Another way of producing abortion consists in the perforation of the foetal membranes, an operation which is rather astonishing. A thinly cut walrus or seal rib is sharpened at one end like a knife edge, while the opposite end is rounded and blunt. The sharpened end has a cylindrical covering of dressed sealskin open at both ends and corresponding to the cutting part of the piece of bone. At both the upper and lower ends of this covering is fastened a thread of reindeer sinew from 15 to 18 inches in length. When this probe is introduced into the vagina, the blade part is covered by the leather sheath. When the operator thinks she has penetrated far enough, she gently pulls the thread fastened at the lower end of the sheath. By this means, the blade is, of course, laid bare, then a half turn of the probe is made and, at the same time, a push upwards and inwards. After the rupture of the foetal membranes has taken place, the instrument is drawn back again ; first, however, the thread at the upper end of the probe is pulled in order to cover the sharp end of the probe and thus to avoid injuring the genital canal.”

Bessels learnt that this operation is always performed by the pregnant women themselves.

The inhabitants of the northern part of Hudson Bay, states Henry Ellis (p. 198), make their wives induce abortion by the use of a certain herb which is common there, so that they may be relieved of the trouble of rearing children ; and of the Iroquois women in Canada, Frank records the same.

Among the Omaha Indians, abortion is unusual. The story is told that a few years ago Standing Hawks' wife became pregnant. He said to her : “ It is bad for you to have a child, kill it.” She asked her mother for medicine. The mother prepared it and gave it to her. The child was still-born. The daughter of Wackanman-cin induced an abortion every time she was pregnant. That, however, was an exceptional case.

The Shasta Indians in North California, according to Bancroft, used as abortifacient great quantities of the root of a parasitic fern which grows at the top of their fir trees.

Steller records of the natives of Kamchatka :

“ It might be said of the Kamchadale that sensuality is their object in marriage, rather than the begetting of children ; for they try to get rid of pregnancy, and to induce abortion by herbs as well as by external contrivances. For the induction of abortion, they have various methods which so far I know only by name, but have not yet seen. The most horrible is that they squeeze the child to death in the womb, and cause its arms and legs to be broken and crushed. And then, if they abort the dead embryo whole, or if it putrefies and comes away in pieces, it often happens that the mother must lose her life with it.”

In Armenia, where artificial abortion is very common, Minassian states that decoctions (*e.g.*, of saffron, juniper, oleander) are drunk, or it is induced in a very crude manner by the introduction of a piece of wood.

In Siberia girls used the roots of *Adonis vernalis* and *Adonis apennina* for inducing abortion (see Frank, II., 57).

Among the Kalmucks, Pallas states that an unwanted pregnancy is ended with the assistance of old women, who try to achieve this purpose by long-continued massage of the abdomen, by applying live coals wrapped in an old shoe sole to the region of the uterus and by other irritant manipulations, which the girls are said to

endure with the greatest patience (see Pallas,³ II., 235). Demič cites "Labrador tea" from *Ledum palustre* as an abortive among the Yakuts.

In Japan the artificial induction of abortion is not permitted; it is regarded as a great disgrace among the higher classes. Nevertheless, it is very frequently carried out in illegitimate pregnancies, and even among married women of the lower classes by a kind of midwife, who is, moreover, quite ignorant.

Stricker² states that the procedure consists in inserting between the wall of the uterus and the fetal membranes a piece of the flexible root (resembling a goose quill in thickness) of a certain plant and letting it remain there for a day or two. The root, before being introduced into the vagina, which insertion is done with the help of two fingers pushed into the passage, is smeared with musk; and musk is also given internally. The result of this is said to be certain. Silk threads are also smeared with musk and are inserted in the uterus; and there also occurs the rough method of pushing a sword-like, pointed bamboo rod or pointed twig of some shrub into the orifice of the womb, a method which not infrequently leads to death. The proper time for doing this is supposed to be the fourth or fifth month of pregnancy.

v. Martius translates from a Chinese work:

"In a case where it has been ascertained that the embryo has already died in the uterus, the mother must be given the drug *fo-shu-san*. After this, the embryo will pass off easily and without pain. Should the said specific not produce the desired effect, then let a mixture be made of the drug *pinwei-san* with three parts of the drug *pu-si-uh-yem*, and let the mother take this. This excellent specific was compounded by wise men in ancient times for the benefit of posterity. The preparation of the specific is a very easy matter, and anyone can do it. Therefore be sure not to make use of any other unknown or unusual medicine."

According to this, the physician considers the use of this abortifacient justified only where the embryo is dead. The people in China, however, are hardly likely to restrict themselves to its use only in such cases.

In the island of Formosa the abdomen is trodden on to induce abortion. For this purpose, according to Scherzer, musk is also used a great deal by the Chinese, as in Japan.

In Siam there exists a vegetable abortifacient which is used a great deal by the natives, but is kept secret; at least Schomburgk could not get any information about it.

In Karikal, a French possession on the south-east coast of India, the *Nigella sativa*, Linn. (the Black Cumin), is used. Its seeds in smaller doses (up to 15 grains) are supposed to act as an emmenagogue, and in larger doses as an abortifacient; it is powdered and taken as a paste with palm sugar (Canolle). A rod or a pointed reed is also sometimes introduced into the uterus and allowed to remain there.

In other parts of India the induction of abortion is very common. On the methods used there John Shortt³ reports that:

The juice of fresh leaves of *Bambusa arundinacea* Retz (2), the milky juice of various Euphorbia (e.g., *E. Tirucalli* Linn., or *E. antiquorum* Linn.), also asafetida mixed with various scented and aromatic substances, are much used. Moreover, *Plumbago ceylanica* Linn. is employed internally, but is also used locally. In the latter case, the root is pointed and has to be pushed into the womb with great force, for Shortt found it still there in several cases when the embryo was already expelled. In the dead body of a woman who had aborted, the fundus uteri was found pierced in three different places. Such cases are said to be not uncommon, as indeed are other affections of the womb, in consequence of such treatment.

Among the Hindus in Calcutta, who take up the business of abortion as a profession, are used either the method of perforation or medical potions in which asafetida appears to play a great part (Webb).

According to an older record (*cf.* Krünitz²), women are said to have induced abortion by means of unripe pineapple, and it may be connected with this that pregnant women on Keisar, even when they suffer from desires, are forbidden to eat pineapple.

From the Malay Archipelago a statement of Riedel may be here mentioned, that the women on Babar drink an extract of Spanish pepper in arrack in order to induce abortion. Moreover, the man who has made her pregnant treads daily on her abdomen either in the house or in the woods, in order to bring on a miscarriage. In Galela and among the Tobelorese on Djailolo, abortifacients are prepared from kalapa oil, lemon juice and the roots also of various trees are much used.

According to Jacobs, the women on Bali use as abortifacients, among other things, "a little extract of *Sterculia foetida* Linn., and further, a cold extract of another variety. In Java (Banjoewangi), the unripe fruit of this tree is used for this purpose. Among the mechanical methods, massage and pinching of the abdomen are much in vogue—a process they call *ngoe-oet*."

In Kroë in Sumatra, according to Helfrich, the midwives induce abortion by giving pregnant women yolk of egg beaten up with arrack or brandy, and they apply warm ashes or a warm stone to the abdomen, which is also massaged.

Harrebomée says of the Lampong in Sumatra :

"A girl who thinks she is pregnant betakes herself to a medicine woman (*doekoen*) and begs her to bring on a miscarriage. Then the initial letters of her name are spoken into a lemon, and the girl is bathed amid the repetition of prayers. Every time that the *doekoen*, by pressing the lemon, lets a few drops fall on the head of the *moeli*, the following formula is used :

'Thou child that art not yet born or even formed ;
Come forth before thy time ; else bring'st thou shame on thy mother.'

"She is given nauseating drinks, which have to be taken at specified times with the face turned towards the east. The squeezed lemon must then be stuffed, and amid ceremonies is thrust into a hollow tree. Finally *pidjet* (massage) generally achieves the desired effect if the astringent drinks have not a sufficiently speedy result."

Another method, more rational than either of these, was also used in Sumatra among the Battak, which is carried out by the medicine-man : he perforates the membranes, as Roemer records, "by means of a little bamboo rod or leaf vein. In addition, however, he uses a kind of pea-shooter with which he shoots a little bamboo arrow at the orifice of the womb. The sad consequences rarely fail to appear.

Abortion is customary also in the New Hebrides (Vate Island), and is attempted sometimes by vegetable specifics and sometimes by mechanical means. For each of these methods they have a special name. The plant used is not known, since they call it only "the abortion plant." The mechanical method consists in pressing and kneading the abdomen by midwives and through this the child is killed. Some of the women, states Jamieson, die from this treatment.

On the island of Yap in the Carolines abortion is common among young women, who are afraid of their appearance being spoiled by a confinement. As a specific for the inducement of abortion boiled sea-water is drunk immediately after the non-appearance of menstruation (see Senfft).

According to de Rochas, the inhabitants of New Caledonia have great skill in

the art of inducing abortion. The most usual method they call the "banana cure," which apparently consists in devouring boiled green bananas. Since the bananas are quite harmless, they are used, in the opinion of de Rochas, to conceal the true but as yet undiscovered abortifacient. He not infrequently heard the natives say, "There goes a woman who has taken bananas." Moncelon also states that their specifics were unknown but vegetable in nature, and in his opinion certain kinds of bark were used.

Of the natives of Victoria in Australia, Oberländer¹ (p. 278) writes: "Abortion by pressure is by no means uncommon, especially after a quarrel between husband and wife."

Among the Murray Islanders in Torres Strait abortion is very common. A. E. Hunt reports that in order to induce abortion the leaves of certain trees were chewed. "The leaves of the *sesepot*, *mad leuer*, *ariari* and *ap* were sometimes mixed with coco-nut milk and drunk. This caused little or no pain." If it fails then the leaves of the *tim*, *mikir*, *sorbe*, *bok*, *sem* and *argerger* were chewed together. This medicine caused great pain but killed the child.

If the medicines fail, then less gentle methods are resorted to. Sometimes the abdomen is struck with big stones, or the woman is placed with her back to a tree whilst two men take one end of a long post and press the other end against the woman's abdomen until by continued pressure the foetus is squeezed to death. It is hardly necessary to add that the woman also is often killed by this treatment (p. 12).

Among the Sinaugolo in British New Guinea, the person who wants to have the abortion brought on lies on her belly, and another woman sits on her back; or the abdomen is pressed, or hot stones are laid on it. This, however, is only done before the bones of the child have formed, because then the child is still *rara*, *i.e.*, blood. They put this period in the first three or four months of pregnancy (Seligman²).

In New Guinea the women induce abortion themselves, even in cases of advanced pregnancy, with the leaves of a tree called *woninderoc*, if they do not want to have any more children. On the neighbouring island of Nufor, according to van Hasselt,¹ the women use a drink for the same purpose; but they also have their abdomens tied fast with a band of reed and then trodden upon.

In the former territory of German New Guinea the women often try to get rid of the foetus by jumping from a height or by having their abdomens massaged, according to a statement of Graf J. Pfeil.

All kinds of magical cures are also used. One interesting abortifacient of the Kai, according to Keysser, is a pip from the dung of the cassowary. It is cooked with the vegetables which the woman is to eat. The pip itself is kept back for it is only the life substance from the pip expelled from the cassowary's bowels that is to be imparted to the vegetables. This life substance in the woman's abdomen effects the expulsion of the nascent being.

Among the Bukaua the passing through the fork of a tree is used, according to the missionary Lehner, a method used in Europe also for a different purpose, but it can hardly be the painful cure that Lehner considers it.

The attempt is also made to rub the abdomen with bast cloths and to get old women to knead it; further, incisions are made (by means of a species of grass) in the abdomen, elbows, knuckles, finger tips and the heels; and as a result of the loss of blood "premature confinement is supposed to set in" (see Lehner).

Among the people living by Doreh Bay the girls and wives who there desire abortion have the abdomen kneaded and trodden upon. They call this "making the

belly dead." However, a drink made from a kind of plant called *papier* is also used for this purpose (*cf.* van Hasselt ²).

Danks reports that among the women of New Britain it is not usual to give birth to children after marriage until the lapse of from two to four years. He heard that this is because the people dislike wives becoming mothers so quickly, and thus the latter practise various methods of abortion, admittedly with some success. The favourite method consists in pressing the abdomen from both sides between thumb and fingers and pressing in the fingers hard in the abdominal region and compressing it. Others introduce a sharp-pointed stick into the womb, by which the fœtus is destroyed. The latter operation he could only report according to hearsay. It is, however, a very suitable method of inducing abortion. Other uncivilised tribes have the same custom.

In a report by the Rev. L. Fison, he informed Bartels that in Fiji the same thing existed in the earlier pagan times, only that two sticks were used. Some say that a herb is also used for the same purpose, a method likewise existing in Fiji.

Also in New Mecklenburg and New Hanover abortion is very common among girls as well as women. Girls of 16 or 17 years often make no concealment of the fact that they have already induced abortion three or four times; the wives either regard children as irksome appendages, or they abort because of the peculiar custom of voluntary childlessness already mentioned. The means used are sometimes medicinal, sometimes mechanical (tying strings tightly round their bodies, violent kneading of the abdomen, jumping down from a high stone



FIG. 667.—Kapō. Wooden image presiding over miscarriages, Hawaii. Mus. f. Völkerk, Berlin. (Photo: M. Bartels.)

block or tree trunk, etc.). Parkinson,² who reports this, adds that they get so weak owing to this evil custom that they die early.

Blyth (p. 182) learnt from native midwives that in the Fiji Islands the method of abortion consists purely and solely in taking herbal decoctions, which are used when movement is first felt. For this purpose five plants are used: two Malvaceæ (*Kalakalauaisoni* = *Hibiscus diversifolius* Jacq. and *Wakiwaki* = *Hibiscus abelmoschus* L.), a Tiliaceæ (*siti* = *Grewia prunifolia*), a Convolvulaceæ (*Wa Wuti* = *Pharbitis insularis*) and a Liliaceæ (*Ti kula* = *Dracæna ferrea* Linn. (2)). The sap and the leaves, and of the third and the fifth the surface of the stem as well, were used. The last is considered the most effective and is used when the others fail.

A very strange phenomenon is to be found among the Hawaii islanders, and, so far as M. Bartels knew, there is nothing analogous to it among any of the other peoples. The women of Hawaii have a special image of the God which conducts miscarriages. Now we have seen that among other peoples certain gods were worshipped in order to protect pregnant women from miscarriages, but it is the vocation and function of this deity to bring on miscarriages. Arning procured this image (called kapo) whilst travelling in Hawaii, and the specimen, with his own rich collection, has been given to the Ethnological Museum in Berlin. The figure is reproduced in Fig. 667 from a photograph by M. Bartels.

"The *kapo* is carved from a brown wood and has at the top a fantastic head with a cock's comb-like crest. Towards the other end it forms a rounded, slightly conical tapering stick shaped like an awl, of the approximate thickness of a medium-sized index finger. Its whole length is now 22 cm., but the instrument was originally somewhat longer. Its lower point appears rough, irregular in shape and very much

worn, an unmistakable sign that this god had performed his bloody office very industriously. There can be no doubt that the pointed end of the figure was introduced into the uterus in order to perforate the foetal membranes, and in this way to induce abortion. It is stated that the figure not only served to get rid of an unwanted pregnancy, but also to produce the pregnancy denied to other women. M. Bartels assumed that the idol was used in such cases to widen artificially the orifice of the womb so that the sperm might penetrate more easily, an opinion not apparently shared by von Reitzenstein.

In Persia pregnant women, and above all the unmarried, have abortion induced by the midwife in the sixth or seventh month. She perforates the membranes by means of a hook, an operation which in Teheran used to be performed with great skill by several midwives who were renowned for it. Only a few unfortunates try to induce abortion for themselves; they apply numerous leeches; bleed themselves at the feet; take emetics of copper sulphate, powerful purgatives, or the top shoots of the date; and, if all these methods are unavailing, then they have the abdomen trodden upon and beaten. Many, according to Polak, die from this. In Gilan on the Caspian Sea, according to Häntzsche, abortion is induced by blows, pushes, pressure, etc., on the abdomen, and besides this by the use of drastic purgatives.

According to Oppenheim, saffron and savin are known as abortifacients among Turkish women; besides these they often use orange leaves with jalap, which they infuse with boiling water and drink as tea, a specific which they prefer to all others because of its certainty, only its use is said to result in dangerous hæmorrhages.

According to Eram the midwives also introduce foreign bodies into the womb, *e.g.*, pipe mouth-pieces.

A method which Stern² imparts is more harmless:

“Among Mohammedan women, a Hodsha-doctor generally appears with an amulet on which is designed a bird with a large beak, and he does his tricks while rattling off various aphorisms. The Moslems believe that along with the embryo a bird comes into being which flies away at the birth of the child. By means of the strange amulet the Hodsha believes he can irritate the bird so that it tears the foetal membranes prematurely.”

Gerhard records that in Alexandria the women who want to abort irritate the womb with pieces of wood; besides this, however, they use pepper, laurel and other specifics.

The Arab midwives, according to Rique, induce artificial abortion by perforating the membranes. In the case of a woman delivered in this manner, where the inexperienced hand of the midwife had missed its mark, Rique, according to Bertherand, saw two or three wounds near the os uteri caused by some sharp instrument. If the child is thought to be dead, the pregnant woman has to take a drink consisting of honey and warm milk in which powder of vitriol is dissolved; the child is said to pass away; should the latter be not quite dead, however, it will turn on its side and then be certainly expelled.

Then also the sour milk of a bitch mixed with peeled and pounded quinces and drunk is considered an abortifacient. Or the woman must for three days drink an infusion of asparagus roots and the roots of dyer's madder. It is also effective if a Taleb writes two words from the Koran on the bottom of a cup. These are then washed off with a mixture of water, oil, caraway, rue and radish. These substances must be squashed by the woman herself in the bottom of the cup and rubbed to and fro; she has then to drink from it for three days; thereupon the child will assume such a position in the womb that it is easily expelled. Likewise the pregnant woman

must drink every day for 10 days a mixture of milk and salt ; if the child is not expelled by this, then she drinks sweet and sour milk from two cows mixed with vinegar ; one draught of this rids her of the child. They also mix asparagus and tofarfarat (buds ?), add a little meal to it and boil it with a little water ; they eat of this for three days and meanwhile drink water from the cup, on the bottom of which are written these words :

“ With God ! Djbrahil ! (name of an angel). With God, my angel ! (Here follows the name of the woman’s angel.) With God ! Srafil ! (name of an angel). With God ! Azrail ! (name of an angel). With God ! Mohammed ! (The prophet.) Hail to him, twice Hail ! It is He who awakes, who causes His strength to rise again. He has said : Let him live to thee who hast conceived for the first time : He has spoken, if she drinks for three days, the colour with which words are written in the cup ” (see Bertherand).

In Fezzan, according to Nachtigal, people did not shrink from the induction of abortion, for it was not illegal ; old women achieved it by means of plugs of tobacco or of cotton soaked in the juice of the *Calotropis procera* R. Br. ; taken internally, the soot from earthenware cooking vessels and soaked henna are said to have the same effect. In Ethiopia, the wood and resin of the cedar and the savin tree are used for the induction of abortion (Hartmann,³ p. 357) ; in Massaua, according to Brehm’s report, an infusion of a species of thuya is used. Among the Wolof there are certain fetish men, especially in the district of Cayor, who, according to de Rochebrune, make a special profession of abortion.

Among the Masai, according to Merker, pregnant girls chewed pieces of about the size of four fingers of the root of ossegi (*Cordia quarensis* Gierke, p. 191), whereupon the child is said to die quickly and be expelled. Certain drinks also, the composition of which is not fully stated, are used, and in a thoroughly sensible manner they chose the third month of pregnancy as the time for this.

The negresses in Old Calabar, as we have seen above, take medicine in the third month of pregnancy, ostensibly to test the value of the conception. However, it happens not infrequently that the action is too violent ; later on, constitutional disturbances and organic affections develop and death ensues (*cf.* Hewan). Among the Herero, pepper is regarded as an abortifacient.

7. METHODS IN USE IN EUROPE

Although in every country in Europe intentional abortion has hitherto always been considered a penal offence and punished accordingly, yet it is practised everywhere.

[In England various methods are employed according to the social position of the woman. Among “ natural ” methods may be mentioned rolling downstairs, kneading the abdomen, jumping from a height, prolonged exercise, hot baths, etc. Drugs, taken orally, include tartar emetic, aloes, croton oil, corrosive sublimate, cantharides, etc. Among mechanical methods to procure abortion are a large number of instruments, such as sounds, penholders, crochet needles, umbrella ribs, etc., which are either employed by the woman herself or by an operator. Various mixtures are also injected into the uterus by syringes and similar devices.

Among the upper classes, who can afford to pay high fees, it is generally possible to arrange an operation if performed up to three months, and also certain injections are attempted and substances of a non-toxic nature are taken orally for which many successes are claimed. The same can be said of the United States at the present

day. The trade in alleged abortifacients is very large and lucrative, being patronised almost entirely by the more ignorant women of the working class.]

In Russia, according to Krebel's statement, corrosive sublimate and savin are used internally as abortifacients. In Esthonia, pregnant girls take mercury mixed with fat; but always in vain, as might have been expected.

According to Demič the women of Little Russia use savin and white bryony. Tartar women take marsh trifoil and amber or succinic acid; popular physicians in the Caucasus give an infusion of *Eupatorium* Linn., four whole plants to one bottle of wine, or *Ruscus aculeatus* Linn. or *Pulmonaria officinalis* Linn., four roots to a bottle of wine, a wineglassful to be taken morning and evening.

A quack in Sweden, according to a report, gave a pregnant woman a tube which she was to insert as far into the womb as possible. Then he blew arsenic into the womb through it, as could be proved by the post-mortem examination of this unfortunate woman.

Damian Georg records of the Greeks that it was a practice with them, when they wanted to induce abortion, to introduce opium or belladonna into the vagina; they also take internally rue, savin or amber. More rarely bleeding is employed, and then always in the foot; less commonly it is found that these women sit on very hot stone basins in the bath.

Frenchwomen use numerous abortifacients. Tardieu and Gallard indicate as such squills, sarsaparilla, guaiacum, aloes, balm-mint, camomile, saffron, absinthe, vanilla and juniper, but also ergot and iodine preparations are to be found among them.

Baths and blood-letting, over-exertion, intentional falling and pushes and blows on the abdomen are also used. Electricity also has been tried, as well as the insertion of sharp objects into the womb, especially knitting needles and crochet hooks.

In Bohemia, according to Maschka, pregnant girls used to try to induce abortion by means of beer with peony or *Asarum europæum*, or by a decoction of rue and a solution of sodium sulphate.

Zechmeister found that in Esseg a few women made a trade of inserting a spindle through the orifice of the womb in order to pierce the membranes and the head. This was done in the fifth or sixth month of pregnancy. In one case a twig, 6 in. long, and the thickness of a quill, was pushed into a girl's vagina in such a way that the front end was found in the orifice of the womb, whilst the other was embedded in the sacral region.

As a means of inducing abortion in Frankenwald, according to Flügel (p. 47), women try stretching the arms out as high and as far as possible; lifting and carrying heavy things; dancing; jumping; walking on uneven paths; intentional falling; straining the abdomen; treading, etc. Many women think highly of wringing wet clothes with great force.

Any herb which is believed to stimulate the action of the uterus or possess calming qualities is called "mother's herb" in Frankenwald; thus balm-mint, rue, etc. Practically everywhere savin is known, but not so much ergot, emetics and laxatives. Aloes especially, and coffee, cinnamon and saffron, are less highly thought of; but senna is supposed to cleanse the uterus. Drinking vinegar; eating a great deal of cooking salt; fasting continuously; taking a great deal of brandy; and all harsh and poisonous things are considered abortifacients; also Peruvian balsam enjoys a good reputation, and likewise gunpowder, of which they say "it makes an opening as it must get out through a hole." Inserting pointed objects and an excess of blood-letting for the same purpose are not unknown in Frankenwald, and it some-

times happens that a girl asks a doctor straight out for something "which eats away the navel cord."

According to the prevalent popular belief "it is easier to induce an abortion in the case of boys than of girls." This opinion is no doubt based on the actual observation that among children expelled prematurely there is a preponderance of boys.

In Swabia, according to Buck, savin and mugwort are trusted, and also people



FIG. 668.—Instruments used in criminal abortion. (After Wulffen.)

believe that abortion can be induced by exposing the lower part of the woman to the smoke of horse fat.

Styrian women, according to Fossel, used as abortive means strong purgatives, ergot, savin, the twigs and leaves of rosemary, and infusions of tar.

In the district of Ohrdruff (Thüringia) the lower classes believe that pregnancy will disappear if a pregnant woman injects a drop of blood into a tree with certain ceremonies.

In earlier times black soap appears to have been regarded as an abortifacient, for Lindenstolpe names it among them as "famosus in Belgio Sapo niger."

A woman in Kappen in Schleswig, who was famous as an abortionist, used first, according to J. Thomson,² infusions of hops and bramble leaves, then thyme or wild thyme, rosemary and camomile; and further, *Spartium scoparium* Linn. (3), which had to be got from a distant

heath. If that was no use, then *Thuja occidentalis* Linn., or savin, was tried ; also *Artemisia vulgaris* Linn., infusion of peony flowers and emetics were used. But, as chief specific, she used saffron, of which, when boiled with a bottle of water, with the addition of something strong, the pregnant woman had to take about a drachm in two portions night and morning ; the consequences of which were, after half an hour, sickness with retching, lassitude, dullness and pains in the head, and after three days' use of the specific pains in the abdomen and acute pain in the limbs. If by this means the desired effect was not achieved, then the abortionist with the help of a man undertook mechanical manipulations. The pregnant woman had to lie on her back, and then the abortionist planted both fists on her abdomen and pressed downwards from the navel to the pelvis, as hard as the pregnant woman could bear. Now the male assistant got on his knees between the out-stretched legs of the patient, put two fingers into the vagina and worked them about till he succeeded in pushing through a "thin skin." This operation, which was designated as very painful, had not always the desired result, but had to be repeated at intervals of several days, in one case five times, before the abortion really began. A collection of instruments for the induction of abortion is set up in a criminal museum in Dresden. Fig. 668 shows some of them, and Wulffen, in an excellent work *Der Sexualverbrecher*, illustrates others of similar type.

With regard to chemical and herbal preparations Köhler in Halban and Seitz (*Biologie u. Pathologie des Weibes*), Berlin, 1924, II., pp. 180, etc., has stated that really nothing is to be expected from these medical specifics. He says :

One portion of the specifics in use among the populace with more or less justification as a means of abortion leads either to direct stimulation of the uterus (nicotine) by acting on the central nervous system, or, combined with irritation of the abdominal muscles, to contractions of the uterus ; and in consequence, not infrequently to the expulsion of the product. The other portion, however, is proved quite ineffective.

Because of the great danger to the pregnant woman owing to the uncertain action, it would never enter a physician's head to make use of any of these specifics when reasons of health make an interruption of pregnancy necessary.

The sympathetically stimulating effect of *nicotine*, which has recently been ascertained by experiment, has long been utilised in popular remedies. Infusions of tobacco are highly esteemed for abortion ; indeed, even employment in tobacco factories alone is said frequently to lead to abortion ; wherefore, these places for working are eagerly sought after by women who are pregnant against their will.

Abortifacients much in use are aloe, saffron and myrrh. The abortive action of aloe has been ascertained by many experiments, and is due to its power of producing hyperæmia and inflammation which cause bleeding in the decidua, as well as to the fact that reflex action by abdominal irritation brings about contractions of the uterus. It is mostly taken in the form of aloe-brandy. Less certain is the abortive action of saffron ; it does, however, appear to act frequently. There is besides a whole series of favourite plants for causing abortion, as, e.g., *Ruta graveolens* Linn. (common rue), *Tanacetum vulgare* Linn. (fern), *Taxus baccata* Linn. (yew), *Thuja occidentalis* Linn. (arbor vitæ), *Sabina* Hall (savin), *Semen myristicæ* (nutmeg), *Rosmarinus officinalis* Linn. (rosemary), *Mentha Pulegium* Linn. (flea bane mint), *Cinnamonum Cassia* Bl. (cinnamon), *Pæonia officinalis* Auct. (peony), *Helleborus niger* Linn. (Christmas Rose), which contains two glucosides, helleborine and helleboreine ; further, *Gratiola officinalis* Linn. (water hyssop), which contains the two glucosides gratioline and gratiosoline, *Polygonum hydropiperoides* Rich. in Michx. (smart-weed), *Colchicum autumnale* Linn. (meadow saffron), etc. Usually they produce, by means of the powerful essential oils contained in them, inflammatory alterations in the intestines, kidneys and genital organs, and can, in the dangerous manner before mentioned, often bring about abortion. If with the afore-mentioned abortifacients a direct or indirect action of the uterus can indeed be brought about, yet more prominent are the following chemical agents and toxic components, which lead to bleeding in the decidua, to poisoning of the fœtus and consequent expulsion of the dead embryo. Of the acids, the following are important according to Lewin : sulphuric, nitric, hydrochloric, chromic,

acetic, oxalic and salicylic acids ; of the alkalies, ammonia, soap. Further, the various metals like quicksilver, iron, copper, manganese, lead, arsenic, phosphorus, antimony, besides potassium sulphate, nitrate and chlorate. Of the halogens iodine (and iodine preparations) is the favourite abortifacient in France. In Russia, gunpowder is often used as an abortifacient. Phosphorus, a specific much in use in Northern countries especially, has undeniably the power to provoke a miscarriage, but only in big toxic doses. It is generally taken in the form of an infusion of the heads of the phosphorus matches which are still manufactured for trading ; sometimes too as a phosphorus electuary which is prepared with meal and water and much used as a rat poison, and, like matches, is easily obtainable by anybody. It represents one of the most dangerous specifics, for the ebolic action begins only after general toxicosis, and the cases generally end fatally. Besides these specifics, the abortive action of which has been proved by pharmacological investigation, and which are thus to a certain extent justifiably used to cause abortion, there is still a whole series the mode of action of which we know nothing. Of these Common Heather, amber-oil, saffron, onions, etc., may be mentioned.

In the course of my studies on specifics for causing labour, attempts to provoke artificial abortion with their help naturally came within the scope of my work. In the cases entrusted to us, where for reasons of health interruption of pregnancy was indicated, it would, of course, have been of great advantage if the *abortus artificialis* had been practicable without operation, and, above all, without narcosis. I made experiments to this effect with quinine, preparations of ergot and different organic extracts, but always with negative results. By no kind of specific introduced did we succeed in stimulating the uterus to labour pains strong enough to produce a sufficient opening for the expulsion of the fœtus and placenta. According to our experience, the brief use of quinine, which is often used, was able to effect an interruption of pregnancy only in exceptional cases. Preparations containing extract of ergot could only produce an abortive action by protracted use and in very big doses, or with an over-sensitive uterus, but cannot be considered sure. Organic extracts, likewise, proved inadequate for bringing about artificial abortion, for only here and there in early pregnancy, and with a quiescent uterus, could we produce quite slight labour activity. However, we were able by the introduction of a laminaria tent, or a candle, to sensitise the uterus so far that, by the following injection of one of the above specifics, could an activity be aroused sufficient for the spontaneous expulsion of the ovum. Generally, however, even after this the abortion had to be completed by an operation.

Specifics for the regulation of menstruation play a particularly important part in popular medicine. Not only fear of possible pregnancy, but also certain ideas of the harmfulness to the organism from the absence of the monthly elimination of blood, cause their use. We know, as supposedly proved specifics of the populace, ground ivy, hazelwort, saffron, the onion, iron filings softened by 24 hours in a warm place, chalk taken in the form of a fine powder, salt, magnesia, soda or ground mustard as an admixture in hot baths, are said to be reliable specifics for this purpose. On the physician's part, the following specifics for restoring menstruation used to be ordered : sodium, salicylic acid, potassium permanganate, the latter as a pill.

8. ATTEMPTS TO LIMIT OR PREVENT ABORTION

In very early times legislation turned its attention to abortion. For as early as in the old Persian code, the Vendidâd, which contains the legal maxims of Zoroaster, we read : " If a man come near unto a damsel . . . and she conceives by him, and she says, ' I have conceived by thee ' ; and he replies, ' Go then to the old woman and apply to her that she may procure thee miscarriage ' ; and the damsel goes to the old woman and applies to her that she may procure her miscarriage ; and the old woman brings her some Banga, or Shaêta, or Ghnâna, or Fraspâta, or some other of the drugs that produce miscarriage and [the man says], ' Cause thy fruit to perish ! ' and she causes her fruit to perish, the sin is on the head of all three, the man, the damsel and the old woman " (*Fargard*, XV., 13 (40) ; 14 (43), p. 175).

The Medes and Bactrians also punished people for abortion.

The Laws of Manu, which regulate the way of life in the Hindu castes, prohibit and also lay down punishments for abortion.

Among the Jews methods of abortion were strictly prohibited ; any use of them was regarded as a variety of infanticide and, according to Flavius Josephus, was punished with death.

The Law of Moses in Exodus xxi. 22 ff. is also important in regard to this :

“ If men strive, and hurt a woman with child, so that her fruit depart from her, and yet no mischief follow : he shall be surely punished according as the woman’s husband will lay upon him ; and he shall pay as the judges determine.

“ And if any mischief follow, then thou shalt give life for life, eye for eye, tooth for tooth, hand for hand, foot for foot, burning for burning, wound for wound, stripe for stripe.”

That the Greeks did not regard the induction of abortion as a crime is clear from the following words of Aristotle (*Politics*, VII., 16) :

“ But if in marriage couples have children in excess, then shall abortion be procured before life and sensation has commenced ; what may or may not be lawfully done in matters of this depends on this question of life and sensation.”

According to this, the intention seems to have been to justify abortion among those parents who did not want children, so that the community should not be injured in any way by the excessive strain on poor families containing too many children.

Plato expressed similar views : he permitted midwives to induce abortion, for he said : “ They can make those bear who have a difficulty in bearing, and if they think fit they can smother the embryo in the womb ” (*Thecætetus* : Dialogues, IV., p. 202). Lichtenstädt and Schleiermacher regarded this promotion of abortion by midwives as an abortion brought about by the wish of the pregnant woman.

In Rome the same custom prevailed, even among the wives of men of high rank. Seneca (*Ad Helviam mat. de cons.*, 16) mentions this reasonable procedure as a usual thing.

“ Never,” said he to his mother Helvia, “ hast thou been ashamed of thy fertility as if it were a fault of thy age ; never hast thou like others concealed thy condition as an improper encumbrance ; never thyself killed the hopeful fruit of thine entrails ” (*Dialog. lib. 12*, p. 363).

Consistent with these generally prevailing views, abortion was, therefore, neither prohibited nor culpable, according to the laws of the Romans. It was left to the parents to rear or to get rid of their new-born children as they chose. Only when special ceremonial purposes were connected with the abortion were proceedings taken against the person concerned.

Milesia, whom Cicero mentions, was bribed with money in order to do a service to certain relations by inducing an abortion. Cicero (*pro Cluent.*) discussed the case of the abortion, in which he gave the reason for the condemnation of the bribed mother as solely from the point of view of an injury to the property of the father. The Emperors Severus and Antonius, as Justinian law shows, ordained banishment as an extraordinary punishment for abortion, merely on account of the injury done to the husband by it :

“ Indignum enim videri potest impune eam maritum liberis fraudasse.”

The same code, however, also fixed punishments for the professional sale of love potions and abortifacients.

This enactment suggests that the commercial side only was considered criminal, for the pregnant woman inducing abortion is not even mentioned.

Of the Teutonic peoples, Tacitus (*Germ.*, 19) had maintained that they considered it a crime to limit the number of children. On the other hand, it has been proved by Grimm, among others, that at one time the custom of exposing children was generally prevalent. So it appears that Tacitus wanted to point out that the Teutonic people did not practise the Roman custom of inducing abortion by artificial means.

It has, nevertheless, been proved that this custom of abortion was also known to the Teutonic peoples by the *Lex Bajuvariorum* (VII., 18) and the Salic law (XXI., 2). Suggestions were made about the use of methods of abortion among the North Teutonic peoples both in the *Hóvamól* and in *Fjolsvinnsból* (22), and among the Frisians, according to the *Lex Frisionum* (V., 1), abortion was not punishable (see Weinhold). Yet the Frisian Code reckons among the people who could be killed without paying wergild those who caused abortion in the mother.

The oldest German Law books (already under Christian influence) confine themselves to imposing fines for injury caused by inducing abortion. The *Lex Alamannorum* (c. 638) imposed a fine only on the man who made a pregnant woman abort (higher when a female child was concerned or when the sex was not known). The Salic Law and the *Lex Ripuaria* fined the perpetrators in money, and the fine was higher if the mother died. The later laws for the autonomous period do not come into consideration.

A few more facts, however, may be added here. In misinterpretation of the Mosaic Law Saint Augustine had declared (by reason of wrong translation of the Septuagint) that an embryo is not properly formed until the fortieth day of pregnancy; for abortion in this case a fine was imposed, for abortion in the case of an older foetus, on the other hand, the death penalty. Accursius, a commentator of the Justinian Codex, required that expulsion of an embryo (before the age of 40 days) be punished with banishment, the expulsion of a later foetus with the death penalty.

In the *Sachsenspiegel* and the *Schwabenspiegel* abortion is not mentioned; in the Caroline Code of Charles V. (1532) the difference between the embryos (*vitalis* and the reverse) reappears, and it reads (*Cap.* 133) :

“If anyone, by means of force, eating or drinking expels from a woman a living child (*foetus vitalis*)—if this evil happens intentionally and wickedly, then shall the husband be punished with the sword as a murderer, and the woman, if she has done it herself, shall be punished by drowning or some other death. But if the child which was not yet alive (*vitalis non sit*) was expelled by a woman, the judges shall consult the lawyers as to the punishment, as is announced at the end of this decree.”

In France the Frankish laws were gradually displaced by canonical allied to Roman Law. The parliaments simply had the abortionists hanged. The Revolution changed this draconian legislation so that the obliging assistant was sentenced to 20 years' confinement in irons; as to the woman in whom the abortion was induced, nothing was decreed.

The English had, from the thirteenth century, in the *Fleta*, a commentary on the common law. This threatened the induction of abortion with death (*Lib.* I., c. 23); in which the point of view was emphasised that by this crime an injury to the state was brought about. A law of 1803, the *Ellenborough Act* (43 Geo. III., c. 58), adhered to the difference between being “quick” with child and not “quick.” (For later legislation see L. A. Parry, pp. 101 ff., and *cf.* Ryan, p. 139.)

In Austria the Josephinian Code of 1787 decreed that a pregnant woman who induces an abortion commits a serious crime and may expect imprisonment for from one month to five years ; accomplices got a shorter, milder term of imprisonment.

The Prussian Civil Code of 1794 decreed that female persons who made use of a method for expelling the fruit of the womb have by so doing already incurred penal servitude for from six months to a year. Actually, induced abortion within the first 30 weeks of pregnancy is threatened with penal servitude for from 10 months to one year. Accomplices suffered the same punishment, but in case of several repetitions of the crime were flogged.

The fact that even to-day among so-called primitive peoples a few impose fines for abortion does not concern us here, for each nation must attend to its increasing population when expedient on social grounds alone. China and Japan are at the present time suffering the consequences of an unsound population policy with its consequent huge increase.

Of the Ama-Xosa Kropf says :

“ For the intentional abortion of a wife, with or without the consent of her husband, four to five head of cattle must be paid. Likewise, anyone who has prepared or given the medicine for it is liable to punishment. The fine goes to the chief, because by this means he has lost a human life. The fine for the woman can be required from the husband if he has known about it, or from the parents, or from the man whose child it was (if it was not the husband's).

A Chinese penal code also prohibited abortion and threatened the offender with 100 lashes of the bamboo and three years' banishment. In spite of this, however, in all the towns, especially in Peking, the walls in the streets were covered with advertisements which offer specifics for regulating menstruation ; by these, of course, abortifacients have to be understood. E. Martin says :

“ Yet if the matter comes to trial, the mandarin does not enquire into the fact of abortion, but into the personal circumstances which make the crime excusable and it then remains unpunished. The magistrate also must verify through a midwife whether what has passed from the vagina was a foetus or a fleshy mole.”

In the book “ Si-Yuen-Lu,” it is stated how one can tell whether an abortion has taken place ; quicksilver is to be put into the vagina. If its lustre is dulled, then abortion has taken place.

The Turkish penal code also contained decrees as to the punishment of abortion, but so ambiguously worded that the judges could never discover who was really to be punished.

CHAPTER XXII
NORMAL BIRTH AT TERM

1. BIRTH IN GENERAL

IN woman's life no function plays so important a part as the birth of the child and the becoming a mother.

First, by giving life to a descendant she fulfils exactly the task assigned to her by Nature. With this is connected the expenditure of her physical strength and the secretions of her body, together with other important claims on her physical and

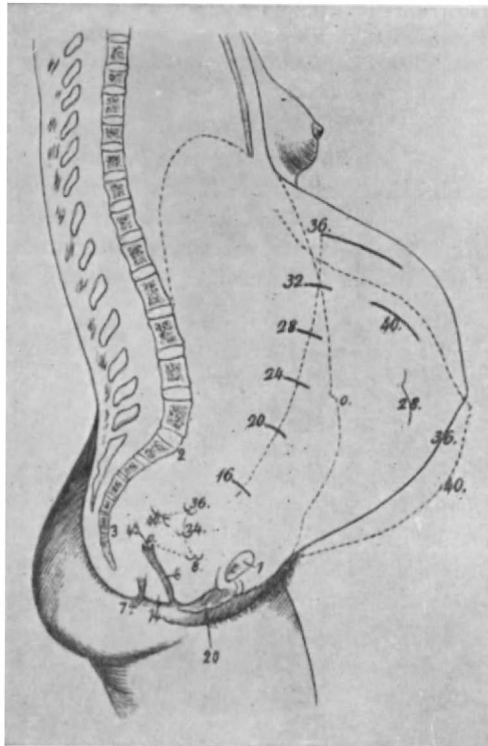


FIG. 669.—Changes in form during pregnancy. (After Schäffer.)

mental activity. Henceforth she has to attend to the nursing, the feeding and the bringing up of the child ; and thus a human life is fulfilled in itself. An illustration is given here which shows the growth of the uterus in the individual months of pregnancy (Fig. 669) and an X-ray photograph, which shows the position of the child in the uterus shortly before birth (Fig. 670).

The actual process of birth is for the woman, as well as also very often for her family, deeply absorbing and alarming. "Thou shalt bring forth children in

sorrow" was predicted to Eve in the Hebraic saga, and it is true that often with very acute pain, which we designate *labour pains*, and with the expense of considerable strain, woman must assist her child to come into existence.

If we have here to deal with a process which is entirely animal and takes place in the human race under conditions precisely similar to those in the higher divisions of the animal kingdom, then it is very properly the task of anthropology to investigate how far a number of circumstances connected with this process prove specifically peculiar to the human race. We must also try to discover what differences in respect of the birth act, if any, can be discerned in individual races.

There are certain physical characteristics which make the course of birth in

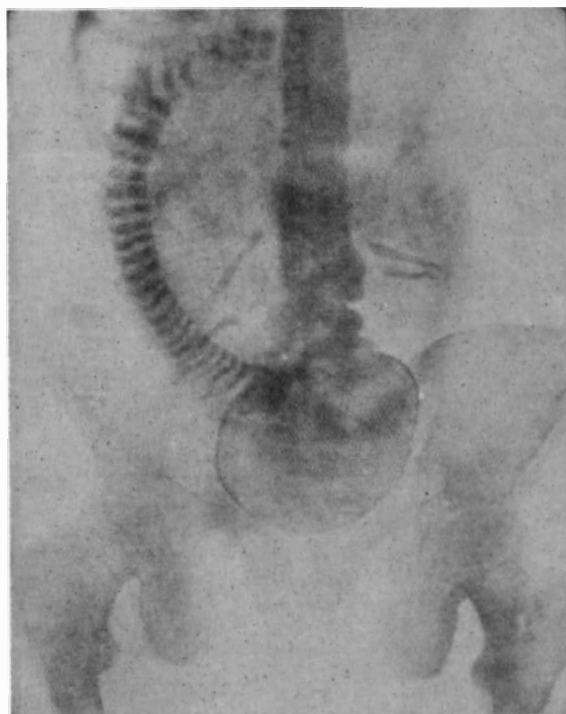


FIG. 670.—Position of the fœtus shortly before birth. (After Warnekros's Atlas.)

woman somewhat different from that in the higher animals: the upright gait, the structure of the pelvis and the organs of birth are most important in this connection. Then the psychic element enters, which, owing to the more intense feeling and intellect in woman, makes the conception of the birth act quite different from that in the female animal.

A comparison of the act of birth in animals and men does not come within the range of these discussions. Our task is to throw light on the differences which can be proved with regard to confinement in the various races and tribes.

At this point must be emphasised the fact that we have to recognise the service rendered by the late Heinrich Ploss for having directed the attention of anthropologists and gynæcologists to this interesting subject. For this purpose he opened up various scientific discussions, and was the first to collect relevant evidence from

the scattered literature. Moreover, at his own expense, he also sent a great number of questionnaires to those men in various countries who had an opportunity for close observation.

In the critical selection of material it must, above all, be kept in mind that it is often only the striking abuses which are repeated to us by travellers and missionaries, whilst the general obstetric proceedings in which might possibly lie many indications of the natural order in confinement have escaped them, or have seemed scarcely worth recording, an error which concerns the whole science of sex, and in both of which cases an objectionable prudery is also apparent. In face of this, we should like to express our desire for exact information so as to be able to see more clearly whether, as has been maintained, our obstetric regulations can really gain anything from that of primitive peoples, and whether among primitive peoples in such matters, the properly chosen and natural things are more strongly and decidedly native to them than the innumerable mistakes, which among many primitive peoples have smothered a sensible and really natural procedure. In the search for such facts, scattered sources difficult of access are of use, and records of travel in the most varied journals and of all periods. Unfortunately, most travellers were, as a rule, not sufficiently trained in the province of obstetrics to be able always to observe and record useful material.

Among the records of obstetrical customs, according to their authenticity and usefulness, one can differentiate three useful kinds. The most valuable information is given by medical men who have practised for a longer or shorter period among the people dealt with; then come missionaries who, though they have no scientific training in obstetrical matters, yet can make an observation over a period of years, and finally come those travellers who have a geographical or scientific interest in wandering among the tribes. We cannot accept the records as they stand without knowing the source of authority.

It is greatly to be desired that missionaries, before they betake themselves among the peoples to be converted, should try to acquire some medical and scientific knowledge, because its use would be of great benefit both to the tribes and to the mission. This is far more valuable for the missionary's work than his theological training. The emissaries of the Berlin Mission have, for many years, received this kind of instruction, partly from the managers of the municipal hospital in Friedrichshain (Berlin) and partly from M. Bartels. Many missionaries have openly expressed the opinion that it is very desirable for them to have practical experience in obstetrics, and many societies train special medical missionaries for work in the field.

The existing records show that among primitive peoples there can be no question of a purely passive procedure in midwifery, and that, especially if extraordinary phenomena appear at the birth, or if the latter appears to be delayed, methods of supposedly helpful interference are employed which, in many cases, can only be designated as harmful. Yet primitive peoples are sometimes recommended as examples of the passive procedure in obstetrics which is worthy of imitation.

Thus one finds in midwifery text-books the correct statement that a healthy delivery, as a natural physiological act, needs no artificial aid at all. This view, however, is often based "on the millions of births which take place successfully and without disturbance among uncivilised peoples every year." According to this idea, the whole work of obstetrics is limited to a patient, inactive waiting in expectation of possible disturbances. With respect to this, people refer to the Chinese who, although known to be superstitious and narrow in medical matters, call midwives

quite expressively "receiving and welcoming women" because, according to general opinion, they have only the function of "receiving" the child (see Behmann, p. 16). But any reference to the "millions of successful births" among primitive peoples should be coupled with a consideration of the exceedingly plentiful, harmful consequences which accompany the innumerable abuses among uncivilised and particularly among half-civilised peoples. In this direction research has certainly not yet penetrated sufficiently far. The pursuit of these matters would be the task of a quite new science, the *Ethnography of Midwifery*, the founding of which requires the labour of collecting the many articles which have been written, as M. Bartels well knew.

Birth is to be comprehended as a physiological act which woman, in normal circumstances, performs as well and easily as any other physical function, and for which, in the natural course, she needs aid just as little as does the female animal. It may indeed be assumed that in those circumstances which we call the original state of the human race, in which man lived only a little differently from the higher animals, any special aid given to women in labour was of the most limited kind.

That a parturition without aid is really quite possible is shown by the uncommonly numerous cases which occur even to-day in our state of civilisation. It may be maintained that the average delivery in animals proceeds more quickly and easily than that of the human female who, under our conditions of civilisation, has lost much of her "normal" condition. But it must also be assumed that the natural forces of expulsion and the overcoming of the obstructive resistance of this expulsion are, with a perfectly normal organism and under conditions not otherwise unfavourable, just as effective in human beings as in animals. To be sure, Denman and Osborn have stated reasons why animals give birth to their young more easily, and G. W. Stein, as well as Hohl, have likewise cited mechanical and physical causes for the difference between man and animal in parturition. Nevertheless, it is well known how much more easily women of the lower classes usually get over births than women in better circumstances. Should we not draw from this fact a conclusion as to the course of birth among the more or less civilised nations, especially as all the records bear witness to the quick and easy process of birth among so-called savage peoples. That is to say, if with us a number of women give birth to children without any assistance (although our people are already far removed from the natural mode of life and have acquired many physical prejudices) we can hardly doubt, as Prochownik does, the statements of so many travellers that women in primitive tribes not infrequently give birth to their children quite alone.

2. THE SO-CALLED INSTINCT IN PARTURITION AND ITS USE IN SCIENCE AND PRACTICE

We must now ask ourselves whether we cannot gain some practical advantages by the observation of the obstetrical customs of primitive peoples; and whether we may hope to find in their conduct valuable suggestions for a special, natural procedure. It is true that open investigation in any other field of knowledge has never been obliged to render in advance an account of the practical value of the results to be expected. Yet our concern gains in interest if, from obstetrical treatments observed among different peoples, we may expect to get much that is useful, not only for our own knowledge, but also for our practical skill in obstetrics. We must in particular ask whether, from observation of the mode of life of primitive peoples,

suggestions can be got for a natural system of regulations and whether from their treatment of birth, we can make rules for our own obstetric procedure.

We have obviously departed in many respects from the natural manner of living, and certainly in regard to the mode of life and treatment of the pregnant, parturient and lying-in woman. Could we not now, by observation of primitive peoples, acquire again our lost understanding of the natural regulations of these conditions ?

Civilised nations, by the most accurate observations possible of the course of birth and by the utilisation of collective experience, create a rational system of obstetrics in the light of knowledge and skill. Savage peoples on the contrary, as is generally believed, follow, as regards their procedure in confinements, solely the claims of overpowering needs, and the guiding force of an "instinct." The more uncivilised a people is the more will the act of birth be conceived in a manner similar to that in birth among the animals. (*cf.* Stein). This hardly offers a helping hand. Almost everything is left to nature and its infinite contingencies.

But what if there should be no hygienic instinct in savages which leads to the unconscious adoption of appropriate measures in confinement, as in other things ? Should not such an instinct inspire the parturient to choose the conduct adapted to the process of birth, *e.g.*, to assume the appropriate position and attitude ; should it not inspire the persons helping to use the most suitable manipulations in rendering aid to the parturient ?

If we had been able to prove anything of the kind, it is obvious that it would have been our duty to imitate it and to make use of it for our modern obstetrics. Recently, for instance, Engelmann, in St. Louis, made an attempt to discover from the procedure of uncivilised tribes such generally authentic measures as prove the "instinct" of the human female in parturition. He took the trouble to collect an abundance of material, which he got by the good offices of the Bureau of Ethnology of the Smithsonian Institution in Washington, through the medical officers of the Army of the United States and the doctors of the Indian Settlements, as well as from other sources. In the years 1881 and 1882 he published some essays on the subject in separate American medical periodicals, and these in somewhat extended form he then published in German, translated, with additions, by the gynæcologist Hennig, in Leipzig.

There he lays down the following principle, which we have to consider the essential point of his view : "A wide field is opened for the investigation of the position which is suitable for the woman in childbirth, in so far as the structure of her pelvis and the position of the head of the child require. Savages have solved this problem from their own correct feeling."

It still appears, however, very questionable whether among primitive peoples the women in labour and the individuals assisting them act in *any* respect really more naturally than those in civilised nations : at least, as these investigations will show, only with the greatest caution will anyone dare to use the conduct of the so-called "primitive" peoples as a guide for the purpose of practical midwifery.

In place of mere "instinct," there appears, at an early stage in mankind, action from choice ; and in all peoples, even those at the lowest stages of civilisation, the whole line of conduct is no longer governed by instinctive ideas, but by custom historically developed.

Taylor pointed out that if the remote ancestry of mankind had instincts which, as in the beaver, were dependent on the structure of the brain, then these have long ceased to exist and have given place to a freer and higher power of reasoning.

Every anthropologist will subscribe to these words. For even savages deviated more or less from the true state of nature as soon as they had obtained a certain degree of mental activity, and even if they have advanced in mental development only so far as to have reached, by a process of thought only in some degree complicated, scarcely any real understanding of the physiological life, yet they will try to escape and avert, though in a crude and faulty manner, the half-understood injuries which seem to threaten health and normal life. Moreover, the act of birth, if it is delayed or attended with abnormal disturbances, is just that which has something highly mysterious and disturbing to the mind and feeling of savages, so that the effect of this must make the choice of the right procedure considerably more difficult.

It is civilisation, however, which first makes people capable of appreciating the true conditions of the physiological process and first teaches a people to recognise and set aside errors in regulation which have gradually become customary.

We shall in fact show clearly, in the consideration of the obstetrical customs of the least civilised nations, methods of the most varied kind which, with a little calm thinking, must be recognised as obvious deviations from the natural path. And only a very small number of obstetrical customs among the savages could one try to use as a proof or a support for or against a particular opinion.

But we must also ask ourselves: Are there still anywhere on earth really *primitive* peoples or savages who are guided chiefly by instinct? "There is no hope now of finding human beings anywhere in the actual natural state," said Waitz many years ago, and we must agree with him.

Now it is of conclusive importance for our view that it is just among the peoples at the lowest stage of civilisation that no uniform conduct of the women with regard to the choice of position of the body for delivery has been observed. Even the peoples belonging to *one race*, indeed, even the tribes belonging to one people, are so widely divergent, as Engelmann's records show, that we are bound to conclude it is conditions quite other than instinctive which supply the guiding motive.

Now, as soon as any person comes forward assisting the woman in childbirth, advising, helping, arranging or even interfering, everything primitive is excluded. Thus begins midwifery, primitive it is true, but always resting on a certain range of experience and deliberation. To be sure, this is not yet science, but at any rate it is a fragmentary knowledge, a believing in tradition created from early and, to some extent, very bad observation: it is, of course, not an art but a profession ever advancing by crude, artificial methods. Though, in many cases, the mother of the woman in childbirth assists, yet this helper thinks she can form a kind of regular procedure for her daughter in childbirth from what she had heard from others about the process of birth and the assistance necessary. Thus a fixed custom in midwifery is soon made indigenous by the exchange of talk and by the authority of a midwife who has gained special respect.

Thus, from these researches we can only hope to gain anything for practical and scientific obstetrics if by the closest observation we are able to consider fully not only the method of treatment but also especially the results, the advantages and drawbacks for mother and child of the measures taken. Up till now we have only been able to observe closely the harmful effects of individual, crude errors against the arrangements of nature; yet an extraordinary number of obstetric customs of these peoples proved to be solely errors of the human mind, the pernicious consequences of which cannot fail to appear. Our further discussion will appear as a record of a long series of errors and the harm caused by them.

The practical gain, however, is here. We learn from this less what we have to do than what we have to leave undone. Thus the advantage which we have to expect from anthropological researches on the path taken by us for obstetrics is chiefly a negative one, which, however, we must not too greatly underrate.

That we can get many positive uses, however, must be shown for the present by only one example. Until a short time ago there was controversy amongst doctors over the question whether a woman could give birth to a child while standing. If it had been observed that in so many tribes parturitions as a rule take place in a standing position, the question at issue would not have arisen, or at least would have been very soon settled. For this controversy certain isolated but known examples were collected when whole tribes could have been brought forward as evidence. Thus, by knowing what takes place among many different peoples, one can easily answer the question whether a similar occurrence is possible or impossible among ourselves.

3. BIRTH IN LANGUAGE AND METAPHOR

In the Indo-Germanic languages it is evident that there is one root word for giving birth, that is to say, that in this connection they are all related. The Old German word *berentragen* (we now have it only in *gebären* (to give birth), *tragbare* (productive), etc.) The old *birrit*, "he bears," may be compared with the Old Slav *běrete*, Lat. *fert*, Greek *φέρει*, Zend *baraiti*, Sanskrit *bhāratī*.

The word *Geburt* (birth) is, according to Grimm's dictionary, to be found in Old High German, *kapurt*, *gipurt*, and in Old Saxon *giburd*, in Old Norse *burðr* (masc.), also simply *burt* up to the sixteenth century, like the English *birth*, Danish *byrd*, Swedish *bord*. *Gebären* (*ferre*, *parere*, *gignere*) is a word in which, in its oldest meaning, the idea of *bearing*, *bringing* is inherent; it occurs in Gothic as *gebarian*, in Old High German as *kipëran*, *gibëran*; in Middle High German as *gebërn*.

In Latin procreatrix = *Gebärerin* (woman in labour) = *generatrix*; *generare* = to procreate and *generatio* = procreation.

In the Tyam language used in Cambodia, according to Niemann, confinement is designated by the periphrastic expression *dih di apui*, i.e., lying by the fire. The reason for this odd designation is to be found in the fact that there, as in many other peoples, a burning fire was kept up near the couch of the woman in childbed (see Jacobs²).

An attempt to explain the choice of the Hebrew word for giving birth was made by Prochownik. He says: "With giving birth came also the need for help at giving birth. . . . *Genesis* expresses this in the purposeful association at the beginning of agriculture in using the same word for the tillage of the man and the labour of the woman: *עבד* (this is exactly the Latin *labor*) rendered by Luther in the case of the man *Kummer* (care), in the case of the woman with *Schmerzen* (pains) for want of a corresponding German word.

French has several expressions: *enfanter* = *donner le jour à un enfant*; birth = *enfantement*, also *travail*; in the latter, the signification of labour emerges. Besides these, lying in = *accouchement*, i.e., a lying down. Obviously there is a suggestion here that the lying down of the woman in childbirth was regarded as something necessary to the act of birth.

Littré says of the historical derivation of the word: "On voit par l'historique que accoucher ou s'accoucher signifie proprement se coucher, s'aliter; ce n'est que peu à peu qu'il a pris le sens exclusif de se mettre au lit pour enfanter." This is similar to the German words *Niederkommen*, *Niederkunft* (lit. coming down, descent; then confinement); also one often hears women advanced in pregnancy say that now "she would soon *zum Liegen kommen*."

In England also, *Geburt* means first of all *labour* of a woman; the German *Entbinden* being *delivery*. Thus, the idea of *labour* appears again; *gebären* means *to bear a child*, and *Geburt* is equivalent to *birth*. However, here also, the form occurs for *Sie hat einen Knaben geboren* means "She has been brought to bed of a boy," and according to this the *bed* was certainly chosen as

the place for birth in earlier times. *Das Entbindin*, however, has many synonyms: it means, e.g., to unbind, to untie, to loose, to deliver, to disengage, to clear or to free from, etc.

In Tyrol, according to Zingerle, people say of women delivered of a child that "der Ofen ist eingefallen" (The oven has collapsed). This may have some connection with the fact that a barren woman sometimes has to crawl into an oven. The womb is no doubt compared with an oven.

4. SEX AND BIRTH IN HIEROGLYPHS, ETC.

The ancient Egyptians treated sexual processes like other physiological processes. Thus

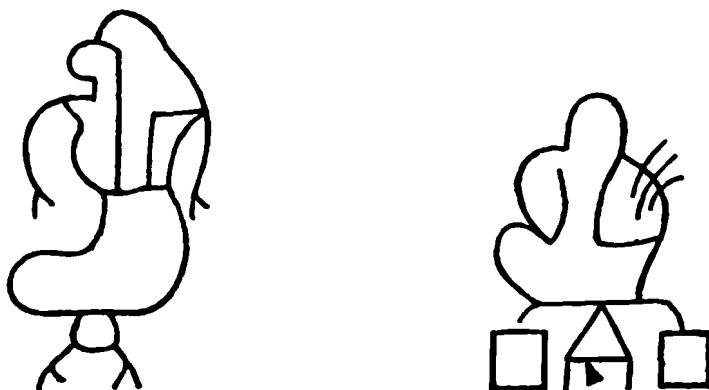






FIG. 671.—Signs for parturition. Stele Harris, Z. 12. (After Halban-Seitz.)

among the signs we find one sign for the *phallus*, which sign is used generally for the organ, and , a sign employed for the same organ and expressing what issues from it or is performed by it. Similarly for the *vulva* we have , a "well full of water"; for *woman* ; for *pregnant woman* ; and there are other signs for woman giving birth, woman suckling an infant, and so on (see A. H. Gardiner).

In Egyptian hieroglyphics there is to be found not infrequently a pictorial sign which

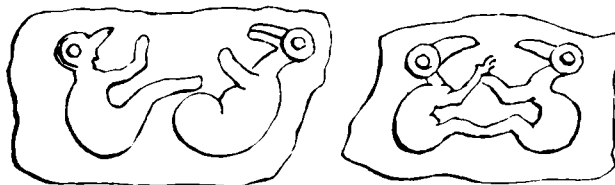


FIG. 672.—Relief showing the god Make-Make, and denoting a birth. Easter Island. (After Geiseler.)

represents the birth of a child. This is typical wherever a word connected with delivery or birth occurs: it is introduced immediately after any such word in order to indicate that it has some connection with the birth act (Fig. 671). The hieroglyph shows a kneeling or sitting woman between whose thighs appear the head and arms of the child.

Also in Rapanoui, the Easter Island famous for its remarkable prehistoric culture, representations were found which referred to birth. These were repeated on the old stone houses of the Ranakao crater as well as on the sculptures often found on rocks. The figures are reproduced in Fig. 672.

They are said to represent the *Make-Make*, the god of sea birds' eggs. Sometimes the legs appeared raised, sometimes in a horizontal position. It is, however, always a two-fold position

so that two pictures of the god are placed side by side. Now, since the *Make-Make* in these positions represents the female and the male, all children are dedicated to him who was the original creator, and thus, as was gathered from the explanations of the natives, this sign is supposed to indicate the birth of a person.

These signs are often preceded or followed at short intervals by others which are supposed to represent the vulva of a woman. They are said, according to Geiseler, to state that the birth in question is the issue of a matrimonial alliance. Two illustrations (Figs. 242 and 243) of this are given in Vol. I., p. 278.

Among the pictorial representations of other peoples who have no system of writing, birth scenes occur. We do not give further details of these here as we have to come back to them in a later chapter. In any case, only a few of them can be understood as a substitute for information in writing.

CHAPTER XXIII

BIRTH IN RELIGIONS AND POPULAR BELIEF

1. MYSTICISM OF BIRTH

AMONG the conceptions of a considerable number of peoples we come across supernatural powers which are inevitably concerned in the birth of a child, and quite apart from the ordinary popular beliefs as to the origin of the child. Some help and relieve, but others prove hostile and obstructive. The lower the stage of civilisation the more prominent is the belief in the evil spirits which cause disaster, distress and danger for the woman in childbirth. Thus it is natural to seek means to drive away these demons and make them harmless. Faith now attaches itself to higher powers; to the gods whose powerful protection can be obtained by prayer and sacrifice. In one of the next chapters we shall speak in detail of these gods. Here we shall merely refer to some peculiarities which are now and again connected with the act of birth.

In this connection, one view, which Angas reports from Australia, is of a serious nature. In Queensland the women believe that their offspring draw from them a great part of their strength, and in conformity with this idea it is said to occur not infrequently that a mother devours her own child immediately after birth in order in this way to have the abstracted strength return to her body (see Andree²).

We come across a peculiar story among the Dyaks in South Borneo as to the origin of birth. This is told by Hendrichs as follows:

“Our great grandmother laid eggs and by hatching them multiplied her descendants. Once, when she was leaving the nest, she said to her children who were already hatched: ‘Do not go to the nest!’ But they took out the eggs and cooked them, and behold there were human children inside. When the mother returned and saw what had happened, she cursed her children, and from that time multiplication by hatching ceased and men were born with pain” (cf. with this the Make-Make legend in the foregoing chapter).

Another superstitious idea may be mentioned here which was said to be prevalent among the people of Philadelphia. There people believed, as Philipps records, that with each confinement the woman must lose a tooth. Unfortunately this observation is not very intelligible, otherwise it might be possible that this custom goes back to an old tooth-drawing rite, such as we described in the case of certain puberty ceremonies.

Among the common people in Russia it is believed that the time of the confinement must be kept secret. In Northern Russia this goes so far that even the nearest relatives may know nothing about it. For the belief prevails that for every person who hears of the confinement the woman in labour must suffer, and a wicked person may even make the birth impossible.

Among the Indo-Germanic peoples the following mystic ideas are associated with confinement, as Schwartz suggests:

According to the Delphic saga, birth and fighting with bow and arrow proceed under the sacred tree; and on Delos, Leto, when pursued by Python, embraced the sacred palm seeking help and refuge in birth (see Botticher, pp. 30 ff.). Like Mannhardt, in his *Baumkultur*.

Schwartz also refers to a superstitious custom in Sweden which may be connected with this Leto saga : there, pregnant women embrace the Vårdtråd, or guardian-tree, by the house in order to attain an easy confinement. Mannhardt (pp. 51 ff.) believes that originally there was some mystic significance at the root of this custom, because in the Edda we read :

“ With its fruits
Shall a man make fire,
When women will not bear.
Then from them flows
What lies within :
Thus shall it avail mankind.”
(*Fjolsvinnsmól*, 22)

In addition, according to Schwartz, it occurs that in the Völuspa (28) the “ Tree of Light ” is called positively Yggjungr (descendant of the Ygg), and that there are similar mythological facts in which trees figure in the birth of children and might be regarded as substitutes for the divine tree of light. For that passage in the Edda might be referred back to popular custom, which consisted in smoking the genitals of pregnant women with fir cones or other aromatic substances in order to bring about a premature confinement.

In Armenia and elsewhere also Dan reports that there exists the idea that the devil, whom they call *gagh* or *gogh* (the “ lame thief ”), comes to exchange children or to suffocate them. Therefore, the woman is watched over by the midwife many days before the birth ; and when labour pains begin the midwife takes incense and a wax light in her hand and fumigates the room. Then, as softly as possible (presumably that the woman in childbirth may not hear and thus learn that the devil has approached, and hence be frightened), she says :

“ May the snake in its nest
The mouse in the dishes,
The owl in the tree,
The flea in the bed clothes
The devil in hell perish utterly ! ”

With a few Orang Jakûn in Malacca, according to Stevens, we come across the idea that luminous jellyfish are wandering souls who await the birth of a child in order to get into it. The Orang Lâut believe of the flying lizard that it watches for births in order to cause the young souls which have just come to earth to enter into the new-born. Flying lizards are attributed to the mythical flying lizards which guard the stones of life and which the creator made for this purpose. No Orang Lâut will kill this animal, for the other lizards would avenge it by refusing to show the soul destined for a new-born child of this man where to find the child.

2. THE WOMAN IN CHILDBIRTH REGARDED AS UNCLEAN

As in all sexual processes of woman, and especially in those which are connected with a discharge of blood from the genitals, the idea of uncleanness is associated in the minds of various peoples. Thus we find the same idea in regard to parturition : the woman in childbirth is in many half-civilised nations regarded as unclean. Certain of the natives in South America have a woman in labour confined in the woods outside the hut so that she may not lessen the power of the weapons by her presence. When Father Ochs tried to get rid of this custom of the Indians in Brazil, and insisted on such women remaining in the hut, they went away from that neighbourhood ; they would not live in huts in which women had been delivered.

At a birth the Chukchee take out of the house all objects which are used for hunting or fishing, then two great blocks of snow are placed one on the other and brought into the outer house. Into the upper block a circle of little stones is put, and the snow lies there in a corner until it melts (see Ausland, 1884, 365). Also the Tunguses in Asia and the Tlingit in North America, according to A. Krause, like most tribes, regard the women in childbirth as unclean, and their food may be given to them only by the nearest female relations.

According to Klutschak (p. 233), the Eskimo woman is put into a position of uncleanness for four full weeks.

Colenso states that the Maori woman in New Zealand is not only unclean herself owing to her confinement, but also everything she touches is regarded as unclean. In Hawaii, according to A. Campbell, the women give birth to their children in retirement because they become unclean by delivery.

The idea that by parturition a woman becomes unclean and that she must be made again harmless to human society by a special expiation and a purifying woman, we must suppose from the following Australian custom :

“ A native woman in Australia who belonged to a higher rank was not allowed to sleep with her husband for two months before birth, and one month after ; during this period she was carefully isolated from other natives. She lived in a sacred house ; she was not allowed to cook or even touch food with her hands ; she was attended by one or more priests (*tolungas*) who continually prayed over her. For one or two months longer, the mother and her child were kept isolated and fed by a *tolunga*. The ceremony was still further extended if the child was a boy ” (see Searanke, p. 71).

Likewise among the Sulka in New Britain the process of birth is regarded as something harmful, the results of which must be prevented by a special ceremony. Parkinson ² reports of this :

The fact that “ a woman gives birth to a child has, in the eyes of the natives, the consequence that men become cowardly, that weapons lose their strength and that taro shoots intended for planting lose their power of sprouting. Now, in order to prevent this, the following ceremony is arranged : As soon as it is known that a woman has given birth to a child, the male inhabitants of the farms assemble in the men’s house, bring branches of various strong-smelling trees, break off the twigs and put the leaves, which have been stripped off, into the fire. All those present take twigs with young leaf sprouts in their hands. One of them speaks certain words over ginger which he holds in his hands, and he then divides it among those present. They chew it, spit it on the twigs, which are then held in the smoke, and, after that, these are put on the shields and weapons in the house, on the taro shoots, on the roofs and over the house doors.”

The wives of the Arrian hill tribes in Travancore, according to Painter, are relegated to a special hut for their confinement, because people regard them as unclean during this period.

Also among the Niam-Niam in Africa, Piagga states that the woman is most probably regarded as unclean during confinement, for she must go through it outside the house in a neighbouring wood.

“ Every negro ” [in the West Coast of Africa], says Schütt, “ regards the woman who is about to give birth to a child as unclean ; three weeks before her confinement she must leave the village and nobody may associate with her ; she generally faces her difficult time calmly without any help, and not till after the birth can she return to her hut and her accustomed surroundings.”

It would not be difficult to bring forward many proofs of similar ideas, especially from Africa. And even in Europe we come across similar customs. In Serbia

parturition is often accomplished in the open air without regard to the season of the year ; calmly and noiselessly the woman goes away in accordance with traditional ideas so as not to make the house unclean and, after the discharge of the placenta, she returns to the house with the new-born child in her apron (see Valenta). In Russia likewise both mother and child are regarded as unclean, and people believe that they are especially exposed to the influence of harmful powers.

Likewise in ancient Athens women in childbed, according to the ritual of Artemis, were unclean, so that anyone who touched them with the hand was excluded from the altars, like the person who has committed a murder (F. G. Welcker,¹ p. 197). In Epidaurus a house for lying-in women and for the dying was erected by Antonius for the attendants of the great temple in order to guard against making the ground unclean. Pythagoras also (according to Alexander in Diogenes (8, 33)) avoided contact with the dead and with women in childbed as pollution ; and, according to Porphyrius (*De abst.*, IV., 16), it was prescribed in the Eleusinian mysteries. The ancient Romans, who considered women to be unclean not only during menstruation but also during confinement, had a special birth chamber.

Among the Jews also the parturient woman was unclean and so also was the midwife who gave her assistance. The moment from which the house of the woman in labour was to be avoided as unclean was stated by the Talmudists to be from when women friends had to begin to support the woman under the arms. This is connected with the fact that the Talmudists were of opinion that at this time occurs the opening of the orifice of the womb.

A very peculiar isolation of women in childbirth took place, as Gutierre Diez de Games (*fl.* 1400) states, at the Estuary of the Loire :

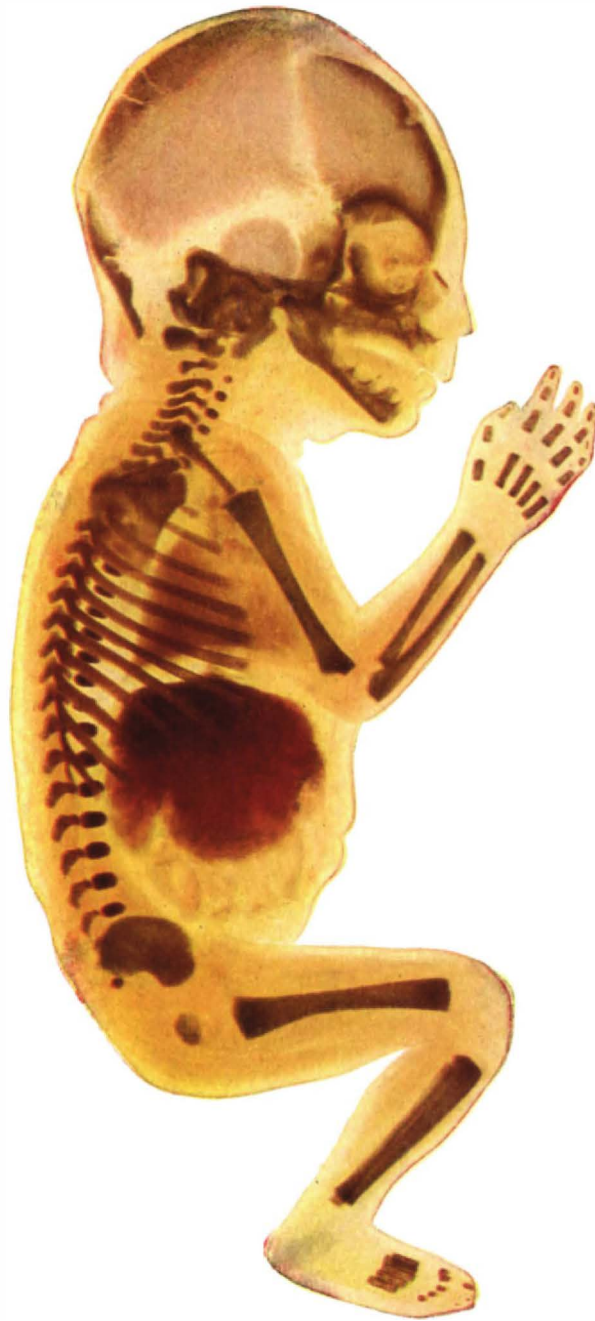
The women are not allowed to be confined on the islands situated there, but at confinement they had to betake themselves to the mainland or to a ship. "There is an inhabited island there where the women cannot be confined. When the time for labour arrives, the woman is taken to the mainland to have her child, or she is put into a ship, and when the birth is accomplished she is taken back to the island." Liebrecht, who discusses this passage, adds : "Here we come across distinct traces of the sanctity in which the islands on the north-west coast of Gaul were held in Druid times, for which reason the first missionaries to the heathen settled there." He also recalls the women of the Samnitæ, who, according to Strabo (IV., 6), also dwelt in an island in the estuary of the Loire and who, in order to have intercourse with men, had to go to the mainland, probably because of the sanctity of the island, so that it may be supposed that, for the same reason, parturition likewise could not take place there, in order not to defile it. In any case, this custom shows that the wives of the Celts, who dwelt there, were held to be unclean during confinement.

An analogous case is known to us from ancient Greece. The Athenians (in the eighty-eighth Olympiad) purified the island of Delos and then, by reason of an oracle, forbade that parturition should take place on it ; at that time this now desert island was inhabited and a famous place for religious worship. People believed here also that a parturition might defile the ground of the sacred island.

The Ossetes are not satisfied with removing a woman in advanced pregnancy from the house ; she has to return to her parents' home in order to have the confinement there.

This is a custom which we come across also in a number of other peoples. Thus, for example, Kubary records of the inhabitants of the Caroline Islands that not only for every confinement, but every time they are ill, they have to return to the house of their parents.

However, the custom just recorded of the Ossetes and the inhabitants of the



New-born child showing bony skeleton. (Spalteholz Preparation. Hygiene Museum, Dresden.)

Caroline Islands may admit of another interpretation. These people perhaps have no idea at all that the woman in childbirth would defile her husband's house, or even any general practical reason for their conduct. It is probable that they expect the reincarnation of the "soul" only in their home. There may also be some reminiscence of the matriarchy, to which M. Bartels has already referred. Only the wife belongs to the husband: by bridal purchase, she has passed over to his family; but the child she bears again belongs to the family of the mother, for the father did not buy it with her. Now, in order to assure that it belongs to the maternal family, care must be taken in advance that it does not see the light among strangers, *i.e.*, in the father's family.

In the view of many peoples the woman in childbirth is not so much unclean as the substances which issue from her genitals in parturition, from which people fear that demons will arise. Thus Pilsudski reports that Gilyak men and boys must carefully avoid setting foot in the place of confinement, for should the boys encounter a trace of women's blood they would bring on themselves the disease *taremynd*, which begins by crippling the hands and feet so that the person afflicted loses the power to move, gradually wastes away, and finally dies (p. 756). Further, when, among the Parsees, the time of confinement is near, the woman has to use an iron bed, since she would defile other kinds; and in the room where she is a fire is lighted for several days to banish the evil spirits (du Perron, p. 703). Similarly, as in China, it is considered a great pollution for the woman in childbirth to soil a room or bed with her blood, when she is about to be delivered; she has to sit with her delivery chair in a tub.

In Japan the lying-in couch is directly on the floor boards; this couch is bare of mats in order to keep the latter clean; some cotton stuff is used for lying on. In this case probably there comes into consideration the dread of pollution and of the creation of demons.

3. THE PARTURIENT WOMAN MUST HAVE PEACE

There is no doubt that originally the custom of relegating the woman to a special birth hut for her confinement was based on the idea that a parturition in the dwelling-house would defile both it and its occupants. But in a by no means insignificant number of cases this idea had long been forgotten; nevertheless, the custom continued to exist, but added to it was the idea that the woman in her time of travail must have as peaceful and undisturbed a place as possible. This explains how it happens that very often no one but the women assisting are allowed to enter the birth hut or, as the case may be, the dwelling-house in which birth is taking place.

It is not the fear of defilement which prevents fellow tribesmen, relations and very often even the husband himself from entering the birth-room, but the fear of the demons, since these have a harmful effect on the woman herself, on the child and on those present. Superstitious fear of the evil eye, of magic gestures and of spell-bearing words plays an important part here. Hence it is that on the Amboina Group even old people who happen to have sat down in front of the dwelling-house are sent away. The White Russians, for the same reason, send off the wanderer who knocks at the door of the house when birth is taking place (Paul Bartels³).

This prohibition for husband, friends and relations to enter the room where a birth is taking place is, as has already been indicated, very widespread. We encounter it in the Malay Archipelago, besides the Amboina Group where, in par-

ticular, the woman's brother-in-law may not even enter the house, much less the room in question. The same is reported from Ceram Laut and Gorong, on Leti, Moa and Lakor, on Keisar and Eetar and the Aru Islands. The same holds good for the Galela and Tobelorese on Djailolo and on the Sula Islands. On Tenimber and Timor Laut the husband makes known the fact that the house is not to be entered by fastening a twig of the *inaan* shrub to the door (see Riedel).

Vaughan Stevens says of the Orang-Jakûn in Malacca that they hang up a bundle of *ejoo* fibres (the fibrous covering of the leaf stem of the *arenga* palm) in a prominent place to indicate to the passers-by that in the hut or behind the screening wall a woman is in labour. At sight of this emblem everyone turns about at once. A bundle of these fibres, about the size of a child's head, is always kept on hand by the women for this purpose.

Among the Basutos, states Hamy, the hut in which there is a woman in child-birth is recommended to general consideration by a bundle of reeds fastened over the door.

Also, among the Topantunasu, a tribe on Celebes, as Riedel reports, nobody may enter the room in which birth is taking place. Not until the child has been bathed may the father enter to look at it.

Among the Badaga, in the Nilgiri Hills, the husband leaves the house at once when his wife feels the birth pains begin (*cf.* Jagor); likewise among the Georgians and Armenians, where the woman cleanses her whole body before parturition, the husband is not present at this procedure and does not even see his wife till three weeks after the confinement. The Hottentot must leave his hut as soon as the midwives, who are to assist his wife, enter it; and he must not let himself be seen in it during the confinement. If he does go in and this comes to the public knowledge, then he must give his friends two wethers. Among the Omaha Indians also, no man may witness the birth. The husband and children go to another house during this period.

Among many other tribes, though in general, of course, only the women actually helping may be present at the confinement, nevertheless the husband is now allowed entry. This we find on the islands of Luang and Sermata, and also in the Savu and Babar Islands, his presence is even *required*, as he must take an active part in giving assistance at the birth by massaging the abdomen of the woman in labour (see Riedel).

Glück reports from Bosnia :

“The effort to keep parturition secret, at least from the men, is evident everywhere in the country. As soon as the woman feels the pains, the men are got out of the house on any pretext. The husband is evidently not to meddle at all in this female matter.”

These are but echoes of old customs, the original motives for which have presumably long since faded from the memory of the people.

CHAPTER XXIV

DEMONIC INFLUENCES AND GUARDIAN DEITIES

1. SUPERNATURAL INFLUENCES ON BIRTH

IN the foregoing chapters we have already referred repeatedly to the widely diffused examples of "animism," which we come across among primitive peoples who populate their natural surroundings with dangerous demons whose sway they can escape only with the assistance of supernatural powers. Then, at a much later stage, such a protective power assumes more and more the character and form of a god, of whose help people must assure themselves by prayer and sacrificial offerings. Hence we can easily understand that just such an alarming process as is the delivery of a woman is very often put under the guardianship of special divine powers who, generally of the female sex, must undertake the functions of assistance at confinement.

Owing to the great number of protective spirits who live in continual strife with the evil demons, there comes about gradually a division of labour, and in the end each has a strictly limited range in the government of the world.

It is a remarkable phenomenon in the spiritual life of nations that the gods who, according to their belief, preside over birth manifest themselves also at procreation, that most wonderful process of nature.

Here we must take no account of a specific treatment of the "Spirits and Gods of birth, according to modern scientific method"—as Bartels still thought it—for almost all the preparatory work for it is lacking, and certainly there is no time to collect the little existing material. What Bartels presented here is mostly quite out of date and has no claim at all to display modern scientific method. We therefore think it better that it should be omitted, and also that we should treat those forms recorded by the ancient Greeks as a whole. Too many misunderstandings have crept in when dealing with the Greeks and Romans, and too many attempts at identification have turned out to be wrong. Isolated records, however, from antiquity may be examined, but we shall at once draw attention to the fact that there is still a very great deal in them to be altered. Above all, one cannot yet speak of a "Mythology" of birth even if anyone should ever intend to describe it as such.

2. MATERNAL DIVINITIES IN THE NEAR AND MIDDLE EAST

[Among the earliest human conceptions of which we have record that of a Great Mother is probably the most important. We cannot enter here into a discussion of her origin, her possible relation to the cowrie shell and her subsequent history. We must assume some knowledge on the part of the reader and thus are included under the heading of Maternal Deities a few scattered observations on these goddesses as they appear in the various countries which come within our limits.]

One of the goddesses who was worshipped by the Semitic peoples was known as Ishtar both to the Babylonians and the Assyrians. Under the name of Ashtaroth we read of her in the Bible, and she was also called Astarte.

The Phœnician Astarte had also famous places of worship in the neighbouring islands of Asia Minor (especially on Cyprus), in the ruined temples of which even now many sacrificial offerings are found.

Inscriptions show that the Chaldeans also had a moon worship at a very early date. The old moon god Sin (Nannar) of Ur was doubtless an important deity. He was often called the



FIG. 673.—Ishtar. (After M. Jastrow.)

Lord of Judgment, and of Wisdom, and his spouse, Ningal, is often designated as the great mistress, whilst Ishtar is regarded as partly his daughter. One of the oldest epics of the history of the world treats of her, and it is assumed not incorrectly that she was the oldest prototype of the mother god of the Near East. She also was already regarded as the "virgin," in spite of her lovers. We learn that Ishtar first brought succour to a hero Gilgamesh. Two of her companions accompany the hunter Zaidu in order to lead astray Ea-bani, the friend of Gilgamesh; to him she offers her hand, which he refuses and insults her, saying that she makes man and animals the sacrifice of passion and lust. The quarrel was ended by a severe illness of Gilgamesh. Ishtar is not, as elsewhere, simply a female addition to a male god: she is, from the beginning, a Mother Goddess and a goddess of fertility who, on the one hand, remained unmarried, or, on the other, had had many lovers. Thus, later the Babylonian Astarte appeared not only as the goddess of conception and birth, but also as the divine virgin, queen of the night, or queen of heaven (Fig. 673). As the goddess of fertility, she was the common mother, the giver of birth to all and wore as a symbol the female girdle. She is in some way related to the Grecian Aphrodite, a fact with which various Scythian and Caucasian influences may have had some connection. Hartung says, not without justification, "Aphrodite, or the Cyprian goddess, is in fact identical with Aschera, Astarta, Astaroth, Astarte."

In honour of Mylitta (also identified with her), the so-called "religious prostitution" took place in Babylon, as Herodotus (I., 199) reports as an eye-witness. Legally, every native woman was bound to visit the temple of the goddess once in her life in order to give herself to a stranger. Many of the ladies of high degree disdained to mix with the women of lower origin; they went to the temple in closed carriages, there they took their places with a great number of slaves behind them, whilst the other women, their heads adorned with wreaths, sat on the ground before the temple. These thus formed alleys, which were separated by strings, and along which strange men now walked in order to make their choice. When a woman had taken her place there, she could not leave it before a stranger had thrown money in her lap, while invoking the goddess Mylitta; then she went with him outside the holy places, brought the offering due to Mylitta and went home. The prophet Baruch, 200 years before the Greek writer Herodotus, tells of this cult in the epistle of Jeremy to the Jews, whom Nebuchadnezzar had led into captivity. And half a century after Herodotus, this "site of the worship" consecrated to the

goddess was found by Strabo, a wide space round the temple provided with tents, arbour'd walks, hedges and little gardens.

On the lower Euphrates and Tigris, there still dwelt in 1882 a peculiar sect, the Mandæans (see Pallis), rendering homage to dualism in their religious teaching. Of them, A. H. Petermann (*Reise*, II., 447 ff.) made a detailed record. They worship Rūhā, the mother of the monster Ur. Of this Rūhā, from whom all sorcery and evil are supposed to come, nothing good can be said, except that she gave help to women in childbirth. The same ideas recur among all the peoples of the Near East.

Throughout Syria there was a form of worship connected with sexual intercourse, which was mostly honoured by women, while the men worshipped a priapic deity. Astarte had her temples in the chief towns of Phœnicia, of which the most famous were the temples at Sidon, at Hieropolis in Syria and at Aphaca in Lebanon. The great festivals of Astarte, in which both sexes took part, were celebrated by men in women's clothes and women in men's clothes, thus illustrating a typical man-woman worship, at which a crowd of priests arranged the ceremonies with music. In the fourth century A.D., Constantine abolished this festival by law, and, as Eusebius (*De Vita*, III., 58) records, destroyed the temple of Astarte for love of his fellows.

Altars to Astarte were erected by the Phœnicians also on the island of Cyprus. Homer states that Aphrodite, risen from the sea like the bright star Urania, which the Chaldean shepherds saw rising from the sea on fine summer nights, chose the island of Cyprus for her earthly kingdom. Astarte appeared here as Aphrodite and in Babylon as Mylitta. Twenty temples were erected to her on the island. The most famous were at Old Paphos and Amathus. The maidens of Cyprus went walking on the seashore in the evening, and sold themselves to the strangers who came to the island. Justin (XVIII., 5) relates that they used the money they received as dowries instead of laying it on the altar of the goddess as was done two centuries earlier.

As Cyprian goddess, Astarte, like Isis, wore cow's horns on her head, which suggested a Moon goddess. The pomegranate as symbol of fertility was sacred to her, fish also were her symbol and the distaff too.

Now when several of these symbols, especially the distaff, as well as the circumstance that doves were sacred to her, are found again among the divinities of other peoples, the question arises as to how far diffusion took place. Doves were the birds to which, in the Near East, people ascribed special fertility. They were regarded as "Bringers of Children," somewhat like the stork with us, and it appears that the Holy Ghost thus came to have the form of a dove (as bringer of the "Jesus child" to the Virgin Mother).

In Asia Minor there were temples at Zela and Comana in Pontus, at Corinth, as at Susa and Ecbatana in Media; also among the Parthians, among whom orgies took place; and in Lydia there existed the custom whereby under the cloak of a religious festival maidens earned a dowry through sexual intercourse.

In Phrygia people worshipped Cybele, who was impregnated by male gods; and along with the image of the phallus she represents the goddess of nature; her priests (*Galli*) were castrated and wore women's clothes; and in autumn and spring these gods were honoured.

From Babylon the worship of Astarte spread to several Semitic tribes, who had already to some extent their own gods of procreation and birth; these, however, soon seem to have amalgamated, more or less quickly, with Astarte. We have already spoken of the Phœnicians; they took their worship of Astarte, as a fertility goddess together with Baal, into all their colonies with them. Likewise the worship of Aschera together with Jahweh and Moloch and Baal, the most worshipped of all, was quite popular at the time of Solomon and the other kings. The good goddess Aschera was really identical with Ishtar, with the Astarte of the Babylonians, the Tanit of Carthage, with the Syrian goddess at Hieropolis, the Baalath of Byblus, the Derceto at Ascalon, and the Assyrian Mylitta. The peoples of South Canaan appear to have brought this goddess to Judah and Israel, where she was worshipped up to the time of the Babylonian captivity.

The ancient Arabs, before the introduction of Mohammedanism, prayed to the celestial goddess Alioat, also Allāt, as the goddess of fertility and birth. According to Herodotus

(III., 8) they had two gods, Orotal and Alitat. He observes that these gods are identical with Dionysus and Urania (*cf.* the work of Nielsen to be used with caution).

Our knowledge with regard to Egypt in these respects is not much better; we have a great deal of material, but it is sadly lacking in actual facts. Perhaps here, too, the issue may lie in Greek tradition. Macrobius (*Sat.*, VII.) says that there were deities who, according to Egyptian teaching, assist at the birth of human beings. The ancient Egyptian goddess of birth, Bast, the goddess of cats, who was also designated as that of Bubastis, had a very beautiful temple there. She was, at the same time, a goddess of love.* The people who streamed annually from all parts into Bubastis celebrated festivals which surpassed the night festivals of Venus in wantonness. The women who came in boats with men expressed, it is said, their joy with song and rattling, and when they reached a town in their boats, they went on land, lifted up their clothes and in this way invited love. Very probably the goddess Bast was invoked also at births, for she was one of the deities who brought healing to the sick and suffering, and Herodotus (II., 59, 137) called her Artemis.

Among the amulets of ancient Egypt, Wiedemann² describes little statuettes representing a standing female hippopotamus which is often found as a mark of divine protection. According to one legend, this goddess, as the goddess Thoeris, had given birth to the whole world; according to another tradition, as the goddess Apit, she had given birth to the god Osiris; in accordance with this, her assistance was invoked at a human birth.

According to Borchardt's † view, quoted by Blackman, the fox played a part at birth in Egyptian mythology. Blackman thinks that, in certain customs which he came across in Nubia, continuance of these ancient Egyptian derivations is to be seen. He found in Godi (Nubia) a whole fox hanging over a window, and in answer to his question he was told it was a charm which gave assistance at birth and protection from abortion; further, in a little village to the north of Bâb-el-Kalabsheh, he came across a house adorned with three foxes and got the same information there.

3. THE GODS OF BIRTH AMONG THE IRANIAN PEOPLES

We shall here reprint some of the statements of Bartels, as illustrating his ideas.

Among the Iranian nations of Asia, such as the Persians, Medes, Bactrians, a connection with procreation was assigned to the moon in the religion of Zoroaster: it is supposed to retain the seed of cattle, the seed of the bull, *i. e.*, of the first created bull; and is said to preside at birth (*Vendidad: Fargard*, 21). The moon goddess of these nations is, in any case, pre-Zoroastrian, and her worship, as will be shown, was very widespread. The moon was invoked as the beneficent power of heaven, and when in trouble during the process of birth or afflictions of childbed they called upon her to remove the supposed influence of spirits.

Anaitis (also Anâhita and Anta) was the moon goddess of the Persians, of the Cappadocians, of the Armenians and Medes. All these peoples worship the moon. The Armenians had a chief temple to this goddess, who was also called the Goddess of the Water, at Erznidshan and in Thiln (*cf.* Spiegel). This goddess was worshipped in the eleventh and twelfth centuries and even up to the fifteenth century by the sect of the Sons of the Sun (Arevordians) in the town of Samosata and its neighbourhood, a sect which is probably identical with the present-day sect of the Shemsije (800 adherents of this are said to have dwelt at the beginning of our century in the town of Mardin). The worship of this goddess was made the subject of a special study by Windischmann, whose work will be referred to in the following paragraph.

The oldest informant about Anâhita is Berosus (about 260 B. C.), who records in the third book of his Chaldean History that the Persians had images of gods in human form, the worship of which was introduced by Artaxerxes, the father of Darius, whilst he had set up statues of Aphrodite Anaitis in Babylon, Susa, Ecbatana, in Damascus and Sardes (Clement of Alexandria, *Protrept.*, c. 5). Further, Polybius, who lived about 204–122 B. C., also mentions her temple

* *Cf.* Kunike.⁶

† *Zt. f. ägypt. Sprache*, December, 1907, 75.

at Ecbatana, the capital of Media. Isidorus Characenus speaks of these and indicates also the town of Concoabar in Upper Media as another seat of the Anaitis worship. Strabo, however, informs us that the Anaitis worship of the Persians and Medes had spread to Armenia and Cappadocia. He relates that in one of the shrines erected to Anaitis near the town of Zela in Pontus, people celebrated annual festival of the Sacaea, in memory of the defeat of the Saka (Scyths) and, according to some, Cyrus is said to have overthrown and captured the Scyths. According to this, the worship of Anaitis would extend back to the time of Cyrus. Further, Strabo (XI., 14, 16) states that the Armenians preferred to worship Anaitis in Acilsena, and that the most respected of the people dedicated their daughters to prostitution : when these girls who, at the wish of their parents, had been dedicated for a longer or shorter period to the service of the goddess, quitted the temple, they usually left behind on the altars all that they had earned by the prostitution of their bodies. Then, however, there were always men who were ready to make inquiries about the young priestesses upon which usually those who had accepted the largest number of strangers were most sought after in marriage.

According to Windischmann's opinion, the whole of the evidence of classical antiquity yields the following result : Anaitis, generally called Artemis by the ancients, that is to say, the Persian Artemis, but also identified with Aphrodite, has, in the midst of obvious Zarathustrian institutions and kindred beings of the same system of religion, had a widespread worship in Persia, Bactria, Media, Elymais, Cappadocia, Pontus and Lydia. Her temples are in Hypæpa, in Damascus, in Zela, and in Acilisenia, an Armenian province. Her service was performed by priests and was connected with mysteries, feasts and sexual rites. The Persian feasts are associated with her, and sacred cows are dedicated to her. Artaxerxes II. erected statues to her, and thus introduced the worship of images into Persia. Her statue at Susa was of solid gold and this was pillaged in the Parthian wars a generation before Christ. Many trace her worship back to the Taurian Artemis ; others traced it as far back as the times of Cyrus. In any case, the statement " Artaxerxes first set up her statue " excludes a worship without images just as little as in the case of other gods. The existence of an Aphrodite favoured by Herodotus leaves no doubt as to its great age.

But Anaitis is to be found again in the Iranian traditions, as Windischmann has shown. She occurs under this name in all parts of the Zend-Avesta ; as the goddess of the supernaturally impregnated water, the source of the fertility of all growing things, both animals and men, from which all earthly water takes its rise. In the Zend-Avesta she comes to protect, support and rule all lands from the creator, from the stars, from the mountain Hukaira, and flows to the Vourukasha sea ; the faculty of thinking is ascribed to her, four white horses conduct her : wind, rain, clouds and lightning. She flows as strongly as all the waters of the earth. She appears in the form of a sublime, beautiful, clean-limbed virgin, encompassed with the radiance of many colours and with bright, golden laced shoes on her feet. She also wears a golden robe, heavy ear pendants and golden ornaments on her head ; she is girdled and her garment consists of beaver skins. It is stated in the text as a special activity of Anāhita that she purifies the seed of all men, cleanses the fœtus of all female creatures for birth and gives them mother's milk. Young girls appeal to her for a strong master of the house ; pregnant women and women in childbirth for successful issue. According to all this there is no doubt that the Anāhita of the ancient records is identical with the Anahit of the Armenians and with Anaitis. And her connection with fertilisation and birth justify her being put on a level with Aphrodite, as also with Artemis, on the other hand, by her cleansing power and her strength.

4. THE GODS OF BIRTH AMONG THE HINDUS

We learn that the ancient Hindus also had protective and helping gods for women in childbirth from Suśruta's Ayur-Veda. For, in difficult birth, the Brahman doctor invoked the gods with his incantation (Mantra) ; Agni (god of fire), Parvatī or Bhavanī (Lady of the Hills), the Sun and Indra, as well as the gods to whom salt and water belong : " Oh ! deeply afflicted woman in labour, may Ambrosia, Moon, Sun and Indra's horses dwell in thy house ! " Bhavanī,

whom people in love invoke, and in whose honour poles decorated with flowers and ribbons are set up in the month Phalguna (May), is regarded by the Hindus as the patron goddess of births. The same goddess is represented as the mother of the Trimūrti and the three gods, although her sons, had intercourse with her. In the embraces of Brahmā, she becomes the spinning Maya, as the Hindu Venus, Laksmī, she was impregnated by Vishnu, and, as the wife of the burning Śiva, she is called Bhavanī. Once he had assumed the form of the bull, she that of the cow ; another time they had hatched in a tree as a pair of doves, in order to revive extinct creation. As the creator of death she is also called Kālī, *i.e.*, the Black One.

Among the Śaivas there developed a phallic worship. Whilst the Śaktas pay greater homage to the female force of procreation, the Śaivas venerate the male principle. In the beginning the idea of procreation as the divine all-creating power was purely spiritual, but with the development of the Śiva worship it became sensual and at the feasts of Bhavanī or Parvatī the sexual desire affected the minds of all ; sacrificial offerings were brought to the gods of procreation, all differences of caste being set aside and the emblems of *linga* and *yoni* were represented by images.

Of the Hindus at the present day, Schmidt says that Mātā Janamī, the birth mother, is a kind of Juno Lucina among the Rājputs, like the Eileithyia of the Greeks, or the Camenæ of the Romans. Her power is situated in a little ball, and over the whole of Northern India the midwives carry as a talisman for the achievement of an easy delivery a special kind of little ball, known as *kailas maura*, the top of the sacred mountain Kailāsa.

5. THE GODS OF BIRTH AMONG THE GREEKS

The oldest goddess of birth among the Greeks was Eileithyia. This was the same goddess who had long been worshipped in Media as the symbol of productive and all nourishing power, and the worship of whom then spread along the Asiatic coasts of the Black Sea, and over Asia Minor. Herodotus (IV., 35) gives evidence that her worship was brought to Delos by the Hyperboreans : he records a hymn which Pausanias (VIII., 21) also recalls, the latter stating that the goddess in this hymn was called the deft spinner, at the same time the giver of life. Pausanias (I., 18) says that Eileithyia, coming from the Hyperboreans to Delos, did midwife service for Leto ; from Delos, her worship spread to other peoples. The moon is her celestial symbol, for it receives the rays of the sun, and promotes procreation and growth upon earth ; whilst the cow is her symbolical counterpart on earth. Thus she is again one with the bull goddess worshipped in Scythia, named the Taurian goddess. Her principal seat was Ephesus, where Hyperborean maidens were her priestesses, and where she was afterwards conceived as Diana.

It was imagined that Eileithyia assisted at childbirth and helped to bring children into the world, but she herself increased the pains of labour as a punishment for want of chastity, and thus was often feared.

In Homer's "Iliad" Eileithyia is recalled in several passages, and each time her business as an assistant at birth was imputed to her. Her name occurs there repeatedly, and Böttiger explains it by suggesting that there were perhaps two Eileithyias, one favourable and the other unfavourable.

In Aristophanes (*Eccles.*, V., 368, and *Lysistr.*, 693) also this goddess occurs in the double significance of promoting birth and obstructing birth. According to Theocritus (XVII., 60) she is also called the girdle loosener (*ἀντί-ξωνος*).

The mythology of the Greeks had also other goddesses for help at births. The most important is Artemis, who first abstracted herself from the womb of Leto, and then assisted the mother in labour at the birth of Apollo. In Homer she has as yet no connection with birth, but is regarded by him solely as goddess of hunting. Not until later does she become an assistant at births and is designated sometimes as Eileithyia herself, sometimes as her assistant.

Hera was the goddess of marriage and with it also of birth. Finally, the goddesses Genetylides occur as presiding over procreation and birth and as companions of Aphrodite Colias.

6. THE GODS OF BIRTH AMONG THE ROMANS AND ETRUSCANS

The Romans had renamed their chief gods after the Greeks, but they had also greatly added to their number. Diana, as the goddess presiding at birth, they called Lucina, as Cicero (*De nat. deorum*) makes Timæus say, with the qualifying words *Lucifera, Opifera, Opigena*. Juno was also regarded as the goddess of birth and the patron goddess of the female sex. In this respect, Juno and Diana were one and the same deity, and so, as E. C. v. Siebold (I., 114) says, they coincide with the Greek Eifeithyia. Juno governed or guarded menstruation with Mene; flowers were offered up to her as Lucina by pregnant women in a temple and a grove in the Esquiline Hill. The women making the offerings for the sake of the good omen, approached the goddess without any knots in their garments and humbly with loosened hair (Servius on Virgil, *Aen.*, III., 518); they were thus, as people believed, guarding against abortion. Lucina was not only invoked at deliveries, for after the successful birth of the child and during the first week, a meal was set down before her to induce her to be favourable to the child (see Kissel).

Besides these, the Romans possessed three Nixi whom they invoked for protection together with Lucina (see Curàtolo). According to Ovid (*Metam.*, IX., 294) these were three gods who help women in childbirth. Their images stood in the Capitol before the temple of Minerva; they were portrayed in a kneeling position. Hederich states they were called by some *Nezi* or *Nixi*, "because they rejoined or closed the parts of the female body which had to open at birth."

Further, the woman in childbed with her new-born child was, among the Romans, protected by Pilumnus, Intercidona and Deverra against the attacks of Sylvanus by night. The new-born child, however, had also its own special guardian deities: Cunina watched over children in the cradle; Rumina presided over the business of suckling; Ossipaga over growth; Vaticanus and Fabulinus over the crying and stumbling speech of the child; Vitumnus gave it life; Sentinus and Sentia, feeling; Vagitanus, breathing and crying.

In delivery itself, however, Lucina presides, who is to be found sometimes as Juno,* sometimes as Diana.† Cicero derives her name from *luna*, moon. Pliny (XVI., 44), on the other hand, thinks that it comes from a grove and temple dedicated to this goddess at Rome in very early times. Others, however, associate it with the moon (Plutarch (*Quaest. rom.*), Macrobius (Sat. VII., 16)). With it she would appear as Diana; the girdle was sacred to her; she was called the unloosener of the girdle, for women in labour had to take off the girdle (see v. Siebold, I., 117).

A successful delivery was also effected by Nascio or Numeria. In addition, the Carmentic goddesses were also active at births; Prorsa, who brought help in normal presentation of the child, and Postverta, who helped in faulty (transverse) presentations. When Julius Beer ‡ assumes that the various head presentations were known to the Romans, and that the Carmentic goddesses (including Anteverta) were by their names supposed to personify the positions at birth, perhaps in this respect he goes too far. He refers to a passage of Aulus Gellius (XVI., 16), who, however, was not a physician, in which the foot presentation is described. "Quando igitur inquit contra naturam forte conversi in pedes brachiis plerumque diductis retineri solent aegriusque tunc mulieres enituntur, hujus periculi deprecandi gratia aræ statutæ sunt Romæ duabus Carmentibus." From the passage it appears that the Carmentic goddess did not personify the various head presentations which, as is well known, were not known at all, but that these goddesses were invoked only in cases of normal as well as of transverse presentations. At the end of the passage it runs thus: "Quarum altera 'Postverta' cognominatast, 'Prorsa' altera a recti perversique partus et potestate et nomine." Beer thought that the statue of Juno Lucina had the hand in the position of that of a midwife, who supports the perineum in order to cause the emergence of the child's head to pass without danger. It is very improbable, however, that the artist intended any such indication, for the reason that the support of the perineum was still quite unknown to the ancients.

The Etruscans also had their special goddess of birth. Dennis (I., lv.) on this subject

* Plautus, *Aulul.*, IV, sc. VII, 11. Terence, *Andria*, III, sc. I, 15. Adolph., III, sc. IV, 41. Also in Propertius Lib. IV, eleg. I, 95. Cicero, *De nat. deor.*, Lib. II, c. 27. Ovid, *Fast.*, IV, 39. Apuleius, *Metam.*, Lib. IV, etc.

† Horace, *Carm. saecular*, 15 and Lib. III, *carm.* 22. Catullus, XXXIV, 13. Virgil, *Bucol.* IV, 10, Apuleius, *Met.*, Lib. XI.

‡ According to Beer, the Romans regarded *Ops* as the succouring goddess of women in labour.

writes : " Cupra was the Etruscan Hera or Juno, and her principal shrines seem to have been at Veii, Falerii and Perugia. Like her counterpart among the Greeks and Romans, she appears to have been worshipped under other forms according to her various attributes—as Feronia, Uni, Eileithya-Leucothea." The name Cupra, we learn from Strabo (V.), has not been found on monuments. There the goddess is commonly called Thalva, yet Gerhard (p. 40) thinks that this name is used for her as goddess of births and of light. She had a famous shrine in Pyrgi, a great part of the importance of which must have been due to its temple of Eileithya or Lucina, the goddess of birth, a temple so richly endowed with gold and silver and with valuable gifts, the spoils of Etruscan piracy, that it aroused the greed of Dionysius of Syracuse, who equipped a fleet of 60 triremes and attacked Pyrgi, ostensibly in order to put down its piracy, but, in reality, in order to refill his empty treasure coffers. He took the place by surprise, robbed the temple of not less than 1000 talents and took besides much booty after he had defeated the men of Caere, who came to relieve it, and had laid waste their land.

7. INDO-GERMANIC BIRTH DIVINITIES

Besides the goddesses of birth discussed here, there occur among various Indo-Germanic peoples three goddesses of destiny, or Fates, who are also active in delivery, and especially in the destiny of new-born children whose guardian spirits they are. These are the Mareien of the Germans, the Rojenice of the Slovenians, the Sudiečky of the Czechs, and the Moirae of the Greeks. In Scandinavian mythology the Norns are the goddesses of birth. According to the poetic mythology of the North, there are three kinds of Norns, of which only one kind is to be reckoned as goddesses of birth. The first kind are the Chief Norns, viz., Urd, the past, Verdandi, the present, and Skuld, the future, who determine the fate of mankind in general. The second, the Guardian Norns, are those who protect individual human beings, guide their actions and prepare their future destiny at birth and are, therefore, regarded as goddesses of birth. Finally, the Magic Norns are divested of all that is godly, and are nothing but sooth-sayers and witches.

In the Edda, Freyia is a goddess of love and of the beautiful season ; with her is Frigg, as the goddess of marriage ; she is the wife of Odin, and the goddess of housewives. Freyia is also regarded as the breeding principle in nature : like all the representatives of this principle in the mythology of other nations (*cf.* Artemis, Juno, Athene, Hecuba, etc.), she also is a spinner (see Nork). It is also said that Oddrún gave help in



FIG. 674.—Shelah-na-Gig. Protection against the evil eye. Dublin. (After Dulaure.)

difficult delivery (Grimm,² 1182). Freyia is the moon goddess, and the light of the moon is regarded as the breeding principle because it is supposed to ease birth, an idea which again recalls Diana Lucina.

In the Völsunga saga we learn the following about the gods of birth of the Northern countries. Sigurd asks Fáfnir to speak and say, if he be so exceeding wise, who are the Norns who set children free from their mothers. Fáfnir answers that many there be and wide apart ; for some are of the kin of the Asar and some are of elfin kin and some there are who are daughters of Dvalin (*Fáfnismól*, 12, 13).

Among the ancient Slav peoples, Siwa and Dzdzielia were probably identical with the Venus of the Romans ; the latter was the beautiful-haired goddess of love and fertility. According to Nork, the female principle in nature for the Slavs is Libussa, who is, at the same time, the originator of birth and of death. As the first woman, she is called *Baba* (woman), yet at full moon, which eases birth, she is Zolotaga-Baba (the golden woman), the mother and nurse of all the world.

The goddess of the moon among Slav peoples is also the protector of births. In Little Russia the appearance of the moon at the same time as a star is considered lucky. The Cossack who is born at this time has luck in everything, especially in love. The soul of the child is secretly connected with the star. A falling star signifies in Little Russia that a child has died. Among the ancient Slavs the morning star was the protector of married women; they also believed in the powerful goddesses of fate who spin the threads of human destiny.

The present-day Slav peoples call the goddesses of fate goddesses of birth: among the Slovenians these are called Rojenice. These three goddesses have light, ethereal bodies; at the birth of a child they come at night to the window or into the room of the woman in childbed, and make known to the new-born child what its destiny is to be (see Klun). The Czechs in Bohemia and Moravia believe in the three goddesses of fate Sudiečky; these are three white women who come at midnight into the room where a child lies, or to the window, and have a consultation as to the fate of the child. They hold lighted candles, which they extinguish as soon as they have pronounced judgment; when they are approaching, everything sinks into a deep sleep, and only pious people have the gift of seeing them. When a child is born, salt and bread are put on the table for the Sudiečky to eat. These fateful women are sometimes popularly identified with the wild women who occasionally substitute changelings for children (cf. Grohmann). The Wend Sorbs, who live in Altenburg and Vogtland, believe the following. Porenut watches over the child in the womb; Zolata or Slata-Baba is the helper at birth; at Schlotiz, near Plauen, she had a temple or sacred grove. Ziza protects nursing mothers, and Siwa spins the threads of life till the relentless Marzana cuts them (see Limmer).

Of the goddesses of birth of the Southern Slavs, F. S. Krauss says:

“Originally, popular belief no doubt differentiated precisely between goddesses of birth, the protectors in severe labour and successful delivery, and the goddesses of fate, the actual arbiters of fate. After the Slavs accepted Christianity, the true significance of the demons of birth disappeared, and they rose to being goddesses of fate. Only the name and the custom of making offerings were retained. Rozdanica is the old Slav name for the patroness of pregnant women. The Bulgarians and Serbians have already forgotten it in this sense. Among the Bulgarians in the Rhodope Mountains the woman in childbed is called *Rodzenica(ta)*. Among the Slovenians the women of fate are also called Rodjenisse or Rodjenice. According to evidence from the fifteenth century, it appears that the Rozdanicens were worshipped among the Russians as *numina genitilicia* to whom people made offerings. Offerings of bread, cheese and honey put upon the table were, at the same time, made to Bogu, Peruni, Rodu, etc. Among the Bulgarians in Old Serbia, the offerings seem to have been intended for the actual women of fate. What the gifts formerly signified has been lost to the people. Three of each kind of offering were made originally in consideration of the three Fates, and by doing so it is thought that witches are banished from the child.”

8. BIRTH DIVINITIES AMONG THE LAPPS, FINNS, MAGYARS, MORAVIANS, LETTS, VOTIAKS AND TUNGUSES

The Lapps have a goddess of birth named Sar-akka, one of the three daughters of Mader-akka. She is the actual protector of all growing things until they see the light. Then Uks-akka steps in. Sar-akka determines the favourable growth of the embryo: she also protects the mother and helps her at the birth of the child. The Lapps think that Sar-akka feels the pains with the women in labour. “This goddess,” says Jessen, “the Lapps have ever on their lips and in their hearts. To her they direct all their prayers; they invoke her in all their doings, and look upon her as their greatest consolation and their surest refuge. They erect a dwelling for her near the tent until the mother’s time arrives. Usually she dwells in the tent itself, near the hearth, that is, the holy of holies of the house, where she has her share of everything they eat given to her as an offering.”

Women in childbed drank Sar-akka wine before the delivery and Sar-akka groats after it. In the groats, they put three little sticks, a white, a black, and one with three rings; these they

put under the threshold for two days. Then, if the white one had gone all went well, but if the black was missing, the woman in childbed was to die (see Passarge ¹). Besides Sar-akka, who was regarded as the real protectress of all nascent things, the Lapps did homage to Uks-akka as the second daughter of Mader-akka ; she invested the child with the male sex and had the power to change a girl into a boy a short time before birth. She is a kind of Lapp Diana, but the runic tree represents her as an old woman with a staff instead of the original bow.

Among the Finns we come across various gods of birth. According to Boecler, the Finnish goddess of birth was Rougutaja, and, according to Kreutzwald also, her help for women in labour used to be invoked fairly commonly in Allentacken, Wierland and Jerwen. In the Werrosch district, however, Rougutaja is unknown ; instead of her (or him, for this may be a male god), the *pupa Marja* appears, Holy Mary, who is prayed to for help.

In the great epic of the Finns, the Kalevala, however, another goddess of birth appears, one of the so-called daughters of creation, the Luonnatur, a spirit which hovers in the air. She is invoked in the following words (Crawford's translation) : *

“ Faithful daughter of Creation,
Thou most beautiful of women,
First and last of ancient mothers,
Hasten on thy feet to ocean,
To the ocean's centre hasten,
Take the sea-foam from the waters,
Take the honey from the mermaids,
And anoint thy sacred members,
That thy labour may be lightened. (XLV., 117 ff.)

However, the Finnish god of thunder, *Ukko*, had to come in in specially severe cases as the god assisting birth. And so we find as an inevitable supplement to the foregoing verses the following invocation :

“ Ukko, thou who art in heaven,
Hasten thither, thou art needed,
Come thou to thy child in trouble,
Help the helpless and afflicted.” (XLV., 132 ff.)

We mention the Magyars with the Finns because, as is well known, they are of kindred race. “ The goddess of birth of the heathen Magyars,” says v. Wlislocki, ⁸ “ Naggasszony or Nagyboldogasszony still lives in present-day popular belief, although in some parts, owing to Slav influence, she is being displaced by St. Anna. Tuesday is sacred to her. Boldogasszony (blessed or dear woman) is the daughter of Naggasszony and she is the guardian goddess of women in childbed and of children. Only in places where civilisation has undermined popular beliefs is Boldogasszony confused with Mary, who is beginning to come to the fore, as the protector of women, whilst the characteristics of the heathen protective goddess are attributed to her. Saturday is sacred to her.”

Specially noteworthy analogies are to be found among the Mordvins. They, too, have a goddess of birth, Ange-Pate or Bulamam-Pate, who invisibly assists women in childbirth, just like the Nagyboldogasszony. She also is a mother, and she too surrenders the care of the woman in childhood and the child, after the delivery, to her subordinates, Ange-Özaisz and Niskände Tewtär. Another series of common features also appear to make it plausible that Ange-Pate and Nagyboldogasszony were originally the same deity (*cf.* v. Wlislocki ⁸).

Of the Letts, Alksnis states that Láime, the goddess of fortune, is, at the same time, the goddess assisting at births. “ Since,” he writes, “ it is Láime who can relieve the pains of birth, who decides whether the woman shall rise from childbed happy and gay or shall never more look upon the light of day, women pay special homage to her and try, in various ways, to make her favourable. Instead of a hard chair, wives put down a basket with wool for her so that she may sit down and grant easy days to the women.” In a song, it says of her :

* [This translation is not a faithful rendering of the original.]

“ Not to all does Láime grant
A silken sheet ;
Only to those women is it given
In their hard days.”

With her, Mahrin or Mahra is invoked :

“ Come, Mahrin ! I beg thee
Come with bare feet
Coverest those feet, stayest long,
Greatly suffers my beloved ! ”

In another song, it says that the woman in childbirth sits in the lap of St. Mahra, weeping with loosened hair. So far as one can judge from existing sources, there is no real difference between Láime and Mahra (Mahrina). The name *Mahra*, like Mary, may, under the influence of the Catholic faith, have appeared at a later date in place of Láime, since the incantations show clearly that the Lettish goddess Láime, in her action, comes strikingly close to the Mother of Christ. Certainly no special functions of Mahra can be discovered which were not also ascribed to Láime.

The Votiaks probably worshipped heaven, Inmar, as a god and then, under the designation Inru, the fructifier, deified the rain from heaven. Further, there was a god Kylts'in and Buch believes that this deity is connected with fertility in woman, for the verb *kyldyng* from which *kyldis* is derived has the extended meaning of *to become pregnant*. He says: “ The *Kaldyni mumas* (mumi = mother) mentioned by Rytshko might coincide with Kylts'in ; and of the latter he reports that she is Inmar's mother, and is invoked by the Votiak women for fertility and successful delivery, and by the girls for a happy marriage. At a public feast, white sheep are sacrificed to her by the women.

Among the Tunguses, according to Hiekisch, Helban and Noabulikan are the protectors of the female sex ; they bestow fertility, protect pregnant women, give relief at birth and preserve the chastity of virgins.

9. BIRTH DIVINITIES AMONG THE CHINESE, JAPANESE, ANNAMITES AND OTHERS

According to Pander, the Chinese worship the goddess Kwan-yin as the goddess of fertility, and they also name her “ the virgin giver of sons.” Pander is of the opinion that the Chinese might have had a similar goddess before the introduction of Buddhism, who was later merged with Kwan-yin. The Chinese have made beautiful porcelain statuettes of the latter in which she is represented sometimes alone, sometimes with a child. The figures are very similar to images of the Madonna.

In Northern China a few other goddesses are worshipped who have a beneficial influence on delivery and everything connected with it (see Grube).

Among the Japanese the deity which helps women is called Kojasi Kwan-non. She has a halo round her head ; her left hand holds the outer garment which is falling off the naked breast ; her right hand is slightly raised and grasps some object.

The Annamites, according to Landes, have 12 goddesses of birth, whom they invoke when labour begins.

These are no doubt identical with the 12 midwives from heaven of whom the missionary Cadière reports :

“ In rich or in families in moderate circumstances, one usually sees on the right on entering, supported against the wall, which separates the principal part of the dwelling, *i.e.*, the reception room from the room reserved for the inhabitants of the house, a little carved recess dedicated to ‘ the holy mother of the Palace of the West,’ Doài Cung Thánh Mâu, called more simply *Ba* = the lady. At the back of this recess is to be seen an image with 12 figures of women arranged in two rows : these are the 12 celestial midwives. Sometimes the image is not there.

At certain times it is offered incense and pure water. It is the patroness of the mother, of the family and of the wife.

"When a woman is about to become a mother the *mu-ba* (the midwife) is sent for. A tray of white rice is prepared with 12 mouthfuls of areca and betel, and the midwife offers this to the celestial midwives in order to pray for the successful delivery of the mistress of the house."

On the island of Nias, the goddess Adù Fangóla or Adù Ono aláve guards women in child-birth (see Fig. 675). The figure, made of clay, which represents, according to Modigliani, a pregnant woman, is set up in the room of the woman in labour for the protection of the child. However, the pregnant woman also makes offerings to her if she is afraid of being pursued by the demon Béchu Mariána, the spirit of a woman who has died in childbirth.

The Dyak tribe of the Olo-Ngadjoë in the south and east of Borneo regard Klóweh, the sister of Mahatara as a deity who can make the fœtus strong. Pregnant women, therefore, according to Pleyte, make offerings to it.

Among the Achinese in Sumatra the eldest daughter of the Prophet is worshipped as a kind of goddess of birth. She watches over pregnant women and women in labour, but she also opens the genitals of the young wife so that the penis of the husband may penetrate. On the day after the latter has succeeded for the first time, a festive meal is offered to this patroness by the wife's parents (cf. Jacobs²).

The Gilbert Islanders also, according to Parkinson, have such a goddess of pregnant women who bestows children; she bears the name of Eibong.

We have already spoken of Make-Make, the god of sea birds' eggs, as a god of birth among the inhabitants of Easter Island (Fig. 242).

Among the Samoans the house god must be regarded as the god of birth. Krämer writes of this:

"Along with the feasting and revelry (during pregnancy) numerous offerings were also made at this time (especially before confinement) to the *house god*, the patron god of the family, or at least promises were made, as Turner mentions. 'Moso be merciful, let my daughter live. Have pity on us! Preserve my daughter and we will fulfil any of thy wishes as recompense.'

"Thus no doubt an anxious father cried out. The priests naturally knew how to get a good share of the spoils for themselves; they were often very valuable objects which the worried parents promised the god. Usually the family god of the father was invoked, but in a difficult birth, also that of the maternal family; the one with whose invocation the birth was successfully accomplished, received not only most of the gifts, but also became the patron god of the newborn child."

The deity of the negroes in Yoruba (West Africa) may be mentioned here also. This goddess was worshipped in the form of a pregnant woman. In her temple, water is kept which is a cure for sterility and beneficial in difficult births.

We have printed these "mythological" sections according to Bartels, although they have not been sufficiently investigated. They may be retained, however, for those interested in the views of the original authors of this work.



FIG. 675. — Adù Fangóla, or Adù Ono aláve, the Goddess of Birth on Nias. (After Modigliani.)

10. BIRTH DIVINITIES AMONG THE CIVILISED NATIONS OF AMERICA

The fact that the ancient Mexicans had a special god of birth among their gods is certain; they had, indeed, also a special goddess of sexual intercourse and a special god of marriage, etc. It is a fact also that the woman who died in her first confinement was buried in the temple of an appointed goddess.

We cannot enter here into a discussion of the cultural development of Mexico.

The reader must be referred to the relevant works, such as those by Joyce, W. Lehmann, Spinden, etc.

There were, it appears, several gods of love and birth. Thus the month of October was allotted to lovers, for during that month was the festival of Mixcoatl in Quecholli in honour of the goddesses of love and pregnancy, Xochiquetzal and Xochitecatl. At this maidens sacrificed themselves to the gods (*cf.* Torquemada). They also knew a kind of children's realm from which little children came down. That was the thirteenth heaven where Ayopechtli, the earth goddess, dwells as the wife of Ometecutli, the master of procreation. Thus it runs in the song of the flower goddess: "From the land of rain and mist come I, Xochiquetzal, from Tamoanchan."

This fabulous land was regarded as the home of mankind, and is illustrated as a broken tree from the wound of which blood flows. Its name comes from *temo* to come down, hence "House of descent." This paradise is also called Tlacapilla



FIG. 676.—A Goddess of Twins. *Codex Vatic.*, 3773. (After Seler.)

chivaloya = place where the children of men are made, or Xochitlicaca = place where the flowers are (*cf.* v. Reitzenstein²¹). The goddess Xochiquetzal, who gave birth to twins, is represented here (*cf.* Fig. 676 from the *Cod. Vatic.*) with legs apart (*mamaçouhticac*), *i.e.*, in position for birth; and a feather ornament (a symbol of the *nopiltze, nocuzque, noquetzale*, "O thou my child with necklace of jewels, my feather ornament") is coming out of the vulva of the goddess (see Seler,³ *Cod. Borgia*, II., p. 186). Two strips of hide, which one sees hanging from the wristbands of the goddess, and which do not appear in other pictures of her, may signify armbands of *tlaquatzin* (opossum). These strips are put on women in labour to make the birth easier. In the picture in the *Cod. Laud*, the hands of the goddess are open and empty, but in the *Codex Vaticanus* she holds a corn cob in one hand and in the other a jewelled ornament, both obviously having reference to that born of the goddess. The children—there are again two of them—one sees to the right and left of the woman, sitting at the feet of the goddess, for she is, according to tradition, the first woman who gave birth to twins.

In Fig. 677 we see two gods standing facing each other, the goddess in the attitude of submission, and the vessel for sacrificial blood with its flowers (denoting

blood) standing between them. Here, too, a bone dagger and agave leaf-tips are in the vessel, but are broken in pieces. Under the vessel hangs a *chalchiuilitl*, a precious stone. And under it also, one sees between the two gods, a footprint. This may be interpreted in the same way as the footprints descending from above, which are to be seen in Fig. 678, showing Tlacolteotl, the queen regent of the thirteenth tonalamatl. The *chalchiuilitl* and the footprints over it may be meant to signify the descent of the child which has just been brought about by the sacrifice which the picture represents.

The *Codex Borgia* and the *Vaticanus* show merely the offerings which are necessary in order that a child may be conceived and born. The idea that the gift, as well as other gifts of the gods, must be earned by piety and penance we come across in those chapters of Sahagun, which deal with marriage, conduct in pregnancy, birth, etc. Compare the illustration in Seler (II., p. 200), which shows, for example, the drawing of a jewelled chain out of the goddess by the god (*Codex Vaticanus* shows

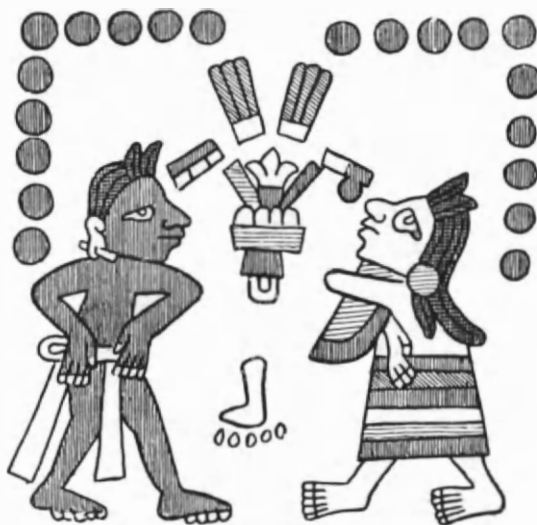


FIG. 677.—*Codex Laud*, 35. (After Seler.)

it being taken from the mouth). That, of course, has a significance similar to that of the descent of a precious stone. The jewel (*chalchiuilitl*), the necklace, the chain of pearls (*cozcatl*), the plumes (*quetzalli*)—it is always the child—*nopiltze*, *nocuzque*, *noquetzale*, “my child, my pearl chain, my plume.”

The god who draws out the chain is painted black in both manuscripts, and in the *Vaticanus*, like the priest in the *Codex Borgia* picture, he has also the tools of mortification, the bone dagger and the agave leaf-tips, placed near his temples, and ear (*cf.* ear piercing). In the *Vaticanus* this god is also provided not only with a remarkable sparkling necklace, but also with plainly marked alternate black and yellow crossbands, the face paint of the god *Texcatlipocâ* who appeared later as a kind of god of birth and as a magician. Perhaps with this he may have brought the proof of skill as a physician.

Chalchiuhtlatonac and *Chalchiuhtlicue* seem gods of birth as well as the lords of birth and the means of life, *Tonacatecutli* and his wife *Tonacaciuatl*. Further (see Seler, 304, nr. 301 and 302), *Tlacolteotl* in Seler’s nomenclature, the goddess of filth (the old earth goddess) who is the goddess of lust and the great bearer of children,

is shown sitting in a temple naked, and with outspread legs ; the temple is drawn in the colours of *Auiateleó*, the goddess of lust. In the lower half of the page a male figure coloured blue, is characterised as *Auiateotl*, the god of desire. The two gods in both manuscripts are surrounded with the signs of the 20 days. These, however, according to the explanatory tablet, have apparently the sole purpose of leading to the last two signs *quiauill* = rain and *xochill* = flower, which are connected in the upper division with the anus and vulva of the goddess, and in the lower with the anus and penis of the male god.

Bancroft states that the mother goddess in the form of a female snake, *Cioacoatl*, or



FIG. 678.—Tlaçolteotl in conception and birth. Codex Borbonicus.

Ciuacoatl, or *Cihuacoatl*, or, finally, *Quilaztli*, seems to be regarded as the patroness of women in childbed, and especially for those who die in childbed.

In ancient Peru, the sun appears to have played a great part, for it is related of the daughters of the cacique of Guachetá that they had themselves fertilised by the sun. For this purpose they went to a high mountain, took up a suitable position towards the sun, and after a few days one gave birth to an emerald which she put in her bosom, where it changed into a child. In Peru, as is well known, there were the sun maidens who were dedicated to the sun, and lived like vestals in a kind of convent. They were buried alive when the consequences of sexual intercourse became apparent unless they were able to prove that they had been impregnated by the sun (*cf.* Nadaillac and v. Reitzenstein ²¹). Further, the Archbishop of Lima,

Pedro de Villagomez, records that people celebrated all kinds of annual festivals at which promiscuous sexual intercourse prevailed. Thus, people celebrated an ancient feast at the time of the ripening of the kal'tay fruits which happened in December ; at this a five days' fast took place, during which men and women met quite naked at a certain place in the fruit gardens. A race to a certain hill was arranged. Now, whichever man overtook a woman was bound to cohabit with her on the same spot without further ceremony. The festival lasted six days and six nights (see Tschudi, v. Reitzenstein ²⁷).

Among the Chibcha, the aborigines of Colombia, who already possessed a higher



FIG. 679.—The ancient bald-headed god (Moon-God ?). (From a Maya MS. in the Landesbibliothek, Dresden.)

civilisation, Waitz (IV., 362) states the rainbow helped women in childbed as well as sick people.

11. BIRTH DIVINITIES AMONG "MONOTHEISTIC" PEOPLES

It sounds like a contradiction when we speak of the gods of birth among peoples who profess monotheism, as they are supposed to worship only one single god. But we shall soon observe that they have had to learn to allow special gods to become active for the special need of confinement. In spite of all their piety, the old faith in gods and demons has not been quite destroyed by their apparent monotheism. Thus, in Judaism, as in Islam and Christendom, we have merely new names for ancient views, and in the discussion of the Letts and Magyars, we have already had examples of these facts.

The Jews brought men from the synagogue who prayed aloud in the birth chamber because people feared greatly the appearance of the wicked Lilith. On a similar occasion, the Persians cried their prayers down from the roofs or from the mosques to set the women free from their suffering ; and the Turks commit some little act of charity and invoke the god of the prophet to be favourable to the woman in childbirth.

Among Christian peoples, women in childbirth prefer to turn with their prayers for help to the Virgin Mary, the Mother of God. The latter, to a certain extent, now takes the place of Juno Lucina ; and it is almost a matter of course that, in Rome where a temple sacred to the latter used to stand, there is now the Church Santa Maria Maggiore, in which is kept among the relics, the cradle (or manger) of the Saviour. The Russian woman, on the other hand, turns with her prayer for easy birth to the Mother of God, and people entreat the patron saints Ipatius (Hypatius) and Roman that they may become fertile (see H. Schmidt).

In the Roman Catholic Church Blunt states that St. Margaret is invoked by women in labour as their special patron saint. This invocation of St. Margaret also takes place in Prague (*cf.* Grohmann). In various parts of Germany St. Margaret steps into the place of that ancient " girdle loosening " goddess of birth. Thus, in Swabia, " St. Margaret with the dragon," which she leads attached to the girdle, is regarded as the patron saint of women in childbirth to whom, in their distress, they appeal for help ; there, too, the symbolical action of the loosening of the girdle is performed whilst invoking St. Margaret. But besides this, in Swabia (Buck, pp. 26, 28), people go to Maria Schein near Pfullendorf for relief in birth, and also often turn to St. Christopher to beg him for a good confinement, as, for example, in Laitz near Sigmaringen. Further, there too, St. Rochas, in whose chapel iron frogs hang as symbols of the womb, is regarded as a helper if, for instance, maternal diseases are present, or if the child lies " square." In Italy, in the provinces of Treviso and Belluno, Saints Libero, Martino and Vittorio become active as helpers of women in labour.

CHAPTER XXV

WHERE BIRTH TAKES PLACE

1. THE CHOICE OF PLACE

THE places in which woman accomplishes the act of birth vary greatly among different peoples, and, in this respect, we shall repeatedly come across very different customs within the same stock. It is therefore not admissible to draw from these customs a conclusion as to the degree of civilisation of the population. To be sure, primitive peoples pay so little attention to providing, to our ideas, a suitable place, which conforms to all requirements and is convenient for all emergencies and where the woman in labour can deliver her child, that the woman's choice merely lies between wood or field or the seashore, when she finds herself far from her dwelling-place or when travelling. It may be assumed that in early times the women of primitive peoples, who lived in a state of nature which did not necessitate specially regulated conduct, may have let their confinement take them by surprise in whatever place they happened to be, just like the mammals living in wood and field, or the women of the lower ranks of our population among whom births in the street are not so very uncommon.

Whilst the nest-building birds, under the guidance of instinct, carefully prepare for the time of egg-laying and hatching, we perceive among primitive peoples scarcely any similar conscious or unconscious preparation. Nature has provided them with hardly any warning but the so-called advance pains, a comparatively slight indication of what they have to expect in a short time and what is very often explained as a simple digestive disturbance. There takes possession of these women a certain uneasiness, but it is questionable whether this feeling tells them sufficiently plainly what is about to happen and how they may best choose the place in which to bring forth their child. Nowadays, there are no longer any human beings living in a real state of nature ; the primitive peoples of the present day have already formed habits and customs in everything they do.

If, in the above-mentioned cases we assume that birth occurs wherever the wife of the savage happens to be at work, then we see among many primitive peoples that the pregnant woman, when she feels her time approaching, intentionally seeks one of the aforementioned remote places in order to be confined there. It is indeed a kind of instinct under the influence of which the woman feeling the approach of her confinement seeks to withdraw from the sight of the people about her ; an instinct which is strengthened by superstitious customs and fear of demons. Of an innate sense of modesty, as Bartels would like to believe, there is nowhere any question.

Every sick animal and human creature gets away from its fellows ; hence, naturally, women in childbirth also. Just in this particular, where the confinement takes place, one, though a somewhat external preparation, is to be met with. If the reason for it must be sought, then it is no doubt the same as in the seclusion of girls at the puberty ceremonies.

2. BIRTH ALONE AND OUT-OF-DOORS

Prochownick has tried to refer childbearing accomplished alone as it was described above, to the realm of fable ; but incorrectly, as M. Bartels pointed out. For we possess records of this from different travellers whose statements we have no reason to doubt. According to statements of Riedel,¹ many women give birth to children quite alone in the woods or on the seashore on the Islands of Buru and Ceram, on the Kei, Tenimber and Timor Laut islands, as well as in the Babar Archipelago and on the Islands of Keisar, Eetar, Romang, Dama, Teun, Nila and Serua. (v. Reitzenstein came across a gipsy girl in this situation.) In the woods, they like to choose the neighbourhood of a stream in which they bathe themselves and the child immediately after delivery : on the seashore, after the birth, they take a bath in the sea. On the Tenimber and Timor Laut islands, they are accustomed even to be confined sitting in the sea. On all these islands, however, confinement in the house and with the assistance of women nurses is almost as common or even more so.

The Maori women in New Zealand also give birth alone beside a stream and in a thicket whither they withdraw in order to be able to wash themselves and the child just after the delivery (Tuke, p. 726). De Rienzi records the same, although naturally it does not hold good in all cases.

The same is to be found also among Malay tribes. The Negrito and the Montesca in the Philippines, according to Mallat's report, give birth almost always "without any help," and are often quite alone when labour sets in. Then, having found a suitable place, they support and press the abdomen down hard on a bamboo. The child is received in warm ashes, then the mother lies down beside it and cuts the navel cord herself. Immediately after this, she rushes into the water with the child (this is certainly contested by Reed), then goes home and covers herself with leaves. Other Philippine tribes, as we shall show later, employ female assistance.

Also Pardo de Tavera reports of the savage hill population of Luzon :

"The woman calmly brings the child into the world where labour has overtaken her, and cuts the umbilical cord skilfully with a piece of shell or a splinter of bamboo so that hardly a drop of blood is lost. A few hours after delivery, the woman takes the new-born babe on her back and walks on with it in the burning sun or pouring rain."

The wives of the non-Mohammedan tribes of the Moluccas betake themselves to a distant cabin for their confinement and do not let anyone accompany them ; it often happens also that a woman is confined when quite alone in a boat, and then rows quietly on.

Among the nomads of the desert in the Levant, delivery proceeds very simply : the woman in childbirth, left alone, looks after the cutting of the navel cord, the washing and the wrapping up of the child herself (H. J. Türk).

Among the wives of some of the North American Indians, it was stated by Charlevoix, they give birth "sans aucun secours." Unzer says :

"It should be noted (1) that among them there are neither women nor men who act as accoucheurs ; (2) that they are delivered quite alone."

Of the wives of the Iroquois, the missionary Lafitau says : If they are overtaken by birth pains on the march, they manage for themselves (otherwise they avail themselves of the help of some of the other women in the hut), wash their children in the nearest water and go to their huts as if nothing had happened. Later, Keating recorded : the wives of the Sioux withdraw into the wood alone when their

time has come, in order to give birth. Schoolcraft (III., 239), likewise records of the wives of the Sioux that they are usually confined alone.

The missionary Beierlein, who lived for many years among the Chippewa, informed Ploss from his own observation :

“ With them, the woman, when she feels the labour pains, leaves her work, gathers some grass and hay and goes quite alone into the wood in order to give birth to her child. She uses the grass and hay to keep away dirt. Then she goes to the water and washes herself and the child, but immediately after continues her work.”

The wives of the Apache Indians in the Rio Colorado are, according to Schmitz, confined “ without help.” Among the Arapaho Indians, too, the women are confined without any assistance. They retire to a thicket for this. Engelmann records also that several doctors witnessed how Sioux and Flathead Indian women brought their children into the world, in the middle of winter on the snow quite alone at a distance from the huts. Schomburgk says :

“ The Warrau (Guarauno) Indian woman in British Guiana, when the time of her confinement approaches, goes away from the village which her husband and relatives inhabit. Alone in a hut in the wood, she awaits the moment, which is without danger for her, and then returns with the new-born child to her people, without having called in outside aid. On one of my excursions, I myself found one such woman in childbirth.” The Macusi Indians, according to Schomburgk, likewise betake themselves to the woods, the fields, or to a lonely hut for delivery, but her mother or sister accompanies her.

The American poet, Longfellow, in his “ Song of Hiawatha,” indicates very poetically the custom among the Ojibway and Dakota :

“ There among the ferns and mosses,
There among the prairie lilies,
On the Muskoday, the meadow,
In the moonlight and the starlight,
Fair Nokomis bore a daughter.”

We find the same custom among the women of a few South American Indian tribes : in Guatemala, according to de Laët, the wives of the Indians give birth to their children often quite alone. In Virginia, the women in labour repair to the woods alone in order to be delivered of their children. Father Ochs also gives similar testimony (v. Mürr).

Of the Tupi and Tupinamba, Thevet recorded in the year 1575 :

“ That in labour they are neither helped nor relieved by any person whatever.”

And Father Gumilla relates of the Indian women on the Orinoco :

That with them the custom of killing female children exists ; therefore, when they feel the first pains, they go secretly to the bank of the river or the nearest stream and there give birth to their child alone : if a boy comes into the world, then the mother washes herself and the child carefully, and is greatly pleased and she recovers from the birth without any more rest. If a girl is born, she breaks her neck or buries her alive, then washes herself lengthily and goes to her hut as if nothing had happened.

At the beginning of the seventeenth century, Garcilasso de la Vega (I., p. 364) related of the original inhabitants of Peru of the Inca kingdom :

“ I add to that, that there was nobody who helped the women of any class whatever on this occasion and if anyone attempted to assist them in childbirth, she was regarded as a witch rather than a midwife.”

Likewise, F. de Azara (II., p. 93) records that the Indian women in Paraguay, where he resided in the years 1781–1801, were confined without anyone's assistance. The Guana women in Paraguay often go alone into wood or field, give birth to their children there, make a hole in the ground and bury the child alive.

A similar report is made about several negro tribes. Of the Kisama of Angola, Hamilton says :

“When her confinement is near, the woman, as is the custom among many primitive tribes, leaves the house, since she has the idea that neither man nor woman should see her. She goes without anyone's knowing into the wood, where she stays by herself till she is delivered. Shortly after delivery she returns to the hut, but the child is kept hidden for a while ; she tells nobody about it and for a time no questions are asked. But should she be so unlucky as to have had a miscarriage, and if the child should be dead, then she runs in fear far away from the scene of action, for, if she were discovered, then death by poisoning would be her fate.”

Among the Balantes, a negro tribe in Senegambia, the women must also give birth to their children in the woods (*cf.* Marche). The wives of the negroes on the Senegal who consider it a disgrace to let any sound of pain be heard in confinement, according to some authorities, bear children “bravely and without any help.”

Among the Maravi in Portuguese Nyasaland, it often happened, according to Peters,* that a woman was taken unawares by labour pains while at work in the fields. Then she put down her hoe and went to any place which seemed suitable where she brought the child into the world without any help. Then she washed herself and the child, suckled it, and went back to her work in the field, or, if it was late, to the village to her household duties.

According to Speke and Burton, the Wakimbu and the Wanyamwezi at Ujiji in Central Africa had the custom that when a woman noticed that her confinement was near, she left the hut and retired into the jungle ; after a few hours, she came back, carrying the new-born child in a sack on her back. Further details about these and neighbouring tribes were given by Hildebrandt, who certainly mentions female assistance as being usual.



FIG. 680.—Acholi negress during delivery. (After Felkin.)

Felkin records of confinement among the Acholi that a block of wood is placed immediately in front of a tree trunk : on this 3½ ft. high block, which is covered with grass over which a hide is put, the woman sits. About 2½ ft. from the block and the same distance from each other, two poles are driven into the ground, each of these has a fork about 1½ ft. from the ground, on which the woman plants her feet, while she holds the poles fast with her hands. When once she has taken her place, she hardly ever gives up till the child is born (Fig. 680).

d'Arvieux states of certain Arabs :

“The princesses are taken care of when in labour. There are no regular midwives among them ; all the women are skilled in this profession. The women of the lower classes have no need of anybody's help. A few minutes after they are delivered they take hold of the umbilical cord, cut it, and then go, with their child, to wash at the nearest fountain or river.”

* [No reference is given.]

Of the Bedouins in South Tunisia, Narbeshuber says :

“ Among the Bedouins, as I myself have seen, the event of birth is enacted even more simply than with the town Arabian woman of Sfax. The woman crouches down somewhere, gives birth to her child, cleans herself and the child superficially and returns to the duâr. People hardly notice that she has had her ‘difficult time,’ and she generally takes up her hard work again immediately.”

We also come across peoples, not only in foreign parts but also in Europe, who let their women go through childbirth alone and without help. Thus, Strauss records a song of the Bulgarians which begins as follows :

“ Yes the youthful Momarica
Children, female, nine has borne.
Is now pregnant with the tenth.

And then too the time came near,
That the woman was in travail
By the hand she takes her little one
Todora, the very youngest ;
To the green woods they go
Under the maple tree they sit
There gave birth the Momarica
And the tenth one was a boy ;
Wrap it in white swathings
Put round it silken bindings.”

It is recorded by Mme. Dora d'Istria of the women in Montenegro that they do not even stay in their miserable huts to wait for the accomplishment of their confinement ; they are delivered out in the fields or woods without any help, without letting a sigh or plaint escape from them ; as soon as they have recovered a little, they take the child in their apron and wash it in the nearest brook.

3. BIRTH OUT-OF-DOORS WITH HELP FROM OTHERS

Delivery in the woods, however, does not always take place without assistance, and among many peoples who choose the wood as a birthplace, the pregnant woman is accompanied thither by one or more friends to assist her. Thus, for example, the women of the Niam-Niam in Central Africa, when confinement is near, do not stay in their husband's house, but repair to the woods nearby in order to be delivered with the assistance of their companions (Antinori).

Among the Bongo (Upper Nile) we learn through Felkin that here a pole is laid horizontally between two trees in such a position on the branches that the woman when standing can with raised hands take hold of it like a horizontal bar (see Fig. 681). In the intervals of pain, she walks slowly up and down, but as soon as the pain sets in she grasps the pole, sets her feet apart and presses downwards. The person assisting crouches in front of her to prevent the child from falling on the ground. The pole between the trees is permanent and ready for any case of birth that occurs. As soon as the birth is over, mother and child bathe ; a troop of friends accompany them to the water shouting and singing ; the placenta is carried by one of the women at the head of the procession, and thrown as far as possible into the river.

According to Engelmann, among the Sioux, Comanche, Tonkawa, Nez-Percé, Apache, Cheyenne and several other Indian tribes, the woman steals away to the woods to be confined. Alone, or accompanied by a woman relative or friend, she leaves the village as soon as she

perceives that delivery is near and seeks a lonely place, preferring one near running water where she can bathe herself and the child so that, when all is over, she can return to the village clean.

The women of the aborigines of Australia have their confinement at a place in the bush away from the camp whither only women may accompany them.

4. THE SUDDEN ONSET OF LABOUR AND DELIVERY IN THE OPEN

Delivery in the open air is a different matter when the pregnant woman is suddenly overtaken by labour pains while at work in the fields. However, the frequency with which the women of many peoples allow themselves to be taken by surprise obviously depends upon their whole mode of life and upon their own cultural position.

Strabo (III., 3) recorded of a woman of the ancient Ligurians that she went only a little way aside from her work in the fields, in order to give birth to her child, and then immediately resumed her work so as not to lose her wages. Similarly Charlevoix says of the Indians of North America that it is never in their own huts that the women are confined; several are taken by surprise and are delivered while at work or on the march. Again, Potherie says, "Female savages are so robust in constitution that if they happen to have to be confined while journeying they rest for an hour or two and wrap the child in a beaver skin and continue on their way." This is, however, too much of a generalisation, since, as Engelmann, for instance, has shown, the customs in individual tribes are very varied.

We might make similar reports of numerous other peoples. In general it seems that it is chiefly among nomad peoples where the women are neither in a position nor scarcely accustomed to seek a special locality, that any place is to them, equally suitable for giving birth. Among the nomad tribes in Asia, the Ostiaks are quoted as an example. J. B. Müller¹⁶ says that the

Ostiak women, who think very little of birth, often have to go from one place to another in winter; now, if there is no *yurt* in the vicinity and no convenience for the woman in childbirth anywhere, she manages her affair as she goes along, buries the child in the snow to harden it, etc.

Many Arab women, says d'Arvieux, "are confined wherever they happen to be, in the country or at home." Kurd women, according to Wagner, often give birth to their children in the open fields; whilst Bedouin women, as Layard testifies, are often confined when on the march or when they are watering the flocks at a distance from the camp.

The wives of the wandering gipsies of Europe are usually confined in the open air, states Grellmann (p. 61); and a song of the Transylvanian gipsies which v. Wlislöcki² has translated, gives proof of the fact:

"When my mother bore me,
Nobody troubled about me;
In the grass was I laid,
And was baptised by the rain."



FIG. 681.—Bongo negress during delivery.
(After Felkin.)

Eugène Cordier also, speaking of the Basques, states that among them more than one new-born child has spent the first day of its life in the shade of a tree under which it first saw the light of day, whilst the mother had calmly gone back to work again.

Southern Slav peasant women also are said to go through the process of giving birth with great equanimity. It is reported that it often happened that a pregnant woman, who had gone to the hills to collect firewood, was suddenly overtaken by labour pains and, without ado, acted as her own midwife and brought the child home in her apron ; in addition, she brought sometimes a load of wood with her.

Similar cases are reported by others ; yet Krauss thinks that these cases are exceptional ; he believes that there is a desire to stamp the Bosnian women as heroines at any price for, in general, one comes across very careful preparations in the Southern Slav farmhouses.

5. PARTURITION IN PUBLIC

Whilst the women among the peoples already mentioned generally go a little apart for their delivery, we find in many others a total lack of any regard being paid in respect to this. A confinement to them is a physiological act, at which anyone, even children, may be present, and it usually takes place in the public street. When H. Winkel took the trouble to explain observations made with regard to this as rather to be considered as "accidental street births," thus depriving them of the significance of a common usage, he doubtless went too far.

Among others, the Kamchadale woman is delivered in public. At least Steller, to whom we owe gratitude for much good observation, records that in Kamchatka in his time, the woman was usually delivered lying on her knees in the presence of all the people of the village, without distinction of position and sex.

According to Nicholas (in Rienzi,² III., 142) women in New Zealand were even delivered in the open air before an assembly of persons of both sexes, without uttering a single cry. The bystanders watch with attention for the moment when the child comes into the world and when they see it, cry *Tane ! Tane !* The mother cuts the umbilical cord herself, and then resumes her usual activities as if nothing had happened. This description, however, does not agree with those of Tuke and Goldie, according to whom Maori women are supposed to be confined, isolated and quite alone in the bush.

Parturition in the Hawaii islands is said to have been formerly a public act, at which anyone who happened to be about looked on.

Of the native Mincopi woman on the Andaman islands, little shyness is reported (see *Ausland*, 1863, 869).

Wijngaarden was present at the delivery of the wife of a chief of the Karau Battak in Deli in Sumatra. As soon as the pains began, the woman was brought out of the house on to the uncovered gallery round it and laid on two planks. Another woman reproached her for her loud cries of pain ; she should be ashamed, she was told, for she was behaving exactly as if she were being beaten.

Of the Aru islands, H. von Rosenberg reports :

"When a woman is on the point of being delivered, friends and relatives are summoned in order to be present at the birth of the child. During labour, when the woman is terribly ill-treated under the pretence of helping on the delivery, the guests make an infernal noise by shrieking and beating gongs and *tiffas* (little drums). If the child is a daughter, then great joy arises because later, when she is married, the parents receive a bride price of which all those present at the birth also get a certain share. Then a feast is held at which a pig is killed and an enormous amount of arrack is drunk. The birth of a son, on the other hand, is received with

indifference. The guests betake themselves to their homes sad and disappointed, and the poor mother is often reproached for not having given birth to a daughter.

In the Dutch East Indies, children are also often present at births (see van der Burg, *Virchow's Archiv.*, 1884, XXV., 367). Also in the Kei islands, when a birth is taking place, the house is open to everybody.

Among the Munda in Chota Nagpur (India), when labour begins, and even at the birth of a child, both her own and even strange children, big and small, remain in the room with the mother till the child is born; yet, as Jellinghaus (p. 366) adds, "this barbarous naturalness (as it appears to us) seems not to have any bad influence on the morals of the children," which, after all, goes without saying.

The more uncivilised tribes of Southern India permit only female relatives and friends to be about the woman in labour.

In the Brahman village of Walkeshwar, not far from Bombay, Haeckel saw a delivery carried out under difficult conditions and with the strangest instruments in the open street; a Hindu constable, or policeman, kept the assembled onlookers in order, and was good enough to explain to Haeckel the significance of the act.

Of the Guinea negroes, Purchas recorded in the year 1625 that when confinement begins, men, women, youths and children stand around the woman, and she brings her child into the world "in most shameless manner" before the eyes of all.

In Central Africa, Felkin (1879) found many onlookers at delivery in several negro tribes, but the presence of children was not tolerated.

Among the desert tribes of Algeria, when the woman is seized by labour pains, she is at once laid down in the street, for custom does not tolerate birth taking place in the house. Very probably the woman in childbirth is regarded as unclean, and must, therefore, be confined in the open street where she is surrounded by a crowd of people sunk in silent curiosity. v. Maltzan² (p. 100) was present at such a birth in the open street in the little oasis village El Kantarah.

In America also, we come across similar customs, for the Caripuna Indian woman on the Madeira in Brazil gives birth to her child in the presence of her fellow tribesmen (Keller-Leutzinger, p. 103).

E. V. Vollum was called to an Umpqua chief. He found the female patient lying in a hut crudely constructed of sticks and brushwood. The space was filled to suffocation with men and women; he himself, owing to the nasty smell which rose from the perspiring bodies combined with the smoke, could hardly stay more than a few minutes in the hut. The assembled people shrieked in the wildest manner; they lamented the misfortune of the sufferer. It used to be not much better among the half-civilised inhabitants of Mexico at Monte Rey; but in these cases where publicity was permitted, men were, as a rule, excluded (Engelmann,¹ p. 612).

6. BIRTH AT HOME

If the pregnant woman awaits her confinement at home, then we come across various customs as regards the arrangement of the lying-in chamber. An exact picture cannot be made of the rooms in which women of the ancient classical races, the Greeks and Romans, awaited their confinement. For, in any case, the place and its equipment were quite different in these times, since these peoples were still in the earlier stages of their cultural development, whence they reached the full flower of their greatness and their decline. As with all civilised nations, the aspect of a birth chamber will certainly have varied according to the different ranks of the population.

The old writers, as a rule, speak only of the higher classes. Greek women, who belonged to these classes, were delivered in their rooms, the *γυναικεῖον* which was assigned to them for residence. The Roman woman resorted to a special room where rich coverings were spread ; she washed herself, bound her head, took off her sandals and lay down covered with the pallium on the couch prescribed for her confinement. Soranus, who wrote a book on obstetrics, states the regular preparations for equipping the room if it were to conform to all requirements as regards hygiene. The woman in childbirth had to stay in winter in a spacious room with pure air ; in the room there had to be standing ready various requisites, such as oil, infusion of fenugreek, liquid wax, warm water, soft sponges, cotton binders, pillows, perfumes, a delivery chair, and two beds.

It may be imagined that in the lower classes, as well as among the country people in the province of Rome, no arrangements approaching these were made.

In Germany the arrangements of the room in which the woman is confined, in the houses of urban women of high position or even middle-class women, can in no way be compared with those of peasant women, especially in certain districts. In German middle-class houses, the bedroom is generally arranged suitably. On the other hand, at least in Germany, the rooms in which the women in labour among the small farmers usually remain show a total lack of conveniences and hygienic conditions. From the Bavarian Upper Palatinate, the following facts, which certainly occur in other districts also, are reported by Brenner-Schäffer (p. 12) :

“ In most cases a peasant house contains only one room in which stay husbands and wives, men servants and maid servants, children and neighbours. Under the colossal farm stove, which radiates the same heat day and night, summer and winter ; in which the cooking is done year in year out for men and cattle ; under this stately erection, which no peasant room is without, geese cackle, hens cluck, pigs grunt ; here the food for the cattle is boiled, there the potatoes for the pigs washed, an ever open water-pot, the so-called hell-pot, is continually sending forth clouds of vapour whilst, from the stove pipe, the smell of burnt fat, roasting potatoes and a thousand other kinds of gas pervade the room. In this medley the child comes into the world ! ”

The picture sketched here shows that obviously the woman in many uncivilised nations is confined in better and more suitable places than with many of our peasants.

In the proletariat of the big towns it is not infrequent for the whole family to use only one small kitchen as living-room and bedroom combined, whilst the one bedroom in the house is let to a number of unmarried young men, so-called *Schlafburschen* (labourers or soldiers). Thus, in this kitchen also, the children are born.

In somewhat better families among the poor, there is only one common living-room at their disposal. They try sometimes to help matters by changing the bed which is to be the lying-in bed into a kind of canopied bed. This is done, for example, in Istria, where the Slav woman, when she feels her confinement approaching, goes to the church to pray, and then returns home where her bed is hung round with bedclothes and coverings. For there the houses, except those of very wealthy families, generally contain only one large room, so that the beds in it are very close together and are not separated from each other by curtains or hangings. In this case, the husband surrenders his bed to the woman for her lying-in (Frh. v. Reinsberg-Düringsfeld).

Among the Slovaks too, according to Hein, there are special curtains for the lying-in bed. These curtains are richly embroidered with motifs which consist exclusively of big peacocks.

Glück reports from Bosnia that in many parts of the formerly occupied territory the peasant women have the custom of creeping into a corner of the house as soon as they feel the first pains, and only make their appearance again when they are delivered and have cut the umbilical cord themselves.

In parts of Hungary, the birth does not take place in the bed, but on the floor in the middle of the room on some straw covered with a linen cloth "because Christ also was born on straw" (J. v. Csaplovics, p. 302). This, of course, is not the real reason, for here again the idea of the ancestral spirits is concerned.

H. v. Wislocki⁸ describes in detail the ceremonious establishment and appointments of the bed in which the Magyar passes her period of lying-in. It is the Boldgasszony bed, the St. Mary's bed, of which we shall speak again later. He states that the mother does not bring the child into the world in this bed, and is only laid on it after the birth is over. The woman is delivered with her face turned towards the door, for people believe that with the dead, death also goes out of the house.

The Laplanders assign a special place in the hut for the woman's confinement, and this nobody must set foot upon during the lying-in; it is situated on the left of the entrance.

The Gurians in the Caucasus put the woman in childbirth into a room without floor-boards, but the floor of which is strewn with hay.

Parsee women in Bombay are also confined singly on the ground as the Parsee Dosabhoy Fremjee records.

Among the Hindus in the Punjab, birth also takes place on the ground; it is only afterwards that the woman is placed on a mat. For her first confinement, the young wife very often returns to her parents' house (see Rose⁴).

On the island of Ceram, Riedel¹ states that the women are confined in a room separate from the house; on the Watubela islands, the usual sleeping place is used as a birthplace. The Aru islanders prepare for the confinement a secluded space in the house which they arrange by putting mats round it.

In Achin also, confinement takes place in the house. The woman in labour is put on the floor over which bamboo laths have been spread. The woman must remain lying on these during the whole period of confinement, however long it may last. The amniotic fluid can flow at once down through the crevices in the floor, and here, under the piles, it is received in a leaf sheath of the *aren* tree in which some salt and ashes have been put. This vessel, when the fluid and the blood have run into it, is very carefully covered with the big rough leaves of a kind of pandanus (see Jacobs²).

Many American Indians use as a couch for confinement nothing but the bare ground; at most, a buffalo skin or an old cloth is spread over the floor, or some dried grass or weeds; in any case, however it is done, they make a soft and comfortable couch on the ground. A very common method is to put the woman in childbirth on a layer of earth which is covered with a buffalo skin. The Gros-Ventre and the Mandan put on the floor a wide piece of hide over which a layer of earth, 3 or 4 inches thick, has been piled, and over this is then laid the skin or cloth on which the patient kneels (Engelmann).

If the Ama-Xosa woman gives birth to her child in the house, "then she crouches stark naked on a heap of loose earth so that neither her clothes nor the floor of her house is soiled by one drop of blood" (Kropf).

A similar report was made of the Gurians, and also some of the Chinese are said

to be delivered on a heap of hay thrown on the floor of a room without floor boards. This nevertheless does not hold good in all cases, for we shall learn later of another Chinese sketch from which it may unquestionably be concluded that Chinese women are also delivered sitting on a chair which is like a footrest. Moreover, an earlier statement showed that delivery takes place in a bath (Max Bartels).

Certain Chinese women in Peking (according to information from Grube) are confined in the bedroom and in the bed by the stove. In it she assumes a squatting position in which her back is supported against the wall. To keep the abdomen more away from the bed, a brick is put under each foot which raises her body a little. A basin is pushed under the genitals to receive the impurities which run off and also the placenta.

Birth in South Shantung, as Stenz records, must always take place in one's own house ; for example, it must not even take place in the house of the woman's parents. In accordance with this, if confinement comes unexpectedly quickly and the wife is living with her mother, she at once, even in the last hour, goes to her own house. But if, in spite of everything, birth does take place in a strange house, then it is unlucky for this family. To avert the ill-luck, the husband of the woman in childbirth must plough up the floor of the family's barn, the bed must be carefully cleaned, and, on leaving, the family cooking pot must be filled to the brim with wheat.

The old book *Shorei Hikki* recorded the place where the Japanese woman gave birth. There, according to Mitford, we learn that the furnishing of the room of the woman who is lying-in is as follows : Two tubs in which to put underclothes ; two tubs for the placenta ; a low armchair without legs for the mother to support herself ; a stool which is used by the midwife for support when she grasps the loins of the woman being delivered and which the midwife afterwards uses when washing the child ; several pillows of various shapes and sizes with which the woman in childbirth can support her head as she pleases. Twenty-four baby garments, 12 of silk and 12 of cotton, must be kept ready. The hems of these garments must be coloured saffron yellow. There must also be ready an apron for the midwife so that when the child is of high rank, she shall not put it directly on her own knees when washing it. This apron should be made of cotton lawn ; and with a similar piece of fine, unhemmed cotton lawn, the child should be dried when it is taken out of the warm water.

In Samoa, according to Krämer, there is a custom for the woman to remove to her parents' house between the eighth and ninth month at the latest.

On the Gilbert islands, the woman looks out for foster parents for the expected child, who adopt it. The child is then generally born in the house of the foster father, the *Djibum* (see Krämer ²) ; or if in the house of its own parents, then the removal to the house of the foster father takes place immediately afterwards.

We must reckon it as confinement at home when, among nomad tribes, the woman must be confined in the dwelling tent. Evidence of this is given by Vámbéry. He says of the Turks of Central Asia, among whom he understands mainly the Kara-Kirghiz :

“ During the birth itself, the woman is generally in a half-sitting position ; in many places she is even grasped under the arms and held up under the upper opening of the tent.”

It must be admitted that not many peoples allow women to be confined in the dwelling-house, but they do not drive them out into the open, for they erect a special hut or tent for them in which the delivery takes place. We shall hear of these in one of the following sections.

7. BIRTH IN THE BATH-HOUSES

We have to recognise as a special and exclusive peculiarity of certain Russian peoples that they have their women in childbirth delivered neither in the dwelling-house nor in a hut erected for the purpose but in the bath-house. This is reported to us, not only of the women in Great Russia, but also of the wives of the Letts, of the Esthonians, of the Finns, of the women of Viatka, and of the Votyak women (see



FIG. 682.—Bath-house in the White Russian village of Koslovka, Smolensk. (Photo : M. Bartels.)

M. Buch³). It is also customary in White Russia. The bath-house plays a very prominent part in the general culture and in the popular hygiene of these peoples. Not infrequently, it is the property of the whole village ; but it is never a part of the dwelling-house, or separate room in it, but a detached little windowless house with a stove, the smoke of which does not emerge into the open air through a chimney but through little openings in the walls.

Such a bath-house M. Bartels was able to visit a number of years ago in the White Russian village of Koslovka, a few versts from the railway station of Stodo-

listshe (Smolensk). "The village, consisting entirely of log houses, stretches along one shore of a lake. A few steps from the lake shore, the bath-house is erected so as to be able to provide the necessary water with the least possible trouble. It also is a log house with a square base and a fairly flat, gabled roof, which projects about 1 m. over the front of the building. A few steps away from the front, is a kind of screening wall made of thick beams. Fig. 682 shows on the right a few of the houses of Koslovka which are near the shore. In the middle, we see the front of the bath-house, before which the screening wall of sloping beams is erected. The part of the roof projecting before the bath-house which, apart from this covering, is

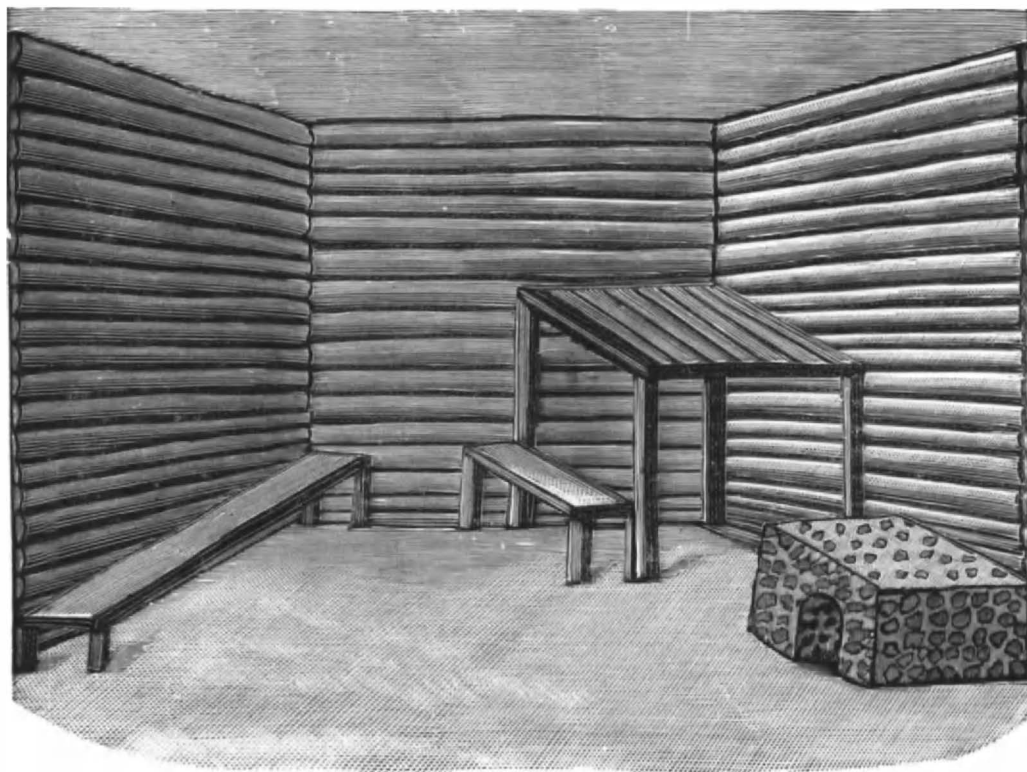


FIG. 683.—Interior of bath-house seen in Fig. 682.

quite open, serves the bathers, in summer as well as in the severe winter, as a dressing-room. They are usually separated according to sex, but generally several have their bath at the same time, and so they go into the bathroom quite undressed.

Over the low narrow door, which leads into the bath-house from the front side, is a little open, square dormer window through which the otherwise windowless bathroom gets its light and through which the superfluous steam can issue. On entering the bathroom, one notices that in the foreground against the right wall is a stove like a hearth stove. Fig. 683 gives a sketch of the interior of this bath-house. On the front of the stove on the floor is a fairly big, arched opening for making the fire. The stove is made of field stones about the size of a man's head which are joined together by loam. Its upper surface forms a horizontal plane on which flat field stones the size of a fist, joined by masses of clay, are spread. The fire, as mentioned above, is kindled in the hole on the ground. By means of it the stones gradually reach white

heat, until, finally, the whole stove is brought to a high degree of heat. Then cold water in sufficient quantity is poured on the upper surface of the stove, and this immediately evaporates and fills the bathroom with clouds of vapour.

Near the stove, also against the right-hand wall, a wide platform about three-quarters of a man's height is constructed of boards, the ascent of which is made possible by a high step before it. On this platform those who want to take the vapour bath sit down, for here they get most of the steam.

Along the opposite wall is a bench on which those can sit who have not at once been able to get a place on the raised platform, or those who wish to cool off a little before leaving the bath-house.

The bath-house contains no other equipment, and thus it presents an excellent place for confinement, which is much more suitable than the cramped and disturbed family room at the



FIG. 684.—Mixed Russian bath. (After Rechberg.)

log house. Also the hot stove permits of a kettle of water being placed on its upper surface, and thus the warm water necessary for cleansing the woman when delivered and for the newborn child can be procured. In view of this, the preference of the Russian country people for the bath-house as a place for lying-in is easy to understand.

It has already been indicated that an idea of the uncleanness of women in childbirth may be at the root of this peculiar custom (M. Bartels). If she were isolated in the bath-house at the time of delivery, the dwelling-house would be kept clean and unstained, and when the confinement was over, the uncleanness of the woman would immediately be removed by a purifying bath. Alksnis has another explanation for this custom, which, as we see from his statements, is dying out among the Letts.

“When the first pains announce the approach of the birth a midwife is quickly fetched. The warming of the room is attended to and the woman leans her back against a warm stove

so that these pains may not be too severe. The idea that warmth mitigates the labour pains as well as the fact that people did not want the mysteries of birth to take place in the presence of a number of possibly young people, no doubt brought about the earlier custom of pregnant women repairing, when the birth was near, to the well-warmed bath-house, where all the necessary procedure of the midwife could more easily be carried out. There was warmth there, warm water for baths was ready, and they were not bothered by disturbing relatives, and had more space to act."

All these views are, of course, quite correct and proper, but they need not express the original and primary causes. The belief that the woman in childbirth was unclean and that she had a defiling and pernicious effect on the dwelling-house and its occupants, may have brought about her banishment to the bath-house. Only afterwards was it clear to the people that they had chosen a very suitable place for the woman, and they gradually became conscious of all the advantages connected with the bath-house. In spite of this, among the Letts, as we now learn from Alksnis, the bath-house has now gone out of fashion as a place for lying-in, and he even considers it necessary to bring forward evidence that the bath-house was ever accustomed to be used for this purpose. As proof for this, he quotes the following passage from an old folk song :

" Entering the bath-house, I threw away my golden ring ;
Láime, take the golden offering ! Do not take my life ! "

The peasant women in Finland, however, according to some authorities, go through their confinement, even at the present day, in a bed of straw in the bathroom. A verse from a so-called rocking song runs :

" Not thought of and not guessed,
Not intended thus by the mother.
On the bed in the bath-house
When upon the straw she stretched
On the chaff with child in travail."

The bath-house as a place for lying-in is also mentioned repeatedly in the Finnish Kalevala. The virgin Marietta, who had become pregnant through eating a bilberry, had long since ceased lacing and discarded her girdle (L., 127).

In vain she beseeched her mother and father :

" Make for me a place befitting,
Where my troubles may be lessened
And my heavy burdens lightened." (L., 156.)

In the village also, an unmarried pregnant woman, she was turned away with the words :

" Occupied are all our chambers,
All our bathrooms near the reed-brook." (L., 263.)

and Marietta has then to give birth to her child in the pine woods.

Another pregnant woman sought help in the " chambers of Pohyola," and was here secretly brought into the bath-house :

" Thereupon the blind Lowyatar,
Blackest daughter of Tuoni,
Mana's old and ugly maiden,
Hastened on her journey northward,

To the chambers of Pohyola,
 To the ancient halls of Louhi,
 There to lay her heavy burdens,
 There to leave her evil offspring." (XL., 97 ff.)

She then assisted the woman in childbirth, but her help was limited materially to promoting delivery by exorcisms.

8. BIRTH HUTS

The custom of erecting a special house isolated from the dwelling-place for women in labour is a very old and widespread one. Among the ancient Hindus, the women of the Brahman, Kshatriya, Vaiçya and Sūdra castes repaired to the parturition house (*puerperarum domus*) where, with the help of four courageous women, the delivery took place amid many ceremonies.

To this house the pregnant woman had to betake herself and for this a "lucky moon day" was chosen. Here, according to Suśruta, she was to be found in the "birth chamber of the Brahmans," which was constructed of the wood of the bel-fruit tree, banyan, ebony and *Semecarpus*, Linn. The bed was of woven camel's hair. The cracks in the house were stopped up. Well-trained serving maids (midwives?) attended her. The doors of the birth chamber had to face the east or south. The room itself was eight ells long and four wide, surrounded by guards. Brahmans had charge of the whole hygienic procedure, and the observation of the regulations as to diet. Here the woman in childbed remained for half a month after the arrival of the child.

Even at the present day, the Hindu wife in childbirth is taken to a birth hut, but here, she is tortured by unskilled women with heat and smoke. This isolation of women in labour, exists also among the Todas in India (see *Globus*, 1883, p. 371). Among them, when the time of delivery approaches, the husband leads his wife to a little hut erected in the woods and takes her food to her there daily. There she lives in complete isolation and has intercourse with only a few female friends, who give assistance at the birth of the child. Similarly, every Badaga village in the Nilgiri Hills in India contains a special hut, in which the woman in childbed has to stay for two or three days after the birth of the child; during this time, she is attended by women and washed morning and evening (see Jagor³). Also among the Kadir, a tribe in the Anaimalai Hills, confinement takes place in a hut specially built for this purpose and with the assistance of women relatives and friends (Jagor,⁴ p. 239). Among the Arrians in Travancore also, a little hut is erected at a short distance from the house for the woman in advanced pregnancy. In this hut she has to go through her confinement and stay there for 16 days.

On a fresco of a temple in Sikhim called "Wheel of Life," there is also a representation of an Indian birth hut (see Fig. 685). Of the occupant, there is nothing to be seen. We shall hear more of the method of their confinement later.

"In North Malabar, the woman is taken to a shelter at some distance from the

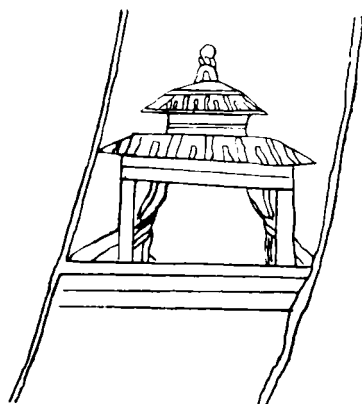


FIG. 685.—Indian parturition hut. From a wall painting (Wheel of Life) in a Tashiding temple in Sikhim. (From *Gaz. of Sikhim*, Calcutta, 1894, pl. 7.)

house, and left there for 28 days without any assistance. Even her medicines are thrown to her from a distance, and, apart from a jug with warm water, which is taken to her about the probable time of her confinement, nothing is done for her ” (see Schmidt ⁹).

The place in which the Annamite of Cochin China is delivered varies according to the social position of the woman in childbirth ; nevertheless, in no circumstances can this take place in the house.

Mondière (p. 38) saw how unfortunate young women lay as it were *coram publico* in the middle of the street, whilst a shelter was prepared for them by means of five mats full of holes and eight bamboo poles. They had to stay thus for two or three days, during which time they were warmed by a fire which compassionate neighbours had kindled and kept going under the 10 or 12 laths which served the unfortunate women as beds. The wives of labourers and servants are generally granted a dirty little corner, which may have been cleaned a little according to circumstances. For this purpose wealthy people construct in the courtyard, but near the actual dwelling-house, a little bamboo hut which has only a door and a tiny window. Here a bed of bamboo laths on four posts is prepared and with that everything is ready. After a month, for which period the woman stays in this hut, it is torn down and often burnt. The latter is certainly a very good hygienic measure.

The non-Mohammedan woman in Ceram, when she is expecting her delivery, seeks a suitable spot for the birth to take place, which often is in the bush near the village and as a rule close to running water. There a so-called *paparissan*, *i.e.*, a little hut made of sticks and leaves, or, to put it better, a shelter is set up which can keep off rain. An old woman stays with her and acts as midwife (Schulze ¹). According to another report, the husband sometimes builds his wife a special place for her confinement, which she does not leave for three days ; many women, however, go through their confinement in the dwelling-house. Yet, among the Pata-siwa Maselo, inhabiting the same island, the latter course is strictly forbidden. They use the same hut where menstruating women have to retire as a communal birth-house. Here also the women must stay for three days after the birth and may not return to their dwelling until they have bathed.

The Gilyaks take the woman in childbirth, even in the worst snowstorms, to a hut erected specially for her near the dwelling-house. The hut is put up in the middle of the patch of bushes which serves as a privy for the women and to which no man may go. If a man were to do so, he would draw severe punishment upon himself. This birth-house, *lan raf*, is erected in haste at the last moment. A few boards are knocked together and covered with old pine bark. “ It is,” states Pilsudski, “ more like a kennel than the place destined for the reception of a new inhabitant of the world eagerly desired by the parents.”

In various parts of New Guinea (*e.g.*, Doreh), the delivery and lying-in take place likewise in little huts erected specially for this purpose in the bushes, although van Hasselt ² says of the inhabitants of Doreh Bay that a room is erected beside the house for the delivery and lying-in.

On the island of Nauru, there used to be special houses for the delivery in the vicinity of the dwelling-houses (A. Brandeis).

According to Moerenhout, the women on Tahiti likewise are confined in a special hut. The same is true to some extent of the Australian native women. We shall revert to this in a later section.

In New Zealand, a similar isolation of women in childbirth prevails among the aborigines.

Even during pregnancy the woman is there declared to be taboo ; she is, therefore, cut off from all association with other people and banished to a crude shelter made of leaves and twigs which is scarcely capable of giving protection against rain, wind and the heat of the sun. However, she is attended by one or more women, according to her rank, and these, like her, are taboo. How long this kind of quarantine lasts and what formalities the woman has to go through in order to enter freely into society again is unknown. The isolation lasts for several days after the birth, and during this time the new-born child is exposed to every inclemency of the weather. The mother is not allowed to leave the hut until a few days after the delivery (de Rienzi). According to other information printed in the report of the voyage of the *Novara* (III., 55) the hut erected for the Maori woman in childbirth is situated not far from the family dwelling and is regarded as sacred.

Goldie's report is somewhat different. According to this authority, who lived in the country for a long time and is very well informed, confinement often takes place in the open air at an out of the way place ; if it is the first child, another woman gives assistance. Among many tribes, however, there is a special birth-house which the natives call *whare* (*fœtus house*). Here the birth takes place. The following day, if the wife of a chief is concerned, she is taken to another house, the *whare kohangir* (*nest house*). Whilst the "fœtus house" is only a rough shed, the "nest house" is distinguished by better equipment. Here, when the taboo has been taken from her, the young mother can receive visits from her relatives and friends.

In good weather the woman did not go into the "fœtus house" ; the designation was then used metaphorically for the place in which she was confined. The food was not taken into the fœtus house from the place where it was cooked, but was put down at some distance away ; the woman had then to come out of the fœtus house to eat her meal ; she might not, in any circumstances, take any of it into the house, otherwise the child would be exposed to every misfortune which can befall mankind.

The Hawaii islanders build near the dwelling-house a small birth hut which is taboo, *i.e.*, not to be entered or approached.

In this, covered with a piece of stuff made from the bark of a mulberry tree, and lying on a little piece of stuff on the ground, the woman is confined ; and the husband, who stays somewhere near the birth hut, enters as soon as he is told of the birth of the child in order to cut the umbilical cord himself.

Perhaps it is not always the idea of the uncleanness of women in childbirth, but to some extent—what is really the same thing—the desire to hide from evil spirits, which leads to confinement taking place in a birth hut. Girschner's record of the customs in the Caroline islands must certainly be so regarded.

When the woman feels the hour of delivery approaching, she repairs to the birth hut (*imwen naukat*) which no man may enter. Of any real help in birth, the natives know nothing ; they only try by exorcisms and magic to ward off a mishap which, in their opinion, is always caused by evil spirits. The most powerful of these is the "black spirit" called *Lūkaisónup*. It is a wood spirit, entirely covered with hair and of terrifying appearance. To keep him off, an exorcist takes his place before the hut ; he is able to push back the threatening spirit. Besides this, six torch bearers guard the place at night. People also throw food, bread fruit and fish, into the wood nearby, or hang it up there ; this the spirit devours. If he is heard chewing and the food has disappeared next morning, that is a favourable sign ; but if it is still there, then it has not been successful in enticing the threatening spirit away. Also two female spirit sisters *Inapwane* and *Limerákis*, approach invisibly and try to kill the woman in childbirth by making a hole in her breast and eating out her eyes.

Among the Pshavs in the Caucasus, Eristow states that the woman is driven out of the hut when the time of birth approaches, and she repairs to a hut situated far away from the village ; there she is quite alone and without any help.

Among the Chevsurs, Radde writes that " the woman leaves the village as soon as the time for the birth has come and betakes herself to a miserable hut, scantily covered with straw, which is erected by other women on a slope 1 or 2 kilometres distant from the village. Often three little branches leant against one another have the straw covering over the side. These birth huts are called *satchechi*. The mother has to give birth to her child here really without any help, yet sometimes a few Chevsurs allow the help of one other woman. It even happens, in recent times, that a special corner in the house of the village is arranged for the delivery. It is so small, however, that it can only hold the mother. According to an old custom, even the husband cannot help his wife or even approach her. Imagine such a birth when at about 7000 ft. above sea level. The hills are covered with deep snow and the temperature at night is 20 degrees below zero. On the heap of straw in the dark night lies the abandoned woman without help of any kind."

The Northern Asiatic peoples also have special birth huts. The " unclean tent " in which, for example, the Samoyed woman must be confined, is called *samajma* or *madiko*. Among the Ostiaks, when a confinement is imminent, the woman goes to a special yurt and lives there till five weeks after the birth of the child (see Alexandrow). The Gilyaks, who live on the Lower Amur and in Northern Sakhalin, relegate the pregnant woman to a birch bark hut before her confinement. J. Deniker ¹ states that

" Among the Gilyaks the pregnant woman is surrounded with every possible care, but about 10 days before the expected parturition she is taken from the house to a cabin of birch bark, where a small fire is kept up. This custom is strictly observed even in the coldest weather. Its meaning is not very clear ; there seems no indication that the woman in childbed is regarded as unclean, for, after parturition, she does not undergo any ceremony of purification. During the whole of her stay in the cabin the woman is attended only by persons of her own sex, who help her during the delivery and bathe the new-born child in the same cabin, often in a temperature of 40 degrees below zero."

On the Japanese island Hachijo, both Satow and Dickens came across the custom of birth huts, which, according to Aston, used to be common in old Japan. The birth hut was called *ubu-ya*, i.e., " birth-house." Also in Japanese mythology, a birth hut is mentioned, which the god Hohodemi, the husband of Toyotama-Lime, built for his wife on the seashore. In this case, cormorants' feathers were used for the roof. The plumage of this bird has an alluring effect on confinement. Usually the birth huts are covered with reeds, as can be seen from another passage also quoted by Florenz.¹

We come across similar phenomena in South America. Barrere (1751) says : " When the wives of the Indians in Guiana notice that they are soon to be confined, they hide in a little wood or in a little hut." Of the Campa Indians in Peru, we learn that their wives, on the approach of their confinement, leave their homes and repair to a little hut situated nearby where they are delivered alone without any help (*Globus*, 1865, 15).

The Wulwa (or Ulua) on the Mosquito Coast in Central America, a good-natured but very uncivilised Indian tribe, do not live in villages but in scattered communities of two or three huts. One hut is generally occupied by three or four families, each of which has its own fire in a corner at which the members cook their own bananas and round which they sit talking, the women in their decidedly incom-

plete toilets. Births occur very seldom, but nevertheless the women are always obliged, when they do happen, to go to a hut in a remote part of the woods, where

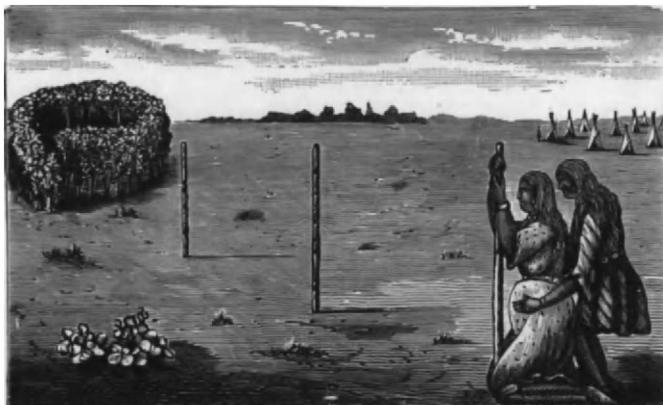


FIG. 686.—Parturition hut of the Comanche Indians. (After Engelmann.)

they are provided with food and looked after by the other women alternately (see Wickham, p. 58).

Among the North American Indians, the customs vary. The wives of the Chippewa and Winnebago, for example, are confined in winter in a special tent

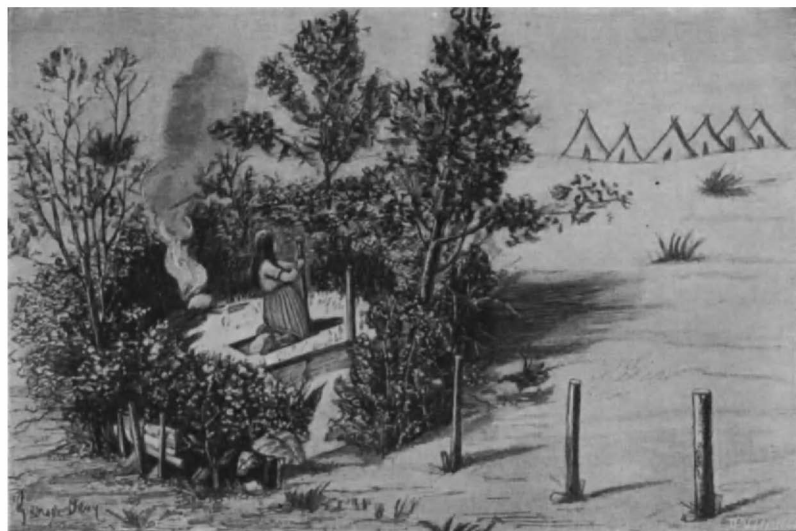


FIG. 687.—Comanche parturition hut. (After Witkowski.)

near the family hut, whilst, in milder weather, they go to the woods for this purpose.

A few Sioux tribes, the Siksika and the Hunkpapa, are accustomed to build a special hut only in occasional and isolated cases; this is also done among the Klamath, the Ute, and others. The Comanche build at a little distance from the settlement near the family tent of the pregnant woman a special refuge for the latter's confinement (*cf.* Figs. 686 and 687).

It is made of birch wood or bush, 6 or 7 ft. high, and provided with poles driven into the firm ground. It has the form of a circle, not quite closed and about 8 ft. in diameter, in which the entrance is formed so that the wall of one of the two ends overlaps the other. At some distance from the entrance three posts made from thin trees are set up. These are 4 ft. high and at intervals of 10 steps from each other. Inside the space for the birth two rectangular grooves are dug in the ground, 10 to 18 in. wide, and a post stands at one end of each of these grooves. In one of them, a hot stone is laid, and in the other a little loose earth for the absorption of fæces and urine. The rest of the ground is strewn with herbs. This is their method of making a birth room when they are in camp ; in a season when brushwood and foliage are lacking they

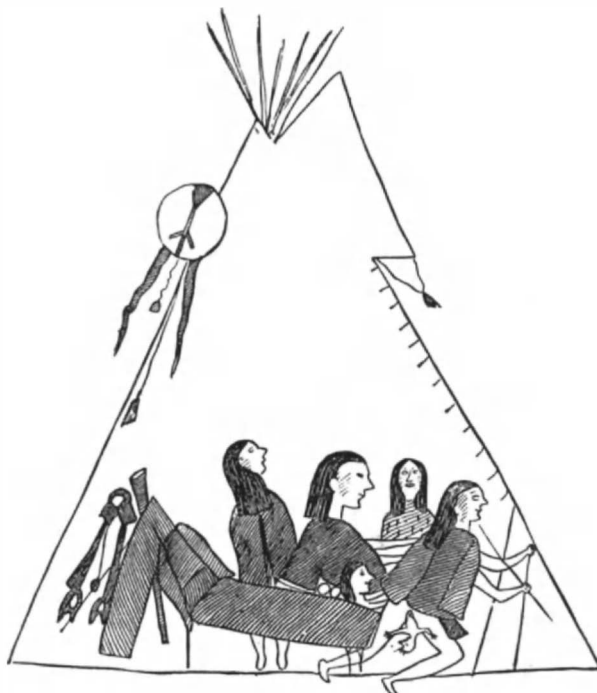


FIG. 688.—Birth in a Kiowa tent. (After Engelmann.)

fill the crevices with pieces of clothing or cover them with skins. But on the march they simply look for a natural shelter for the woman under a nearby tree.

The Indians in the Uintah Valley Agency (Ute) have a similar custom.

“ At the first sign of approaching birth, the woman in labour leaves the hut of her family and, at a little distance from it, puts up for herself a small ‘wick-e-up,’ in which she stays during her confinement. First, she cleans the ground and then makes a shallow groove in which a fire is to be lit. Stones are put round this and heated, and also a kettle of water is heated, of which she drinks much and often. The ‘wick-e-up’ is made as compact as possible to guard against variations in temperature and to promote perspiration. Women from the neighbourhood give assistance ” (Engelmann).

The women of many North American Indian tribes, as has already been stated, allow themselves to be surprised by the birth, and not uncommonly while at work or on the march. “ For the others, as soon as they feel near their term, a little hut is built outside the village, and they stay there for 40 days after the birth.” This

custom, however, as Charlevoix adds, takes place only in first confinements ; a custom which occurs also among other tribes.

Among the Indian tribes in the west of Hudson Bay, if a woman is overtaken by labour pains while journeying, a tent is put up for her on the spot, and she is left behind with some provisions and information as to the course of their journey, so that it is left to herself and luck whether she ever reaches her tribe again. Hearne also reports :

“ Among the Indians living in the most northerly parts of North America, when birth is beginning, a special tent is erected for the woman. This is so far away from the rest that the cries of the woman in labour cannot be heard ; only women watch over her : no male may approach her ” (cf. Fig. 688).

A Tlingit woman awaits her confinement in a little brushwood or snow hut at the back of the house (A. Krause ²).

Among the Salishan Family in North-West Canada, the woman must go for her lying-in to a little hut erected for this purpose. She is accompanied by a professional midwife, and after the birth is over, she must stay in the hut for 10 days more.

Among the Eastern Eskimo, the birth of the first child takes place in the usual *igloo* (hut), in all later confinements she has to go to an *igloo* specially built for her use (Hall ²). The husband may not be present at the birth. The Eskimo inhabiting the western districts must also give birth to their children in a little hut in which they are shut up with the carcass of some animal, generally a dog ; in this hut, the woman in labour stays quite alone and without help. C. Edward Smith visited several of these huts, which contained a woman in childbed and a new-born child ; and, in one especially small hut, he found a bitch and a litter of puppies. The Eskimo woman in the district visited by Klutschak (p. 233) is separated from her husband four weeks before her confinement, and is then taken to a separate house to which only women have access.

It must really seem strange that of the many travellers in recent years who have journeyed to all parts of the world, it has hardly occurred to one of them to take a photograph of such an interesting object as the birth hut. The first one to do so was the German Government physician Dr. Fülleborn, whom we have to thank for the excellent photographs and scientific information about the population round Lake Nyassa (M. Bartels). He found in Ukinga on Lake Nyassa that pregnant women had to have their confinement in isolated birth huts, and he succeeded in taking a photograph of one of these huts with the pregnant occupant alongside it. This woman is also carrying an older child on her back.

The birth hut, according to Fülleborn,² was “ a miserable pointed grass hut about 1·50 m. in diameter and 1·70 m. high, having inside as its only furniture, a primitive couch.” With the kind permission of Dr. Fülleborn and his publisher Mr. Vohsen, the interesting picture is reproduced in Fig. 689.

We find the usage of a special birth hut also in South Africa, although only in isolated cases. According to Damberger (p. 109) special huts for women in child-birth exist in every native village ; no man may go near these places, and when a woman is confined, her husband may not enter the hut until three days later.

In Europe, too, in olden times, care was taken that a refuge for the confinement of helpless women in labour was prepared. The origin of these birth establishments is to be found in ancient Greece. It was in Epidaurus on the Saronic Gulf, the port of Argolis where, near the shrine of Asclepias, the first of these places of refuge was built, which Pausanias (II., 27) described.

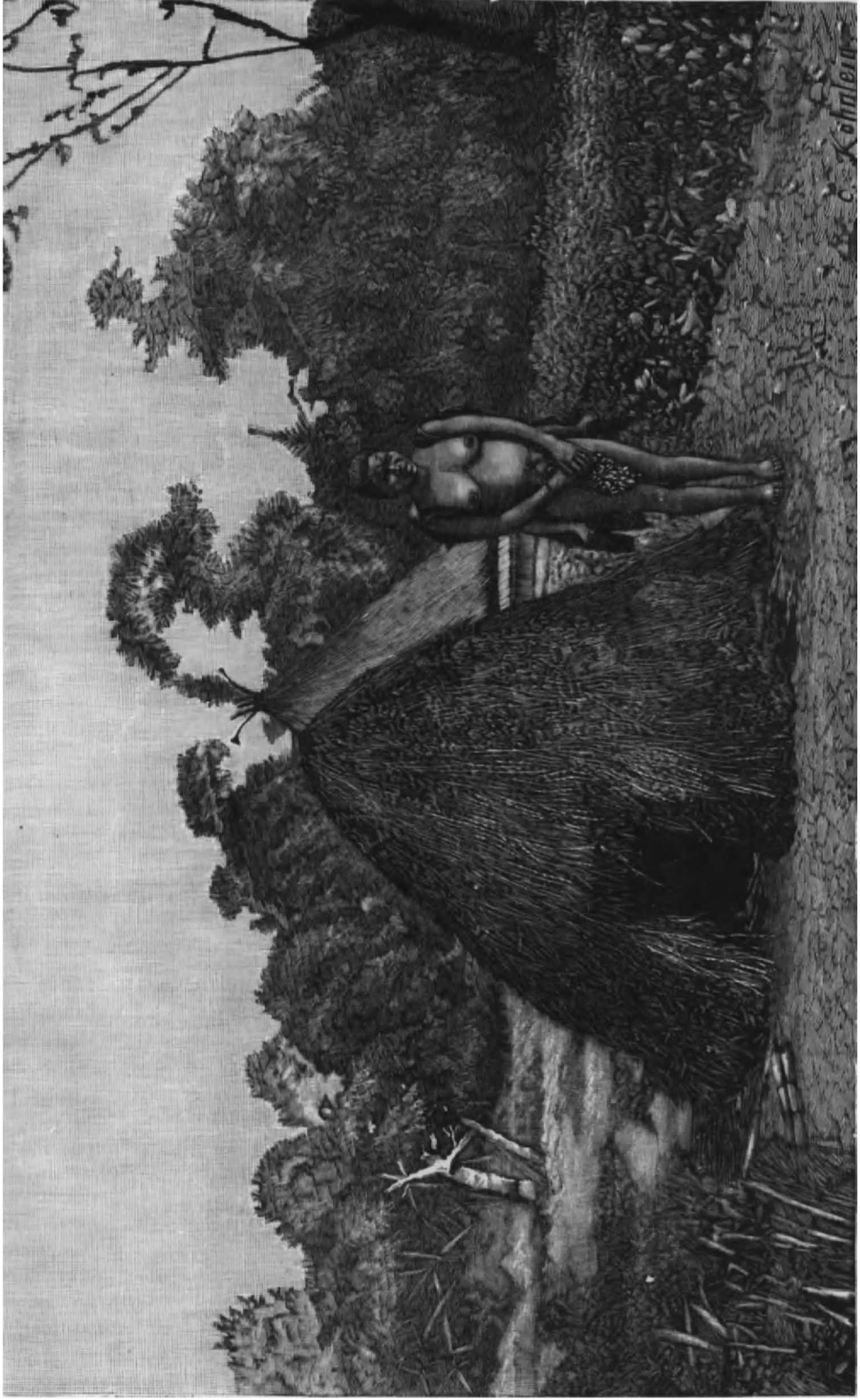


FIG. 689.—Parturition hut, Ukinga, Lake Nyassa. (Photo : Fülleborn.)

It was regarded as an act of piety when, like places for nursing the sick, these places for women in childbirth were formed when the women, regarded as unclean, lacked any assistance.

The Hindus, at the time of Suśruta had likewise lying-in institutions, in which the women in labour were attended by the priest-physician. This will be discussed later. Now we must pass to the history of the lying-in institutions which, as it appears, never ceased to exist even in mediæval Europe, but only in our times have they enjoyed a general distribution and a greater support by the State.

CHAPTER XXVI

HEALTH AT BIRTH

1. ARE BIRTHS EASIER AMONG CIVILISED OR PRIMITIVE NATIONS ?

THE principle is certainly fully valid that birth proceeds in the most normal manner in those nations in which the average woman possesses a normal physical structure and where all the physiological requirements of pregnancy are taken into account. Proceeding from this hypothesis, it may indeed be assumed *a priori* that the so-called "primitive" peoples, the women of which lead a hard but physically strengthening life, and hence acquire a proportionately great endurance, only rarely experience disturbances in the process of giving birth. And since also it is stated in most works of travel that, among uncivilised peoples, the women bear children easily, it is not surprising if it is said quite commonly that among primitive peoples, birth disturbances hardly ever occur, but that civilisation has had such an unfavourable influence that civilised women frequently have to undergo abnormal deliveries.

Here we wish to recall to mind an assertion which was made by Aristotle. He says, in his book on the generation of animals (IV., 6) :

"In regard to pregnancy, the differences between man and the animals are shown. Among the latter, for instance, the body is mostly in a condition of well-being, whilst most women at the time of pregnancy are ailing. To some extent, the mode of life is to blame for this. For, in a sedentary mode of life, too much secreted matter is accumulated, for, among the peoples where the women work hard even in pregnancy, no special symptoms appear, and there, as everywhere where women are accustomed to working, the act of birth is easy. That is to say, exertion dissolves the secreted matter, but, in a sedentary mode of life, much of it remains in the body for want of activity, and because in pregnancy menstruation does not take place, and the pains at birth are then severe. By means of work, breathing is exercised so that it can be held, and on this depends whether the parturition is easy or difficult."

As early as the eighteenth century, enquiries were made into this by Unzer. Here also, however, we have to investigate carefully to find on which facts we can rely. For, although it can be concluded from all the records that the women of less civilised peoples are generally most easily delivered, and that difficult births are relatively rare among them, yet it would be wrong to assume that only civilised peoples, as a result of their softening, non-physiological mode of life, have to suffer in parturition because of abnormalities. Moreover, one cannot put unquestioning trust in all records. H. Fritsch¹ says very justly :

"It is quite clear that uncommunicative savages avoid troublesome questions by saying that no help is necessary at birth. We can be fairly confident that we may hope for truthful information here. . . . If one considers why difficult births are probably not very common among such peoples, one must realise first of all that a very narrow pelvis or one absolutely too narrow seldom occurs. On the one hand, bone diseases, such as rickets, which lead to narrowing of the pelvis, do not occur at all ; and, on the other hand, imperfectly formed individuals die for want of proper care. But if, in spite of this, a crippled individual exists, it must not be forgotten that a woman is frequently a 'commodity.' A bad commodity will be difficult to sell, especially as a woman is married not least for the work that she will do. Then many records

exist, *e.g.*, those of Wernich, of measurements and weights which prove that the children are remarkably small, and that the back of their heads are little developed, or that the 'head is very round,' 'the bones very soft.' For all these reasons, it may be assumed that difficult births are rare."

In this question, we must, of course, refer preferably to the records of physicians who have had the opportunity of being present frequently at the parturitions of women of less civilised peoples and of becoming acquainted with their mode of life. In this respect, what Hille said a long time ago about his observation among the negress slaves in Surinam (to whose birth processes he was able to devote years of attention) seems very important.

"Just as in the whole world generally the women of the lower uncultured classes, where the body has not been disturbed in its development from childhood onwards by incorrect, cramping and distorting clothes, usually bear children easily, so in this case with negresses. All their women's clothes appear to be designed not to obstruct the development of the body. Therefore, even the bowels, pressed back by the expanding uterus, find room without pressing over duly upon the uterus; thus, the latter can expand unhindered and fulfil the required functions to the advantage of both mother and child. Negresses, however, have also by birth the great advantage of a wide pelvis and a sacrum and coccyx widely arched towards the back, owing to which parturition must be made still easier. Here it is very seldom necessary for an obstetrician to give assistance at the parturition of a negress. Midwives, where obstetrical knowledge happens not to be very great, are sufficient. Also, they generally have nothing to do but tie up the umbilical cord, as the act of birth proceeds very quickly and easily."

Engelmann learnt from one doctor who had been among the Canadian Indians for eight years, and from another who had been among the Oregon Indians for four years that, during these periods, they had never heard of an interrupted birth or even a case of death in childbed. The latter authority had at most had to rupture the foetal membranes. Engelmann seeks to explain the favourable result in these tribes by the fact that the structure and development of the muscular system of the women is strong, and that the position of the foetus during the continual movements of the woman is normally suited to the maternal parts. He also refers to the circumstance that the women marry only within their own tribe or race, so that the head of the child, in respect of its compass and diameter, conforms completely to the maternal pelvis through which it must pass.

One of the authorities in this field, Professor Dr. Külz, who was for a long time active in medical affairs in the German Colonies, says :

"If we regard human beings as a product of inherited tendencies and the influences of their environment, then the greatest difference between the primitive and civilised child is that in primitive man throughout life as well as in his unrestricted development as a child, a natural selection rules, whilst we, by civilisation, have become more and more free from its disadvantages. Its effect, accumulated through centuries, shows in the fact that both mother and child run less risk in parturition than with us, at least, in so far as the mechanical part is concerned. Only very rarely does a confinement not end in the natural way. Too narrow a pelvis does not exist, because, in the first place, rickets is unknown, which is the most frequent cause of this in childhood. Further, should there ever have existed a tendency to this in any woman, she would have died for want of medical help, and, therefore, her defective tendencies could not have been transmitted. In a numerous clientèle in Africa and in the South Seas, I have had to interfere on only one single occasion owing to a misplaced transverse presentation. Far more common than irregularities in the mechanism of birth are the possibilities of an infection, either because of dirt, or of the foolish manipulations of the people assisting, *e.g.*, pulling the umbilical cord, and tearing it, or causing an *inversio uteri*, etc. It is remarkable, however, that, in spite

of great want of cleanliness, serious septic puerperal fever does not appear to occur, just as primitive man has localised suppuration in a much higher degree than ourselves without its coming to progressive inflammation of the connective tissues. Very commonly, however, gonorrhœa is connected with birth with resulting permanent sterility. Statistics about still-births are, so far, few, and only given in a small number of cases, but it is the opinion of all colonial doctors that irregularities in birth and still-births are rare. The life of the mother, still more her health, and, most of all, her capacity for giving birth to children seem to be more endangered."

If we cannot help awarding the prize for easy births to the savages, we are still more strengthened in this view if we try to make a survey of the individual peoples. Nevertheless, we should fall into a great error if we were to assume that serious disorders in the course of birth do not occur at all among savages, although it would be going too far to assert that they are just as common or even more common than in civilised peoples. Certainly, we must admit that Winkel is right when he points out that all statements as to the length of time of birth have only a very limited positive value because, very often, not the whole duration of the confinement but only that of the period of expulsion has been reckoned. Nevertheless, a relative importance cannot be withheld from such records.

2. THE PROCESS OF BIRTH IN AUSTRALIA AND OCEANIA

As to the process of birth in Australian women, J. Hooker collected from various parts of this Continent records which agree that confinement is, in general, quick and easy ; only in exceptional cases does a difficult delivery occur, sometimes, according to Searanke, it extends over two days. According to other statements, it varies between a few hours and five to six days (Parris). The duration of the time of birth is short and the loss of strength quite insignificant, death during confinement seldom occurring. Marston states that birth lasts from one to two days ; another from half an hour to three hours ; a third says that everything is over in the period of from one to four hours, and that a twelve hours' labour seldom occurs. The native woman in the Australian Colony of Victoria, says Oberländer,¹ who stayed there for many years, does not need any preparations for her difficult hour ; she has no pains of long duration and also no rest after her confinement. On the Lower Flinders River, in North Australia, the women give birth to their children very easily ; cases of death in childbirth being rare, according to E. Palmer (p. 280).

Among the Maori in New Zealand, the confinement seldom lasts longer than 15 minutes ; the mother washes herself as well as the child with fresh water, and, after a few hours, goes about her usual business (*Reise d. "Novara,"* Th. III., 55).

The process of birth among the aborigines in New Zealand, states Tuke, is not such a terrible trial nor such a painful and dangerous process as in civilised nations. It is not accompanied by such pain or so often attended with all kinds of serious consequences for the woman. The absence of all such civilised restraint as stays, etc., during utero-gestation, the natural way of living and the greater width of the pelvis, make the labour pains shorter and less painful.

Goldie, also, certainly a very reliable judge, states that the births in general proceed very easily, seldom lasting more than two hours, and that the young mother returns from the bath and soon goes on with her work again. As an example, he brings forward the case of a Maori woman, who, acting as carrier, was overtaken by labour pains on the march, was confined and walked four miles afterwards. The following day she walked 15 miles. Cases of death in child-bed are said to be almost unknown ; the causes in such case being usually great loss of blood or transverse presentation. A native chief told Dr. Thompson that he could recall only 10 such cases in a tribe of 4000 members.

Among the Melanesians, we have information about the inhabitants of the Fiji Islands : here births take place "easily" (T. Williams and J. Calvert), and the women seldom die at confinement (de Rienzi).

The women of the inhabitants of the West Coast of New Guinea, according to Otto and Geissler, have easy confinements ; and among the Doreh Bay women, according to von Rosenberg, they are "very easy."

Among the Polynesians on Samoa, according to Gräff, births take place for the most part so easily that the mother is seen soon after going to the river to bathe herself and her child ; and also, according to Wilkes, births in the Samoan Archipelago take place not only without the "least ceremony," but also "without discomfort to the mother." We have similar information of the Hawaii Islands : on Hawaii, the native women give birth to their children without pain except in quite uncommon cases. When they saw the wives of missionaries delivered with pain, they were surprised at this suffering, and laughed about it, for they thought the crying out of the women of white race was only one of their habits or customs. On Nukahiva, according to Langsdorff, birth is said to be "easy and over in half an hour" ; yet, according to his own statements, difficult births occur occasionally and are caused by the unnatural position of the child or of falling forward of some part of the extremities.

On several Micronesian islands, *e.g.*, on the Caroline Archipelago, correspondents and travellers (*e.g.*, K. H. Mertens) could never hear of any unsuccessful confinement among the native women ; troublesome mishaps, they say, seem to be quite unknown.

We have similar reports of the Malay inhabitants of the South Sea Islands. The Negrito women in the Philippines have quick and easy births ; also among the Tinguiane, a Malay tribe of the Philippines, birth proceeds uncommonly easily (see Schadenberg, and *Pet. Mitt.*, Ergh. 67, p. 37). The native women on the Moluccas give remarkable examples of how little troublesome the business of birth is for their women. Thus, among others, we read :

"A woman alone in a boat who had set out for the other side of the bay was overtaken by labour when she was a good sea-mile away. She was confined but continued to row to the far shore. There she washed herself and the child and returned home the same day. Another time the missionary baptised a child which had been born whilst its mother was alone in the middle of the river." The informant adds : "It must not be thought that these women are stronger and healthier than others. Most of them are rather small and delicate, but these advantages are due to the suppleness of their limbs, which are expanded by the warmth in this quarter of the globe" (see *Allg. Hist. d. Reisen zu Wasser u. zu Lande*, Bd. 18).

We come across similar opinions now and again, but we can hardly ascribe any such influence to the warmth of the climate.

On Engano in the Malay Archipelago, birth nearly always proceeds very easily (*cf.* v. Rosenberg). The native Mincopi women on the Andamans, seldom suffer from labour pains during confinement ; in fact, difficult confinements are, states Man, little known among them.

It is true that the inhabitants of the Amboina Group, as we shall see later, have specifics for hastening birth. However, as Riedel¹ reports, they rarely use these because births proceed very quickly and easily. On Ceram, difficult confinements seldom occur ; and also on the Aru Islands, only a few cases are known. On Leti, Moa and Lakor, as well as on Ceram Laut, births proceed very easily, and a case of death in childbirth rarely occurs. On Romang, Dama, Teun, Nila and Serua, as

well as on the Kei and Watubela Islands, many women go through their confinement alone and unattended, but, among the natives, there are various expedients in use for bringing difficult births to an end (Riedel ¹).

3. THE PROCESS OF BIRTH IN ASIA

Births in Java are usually wonderfully quick and successful: one often sees the young mother with her child go to the river to cleanse herself and her clothes half an hour after the birth, states Metzger.³

Kohlbrugge ¹ heard that the confinement of the Tenggerese on Java, from the beginning of labour to the birth of the child, seldom lasts longer than an hour. Only a few women have labour pains lasting for several hours; these are supposed always to be the result of heredity; their mothers had also abnormal (according to their ideas) births which lasted a long time.

Also among the women of Nias, according to Modigliani, confinements are usually successful, because the women, although small, have wide and well-proportioned pelves. But here, too, accidents may take place.

Maass ¹ heard from a Mentawai islander that many "women die (because) the child cannot come out." He also said, "Men are not present at the birth, that is not becoming. But there are many women there. (After the birth) the many women go away (and) the husband enters the house."

Among the Sinhalese, according to Schmarda, births take place very easily.

If, among the Hindu women in India the course of birth begins to be retarded, they are often treated very unsuitably by the untrained midwives, so that the process is more hindered than helped. Loud cries at the time of delivery are permitted to the Kerala (Malabar) women in India (Jagor).

That confinements do not always take place easily in India is shown by the great number of serious cases in the hospitals which make necessary the use of instruments; and malformations as well as internal injuries are terribly common. These are often the consequences of the barbarous treatment to which the ignorant midwife resorts (*cf.* Schmidt ⁹).

In Siam (see Quaritch-Wales) births in general are easy; the women are, as a rule, well developed, and wear no clothing which cramps the body; the breasts are left uncovered, and a girdle only is wound round the abdominal region. If, however, in exceptional cases, delivery was difficult, "then they called in Kemble, the doctor at the English Embassy," according to a verbal communication from Sir R. Schomburgk.

The Annamite women in Cochin China are said to be of different build as regards the organs connected with birth from the European woman, and the child comes into the world "as if through a hole made in a plate." Mondière (p. 44), who reports this, adds:

"On dirait qu'à l'intérieur l'utérus vient s'invaginer jusque près de la symphyse pubienne et qu'il n'y a qu'un seul temps douloureux pour la mère, le franchissement de l'anneau vulvaire."

In China, the process of birth may vary considerably according to social position and province. The Chinese women of high position who, owing to having had their feet cramped by binding, are condemned to almost continual sitting, and are therefore weakened, appear to go through the labour of birth much less easily than the working women. Epp found that among Chinese women in Java, as well as among those

Malay and Javanese women who led a sedentary life, the business of birth is generally difficult, "because the pelvis is narrower, whilst, owing to the favourable structure of the pelvis, the Malay and Java women, in general, have easy births." Chinese women of the lower classes, as we know from several examples, give birth to their children quickly and easily. Cases of death in delivery are said almost never to occur (Stenz). The painter Hildebrand saw the confinement of a farmer's wife in Shanghai: she gave birth to a healthy little boy without the help of a midwife; kind neighbours put a bundle of rice straw under her head, a young girl brought a dish of curry and rice, the woman in childbed sat up and polished off the ample quantity to the last grain; then she wrapped up the child (which till then had lain naked on the tiles in the sharp December air) in her rags and took herself off. The question why births are much easier among women of the lower classes, *e.g.*, peasants and servants, than among women of high position was answered by a Chinese doctor as follows (quoted by H. V. Martius,² p. 61):

"Because the former are busy and industrious at some kind of work from youth to old age and, therefore, have no time to think so much of the passion of love. Their blood, owing to work and movement, circulates properly and easily; their inner nature remains natural and unspoilt and therefore they bear children easily and bring strong and healthy children into the world. Hence also one finds in the higher classes and among women of high position so many difficult and unsuccessful confinements because they spend their lives in idleness and consider it ignominious to move hand or foot."

That the course of birth in Japan is by no means always easy and successful we shall see plainly in the later sections of this book. The rules for the conduct of women during pregnancy quoted in earlier chapters prove this. For if people had not frequently had bad experiences, then these strict rules would hardly have been encountered. It is, of course, also very desirable to have some certainty before the confinement as to whether the pregnant woman can reckon on an easy birth, or whether a difficult one is to be expected.

In regard to this, the eighteenth century Japanese painter Maruyama Okyo has presented to the eyes of his contemporaries examples in water colours from which they could get information on this question. These pictures, now in the possession of the Ethnological Museum in Berlin, are to be found in a portfolio of drawings which the painter has called "physiological studies," and the purpose of which is that destiny can be foretold from them. Three of these water colours refer to our subject: two portray a pregnant woman "who is to have a difficult confinement" (Fig. 690), and one depicts a pregnant woman "who is to have a good delivery" (Fig. 691).



FIG. 690.—Japanese woman whose labour will be difficult. Water-colour by Maruyama Okyo. Eighteenth century. (Photo: M. Bartels.)

The pregnant women are portrayed kneeling on the ground almost naked, but the binder is round the abdomen and the ends of it are tied in front. The pregnant woman who has an easy confinement before her has a fresh colour, smooth skin and a happy healthy appearance. The pregnant woman who, on the other hand, is threatened with a difficult confinement, looks cyanotic and puffy, and, on her breasts, are to be seen a number of enlarged blood vessels.

According to Scheube,⁴ births take place very easily and without any artificial aid among the Ainu, and, according to H. v. Siebold, cases of death in childbed seldom occur among them.

The opinion of Pilsudski, who lived in the country for 10 years, does not sound quite so favourable. "Labour pains," he says, "begin in the Ainu women long before the actual birth, and are very obstinate. A confinement also is only considered difficult when the birth does not take place until the fifth day after the first labour pains." According to this, the process in general seems to be slow. "Among the Gilyaks, the first confinement is supposed to be the most difficult; it is, however, particularly difficult and painful in very young women, who are not yet sufficiently developed physically. Comparing my observations among the Ainu and the Gilyaks, I must come to the conclusion that the Ainu women have more difficult and more painful confinements than the Gilyaks."



FIG. 691.—Japanese woman whose pregnancy will be easy. Water-colour by Maruyama Okyo. Eighteenth century. (Photo: M. Bartels.)

The process of birth in the Philippines, according to D. Bell, is in no wise easier than in civilised nations. Owing to the unsuitable manipulations by the assistants, the consequences for mother and child are often lamentable. In 38 out of 105 cases, which he was able to observe, serious lacerations were caused in the perineum and cervix, and also inversion of the uterus occurred.

The women in Kamchatka are said to have easy confinements. Steller was present at one confinement. The woman came out of the hut as if she were about her ordinary work, and came back after a quarter of an hour with her child in her arms without there being the least change of colour in her face.

According to J. W. Georgi, the Turguse women have easy confinements, whilst of the Ostiaks, J. B. Müller said:

"They do not estimate the time of birth at all and it appears that they bear children without any pain."

The Ostiak woman, we are told in another place (Prévost,² Vol. 18, p. 517) scarcely interrupt their work or journey to be confined. The Samoyed women also, according to Pallas, are said to have easy confinements; and in the *Mémoire sur les Samojèdes* of the year 1762, it runs:

“The Samoyed females are almost always delivered of their children without pain.” Of the Bashkir women one reads: “Les femmes *baschkires* fortement constituées comme elles le sont et avec leur rude genre de vie, n’ont que bien rarement de couches laborieuses” (*Descrip. ethnog. . . . de la Russie*). Among the Tchoud, a Finnish tribe on the River Ojat, birth also “proceeds easily” (Mainow).

Among the Kalmucks in Astrakhan, difficult, irregular births seldom occur, because, as Meyerson observes, “for the most part they have a properly open and mobile pelvis and also for the following reasons: first, the Kalmucks are carried on the back in childhood; secondly, they learn to ride very early, and they have, from the tenderest age, the habit of sitting like a tailor which tends to stretch the pelvic bones by the weight of the body.” Still, it is questionable whether Meyerson here found the true reason for the easiness of Kalmuck births. Of the wives of the Tatars in Astrakhan he says: “They bear the labour pains with extraordinary patience.”

In Persia, as Polak, physician-in-ordinary to the Shah, reported to Ploss, parturition is nearly always normal, because the body is not cramped by corsets, and because the women wear their clothes fastened round the hip-bone ridge and not round the abdomen. The women are broadly built in the pelvis, evenly developed and of medium size. They ride a great deal and in man’s fashion. Chardin, even in his time, said that in Persia (as in the Orient generally) births usually took place easily. And J. Morier recorded of the Persians that “they are often delivered ere the midwives come unto them, and the lower orders often deliver themselves.”

Of the inhabitants of the Persian Province of Gilan, on the Caspian Sea, Häntzsche (p. 570) says:

“According to all the information I could get, I am no doubt not far from the truth if I assume that abnormal births must be just as common with them as with us, and that the women’s diseases are caused by unskilful delivery (which always occurs because there the so-called midwives do not even know what an examination is). Cases, which with us can be brought at least to some extent to a successful finish, always end fatally there.”

Among the Georgian and Armenian women, according to Krebel (p. 103), confinements are “as a rule easy.” Krebel records that the wives of the Nogai are said to have a hard life and give birth to children “easily as a rule.” The Circassians, according to Stücker, are “very little pampered or very much favoured by nature in their confinements.” Also of the Chevsurs, Radde says that difficult births are rarely heard of.

The Irish missionary Robson (p. 232), who lived in Damascus for 20 years, says of Syria that the births there take place somewhat but not much more easily than in Ireland. A. Russell stated of the women in Aleppo in Syria that their confinements are much easier than those in England.

The Bedouin women, according to Layard, have their children very easily and suffer very little at the delivery. Of the Arab women, who are usually confined without any help just where they happen to be, d’Arvieux says:

“Soit qu’elles ne ressentissent pas tant de douleurs que celles qui ont été élevées délicatement, soit qu’elles aient plus de courage et de patience, on ne les entend point crier.”

In the Levant generally, birth, according to H. J. Türk, proceeds with great ease so that skilled assistance is hardly ever required. He adds:

“Many would like to attribute the reason for this not only to the climate but also to the fact that the women are accustomed from childhood to sit on their knees with their legs crossed

and their knees apart ; in addition to this, there is the custom of vapour baths and the fact that the female clothing always fits loosely."

In his " Voyages and Travels in the Levant " (London, 1706), F. Hasselquist states that the women in the country have easy births " and one seldom hears of a woman having a difficult birth, much less that she has lost her life over it ; and this is especially true of the Turkish women." Oppenheim (p. 45) says that " women's confinements, as over-civilisation and fashion do not distort and cripple the body, are not attended with the difficulties and troubles common in civilised Europe ; among the Turkish women they often proceed so easily that they are frequently overtaken by the birth before the midwife comes to them."

Rigler, on the other hand, observes that the Turks and Armenians experience irregular births relatively more frequently than European, this no doubt having regard chiefly to the women in Constantinople and other large towns in Turkey where not only rickets and deformities of the pelvis, blamed by him, are common but also bad midwives may bring about troubles in confinement. Eram, also and no doubt, with justice, points out the difference in the course of birth in the towns of European Turkey and among the tribes in Asiatic Turkey.

4. THE PROCESS OF BIRTH IN AFRICA

Among the Hottentots in the course of an almost seven years' practice by Roser, only two out of 110-130 annual births occurred where the mother died during confinement. The same was recorded by the experts of the " Novara " expedition, and the facts are supported by other records, namely that " the Hottentot woman as a rule goes through parturition very easily." Le Vaillant ² (p. 41) said earlier :

" With the Hottentots, births are always very successful ; neither the Cæsarian operation nor symphysiotomy are known to them, and the debatable question whether or not the life of the child is to be saved with the resulting risk to the mother arises. Yet, should the case occur, which is almost without precedent, there would not be much hesitation over hair-splitting distinctions, and the child would unquestionably be sacrificed to keep the mother."

Theophilus Hahn, born and brought up among the pure-blooded Hottentots, stayed a long time among them ; he wrote to Ploss thus in answer to the latter's questions :

" Hottentot women have extraordinarily easy confinements. It often happens that a woman delivers herself and takes up her work again shortly after the birth as if nothing had happened." And this correspondent wrote further : " Among the Hottentots the female sex shows an admirable fortitude in confinements. A woman was once overtaken by childbirth and was alone in the house without any assistance. She simply chased away a cow which had been left behind from the place where it was lying, lay down on the warm hollow and was delivered there by herself. In the evening she sat as if nothing had happened, smoking and gossiping by the fire. Another still quite young pregnant woman goes in the morning with the flocks to pasture land, a few hours' journey away : in the evening the shepherdess comes back carrying a young shepherd on her back, to whom she has given birth during the day."

As G. Fritsch ² informs us, the Bechuana women have easy births, and there are seldom disturbances at their confinements. Here, too, it happens that the women work in the fields up to the last minute, are overtaken by birth, and bring the child into the world without any help and go back to the village with it. Birth troubles, owing to their infrequency, seem to these women something quite horrible and thoroughly upset them.

Also, among the Ama-Xosa, birth, on the average, proceeds, according to Kropf, very easily, but troubles sometimes occur, and then the woman is looked upon as bewitched and is forsaken by everybody.

Even the wives of the colonial settlers at the Cape of Good Hope are said to give birth to children with less pain and less risk than the Europeans at home, and their confinement is said to take place more quickly. Kolben, who reported this in the eighteenth century, heard of no case in the 10 years he stayed at the Cape in which a woman died in childbirth.

We get information also as to the easy course of birth among the women of the negro tribes in earlier times. As Bosman observed at the beginning of the eighteenth century, the Guinea negresses bring their children into the world easily and quickly. He says :

“ Les accouchements sont ici fort commodes pour les hommes. Car ce n'est nullement la coutume que les femmes gardent longtemps le lit, ou que l'on fasse aucune dépense soit pour les repas ou autrement. Je me trouvais un jour par hasard auprès d'un lieu où la femme d'un nègre était en travail d'enfant ; on ne lui entendait point faire de plainte, même au plus fort de la douleur, qui ne dura tout au plus qu'un quart d'heure et je la vis le même jour sur le bord de la mer où elle allait se laver sans penser plus à son accouchement. Il arrive bien quelquefois qu'elles sont obligées de garder le lit quelques jours, et qu'elles sont fort malades, mais cela est très rare.”

This report, in contrast with other statements, was corroborated by Father Jean Baptiste Labat, who stayed on the Gold Coast from 1725 to 1727. The English officer, Matthews, also described the negresses of the Sierra Leone Coast and stated that the troubles of the women in childbirth are insignificant.

More recently we have had a report in regard to this matter with special reference to the Senegal negresses. Of them Murion d'Arcenant says :

“ Elles s'accouchent à peu près comme les animaux, et au bout de deux ou trois jours au plus, elles sont sur pied.”

The Wolof negress lets no complaint be heard during labour pains (*vasin va*), for she would be ashamed of such expression (A. T. de Rochebrune). Among the negresses of the Loango Coast, according to the evidence of Pechuel Loesche, parturition is not especially hard.

Concerning the negro tribes in Central Africa, Ploss received from Heinrich Barth the information that with them confinement is “ easy in every respect.” Among the Galla in East Africa also the women have easy confinements (Bruce,¹ p. 426). Among the Somali, according to Haggenschmied, it is considered a disgrace for the women to give expression to pain in their confinement.

The negresses in the Nile Territories seem, according to Hartmann³ (p. 404), to give birth to their children easily, as they are often confined in the open fields and soon after calmly return to work. Very young slaves, however, who have been infibulated, are said to suffer severely in being delivered. But, in general, says Hartmann, among those African women whose childhood years are behind them, births proceed easily and without mishap.

In Egypt weakened urban women often suffer severely in childbirth, and need skilled help ; they often die also during delivery. These troubles among Egyptian women are probably mainly due to the fact that they marry too young, *i.e.*, at the age of 11-13 years.

Of the native women of Algiers, Bertherand (p. 543) says :

“ Les Arabes supportent les douleurs de la parturition avec un courage vraiment extraordinaire ; elles affectent même de ne pas souffrir et de ne préférer aucune plainte.”

Narbeshuber, writing of the births in Sfax, in South Tunisia, says that they mostly take place easily. But if any irregularity occurs, the woman in labour is generally lost, for the Arabian midwife refrains from any interference.

In Fezzan, according to Nachtigal² (I., p. 151), births are generally easy and without skilled help. On the Canary Islands also, according to MacGregor (p. 66), parturition proceeds “ very easily.”

5. THE PROCESS OF BIRTH IN AMERICA

Among the Fuegians, according to Giacomo Bove, the small size of the new-born children is said to be the reason that these women are confined without exertion. With them, when the time comes, they leave the hut in the company of their friends and go to the nearest stretch of bush in order to bring the child into the world far from the eyes of the curious.

The Patagonians, according to the records of Guinnard, who lived in captivity with them for three years, make their wives work hard during pregnancy “ for which nature makes amends with an easy confinement.”

On the other hand, according to the statement of Father Dobrizhoffer, among the Abipones in Paraguay the women have a difficult and painful parturition, and Dobrizhoffer thinks that this is the case with all women who ride a great deal. This is an error however, since the Patagonian women are all riders and, according to Guinnard and others, suffer little in parturition. In Corrientes (on the Paraná) the women, according to Rengger, have an easy confinement.

Men and women who associated a great deal with Indians in Brazil assured Ploss that there, when the tribe was on the move, the woman simply went a little aside to give birth to a child and then, after a short time, rejoined the procession with the new-born baby without further ceremony.

Of the Brazilian Indian woman, Marcgravius stated in the seventeenth century that they give birth to their children extraordinarily easily. And later Thevet said of the Tupi :

“ Les femmes des Touipinambaux, quand le temps de enfanter est venu, jettent quelques cris. Elles sont en ce travail demi-jours (les unes plus, les autres moins).”

Yet it appears that at least in one case of birth, which Lery had the opportunity of observing in an Indian woman in Brazil, the affair seems to have proceeded not without considerable pain and great wailing, for he writes :

“ Another Frenchman and I were sleeping in a village, when about midnight we heard a woman screaming so that we thought there was a wild animal trying to devour her. When we rushed there we found that it was not so, but that the travail of bringing a child into the world made her cry out in that way.”

Moreover, according to many reports, very barbarous methods of delivery are in use among the savages in Brazil (hanging women between trees, etc.) so that we must presume that births are not infrequently difficult, and proceed with the help of foolish artificial aid.

The native women in Cayenne and Guiana have usually, according to Bajon, a successful confinement. The earlier information in regard to Brazil and British

Guiana is corroborated by later travellers, such as Prince v. Wied and v. Martius for Brazil and Schomburgk for British Guiana. Laet also has given evidence of the easy parturition of Indian women in Guiana : he records the same also of the women in Guatemala, in Peru and Cumana, as well as in the Gran Chaco. The Indian women in Guiana know very little of midwifery states Bancroft, but nature has luckily made it unnecessary, for they have scarcely any experience of a difficult birth. Among the women on the Orinoco, births, according to Gilij, take place in a very short time, whilst according to Veigl, the Indians in Ecuador had uncommonly easy parturition.

In Central America generally, births seem to proceed easily, for Du Tertre said of the Indian women in the Antilles : " Les femmes enfantent avec peu de douleurs "; and of the Negro women there also, he says : " Elles accouchent avec beaucoup de facilité." Of the wives of the colonists there he adds : " Elles ont des enfants de bonne heure et elles accouchent sans beaucoup de douleurs." At Jalapa in Mexico, according to Poyet, births proceed very successfully, and a difficult confinement is exceedingly rare. We learn through Bernhard ¹ that the women of Nicaragua are well built and have a wide pelvis, " therefore the births there are generally easy and normal." Nevertheless, as we shall see later, difficult births do occur there also.

Marr (I., p. 275) asserts emphatically :

" I have seen parturitions among the Indians where the woman in childbirth lay on her knees, smoked a cigar and, at the same time, let the rosary slip through her fingers." Moreover, he extols the " enormous pelvis " of these women.

The North American Indians are known to be capable of great endurance in bearing hardships. For those tortured to death it is a point of honour not to allow the least sound of pain to be heard. This self-control extends also to the women, for in order not to give birth to a coward they bear their labour pains with the same equanimity. In regard to this, almost all the information, old and new, is in agreement. Among many others de Bacqueville de la Potherie recorded of the wives of the Iroquois :

" Les jeunes mariées parmi les Iroquois font gloire de ne pas crier en accouchement. Comme c'est une injure parmi les guerriers de dire : tu as fui, de même, c'est une injure parmi les femmes de dire : tu as crié quand tu étais en travail d'enfant."

The Tinne Indians are very fertile and bring their children into the world easily and without help (see *Globus*, 1877, 359).

Morton says of the North American Indians :

" Even from the women it is required that they bear the labour pains, however long and painful they may be (most births with them are certainly easier than with us), without groan or cry. If the woman betrays any such weakness, she is held as unworthy to be a mother and her children are regarded as cowards."

According to Rush, parturition with the North American Indian women is short and attended with little pain." Also, according to James, who accompanied an expedition to the Rocky Mountains, parturition there proceeds very easily. The Athabaskan woman to the East of the Rockies, states von Hellewald (p. 302), brings her child into the world easily and without help, and works up to the last moment before her confinement. Again, Abbé Domenech writes :

" The Red Skins come into the world without great trouble or care. . . . The pains seldom last long, and do not often interrupt the occupations of these poor creatures " (II., p. 293).

Among the Indian women in Canada also, le Beau (II., p. 199) says that they give birth to their children easily ; and the Jesuit missionary Begert, who lived for 17 years among the Indians in California, records that their wives were confined without difficulty and without assistance.

The ease with which Indian women go through confinement is described by Engelmann ¹ from the records which have reached him :

“ Faulkner, who lived among the Sioux tribes for several years, knew a woman who, in the middle of winter, went into the wood to get firewood ; while doing so, she gave birth to a child as she walked along ; she wrapped it up, laid it on the wood and took both child and wood to the camp several miles distant without any damage. Choquette tells that once an Indian troop of Flatheads and Kootenais, consisting of men, women and children, set out on a hunting expedition. On a bitterly cold winter day, one of the wives left the troop, dismounted from her horse, spread a buffalo skin on the snow and gave birth to a child whose arrival was followed by that of the placenta. Having seen that everything went well, she gathered up the child, which was wrapped in a cloth, remounted her horse and overtook the troop before anyone had become aware of her absence.”

Hrdlička ascertained how long birth lasted in the case of 52 Indian women. In 29% of the 35 Apaches and in 23·5% of the Pima Indians the birth had lasted at most two hours ; in 31% of the Apaches the period of birth lasted between seven and 12 hours ; in 32% of the Pima between seven and 10 hours. The confinement lasted longer than one day in 17% of the Apaches and 17·6% of the Pima ; these were mostly primiparæ. The placenta followed, almost without exception, in a very short time, at most in half an hour.

The Eskimo women have an easy confinement and seldom die in childbirth. They give birth to their children easily because, according to C. E. Smith (p. 858), they have a wide and deep pelvis. The Greenland women, according to early records, are so hard in their nature that one never hears them complain of pain either before or after childbirth (*cf.* Baumgarten, II., p. 898). According to Charlevoix also, they have “ easy ” births.

6. THE PROCESS OF BIRTH IN EUROPE

In Europe there are relatively few nations (and it must be admitted that there are chiefly the less civilised) where, according to consistent reports, the women in general enjoy a particularly easy parturition.

We shall begin with the North. The women of Iceland “ get rid of birth soon,” as Baumgarten (II., p. 879) expresses it. In Lapland also the women have easy confinement (*Allg. Hist.*, etc., XX., 549). Krebel reports the same of the women in Esthonia, and Holst says with fuller detail :

“ Births among the Esthonian women generally take a favourable course. The head is often deep in the pelvis at the end of pregnancy and often advances slowly at the beginning, so after this period is over birth is generally very quick, because the pelvic outlet is normal and the pliant parts of the pelvis seldom offer any hindrance.” On the other hand, Holst says, regarding the duration of birth, that with the Esthonian women the pains are, as a rule, normal and strong, yet they do not advance the birth remarkably quickly ; the duration of birth in primiparæ was, on an average, 20 hours, in multiparæ, 6·8 hours.

That Irish women have relatively easy births, and that only a small number die in childbirth was recorded as early as the seventeenth century by Gaunt.

Sicilian women are said, according to Finke¹ (I., p. 42), also to be distinguished for easy births.

The women in Minorca, according to Cleghorn, have easy births. Basque women take a considerable share in agricultural work, and thus, owing to their physical strength, they bring their children into the world with great ease.

Legros reports from the French Département de la Creuse that among the countrywomen births are "ordinairement facile et prompte."

The women of Dalmatia, states Finke¹ (I., p. 98), have easy parturition even when they are quite alone on a journey.

Women in Montenegro are often confined in the woods or fields "without any help, or without letting a sigh or complaint be heard," states Mme. Dora d'Istria.

Glück says of the women of Bosnia and Herzegovina :

"That the native women give birth easily as a rule is a generally recognised fact. But if, in spite of this, cases of death in childbirth are very common, this can for the most part be ascribed to the circumstance that in a dietetic respect the women in childbed do not look after themselves at all."

Milena Mrazovič also states that births in Bosnia generally proceed easily.

Roskiewicz had already said of these women that the Mohammedans practically never require the help of strangers at delivery. Doctors may never be present at this and only families of high position appreciate the knowledge and skill of midwives. The gipsies usually bring their children into the world with little trouble (Grellmann, p. 61).

In Istria confinements are "almost always successful," states v. Reinsberg-Düringsfeld.

In modern Greece, according to information given to Ploss by the late Damian Georg, easy births are more common than in Northern Europe.

In order to judge how confinements proceed in civilised Europe, we have certain statistics at our command, the value of which Ploss has tried to estimate in several works.* He came to the conclusion that to attempt to draw definite conclusions as to the relative physical condition of the population from the number of operations would, in his opinion, be very risky. Although it is not impossible (indeed it is even probable) that along with other influences that of the constitution has a certain degree of importance in the number of cases of operation in birth. Since, however, it has long since been proved with the help of statistics that the life, strength and health of a population are chiefly dependent upon the kind of their work and mode of occupation as well as on the degree of their wealth, then also, in further investigations, the influence of those social conditions on the process of birth and the operative help necessary to it, will be shown. The difference in the frequency of operations in town and country seems to some extent to arise from these influences. Ploss found that in the urban population operations are relatively more frequent than in the rural. To this he adds : "The cause of this difference can best be explained by the indirect influence of the welfare, the kind of occupation and the general cultural position of the population."

In any case, there is also the fact that in the towns help is more easily obtainable than in the country.

It is well known that in Germany also many women of the stronger working classes, especially in the rural population, bring children into the world very easily without help. Thus Flügel (p. 47) writes :

"In Frankenwald, confinement gives far too little to do, since not only many poor people but also the well-to-do avoid the midwives for the sake of economy and are delivered by them-

* Cf. *Monatsschrift f. Geb. u. Frauenkrank.*, 1864, xxiii, and *Ib.*, 1869.

selves. In recent years I have repeatedly seen the death of women in childbirth take place owing to this economy."

According to Flügel, the blame for this is rarely due to the formation of the pelvis in the women of Frankenwald: feeble labour pains, however, are fairly common. On the other hand, in many parts of Germany rickets and osteomalacia (*cf.* Winkel and Breisky) are very common, and are the chief cause of the troubles in parturition in those places, whilst in other parts of the country they are rare.

In East Prussia, according to D. Hildebrandt, defects in the pelvis are very rare, but troubles in birth caused by feeble expulsive movements are by no means rare.

7. CAUSES AND CONDITIONS OF EASY PARTURITION

If we cast a glance at the assembled statements about parturition we must first come to the conclusion that climate can have little or no influence on it, at least in so far as disturbances are not caused by any climatic influence on the internal secretions, to which question too little attention is given at the present day.

Far more important in this connection is the mode of life in which the development of the body, and especially of the pelvis and the organs enclosed in it, proceeds more or less naturally. In this lies the principal condition for the favourable issue of parturition.

The normal structure of the female body and the energy of muscular strength are probably, on an average, more commonly found among the people of the less civilised than among the people of more civilised nations, owing to their perverted and softening mode of life. In addition, there is in the more primitive women the smaller degree of sensibility to the influence of the pains in parturition.

If parturition is conceived as a purely physiological process, the course of which depends solely on the more or less normal condition of the woman, then there is no doubt that the majority of cases of birth follow a normal course where, generally speaking, the female sex has been allowed to develop in a correct physiological manner. That this is far more often the case in peoples at a stage of civilisation where the development of the female body is little or not at all restrained, than with nations where manners and customs lead women into wrong paths from youth onwards, may at once be admitted. Under the conditions which have largely been brought about by our modern civilisation, lies the reason for the small capacity for surmounting the difficulty of births easily and well. Perhaps in the gymnastic exercises of schoolgirls, as well as in the ever-increasing practice of swimming among women, a way of improvement may be prepared; exercises in the nude of all kinds are, in spite of protest, greatly to be desired.*

Even Aristotle sought, in the way of life especially, the reason why parturition is easy in one case and more difficult in another. In the fourth book of his work on the generation and development of animals, he says:

"In a sedentary mode of life, owing to want of activity, purification does not go on and the labour pains at birth are then severe. But by working, the breathing is exercised so that it can be held, and on this it depends whether parturition is easy or difficult."

What was said of Chinese women above must be regarded as a statement of this principle.

How far differences of race play a part in the greater or less ease of parturition

* *Cf.* Van de Velde, "Sex Efficiency through Exercises."

has not yet been sufficiently investigated. Very probably, however, it is less the race in itself which causes the difference in parturition than the greater or lesser degree of racial degeneration in consequence of the various manners, customs and habits of life which cause difficult births among certain peoples.

8. BIRTH OF CHILDREN OF MIXED RACES

In all the births that have been mentioned in the foregoing sections it has been tacitly assumed that both parents belonged approximately to the same race. But now we must put the question whether the conditions of the process of birth are altered when the parents of the future citizen of the world are of different race.

It has often been asserted that, in general, the births of children of mixed race are more difficult than parturitions where both parents come from the same race. But this needs substantial confirmation, and it is most probable that it is only appropriate in the case of quite special conditions of cross-breeding.

For example, when the race of the male parent is, in comparison with that of the female, smaller and more finely built, then there can be no reason for the child, if it resembles the father physically, not passing through the birth passage of the mother even more easily and comfortably than if it were of pure (maternal) race. But if (which must here be regarded as the unfavourable case) it has inherited the racial characteristics of the mother, then the child will still have the same prospects for a favourable birth as any pure-bred children of the maternal race.

Thus Tarenetzky reports that the Aleutian women have "uncommonly easy parturition" whether they have been impregnated by Aleutians or by Russians.

The case is quite different, however, when the father belongs to the bigger race. Then, as may be imagined, if the child resembles the father, it is actually greatly disproportionate to the birth passage of the mother. For this M. Bartels has been able to bring forward positive proof.

Thus we have just learnt from Tarenetsky that the Aleutian women, when they conceive by men of the same race, have very easy births. Now the same authority states that "Kamchadale women mated with Aleutians either have miscarriages or else, owing to the great size of the child's head, can only be delivered with the aid of forceps."

Dr. Williams (quoted by Engelmann,² p. 17) was able to observe also that the Menominee Indian women had to suffer far more frequently from mishaps in parturition than the Pawnees. He, however, ascribed the reason for this to the circumstance that the former are not delivered in a crouching position. But Engelmann, quite justly, sees the reason to be that the Menominee women, apart from the fact that they lead a much less active life than the Pawnees, also have sexual intercourse with white men considerably oftener than do the latter. Of the Umpqua Indians, Engelmann was able to report that they very often die at the birth of a half-breed child of a white father. In these mestizos the larger head makes the passage through the maternal pelvis difficult or even quite impossible, whilst the mothers bring pure-bred children into the world easily and without difficulty. We have already seen that many Indian women are fully aware of the dangers which await them if they have allowed themselves to be made pregnant by a white man, and that they try to escape these dangers and to avoid the results of this cross-breeding by using abortifacients.

Similarly, Stuhlmann reports of the Alur of the Upper Nile that difficult births come under observation only in mixed marriages.

But even when the father belongs to the bigger and more strongly built race, the birth of the half-breed need not, therefore, be specially difficult in all cases. For, if the child has inherited the proportions of the maternal race, then, of course, the same prospects present themselves for its birth as for all the other children of its mother's race.

As regards the North American Indian women, we get from Parker the further statements that in quite a number of tribes, in the Dakota, Algonquin, Navaho, the Indian women of the Santee Reservation, in Nebraska, the Brulé and Crow Creek Indian women and those of the Apache Reservation in New Mexico, cases of death occur considerably less often than with the half-breed Indian women and the wives of white people. Engelmann also found that lacerations in the perineum occurred much more frequently in the case of half-breed Indian women than in pure breeds.

On the whole, as regards people of mixed race generally, there is too little information at hand, and what little we have at present is lessened in value by the politically induced race fanaticism among us Germans, based on the English model. Although we are still quite vague as to the real existence of a "race"—for the existing modern works are purely political but not scientific, like Günther's book, *Rassen-Kunde des deutschen Volkes*—certain circles pursue this part of anthropological knowledge with an unparalleled fanaticism. It would be better if investigators were first of all to be quite clear as to what they understood by "race." So long as one investigator continues to think there are 3-4, another 30-40, and a third 300-400 "races," we have to deal with political trifling and cannot remotely think of discussing the conditions resulting from "cross-breeding." *

* [This was written by Erh. v. Reitzenstein about 1927.]

CHAPTER XXVII
NORMAL PROCESSES OF BIRTH

1. THE STAGES OF BIRTH

ALTHOUGH the present work is not intended to be a text-book of midwifery, yet for the non-medical reader a hasty sketch of the course of parturition must be given in order to make the relationship of the abnormalities and obstructions of this process as clear as possible for him.

Obstetricians are in the habit of dividing the course of labour into three main stages: the stage of dilatation, the stage of expulsion, and the stage of placental delivery.

The stage of dilatation not infrequently extends over a varying number of days, during which slight contractions in the muscular tissue of the uterus, accompanied by slight pains in the abdomen, set in at irregular intervals, not infrequently before the actual confinement of labour, especially in primiparæ in the civilised nations. This condition is called sometimes premonitory, or the "false" pains. They are followed by the stage of dilatation. The name came from the fact that the *os uteri* is gradually dilated by violent contractions of the muscular tissue of the uterus. The contractions of the uterus are, as we have said, accompanied by pains. During the gradual dilatation of the *os uteri* the membranes filled with the *liquor amnii*, in which the child is enclosed, are expelled.



FIG. 692.—A child born with a caul. (After Aldrovandi.)

The tightly stretched membranes press against the *os uteri*, are ruptured, and the *liquor amnii* flows away. If the membranes are not ruptured and the foetus is expelled surrounded by the membranes, the child is said to be born with a caul (cf. Fig. 692, an old illustration after Aldrovandi (born 1605)).

In the stage of expulsion the uterine contractions continue and the contraction does not set in simultaneously throughout the whole mass but passes gradually upwards by peristaltic action.

In this way the zone of muscular contraction always forms a horizontal ring-shaped figure. In this process the lower part of the uterus, together with the vagina, becomes like a stiff bag through which the child is forced, partly by the propulsive force of the rhythmic uterine contractions, and partly by the co-operation of the

abdominal muscles, which contract forcibly on the uterus which they further stimulate to action by pressing upon it. It is this abdominal contraction alone which presses the advancing head against the perineum ; thus the latter is arched like a ball, the whole vulva is stretched and the orifice of the vagina is opened wide. In this, part of the head is visible, and then the head protrudes further out of the vulva surrounded by the orifice of the vagina.

Both in this and in the following processes, whereby under the influence of violent expulsive contractions the head is finally expelled through the orifice of the vagina, the woman has to carry out considerable physical exertion. The stimulation to activity of the abdominal pressure is accompanied by extraordinary strain, during which she clenches her teeth, the blood vessels of the head swell, and her eyes protrude from their sockets. Thick beads of perspiration cover her face ; the pains in the lumbar region force sounds of pain from her which, owing to her clenched teeth,

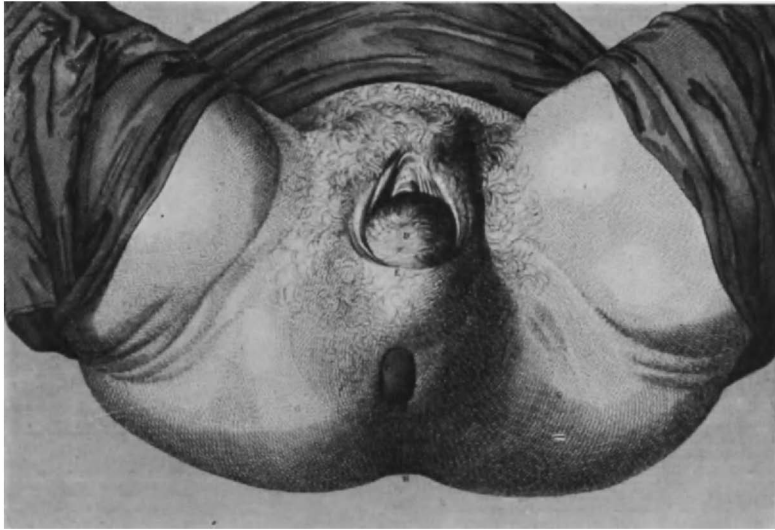


FIG. 693.—The birth of the head. (After Smellie, 1754.)

have a groaning sound. The next pains expel the body ; and the rest of the *liquor amnii*, mixed with blood, flows away. This stage is attended with considerable general irritation : only in the women of uncivilised peoples is the great restlessness, anxiety and expressions of pain seemingly often absent. After the uterus has discharged the child it contracts to a firm rounded mass the size of a child's head ; and the mother enjoys an interval of rest.

However, there still remain in the uterus the placenta and its attachments, which have to be expelled by renewed pains. This generally takes place after a short time, generally about a quarter to half an hour after the actual birth, and this is called the stage of placental delivery. The contractions of the uterus with the co-operation of the abdominal muscles expel the placenta into the vagina, and from this through the still patent orifice. Thus ends parturition and the puerperium begins.

Now, however insensible to pain uncivilised peoples may be, yet the commencement of labour with the accompanying physical unrest in the pregnant woman

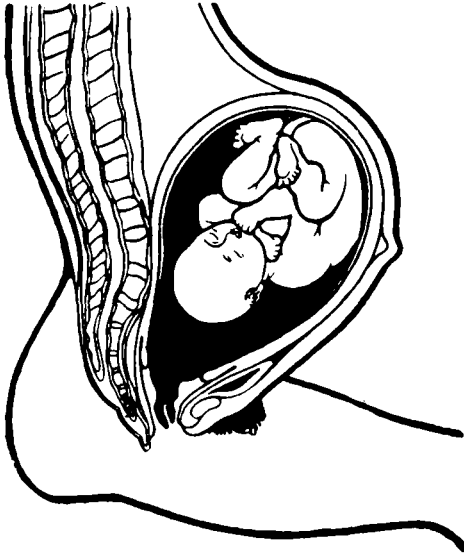


FIG. 694A.—First stage of labour. Vertex presentation. Left occipito-anterior position. Rupture of membranes. (After Robinson.)

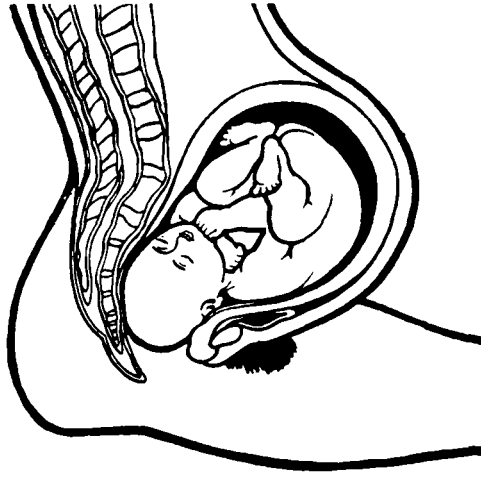


FIG. 694B.—Second stage of labour. Vertex presentation. Left occipito-anterior position. A uterine contraction. (After Robinson.)

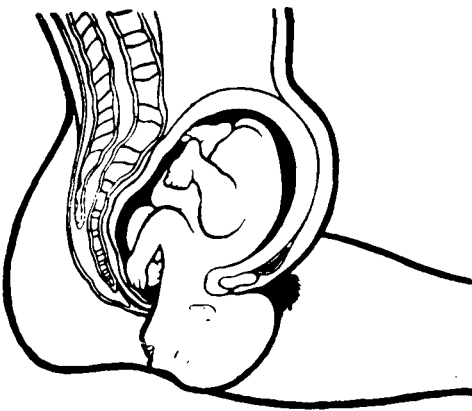


FIG. 695A.—Second stage of labour. Vertex presentation. Left occipito-anterior position. Birth of head. (After Robinson.)

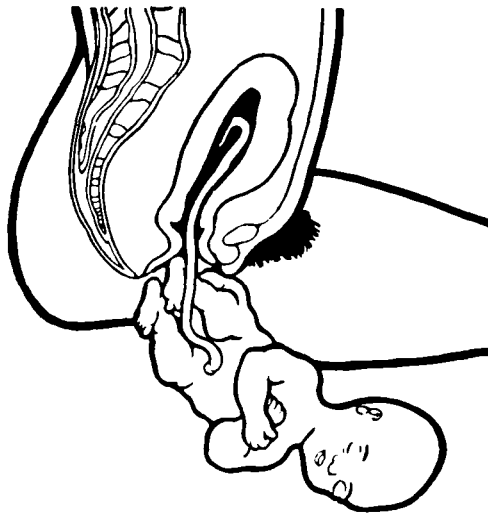


FIG. 695B.—Second stage of labour. Vertex presentation. Left occipito-anterior position. Birth of body complete. (After Robinson.)

must make itself very clearly perceptible, and the issue of mucus and blood from the genitals, as well as the coming into the world of the child and the after-birth, must have enlightened them as to the significance, the homogeneousness and the normal sequence of all these phenomena, since they could not have failed to make analogous observations in their domestic animals.

All kinds of errors have, however, crept in about the dangers which threaten

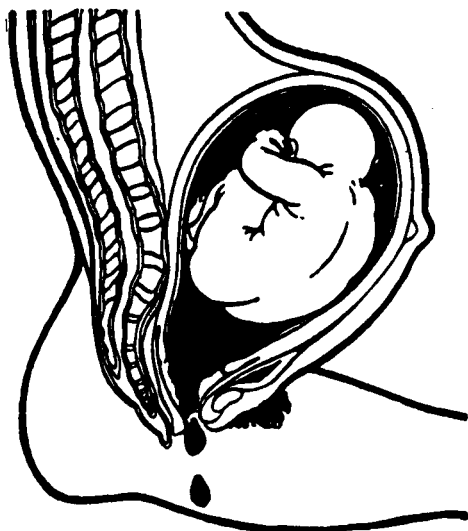


FIG. 696A.—First stage of labour. Breech presentation. Right sacro-anterior position. The membranes are ruptured. (After Robinson.)

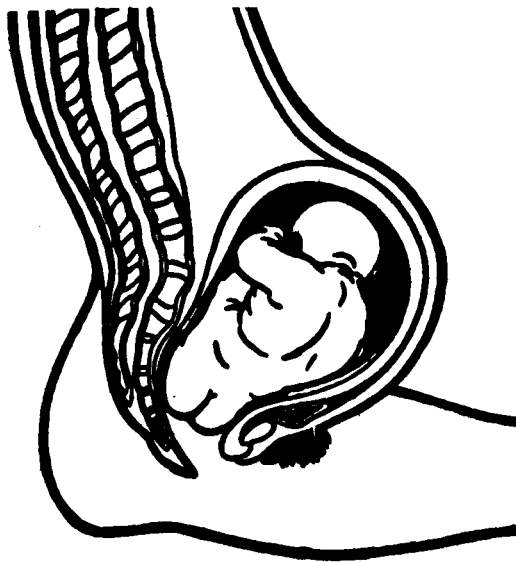


FIG. 696B.—Second stage of labour. Breech presentation. Right sacro-anterior position. Descent of breech. (After Robinson.)

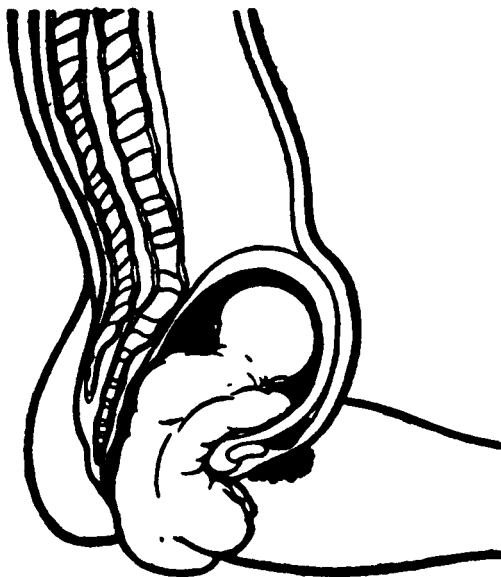


FIG. 696C.—Second stage of labour. Breech presentation. Right sacro-anterior position. Birth of breech. (After Robinson.)

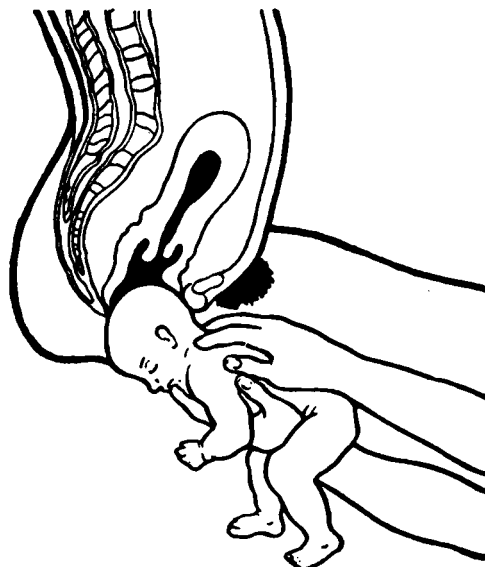


FIG. 696D. Second stage of labour. Breech presentation. Right sacro-anterior position. Birth of after-coming head. (After Robinson.)

in these processes, as well as about the help to be given in normal and abnormal parturition. The troubles and irregularities, which, it is true, seldom occur, are regarded as the acts of supernatural and evil powers because savages cannot conceive

that deviations from the normal in parturition may be explained by pathological conditions in the woman.*

2. THE LABOUR PAINS

We have already said something of the labour pains and their physiological significance in the previous section. Here must be emphasised again that, like sensitiveness generally, the sensibility to pain varies extraordinarily in different individuals, and thus the susceptibility to pain during labour is very unequally divided among the women of the different races and nations. Harder natures bear pain much more easily than the more delicately disposed constitutions. The French woman reacts to the pains connected with parturition by louder outcries than the German; the latter, however, when labour sets in, emits quite different sounds of anguish from a stoical Red Indian woman, who (according to Engelmann) gives vent to a lower sound of "whimpering" or "wailing." Jewesses, on the other hand, frequently raise doleful cries, and even in the Bible it runs: "she bowed herself and travailed, for her pains came upon her" (1 Sam. iv. 19), and then she cries aloud and, extending her hands, says: "Woe is me now! for my soul is wearied because of murderers" (Jer. iv. 31).

The women of ancient Babylonia and Assyria were not accustomed to suppress their cries of pain in parturition, as we learn from one of the famous clay tablets which were collected in the library of Assur-bani-pal in Nineveh. In this, in the description of the confusion which the outbreak of the flood caused among the gods, it is said of Ishtar: "Ishtar cries out like a woman in childbirth."

In a Finnish folksong recorded by Altmann, we read:

"Sweet is the hour of conception
Bitter the time of labour."

The sounds of pain which are uttered during labour arouse the sympathy of everybody among the Herero, states Viehe.¹ The word *ozongama* amongst these people means both labour pains, pity or sympathy.

Among savage women the period of labour pains may perhaps pass more quickly than with the women in civilised countries, but they will certainly never be absent even with them. To be sure, it is often considered a disgrace to let sounds of pain be heard, and for this reason it may have appeared to many observers as if the labour pains were not present at all.

The Jesuit Lafitau, who was a missionary among the Iroquois, gives expression to the following opinions, according to Baumgarten.

"It does not seem as though the women suffer anything in this or are even ill. Meanwhile, they must have their share of suffering like other women; indeed they often die of it. But they know how to endure pain with an admirable equanimity, and control themselves as much as they can so as to let no sign of it be noticed. In our mission, a woman had let her feelings be seen too much; therefore, shortly afterwards, one of the oldest women gave her opinion with great seriousness, for she said that it would not be good if this woman were to get several children, as she would only bring timid people into the world."

* [In the original text there followed at this point a lengthy discussion of Professor Sellheim's views on the principle of least compulsion as a law of birth, including his application of Gauss's principle of minimum force in the explanation of the mechanism of labour. These views, as well as those put forward by others, on the mechanism of birth, are not included here since a discussion of them is not considered of sufficient interest. Those readers who wish to be more fully informed can consult the relevant literature, especially *Zent. f. Gyn.*, 1923, nr. 44; *Monatsschr. f. Geb. u. Gyn.*, 1924, 68, nr. 1; and the lecture by Professor Sellheim which was printed in the *Kölnische Wochenschrift*, 1923, 36.]

On the Tonga Islands, where difficult births are rare, Mariner once saw a woman in childbirth, whose pain had turned her head, tear herself free from the women helping her and run out into the open air. Her attendants made no attempt to run to her assistance but contented themselves with invoking the gods to grant her a speedy delivery ; but when she sank down exhausted they brought her back home, where she was delivered three days later.

Meyerson states, in accordance with his own observation made in Astrakhan, that :

“ Pampered and softened as they are, the Armenian women bear their labour pains with difficulty, for they cry out and lament during the onset so as to make one run away.”

The Goldi in Siberia have a special talisman which gives relief in the pains of labour. No convincing confirmation of its power can be given, for their wives feel these pains very severely. This idol is called *Tzaun*. Adrian Jacobson brought one from Chabarovka-Troizkoje for the Ethnological Museum in Berlin. It is a carved wooden figure 39 cm. in height, which represents very crudely a woman in advanced pregnancy (Fig. 697).



FIG. 697. — *Tzaun*.
Wooden figure in the form of a pregnant woman used by the Siberian Goldi to ease labour pains. Mus. f. Völkerk., Berlin.
(Photo : M. Bartels.)

The Hindus are said to have a specific for easing labour pains. It is the eating of the flesh of the great horn-bill (*B. bicornis*). It nests in holes in trees in which the female is walled up by the male, and during the whole time of hatching is fed through a little fissure. According to this the female has to go through an actual lying-in !

Specifics for relieving labour pains are to be found also in the writings of the ancient Hindus. Schmidt⁸ has quoted several :

“ The root of the white balā (*Sida cordifolia*) tied to the hips removes pain in the intestines : likewise, the root of *iksouāku* (a species of cucumber) if rubbed on the foot, acts very quickly.”

“ If a woman drinks powdered *madhuka* (liquorice) together with *mātulūnga* (citron) mixed with honey and melted butter, she is certain to have a painless confinement : about this there is not the least shadow of a doubt.”

“ The woman who is suffering extremely severe pain in her womb owing to labour procures an easy confinement if she stops her ears with the eye and foot of a white Indian cuckoo which have been thoroughly chewed first.”

According to Stevens, labour pains are not unknown also to the wives of the Orang-Bélenda in Malacca. They call the pains *tran*, which proves clearly that they feel them strongly enough to give them a special name.

It is reported from Tana-Caiit in Borneo that the midwives try to ease the labour pains by speaking words of comfort and by pinching the lumbar region.

Hille, among others, noticed particularly that with the negresses in Surinam the false pains were hardly ever absent : indeed, they even last in some cases longer than the true pains. He ascribes to this fact the phenomenon that he had never an opportunity for observing among these women an involuntary so-called “ sudden ” birth.

Germann, writing of the midwifery and labour pains among the Hottentots, says that when the young wife feels her difficult hour approaching two or three women came to the hut to keep her company. The actual midwifery was attended to by a midwife chosen for this purpose from the women of the kraal. On her appearance the husband had to leave the hut and was not allowed to show himself again so long as his wife was in labour. The specific used to hasten the act of birth was rather radical. Kolben reports: "They take tobacco, which has been cut up small, and cook it in cow's milk; if they have no cow's milk they use sheep's milk for the purpose. When both have been well boiled and the tobacco has abundantly imparted its strength to the milk, they take some of the cooked tobacco-milk and give a dose to the woman in pain. This is done partly in order that (as they say) it may arouse contractions in the woman's abdomen, or increase the labour pains, and thus expedite a speedy delivery, and partly also that the woman may be violently sick and the child may be expelled at the same time." In earlier times, when tobacco was still unknown to them, the Hottentots are said to have used *dacha* (a species of hemp) for the purpose described above.

In numerous cases it is observed that false pains (*dolores præsentantes*) disturb the pregnant woman as much as six weeks before the confinement. The physicians of the Talmud already knew that. Rabbi Meir says that difficult births lasted 40 and 50 days; Rabbi Jehuda speaks of one month; Rabbi Shimeon, on the other hand, thinks that no difficult birth lasts longer than two weeks; in the Gemara itself, however, it is taught that *dolores præsentantes* set in 40 or 50 days before parturition only in cases of illness. In the Midrash Bêrêshith Rabba, the Rabbis assume "that the fate of Eve will not befall virtuous women," *i.e.*, that they will not have to suffer birth pains (see Wünsche¹).

A Chinese physician, quoted by v. Martius, asserts that the most usual causes of false pains are the movements of the fœtus in the uterus, yet according to his assumption, they also come from great internal heat, long-continued standing or sitting, or a false step, or a blow on the abdomen. By such means, too, the fœtus begins to move more violently. These movements of the child, or these false pains, generally take place five or six times before delivery and are, as a rule, like those false pains which befall the pregnant woman two months earlier. That these are not true pains the Chinese recognise by the fact that they constantly decrease in violence. The pulse also tells him whether the false pains arise owing to errors in diet; if they are the result of shock the pain is above the navel; but if they are caused by a chill, the pain is situated below the navel.

As chill is assumed here to be one cause of false pains it seems that the Chinese doctor refers to rheumatism of the uterine muscle. The first obstetrician who differentiated the pain of inflammation from that of labour was Moschion, who says in c. 45: "Quod dolor ab inflammatione ortus cum strictura et siccitate orificii uteri reperiatur." Soranus also wrote a chapter on this rheumatism which has, however, been lost. Others, as, for example, Meissner, in recent times, have discussed this disease more thoroughly.

As we have already seen in an earlier section, the influence of the glands of internal secretion (endocrine glands) is of the greatest importance. The organs of generation in particular cannot be deprived of their influence. We have seen that the action of labour is first of all connected with the pituitary, and in modern obstetrics pituitary preparations are sometimes used with reported beneficial results. The discussion of all these preparations is outside the scope of our treatise.

3. INTERNAL SIGNS OF THE PROCESS OF BIRTH

The internal signs of the process of birth consist essentially of the gradual shortening of the cervix and in the dilatation of the os. The beginning and continuation of this process can, of course, only be recognised and determined by internal examination. The neglect of this method of diagnosis is to be noted not only among primitive peoples but also among such peoples as employ doctors, but who from feelings of modesty or jealousy do not allow doctors to examine their wives thoroughly.* Engelmann learnt from many sources that in hardly any of the Red Indian tribes is the vaginal examination made. He had precise information about this from the Umpqua, the Pueblos and the natives of Mexico. He writes :

“ The insertion of the hand into the vagina or the uterus for a special purpose is something unknown also to other tribes. At most, people report with regard to some few examples of this form of assistance, that it is for the purpose of stretching the perineum or taking out the placenta which has been retained by the uterus ” (Engelmann,² p. 25).

The fact that at the beginning of birth the os uteri *dilates* was known to the Israelite physicians of the Talmud. However, it was a debatable point with them at what time the dilatation began. Rabbi Abbaje said : “ from the time when she comes to the chair ” ; Rabbi Huna : “ from the time when the blood begins to flow ” ; others : “ at the time when the woman in childbirth is supported under the arms by her friends.” The question as to how long the stage of dilatation may last was also answered variously by the Talmudists : they quote three days (Rabbi Abbaje), seven days (Rabbi Rabba), and also 30 days for this. The decision of the question about the duration of the birth was important to the Talmudic physicians in so far as, in a delay in the delivery, a Sabbath which happened to be included in the period of birth might be profaned by the work of those giving assistance. Yet absolution was given for the necessary work of assistance on the Sabbath.

By the ancient Roman physicians, among others, the opening and early moisture of the os, in which later one feels the parts of the child, are given as signs of the beginning of parturition. Hence the examination of the vagina for this purpose was known and valued by them. In other nations the physicians are not acquainted with this method of examination. The old Hindu doctors, for example, do not quote the results of the internal examination among the signs of parturition, although with them the positions of the child were examined *per vaginam*. They cited as signs of birth, that the foetus grows larger ; that the connection of the heart with the uterus is severed ; and that pains begin in the lumbar region ; then, at delivery a pain in the loins sets in, fæces are pressed out and urine and mucus flow from the vagina (Suśruta).

Soranus characterised the signs of a normal birth as follows :

About the seventh, ninth and tenth month of pregnancy, the women feel a heaviness in the hypogastrium and the epigastrium, a burning in the genitals, a pain in the region of the loins and the coccyx, and in all the parts which lie below the uterus. The uterus descends somewhat so that the midwife can easily reach it. The *os uteri* dilates. But when everything is ready for the birth, the genitals swell, *tenesmus urinæ* sets in, blood chiefly flows from the genitals as the fine vessels of the chorion burst. If one inserts a finger, one encounters a rounded swelling which is like an egg (see Pinoff, p. 26).

* [The danger of such examination from the point of view of infection is being increasingly recognised.]

Until a short time ago, Japanese doctors, as has already been mentioned, did not know the internal examination, and hence with regard to the diagnosis of the beginning of parturition, they relied upon similar phenomena to those of the old Hindus. Kangawa appears to have been the first to have made an internal examination. This emerges from the information which v. Siebold got through his pupil Mimazunza in Nagasaki. On the other hand, Hureau de Villeneuve (p. 30) says that among the yellow races (by which he means Eastern Mongolians) the women who assist at birth are well acquainted with the signs of the beginning of parturition by internal examination. Hureau, however, no doubt means chiefly the Chinese midwives; they examine, as we do, the changes in the cervix, but they also make use of the fantastic signs of the pulse. We learn more details about these signs through v. Martius, who quotes the opinion of the

“ Chinese doctor, who thinks that a strong beat at the root of the finger can be perceived when parturition is beginning, and that this is a sign that birth has begun. And if asked why one can see from the pulse of the middle finger that the time of the birth has come, he answers quite simply thus : Because the third and most central part of a woman’s hand is in the closest accord with the third and most central part of the body, namely, the genitals ” (p. 42).

However, even the German physicians of the sixteenth century gave as signs of the beginning of birth merely the setting in of labour pains, the sensation of moistness and dilatation of the womb (*cf.* Rösslin). Therefore they, too, did not yet make use of the internal examination.

The so-called “ signs,” *i.e.*, the diagnostic sign of a flow of a little blood due to laceration in the *os uteri*, is, as we saw, mentioned first by Soranus and passed over in silence by other authors of antiquity. The Rabbis of the Talmud speak of cases of birth which proceeded without loss of blood, and they called such confinements “ dry births ” (A. H. Israëls, p. 148).

4. THE ACTIVE PARTICIPATION OF THE CHILD AND OF THE PELVIC BONES IN BIRTH

We find among many peoples the idea that the movements of the child must co-operate when parturition sets in. Both Hippocrates and Aristotle expressed this opinion; they thought that the movements of the child ruptured the membranes so that the water flowed off. Thus, people thought the process similar to that with which the chicken gets out of the egg. This was believed not only by the physicians of the ancient Greeks, but also by the Talmudists (*cf.* Israëls, p. 137), and likewise the doctors among the ancient Hindus, for Suśruta says in the Ayur Veda: “ When birth sets in ‘ the fetus stretches itself.’ ” This theory was not less honoured by the ancient Roman physicians: thus Aëtius, among others, asserted that the weakness of the fœtus may prevent it from making the necessary movements and that otherwise it might cause an interruption in the birth.

We find a precisely similar mode of viewing things among the Chinese physicians who regarded the co-operation of the child as part of the forces which effect parturition. In the Chinese treatise translated by v. Martius, it runs (p. 36):

“ I seem to have heard somewhere that even the ancients maintained that the child is not able of its own strength and by its own instrumentality to come into the world.” And again, “ the mother has to leave the issuing to the child alone.”

We come across analogous ideas in the Dutch Indies, in Egypt and in Persia, to which we shall return in another place.

There is just as common a belief that the hard and bony parts are, as it were, opened of themselves in parturition. Thus the oft-quoted Chinese doctor says (p. 42) :

“ When the woman in childbirth feels that the child is moving and the moment that her bones separate, she must betake herself with all haste to her couch.”

Grube was told by a Chinese doctor in Peking that one must give a primipara “ the powder which opens the bones ” (*i.e.*, pubic bones).

Among European physicians also the opinion has been widespread from olden times onwards that “ the birth locks must be opened.” In the middle of the eighteenth century the famous midwife Justine Siegemundin first opposed this view strongly in her book on obstetric treatment.

5. NORMAL AND OTHER PRESENTATIONS

In an earlier section, mention has already been made of the position of the fœtus in the womb, which condition, as we have seen, was subjected to certain alterations. In this section we are concerned with the definitive position which the child assumes in the uterus at birth. Physicians have used some of the following designations for it, the names being due to the parts of the body first presented.

- | | | | | |
|--------------------------------|---|--------------------------|---|---------------------------|
| (1) Longitudinal Presentations | { | (a) Head Presentations | { | (1) Vertex Presentations. |
| | | | | (2) Face Presentations. |
| | | | | (3) Brow Presentations. |
| | | (b) Pelvic Presentations | { | Breech Presentations. |
| | | | | Foot Presentations. |
- (2) Transverse or Cross Presentations.

It is recognised by all nations that the *head presentation* is not only the most common, but also that it is relatively the easiest for the issue of the child (*cf.* Fig. 698). However, as even at the present day, the birth of the child in the head presentation is regarded by the most varied peoples, and where the science of obstetrics is still at a very low stage, as the *only* regular presentation, a number of very peculiar views have been acquired, which have given rise to much incorrect treatment. It was believed that in cases of wrong presentation artificial help must be resorted to for all other presentations, and especially the breech presentations were declared to be false presentations which were bound to render birth difficult. It has been by no means easy by degrees to get rid of this belief. To these views are to be attributed the kneadings of the abdomen during pregnancy which were discussed in an earlier chapter.

At the time of Hippocrates only the head presentation was regarded as the normal one. The foot and breech presentations were considered as those positions in which birth is difficult for mother and child. Therefore, all births in which the head was not presented were treated by the use of absurd methods, with the intention of making any presenting part but the head retire. For they would not tolerate a birth with the legs or breech first ; in this case they preferred always to try to turn the child on to its head (*De nat. puer. De morb. mul.*).

Celsus, who may have lived in Rome about the time of the birth of Christ, either by reason of his own observation, or perhaps in conformity with the views of the medical writers Asclepiades and Themison, who lived in Rome before him, had broken away from the Hippocratic doctrine, for he wrote that births with foot

presentation also proceed without difficulties (*De med.*, VII., 29). Pliny, who lived about the year A.D. 70, again associated himself with the Hippocratic view (*Hist. Nat.*, VII., 8).

Soranus (A.D. 100), however, found that in foot presentations birth was not so difficult as in the other supposedly irregular presentations, for he says that in a normal birth, when the head or feet present, no obstetric intervention is necessary. And Moschion (cap. 148), who lived in the second century A.D., agreed with Soranus. Galen, however, again reverted to the Hippocratic view (*De usu part. corp. hum.*, XV., 4).

The Talmudic physicians stated that those head presentations are the normal in which the largest part of the head is first presented at birth. Some (Niddah)

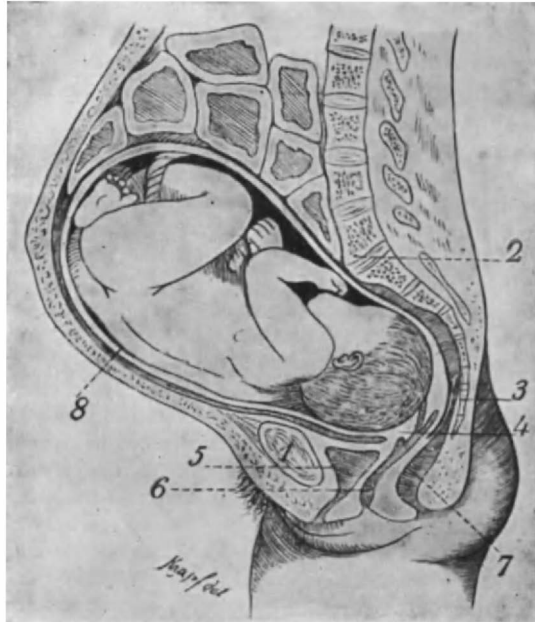


FIG. 698.—Fœtal position in the last month. Occipito-anterior presentation. (After Schäffer.)

declared this largest part of the head to be the brow, others (Rabbi Jose) the temples, still others (Raschid), the "horns" of the head [*i.e.*, the *tubera*]. Israels¹ (p. 134) thinks that the last view must be regarded as the more correct since by the "horns of the head" they must have meant the occiput, which, as is well known, is first caught sight of in normal cranium births. Israels¹ (pp. 127, 128) also concludes from the remarks made by the Talmudic physicians, that at the time men must sometimes have been present at normal births.

The old Arabian physicians Rhazes, Avicenna, Abulcasis, etc., also called the head presentation the only normal one: as also German doctors of the sixteenth century, Rösslin, Rueff, etc.

In the Chinese treatise quoted by v. Martius (p. 39) we read, "as soon as the child has turned with the head downwards, and the moment of its birth has come, then it will quite certainly make its appearance in the normal manner."

According to this the Chinese physicians regard the head presentation which is brought about by its own movement as the normal. This, in their opinion, is disturbed or irregular if the mother overtaxes her strength at the time when the child turns round : also if the child is irritated by the touching and pressing of the mother's abdomen.

The physicians and midwives of Japan also consider the head presentation the normal one, for, in order to bring this position about, a mechanical preparation is made by them during pregnancy, namely, the *ampækæ* (*ambuk*), *i.e.*, a "rubbing and careful light pressure, or better a feeling of the abdomen, as in kneading, according to the safe rules, which the famous obstetrician Kangawa-Gen-Ets has drawn up" (see P. Fr. v. Siebold ¹).

According to the principles of this man, whom we have often mentioned, and who had a great reputation in Japan, one of the obstetricians' most important tasks when the time of birth approaches is to find out whether the foetus lies with the head downwards or upside down, *i.e.*, with the feet and not the breech downwards. This position of the child appears to be regarded in Japan as the normal one. For their information Kangawa gives details as follow :

"If a protuberance, which is wide above and runs to a point below, is felt on the abdomen, this indicates a straightforward pregnancy ; the head is then felt within the sacrum. If the protuberance is, on the contrary, wide below and narrow above, the pregnancy is wrong ; in this case the space between the foetus and the sacrum is so loose that two fingers can be pushed between."

This and the following standards are obviously very inexact, and are by no means in conformity with the natural conditions, yet this is just how they are given in the Japanese original.

"If, on the other hand," says Kangawa, "the head is felt in one of the thighs (the thigh is reckoned from the crest of the ilium), then the fetus is in such a slanting position that, in any case, there would be a cross presentation without skilful management."

Kangawa then declaims against the erroneous view that the foetus turns round in the womb. For if people were to cling to this view, they would, to the greatest detriment of both mother and child, rest in the hope that the cross or transverse presentation would right itself before the end of pregnancy. In consequence of this error, the midwife or obstetrician would omit treatment at the proper time ; the necessary artifices would then be used too late or too soon. He then continues : "If, in a cross presentation, a leg appears first, then help is possible. On the other hand, if the fetus, owing to constriction by the umbilical cord, has assumed quite a transverse position, and in consequence of this a hand first appears, then the doctor must quickly press the parts back into their proper position, otherwise the child must inevitably die and after it the mother also. That is to say, if the replacement by pressure should not succeed, then there is nothing for it but the very sad operative removal of the child." Finally, Kangawa asserts, "In both male or female foetus alike, the face when in the womb is turned towards the back, whether the presentation is normal or transverse."

Since Mexican midwives likewise massage the abdomen of the pregnant woman (from the seventh month onwards) "in order, in case of a cross presentation, to bring the child into a proper position," they too appear to have similar views of what should be the normal position of the child (E. C. Siebold, I., 52).

Among the inhabitants of Unyoro (Central Africa), it is considered lucky if the child comes into the world head first ; if the feet come first this forebodes trouble for the whole family (*cf.* Emin Pasha in Petermann's *Monatsheft*, 1880, 26, 393).

Blyth reports that in the Fiji Islands head presentations are usually the rule. A midwife assured him that no other presentation had ever been observed by her,

and according to her age, she must have had a wide experience. But she had heard of foot presentations.

Better insight into these conditions first developed in Europe by the proper use of clinical observation and of the statistical method. We acquired only 100 years ago by means of Boer, Merriman, Baudelocque, as well as by the precise records of numerous births made by Joseph Clarke and Robert Collins (Dublin), fundamental material on which further clinical and statistical researches could be based.

[Although it does not appear possible to obtain reliable data as to the relative frequency of the more complicated presentations, that of the more normal kinds is now fairly well established among the white peoples. The vertex presentation is the most frequent and has been put as high as 96 per cent. Then come the breech presentations and finally those of the face, shoulder and brow presentations. For recent discussions on the causes of presentations see C. J. Barnum and W. S. A. Griffith.]

6. THE POSITION OF THE CHILD AT BIRTH AND THE PROGNOSIS OF SEX .

The positions of the child have already been discussed above. It was pointed out that not only among Europeans, but also among the extra-European peoples, so far as exact observations could be instituted in an overwhelming majority of cases children leave the womb head first. But a number of variations of these head presentations is possible, detailed descriptions of which must be left to text-books on obstetrics. Here it need only be mentioned the so-called first vertex position is when the occiput lies to the left of the pelvis, and the second vertex position when it lies to the right.

In these first two positions the head of the child issues from the vaginal orifice of the mother in such a way that the child has its face turned downwards if we imagine the mother delivered in a lying position.

We must now ask whether this is also the case among the primitive peoples. It is certainly very probable, but we have, in general, no reliable evidence, and thus another untrodden field is reserved for scientific research. Incidental information, also by word of mouth from the natives or midwives is not at our command in this case. However, we have other means at our disposal for considering this question, although the material is, on the one hand, very meagre and on the other, not entirely conclusive. We refer to works of art.

In our museums we have gradually acquired individual works of primitive plastic art or paintings, which, produced by uncivilised tribes, present to us women in the course of being delivered. In order to make the situation sufficiently clear the artist has generally presented the delivery so far advanced that a good part of the child has already become visible in the vaginal orifice of its mother.

Primitive works of art of this kind are known in America, Asia and Africa, and in particular from the ancient Mexicans (*cf.* Fig. 767); the old Peruvians; the Kiowa Indians (see Fig. 688) in the United States; from the Island of Bali in the Dutch East Indies (see III., p. 756); from the natives of the Gold Coast, and of the territories of the Niger and Congo. All are to be represented in illustrations. The parturition scene from the village of Uitsha in the Niger Territory we see in Fig. 699. M. Bartels describes it thus: "It is a group with numerous figures of which only that of the woman kneeling below in the foreground interests us here. She is in the process of delivery, and the head of the child is already born. Her up-stretched

hands hold fast to the edge of the platform which holds the main group; she lies on her knees but her buttocks are raised up in doing so. Her legs are a little apart and from her very clearly portrayed genitals issue the head and neck of the child, the face being turned to the front."

Now, if we look more closely at this genuinely primitive work of art we cannot determine with certainty from this very crude piece of work of the Congo negroes, which part of the child's body comes first. Probably, in spite of the crudity of the



FIG. 699.—Carved group from the Niger, West Africa. Below is a woman kneeling during delivery. Musée d'Ethnographie, Paris. (After Witkowski.)

execution, the part of the child in front is intended for the head. In all the other pieces, however, the head is really born first. Now, in order to be quite clear in which position of the head the birth must have taken place it is necessary to bear in mind that the position which the women of foreign nations assume in parturition is not always the same. We shall speak of this in detail later. Thus with these works of art we must first be quite clear what aspect the circumstances would have if the woman in labour were lying on her back as is customary with us. Now it appears that only in the plastic representation from ancient Mexico (Fig. 767) and in the drawing of the Kiowa Indians (Fig. 688), is the child represented with its face downwards. This would conform to the first two vertex positions which are observed to preponderate with us. In all other artistic portrayals the child issuing from the womb looks upwards. But whether the primitive artists wished to reproduce in this way the usual procedure among their own people, which would correspond to the so-called third or fourth vertex position, or whether they were not guided rather by practical æsthetic points of view, must remain indeterminate. M. Bartels himself was inclined to the latter view, as for disinterested observers, the face of the child turned upwards was bound to make the subject of the representation clearer than if the face of the fœtus were turned downwards.

On this occasion we must always bear in mind one peculiar fact. We have already discussed how the popular wisdom of different nations, especially that of the female sex, often is able to decide what sex the new-born child is to be either before conception or at least whilst the child lay concealed in the uterus. But when the hour of delivery approaches a slight doubt may now and again stir in the hearts of these prophetesses whether they will pass in their prophecy with honours. Thus fortune telling must again be to the fore during parturition, and again there are special signs which then serve for the diagnosis of the sex.

Grube learnt from a Chinese friend in Peking that the midwives there foretell the sex of the child just as its head is born. That is to say, if the face is turned downwards the child must be a boy, for heaven or the male principle is also directed downwards. Likewise the man in coitus. It is a girl, however, when the face of the

fœtus looks upwards because this is the case also with the earth or the female principle, and also with the woman during coitus.

A similar sex-oracle was known to the ancient Hebrews. In the Midrash Shēmōth Rabba, in the discussion of the well-known command which Pharaoh gave the Israelite midwives (Exodus i. 16) it runs :

“ He said to them : If it be a son, then ye shall kill him ; but if it be a daughter, then she shall live. Then they said to him : How are we to know whether it is a boy or a girl ? ”

According to R. Chanina, he gave them a great sign, namely, if its (the child's) face is turned downwards, then know that it is male ; it looks towards the mother, *i.e.*, to the earth of which it is made ; but if the face is turned upwards, then it is a female, for it looks towards the place of its origin, *i.e.*, to the rib as it runs in Gen. ii. 21 : “ He took one of his ribs ” (*cf.* Wunsche ²).

CHAPTER XXVIII

MIDWIFERY AND MEDICINE

1. THE DEVELOPMENT OF MIDWIFERY AND OBSTETRICS

IT is not very long since the question was first asked : how did the modern midwifery of civilised nations develop from the original beginnings ; and what the most stringent research has, so far, been able to assemble in this field is still very far from being able to offer us a complete and finished picture. However, there is already something and, by further attention to this subject, we shall no doubt succeed gradually in completing our knowledge. These investigations into the manners and customs, as well as the manipulations and assistance at birth, are of very outstanding interest in the history of civilisation. Indeed there have been practically no early historical discoveries in this field ; and the ancient records at our disposal are very meagre and contain little that is of value to us. It would, however, not be the proper method if we were to begin the investigation of obstetrical history by making use of the earliest written works, although these must, of course, be put in their due place : our researches must rather be directed to a comparison of the obstetrical manners and customs of the peoples still living in the world. For we may certainly assume that, before those ancient writings came into existence, obstetrics had gone through a number of phases of development about which, to be sure, incontestable information is lacking. Many survivals, however, from the earliest times have been preserved here and there in manners and customs. The observation of present-day savage peoples must here again be particularly valuable to us, although we must not forget that they do not give in all their manners and customs a true reflection of the original state of man. We have in Fig. 700 a representation (perhaps the oldest known) of a birth.

Long before the growth of obstetrics as a science, various customs were applied in pregnancy, birth and confinement which are, surely, still native to many nations in the world. How these customs developed from the first beginnings of obstetrical practice has still to be discovered. "There is no hope now of finding anywhere human beings in a *state of nature*." We can only agree entirely, as we have said, with this dictum originally pronounced by Waitz. However, he adds : "What the natural man is will be proved from the empirical observation of the so-called savage peoples whose life, of course, does not really represent the actual natural state *but does approach, more or less, close to it*." Peoples hardly removed from the natural state differed very considerably in manners and customs according to the course taken in their mode of life. Thus primitive tribes varied already in their obstetrical procedure, and doubtless in the majority of the primitive peoples now in existence, increasing skill was bound to lead to an ever higher degree of obstetrical knowledge. This, however, did not happen uniformly ; moreover, it cannot be said at once of any custom whether it has been preserved from the earliest times or if it has been acquired in the course of time. Finally, individual characteristics and still more the contact with more highly civilised nations will be able to modify materially the whole obstetrical practice of any one so-called "primitive" people.

Help in parturition must certainly have begun very early, since the woman's need for help in her loud expressions of pain (not perhaps always necessary), awakens sympathy in even very primitive peoples. On the other hand, as Prochownick justly remarks, these peoples also may, in course of time, have reached a number of conclusions which scarcely admit of comparison with the uncivilised peoples of the present day, who use a primitive obstetrical technique.

“From the help in birth which consists in a crude, purely mechanical procedure to reflection on the procedure, to experienced help in normal or even abnormal births, in short, to obstetrics, and, finally, to the professional practice of obstetrics by certain persons entrusted with it, are such immense advances in civilisation that they might be compared with the giant steps from the crudest stone age to the iron age, from the cave dweller to the tiller of the soil.”

The observation of the natural process of birth and the experience gathered along with it determine the sum of the knowledge and skill which the peoples have acquired in the field of obstetrics, so that a small range of purely external phenomena are first only rather superficially perceived, partly in animals and partly in the human woman. Equipped with these perceptions the young savage woman prepares for her own use in the hour of need a very simple formula for her procedure, and this procedure is later ordered by the advice of experienced women.

2. HABITS OF LIFE AND MIDWIFERY

The mode of a people's life forms the first condition for the attainment of a certain stage of civilisation as regards midwifery. Certainly it is important in this respect whether a people lives by hunting or by fishing; whether it is a nomad or a settled people; finally, whether it is engaged in agriculture or industry and commerce. A people which inhabits a country poor in vegetables is led to a life of hunting; this life involves a division of the population into little groups; and the instigation to the invention and creation of better tools than simple hunting equipment does not then exist; barter with the neighbouring tribes brings these hunting tribes into only short casual contact with another kind of civilisation. A number of barbarous tribes of North and South America, the natives of Australia and some African tribes belong to this class; they are at the lowest stage of civilisation also in regard to midwifery. Their knowledge about the mechanism of birth and the assistance to be given is quite insignificant.



FIG. 700.—Delivery. Stone figure from Ripač, near Bihač, in Bosnia. (After Hoernes.)

The fishing life generally fits the peoples for a somewhat higher cultural position than the merely hunting life. The equipment of the tribes which engage chiefly in fishing is rather more artistic, and their nautical resources also arouse their skill; they are directed more towards the observation of natural phenomena; their ships and boats bring them more easily into intercourse with strangers and thus extend their mental horizon. It has been generally observed that among fishing tribes and root diggers the women are in a better position than with hunting tribes. And there is little doubt that where the woman's life has a greater value and her social position is generally better, the greater attention to her hygienic care is developed.

The nomadic tribes, which in greater or smaller troops wander together with their movable possessions, and are mostly dependent on cattle rearing, are usually at a very low stage of civilisation as regards midwifery; they impose hard work on their wives, who are generally held in very low esteem with them, and even in parturition treated very roughly. This is really surprising, for the opportunities they have of observing their domestic animals and the experience which the women giving help in confinements are in a position to acquire, should actually have given them a deeper insight into the mechanism of birth. Sometimes we do meet with a somewhat higher understanding.

Agricultural peoples, on the other hand, with a settled dwelling place and a more tranquil and contemplative mode of life, esteem woman and her life somewhat more highly. They allow her rest and relaxation from labour and, at confinement, go more carefully to work. The net result is that among agricultural peoples woman, as remarked above, represents the chief earning power. The mechanism of birth is observed more closely; in particular, moreover, they try as much as possible to give the woman and the new-born child protection and help. On the other hand, the peoples who are half nomadic are, in this respect, at the lowest stage of civilisation; then come those who have already turned to the cultivation of the ground. Thus the scale could be continued.

Those peoples which are engaged in industry and commerce are, on the average, higher in the obstetrical scale; their mental powers are more developed, their civilisation is higher and with a better general culture their understanding of the process of birth, as well as their skill in obstetrical help, goes hand in hand.

3. PRIMITIVE CUSTOMS AND ABUSES

It must here be noted how very few peoples in the course of their development created better conditions in the field of midwifery by training the persons assisting at child-birth for their duties; for in this, as in everything else, the want of trained workers and an excess of untrained but imagined "powers" is a sign of a primitive culture.

Now, when we ask how the very great suffering caused to women in childbirth by absurd assistance can best be prevented, it is not easy to answer. For all the reforms which people have been at pains to introduce are often unable to drive out the traditional customs of the people.

Medical men and ethnologists should be attached to missions, and this has already been done here and there. But it should certainly be considered seriously whether the wives of missionaries, before they go to distant lands should not get a fair obstetrical training, for to be a "bringer of civilisation" is actually the true purpose of religion. Surely this has been forgotten nowadays amid theological triflings.

In civilised countries also there is much need for improvement. Private charity has, so far, done comparatively little for this purpose, and yet the hours of pain and anxiety which women in childbirth have to endure should certainly not be less thought of than those of sick people to whom relief is given owing to the supply of voluntary gifts to hospitals. An unusually outstanding example of voluntary benevolence is the lying-in house founded by a lady in Leipzig (Mrs. Trier), in which midwives and young doctors are trained.

In November, 1884, the foundation stone of a lying-in institution for the purpose of training midwives was laid in Bombay. It was built at a cost of £30,000 sterling through the humane liberality of the Parsee, Pestonjee Hormusje Cama, who lived for a long time in London. In India a school for midwives was built in the year 1870, and many have since been opened.

A number of other similar institutions have followed, about which Schmidt,⁹ writing in 1904, gives more detailed information. He says: "In view of the many strange customs and deep superstitions it is not very surprising that the hospitals for the reception of women in childbirth have been slow in gaining the approval of the native women. In recent years, however, they have achieved great success, and the institutions supported by the Government in the big towns are usually well patronised by women of the working classes. Among them the Eden Hospital in Calcutta occupies a prominent place, not only because of the admirable nursing which it bestows on the women in their hour of need, but also because of its activities as a training school for the *dhais*, or native midwives. Here instruction is given free; the pupils also get a money allowance for maintenance, and the work is carried out by Hindu women and converts. The services of these thoroughly trained *dhais* are readily sought after, and thus the conviction of the value of actual medical help is always gaining more ground. The health conditions are very good; the mortality among the women confined in hospital and the children is low; which is all the more significant as often the cases treated are difficult." Such institutions are incomparably more valuable than mission houses, especially when they quarrel about Catholic and Protestant "truths."

4. THE HUSBAND AS OBSTETRICIAN

An important means of estimating the stage of cultural development to which a people has reached is gained by considering those individuals to whose hands the obstetrical relief of the woman is confided. We may regard the life of man in the earliest days of family formation as constituted approximately like that now to be found among the most uncivilised peoples.

In the most barbarous conditions of all, the husband never assists his wife. Rather she remains alone and helps herself as well as she can. Thousands and thousands of children are brought into the world in this way by women, who are not by any means unexpectedly overtaken by the birth, but who never think it at all necessary to give birth to their children otherwise than alone. Their fellow tribesmen and later the husband and all the relations generally, of course, rejoice over the arrival of a child, especially when it is a boy; but, with regard to the woman who has given birth to it, their conduct is often quite indifferent so long as the delivery is normal. They regard the business of parturition as unimportant; and they take care that while it is going on the woman is kept away from them.

Therefore we must regard it as a not unimportant cultural advance when the husband does not forsake the woman in labour, but remains at her side, helping and

relieving her to the best of his ability. Also, it is always a help when he clears the room for her and gets her another helper. Thus Ligon (quoted by Unzer) reports of the Antilles that when the woman feels that the birth is beginning she lies down on her bed and the husband takes her into another room and calls in a neighbour to help his wife. As early as the year 1640 Jean de Laet records of the Brazilian natives :

“ Les femmes du Brésil accouchent étendues en terre et le père ou un ami lève l'enfant de la terre.”

And of the same Indians Lery writes :

“ I myself saw that the father, after having taken his child in his arms, first tied the umbilical cord and then bit it off with his teeth. Further, still acting as midwife, he pressed

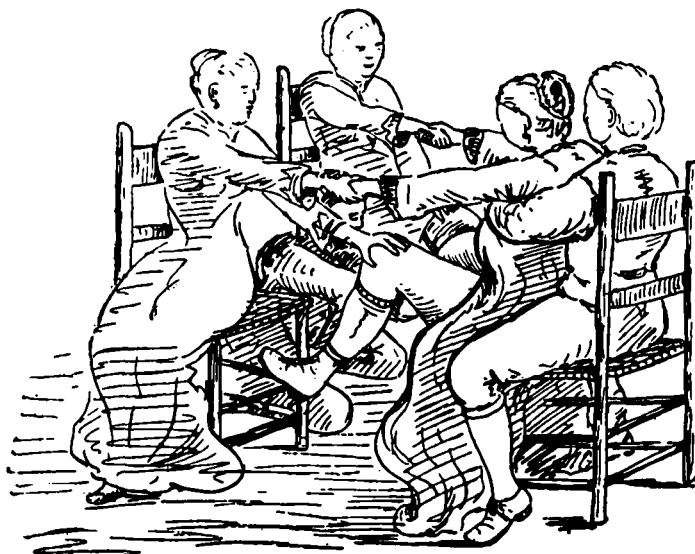


FIG. 701.—Birth with male help in Virginia. (After Engelmann.)

his son's nose with his thumb ; for this is done with all children. After this, he painted it with red and black pigment, and laid it without wrapping it up in a little cotton bed.”

Ehrenreich says of the Caraya Indians on the Rio Araguaya in Brazil :

“ The woman kneels on her heels, grasping a post with her hands, whilst the husband seizes her round the body from behind with strong pressure.”

Among the North American Indians also, sometimes only the husband is concerned with his wife. For example, Schoolcraft states that a Chippewa performed Cæsarean section on his wife.

Among the Unmatjera (N. Australia), it is believed that a spirit goes through the navel into the woman, and as soon as the husband notices that his wife is pregnant he sings in order to make the child big. While doing so he rubs some grease on the woman's side and sings : “ *are tapa tjiri ai ; ara tapa tjiri ai ; ara tapa para re,*” repeating each refrain several times (see v. Reitzenstein,¹ p. 648).

Also the women of Gorngay and Tungu, on the islands of Kola and Koproör, belonging to the Aru group, are, in confinement, helped by their husbands.



1.



2.



3.

Section through the mammary gland of (1) a girl of nineteen years ; (2) a woman at the commencement of pregnancy ; (3) a woman of twenty, one day after the birth of the first child.

[To face p. 616.

According to Rosenberg, the husband helps his wife in childbirth in Mangonus in New Zealand ; for only in case of necessity does some woman from the tribe take his place. Among the Marquesas islanders on Nukahiva the husband sees to the cutting of the umbilical cord with a sharp stone (v. Langsdorff). On the island of Engano (Dutch East Indies), when a woman is about to be confined, she is helped by her husband who calls in an old woman of the village to help him. The husband sits on the ground with his legs outspread, takes his wife in his lap and strokes her abdomen in the belief that he is helping her (see Modligiani ²).

Among the Gilyaks, an older woman who has had several children herself, helps the woman, but if such a woman is not at hand then the husband assists. Strange



FIG. 702.—Semi-recumbent position in the lap of the husband. Ohio. (After Engelmann.)

to tell, the husband's younger brother must in no circumstances help although he has a right to his brother's wife (*cf.* Pilsudski).

The husband as helper at birth is known even in one European people, that is among the Laplanders, for Leem, who was a missionary among them records :

“*Munere obstetricis ipse maritus haud raro defungitur.*” Both in Europe (see later) and America this kind of midwifery was known (see Fig. 701 (Virginia) and Fig. 702 (Ohio)).

It may be considered as help in birth, although a very slight one, when the husband builds a special lying-in hut, or fastens to the roof-beam over her couch a rope, which she can hold, the better to carry out the bearing down movements of the abdomen.

According to Howell, the Dyaks tell the following tale about the origin of midwifery, according to which they got their knowledge from the orang-utangs. He states that the first to acquire such knowledge was a man named Kelili Badak Resa, whose wife was called Teburi. When his wife was pregnant, he went into the jungle with a blowpipe. There he saw how the

maias (orang-utangs) helped their wives at the birth of their young, and used *lia* (ginger) and binders. Later, when his wife was confined, Kelili Badak Resa was able to help her in the same way as the orang-utangs had done.

5. PRIMITIVE MIDWIVES

Parturition among many peoples is so very much an exclusive concern of the female sex, a thing to be kept from profane male eyes (not from modesty but from belief in magic and for social reasons), that it cannot be wondered at that when help is given it is usually by a female hand. Generally it is one or more friends who stand by the side of the woman in labour, and we must regard it as very human that these must, as a rule, be of somewhat riper age, for doubtless on account of their



FIG. 703.—Delivery among the Kabyles.
(After Witkowski.)

greater experience of life people have confidence in them. We have already had a number of examples of this.

On some of the little islands in the Malay Archipelago (the Aru Group, Leti, Moa and Lakor) custom requires these women assisting to be older relatives of the family who, at the request of the pregnant woman or of her husband, have already during pregnancy promised their help for this critical time. Sometimes the mother too, must manage the duties of midwife, as among the Ewe negroes in West Africa as well as in Samoa and East Turkestan. The same custom prevails also with some Malays.

In Samoa, states Krämer, two old women assist the woman in labour.

In New Zealand the Maori woman is assisted by the maternal grandmother at the birth of the first child, or if she cannot, then by the paternal grandmother; and, on the islands of Tenimber or Timor Laut, as well as in the Pulaya caste in Malabar, the mother-in-law must deliver the woman in childbirth.

We have to record a fresh advance in our field when we find stated as helpers at parturition not simply women friends or relatives, but "experienced women." Thus at the parturition of the Dyak women in Borneo "experienced women" assist, and they receive presents for their assistance (see v. Kessel).

The Aleut women are assisted in confinement by their "sage femmes," and difficult births often prove unsuccessful (see Ritter, p. 265).

The Kabyle women are assisted in parturition by experienced women whose help has been requested beforehand: there are, states Leclerc, no professional midwives there (*cf.* Fig. 703). Also, among the Sudanese, according to Brehm's information by word of mouth, "experienced" women assist the woman; and the same holds good, it is said, for the Bedouins in Arabia (see Mayeux, III., 176).

In Abyssinia there are no midwives: every old woman is regarded as an expert in this matter. Yet many of them glory in the title of midwife (*cf.* Blanc). Also, according to Leo Reinisch, the woman there is assisted by "old expert" women.

In Massaua women neighbours help the woman in childbirth.

According to Lübbert, several women assist the natives of the former German South-West Africa (by whom he means the Hottentots, Bushmen's wives, Bergdama and Herero women). He writes :

“ The birth proceeds with the woman lying on her left side. Three or four midwives sit round to exercise pressure on the uterus at each pain.”

In Guatemala, according to Bernoulli, writing in 1864, chronic diseases of the abdominal organs often occur after parturition. He ascribes the reason for this to the circumstances that there were not any trained midwives there and any old woman with no occupation is accustomed to undertake these functions.

Of how little advantage to the poor woman in childbirth the well-meant help of these so-called experienced women can be, we learn, among others, from Montano, when he speaks of the natives of the Philippines. He says :

“ Bien que l'imprévoyance des indigènes s'oppose certainement aux pratiques qui, dans d'autres pays limitent la fécondité, les familles sont généralement peu nombreuses. Les déplacements de l'utérus et les métrites chroniques, conséquences de pratiques violentes qui sont employées par les matrones du pays pour peur que l'accouchement soit laborieux, et aussi du peu de repos que prennent les nouvelles accouchées rendent celle-ci steriles de bonne heure.”

In Iceland also, until a short time ago, any energetic woman had to help her neighbour in childbirth. Only recently has this island begun to be provided with trained midwives (Max Bartels,¹² writing in 1900).

Among the Teutonic peoples, midwifery was a matter for women among themselves. Along with the crouching position, the sitting on the husband's knee (*an. kné-setia*) and the massage and kneading of the abdomen (*strjūka strjka, verða*) ; or drawing the woman through holes and clefts in trees, etc. : or in delayed births, people had recourse to incense burning (juniper, etc.), also the fruits of the ash tree, according to Fjølsvinnsmöl, 16, and herb potions and herb fomentations. Then they tied on the appropriate herbs as amulets and, above all, they used magic words and runes to bring forth the demons and to banish obstructive or otherwise injurious demons, as the Edda sings :

“ Help runes shalt thou gather
If skill thou would'st gain
To loosen child from low-laid mother ;
Cut be they in hands below,
Wrapped the joints, round about ;
Call for the good folks' gainsome helping.”
(Sigdrifumöl, 8.)

6. THE ORIGINS OF PROFESSIONAL MIDWIFERY

In a few tribes we find the first beginnings of a regulated midwifery. We must, it seems, recognise this if we find for those “ experienced women ” who assist in childbirth, a special name which gives expression to their talents and capabilities. We come across such special titles on the island of Ceram, where the word employed is *ahinatukaan* ; on the Tenimber and Timor Laut Islands (*wata sitong*), on the Fiji Islands (*alewa vuku*) and among the Basutos (*babele xisi*) ; we shall hear of others later. On the Philippines many women acquire the reputation of *mabutin gilot* (good midwife), especially if they have grown old in the practice ; people turn to them for advice in the earliest stages of pregnancy although it is true only to

determine the sex of the child. So far as midwifery is concerned they are described to us as still very ignorant.

From these stages a professional midwifery will then gradually be formed. The mother will have systematically imparted her ability and knowledge to her daughter on the one hand, and on the other the older and more experienced midwives, when their engagements are extended, will no doubt find it necessary to have younger helpers, who will be trained by them and who will then practise independently later.

Or it may occur that the persons who practise midwifery have learnt their method by watching and observing another experienced person who is a midwife



FIG. 704.—Assuan midwife, in full dress, with decorated parturition chair which she brings to the pregnant woman seven days before delivery. (Photo : A. R. Simpson.)

by profession. In the last case, too, very ancient obstetrical customs are, with little alteration, handed down from midwife to midwife if not by systematic instruction, then by long-standing tradition.

The help which women in childbirth in the desert tribes of Algeria get from midwives is limited to this : the midwife seizes the child when it is half-way out of the womb ; she holds it with both hands and keeps it fast in this position for quite a quarter of an hour : the poor woman thus gets an increase of pains not ordained for her by nature, but imposed on her by a superstitious prejudice of these desert Arabs. Frh. v. Maltzan ² (p. 101), who was present during a procedure of this kind, thinks that the aim of this custom is either a misunderstood hygienic measure, or that it has a mystical significance, man being kept on the threshold of existence between being born and not being born.

According to Bertherand (p. 543), however, the midwives in Algeria are supposed even to engage in turning the child.

From Sfax in South Tunisia, Narbeshuber reports that help in midwifery is generally given by a woman who has herself gone through several parturitions and has watched a good deal and who shows a liking for this occupation.

In Morocco, as Quedenfeldt reports, obstetrics lies exclusively in the hands of midwives (*kábla* or *gábla*), and is practised in a very primitive way. Sometimes a midwife is called also *tebíba*, although this is not quite correct. *Tebíba* means woman doctor, and there are in the country plenty of old women who give help, not only in specific illnesses but also in all cases of illness among members of their



FIG. 705.—Assuan midwife in professional garb, with the parturition chair, behind which stands a Nubian assistant. (Photo : A. R. Simpson.)

own sex, whom no strange man may approach. Diseases of the uterus, which date from a parturition are therefore common, especially chronic inflammation and displacement of the uterus.

The midwives in Egypt (see W. S. Blackman) are generally very ignorant women, for whose training, until recently, very little or nothing was done ; their manipulations, pressing and kneading the abdomen of the woman in labour as well as the insertion of the finger at the expulsion of the child, are said to be carried out in the crudest manner. An effort is now being made to have these midwives instructed by properly trained Europeans and to make them conversant with the demands of a skilled service. The midwife used to take, and perhaps takes even to-day, her parturition chair with her (*cf.* Figs. 704–706, and see also Vol. II., p. 724). In difficult births the Egyptians often require artificial assistance, which is given them

by women, never by men, and often in the roughest way, so that they often succumb during the act (R. Hartmann ⁴).

In discussing the school for midwives, first founded in the 'thirties of last century at Abu-Zabel, Clot-Bey says :

“ Here hundreds of girls and women are trained as midwives in order to replace the ignorance and superstition of the present midwives who, after the vain use of exorcisms and the most ridiculous and dangerous means, had a child hop between the feet of the woman in child-birth to stimulate the fœtus to imitate this. The secret specifics of these matrons for sterility



FIG. 706.—Assuan midwife with Nubian assistant. The parturition chair is folded up. (Photo : A. R. Simpson.)

and for pregnancy were used in an unconscientious but, unfortunately, effective way : the pregnant woman believes that she is not responsible either to God or to society for her offspring.”

Although, as we have seen above, in Massaua, women neighbours very often help women in childbirth yet, as Brehm reported to Ploss, there are also real midwives. They are in the habit of drawing forth the child by the head, but they are said even to be able to recognise a wrong presentation of the child, and to improve this by turning the child round.

According to Merker's descriptions, the midwives (*in gaitojok*) of the Masai rightly enjoy great esteem. Nairvenna was, according to tradition, the first midwife ; her name originates from the fact that at her birth the umbilical cord was twisted round her neck. The midwives of the Masai are elderly women, who live in the kraal or in a neighbouring kraal, and practise midwifery professionally ; they

are supposed to be called only in exceptional cases. In the kindred tribe, the Wandorobbo, the mother or mother-in-law assists the woman in childbirth.

Among the Swahili, according to Kersten's verbal reports to Ploss, there are professional midwives who charge one, to one and a half talers, paid in the clothes of the pregnant woman; they confine themselves to kneading the abdomen, cutting the umbilical cord and dressing the child's navel, etc. As Velten tells us, the midwife is called *Kungwi* (tutor); she has a female assistant (*mpokezi* or *mpokeaji*)

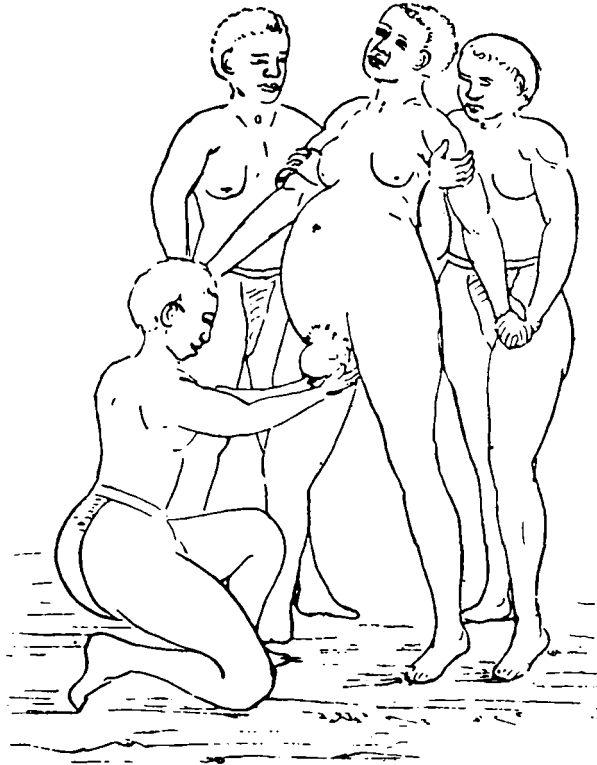


FIG. 707.—Birth scene among the Wakamba, West Central Africa. (After Engelmann.)

who takes charge of the child when it is born. Fig. 707 shows a birth among the Wakamba.

According to H. Krauss,² the Swahili are so far intelligent as to refrain from unnecessary manipulations, especially as regards internal interference, and also see to a certain cleanliness of their hands. The woman in childbirth, too, is cleansed by them in quite a rational way inasmuch as they remove the pubic hair; for this a knife must not be used; it is singed off with ashes. (The reason, according to v. Reitzenstein, is no doubt, as with the witches, not hygiene, but the banishment of evil spirits.)

Among the Bombé, likewise, Buchta found professional midwives; and Hewan records the same of the negroes in Old Calabar.

Among the Basutos, according to the information given by the missionary Grützner,¹ old women who are called *babele xisi* help the woman and the child. Kolben also mentions midwives among the Hottentots.

The North American Indians, according to Engelmann, have also, to some extent, their special midwives ; for instance, the Klamath, the Mandan Indians, the Gros Ventres, the Nez Percé, the Arikara, the Clatsop, the Pueblos, the Navajo in Arizona and the Indians of the Quapa Reservation in Mexico.

The help of these midwives is confined almost entirely to external manipulations together with compression of the abdomen in order to press out the child : in addition to these, there are incantations and exorcisms by the medicine man. Only a few of these tribes, the Umpqua, the Pueblos, the natives of Mexico and the Pacific Coast ever undertake manipulations inside the vagina. The introduction of the hand into the vagina and the uterus is something unknown to the rest of the

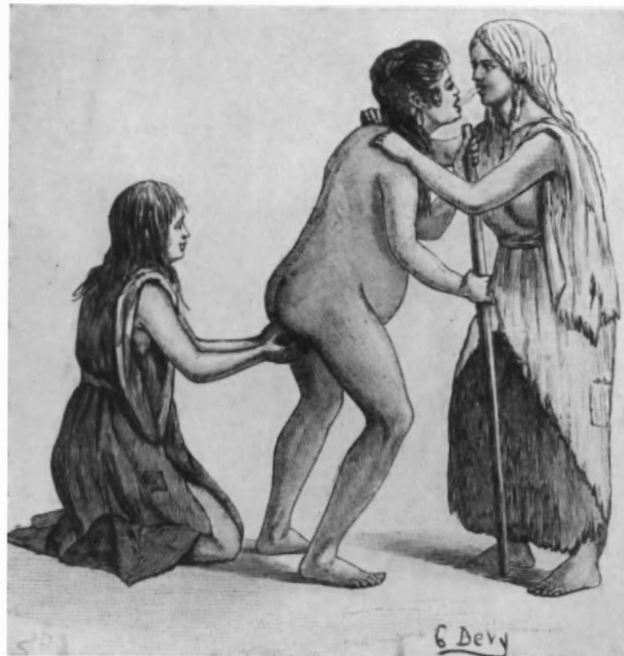


FIG. 708.—Birth scene among the Kiowa Indians. Powder is being blown into the woman's mouth.

tribes. The dilatation of the perineum or the removal of the placenta hardly ever occurs. The placenta, if retention happens, has to remain in the uterus. The midwife or the oldest woman assisting confines herself customarily to receiving the child (Fig. 708). Younger women support the head, the shoulders, the pelvis or the legs of the woman ; they also press her abdomen to expedite the birth of the child.

The midwives in Mexico work at the pregnant woman's back and abdomen with their fists as early as the seventh month of pregnancy. This is done often for half an hour at a time, so that the poor woman writhes with pain.

This record of Dr. v. Uslar, which E. C. v. Siebold first published in his history of midwifery, was confirmed to Pinoff by a German woman who lived in Mexico and in her seventh pregnancy had the offer from a midwife of being treated in accordance with the prevailing custom. Only women of high rank and foreigners

do not follow this common custom. The frequent occurrence of abortion is ascribed to this procedure, which is supposed to give the child a good presentation. If a transverse presentation occurs at parturition the midwives grasp the mother by the legs and shake her in order that the child shall assume a head presentation.

We have still the conditions in Asia to consider. And here we at once perceive how very much it is the prevailing way of life which influences the practice of obstetrics: for, with some peoples who are partly nomadic, partly settled, the two sections differ considerably as regards midwifery: Thus, among the Tunguses of the Steppes there are midwives; on the contrary, the wives of the Forest Tunguses help each other and do not need midwives (Georgi). Certainly, in the case of such assistance, very doubtful interference takes place. At the parturition of the Buriat woman, too, a midwife is present whose whole assistance, however, consists in putting the ligature on the umbilical cord.

The Ainu in Japan for the most part engage the help of a midwife (*ikawo bushi*) in confinement (H. v. Siebold³). She is, as a rule, an elderly woman who has been confined several times but has had no instruction, nor does she possess special skill. From time to time other women also visit the hut of the woman in childbirth, but do not intrude their help.

The conditions among the Japanese and in China will be discussed in a later section.

In Siam, when a woman is overtaken by labour she has the "birth-woman" fetched and several women of her acquaintance: these support the woman in labour in many ways (A. Hutchinson). According to Schomburgk, in the big towns the midwives are so far civilised that in difficult cases which they cannot themselves manage they call in European doctors to help (see Fig. 709). Stevens states that the wives of the Orang-Bélenda in Malacca are helped in parturition by the midwife and an assistant, or, instead of the latter, the husband.

In Laos also there exist, according to Aymonier, actual professional midwives who are summoned as soon as the first labour pains set in.

The midwives among the Annamites in Cochin China, Mondière² (pp. 41 ff.) describes as extremely ugly, old and lean, with grey or white hair which is often shaved. They are, he says, like witches. Usually they visit the pregnant woman for a month twice daily before parturition is expected, and finally, daily, in order to prescribe some articles of food for her, which consist chiefly in infusions of leaves of the papaw and a species of mint. However, they do not touch or examine the



FIG. 709.—A difficult labour in Siam. (After Engelmann.)

woman ; at most they examine her by palpation if the pregnant woman complains about a special pain which might make the delivery difficult. Primiparæ in such circumstances are filled with fear and anxiety ; Mondière saw two of these die during confinement without hæmorrhage or eclampsia.

In the better known parts of the Dutch East Indies the midwife is called by the name *doekoen* (pronounced *dookoon*), also used for "doctor" ; nevertheless, here, in difficult cases, not rarely the help of European midwives is requisitioned.

On Nias there are, according to Modigliani, certain women who act as midwives. Also the inhabitants of Bali, according to Jacobs,² and the Sulanese, according to Riedel, have their special midwives.

In Achin, according to Jacobs,² they have a special class of midwife. Such a midwife is always an elderly woman who is acquainted with pregnancy and confinement from personal and, if possible, repeated experience ; and who has, besides, been the pupil of a busy professional colleague. Her influence is great, as with our own midwives in the country, extending far beyond the lying-in room. It extends to all questions of the nursery, of the life of the young married people, and not seldom also to abortion. Along with them there is, however, still another class of midwife, which, it is true, has a very small number of representatives. These might be called "head midwives," for they are only called in for advice and help in very hopeless cases. They are the *bidan dalam*, whose name signifies that their hand assistance extends to the internal genitals. We shall hear about their activities later.

Among the Mohammedans in Baghdad the influence of the midwives is very great ; they are also generally very highly paid. From wealthy people they receive usually a honorarium of from 50 to 100 gulden. They are by no means satisfied with that, however, but impose a tribute when the child begins to teethe, to walk or to talk. In the illnesses to which it is subjected they alone are consulted, and they usually prescribe a universal powder made up of bitter and astringent ingredients.

Their profession, when they have a good reputation, is very remunerative, so that they soon make a fortune.

In the Finnish tribe, the Syryenians, every woman who has reached a certain age must become a *gegin* (midwife), and give help to anyone, otherwise she must, in the opinion of some, act as midwife to a bitch in heaven. In the opinion of other women, however, such a woman never reaches heaven at all (see Nalimov).

The following tale shows what a strong hold this idea has. "A woman was not called in to a birth by anybody, and, therefore, could not become a *gegin* ; so she said : 'If I could at least help a wood sprite !' The wood spirits took pity on the poor woman and had her come and help when a birth took place among them."

In this case a special class of midwife is founded compulsorily.

Among the Circassians the help of the midwife is confined to stroking the abdomen of the woman in labour, who is in a kneeling position. This is done to expedite the delivery. The procedure among the Kalmucks, the Georgians and the Armenians is similar. The Karagasi (*Zt. f. allg. Erdk.*, VIII., 404) have also special midwives ; and of the Bashkirs it is said :

"Ce sont toujours de *vieilles femmes* qui assistent aux accouchements ; elles ne possèdent naturellement que de connaissances pratiques. Une femme enceinte préfère mourir en couches plutôt que de recourir à un médecin, lors-même que celui-ci lui donnerait gratuitement ses soins" (*Descript. ethnog. d. peuples de la Russie*).

The midwives in Persia, according to Häntzsche, are usually without any real training. Generally it is an old woman (usually a widow) who starts her business

as *māmā* or midwife. Sometimes, even three of these midwives are present at the same time.

In Palestine at Jaffa, midwives are to be found who, according to Tobler,¹ have had no instruction but the little traditional teaching which a mother imparts to her daughter. Yet the missionary Robson maintains of the midwives in Damascus that such inherited knowledge is never found among them and that they are abominably ignorant.

Reports of the midwives of the natives on the Caroline Islands in the Pacific are more favourable: they are called skilful, and it is said that only a few unsuccessful cases occur through unskilful midwifery. The women in charge lift up their voices in song or shrieks so that the husband may not hear his wife's cries of pain.

On the New Hebrides also, special midwives exist, and also, according to Thomson,⁵ on Niué or the Savage Island.

Of the Fiji Islands, Blyth reports: The Fiji islanders have had from ancient times native midwives called *alewa vuku*, or wise woman. They keep their art secret and surround it with mystic usages. A short time before they think of retiring from their profession, they instruct a successor in their art. In remote districts they also give help to European women.

7. DEGENERATE AND DISHONEST MIDWIFERY

It is highly probable where we now find an obstetric practice of this kind that it comes down from an era in which, among the people concerned along with a higher civilisation, there was also better midwifery, but that with the decline of the former, midwifery also gradually declined. In this case more or less clear signs of the earlier and better developed condition of obstetrics will be recognisable in the procedure of the midwives. This is indicated, according to Epp,¹ in the obstetric procedure among the peoples of the East Indies, where the obstetric knowledge of the Javanese, of the Malays and kindred tribes dates from the time when the Hindus ruled over these tribes: neither Mohammedan nor Christian influences had an obstructive effect. The native midwives employ the most varied methods of procedure, the correct form of which was only gradually recognised by Western art; in the main, however, they are full of superstition and they have all sorts of customs which do not appertain to the realm of obstetrics and are even to some extent injurious. Epp¹ (p. 392) says:

“The results of the infamous treatment of women in childbirth in the East Indies are shown in the fact that so many children come into the world seemingly dead and many women find death only too soon.”

According to the earlier records of the missionary Beierlein, the people had no special midwives in Madras, but in Hyderabad and Delhi are women who are called midwives. These, as Dr. G. Smith reports from Hyderabad, usually belong to the Telegu tribe; they are extraordinarily ignorant and the result of this ignorance is an enormous mortality among women in childbirth; also Robertson and others tell of the colossal mortality in women in childbirth among the Hindus. If the East Indian midwife thinks it necessary to have surgical help, she sends for a woman barber, according to Smith, who carries out extraction and embryotomy; both kinds of women practise abortion, and the midwives torture the woman in childbirth in the lying-in hut by heat, smoke, thirst and irritant drugs (pepper, ginger, etc.). Medical help is, according to Robertson, not called in by the Hindu except in the

greatest emergency. Part of a great temple picture shows us the procedure of the midwife and her assistants in Sikhim. Fig. 710 is a copy of this representation. We see the woman crouching over a stand as if bent double with pain. Behind, on the ground, the midwife kneels waiting to catch the child, which is not yet visible, in a cloth which she holds ready. Beside her, three other women are busy.

In Southern India, Shortt found that people also send for a midwife to help the women in childbirth; this woman helps the woman in labour by rubbings with oil and by washings. As recompense for her trouble, she receives every morning until the twelfth day; oil and betel nuts, besides two pounds of rice and other articles of food, old clothes and one rupee. The midwife in this case also undertakes attendance at childbirth and receives for this, as a rule, maintenance and pay.

Miss Billington gives a very unfavourable description of the activity of midwives in India. She calls the ignorance and methods of treatment of the dhais, the professional midwives and monthly nurses, simply barbarous. Many of them interrupt their necessary manipulations to press for higher payment and refuse to go on with their duties till a guarantee is given them that their impudent demands will be complied with (see Schmidt⁹).

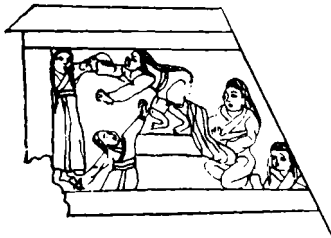


FIG. 710.—Midwife and her assistants supporting a woman in labour. From a Tashiding temple fresco in Sikhim. (From *Gaz. of Sikhim*, Calcutta, 1894, pl. 7.)

The Boers in South Africa who, as is well known, are of Dutch extraction, serve as an example of how the old native popular midwifery is continued traditionally by a people which has become detached from its native culture. Of the midwives in the north-eastern districts of Cape Colony, L. Holländer² gives the following information:

“The midwife in the Boer townships is the oldest woman inhabitant of the neighbourhood. She knows the whole history of the place from the beginning and is acquainted with all the merchants who have become rich and many women of bygone times. But she has grown old amid work, discretion and reticence. She has delivered more women than many a professor of obstetrics in Europe. And also many women have reached the better land through her hands more quickly than was necessary; the dead are dumb, and the living can only spread abroad her fame and her skill. A doctor who is not patronised by her can never succeed, but lucky is the doctor who has gained her favour. Her technique has not come from the training school, but she has an endless amount of experience, has observed much and kept her eyes open. Perhaps in recent years she has bought an old Dutch book on midwifery of the year 1749 with big type, which she now reads daily, and knows, too, the value of all the wonder-working potions and remedies in the book. Her knowledge is authoritative. Among the women in the village she is regarded as their mistress, and the young lady just come from Scotland who, in her native land would have been horrified if the *sage femme* of our little town had approached her bed, cannot evade her influence. As a matter of fact, they are careful and attentive; they do much good, as a rule, and, owing to their practice, are often much more use to a poor woman in childbirth than a young trained doctor, whose eagerness and urge to distinguish himself and get himself talked about may easily lead to undue haste. Incidentally, the midwife also sells various vegetables, grapes, etc., which she grows in her little garden and thus becomes a wealthy woman.”

8. MALE ASSISTANCE AT BIRTH

In an earlier section we have seen that the husband of the woman in labour assists as well or better or even perhaps as badly as the need of the moment suggests.

Now, in many tribes, the husband has not the actual conduct and supervision of the process of birth, but he has to play a part as supporter while a midwife carries out the actual delivery.

Thus, Man reports of the Mincopi of the Andamans that when the delivery is near, it is customary for the husband and a woman friend of the wife to support her. She is put in a sitting position, the left leg is extended and the right knee is drawn up so that she can put her arms round it. The husband supports her back and presses her when it is desired, whilst the woman friends hold a screen of leaves over the lower part of her body and help her to the best of their power in the delivery and in the removal of the afterbirth.

In the Philippines, this function is handed over to a particular man who, in accordance with his function is called the *teneador*. He grasps the woman in childbirth from behind and holds her, and at the same time presses her abdomen, especially the *fundus uteri*. Not infrequently the woman in labour lies on a mat. Then the *teneador* stands at her head and from there presses the *fundus uteri* (see also Fig. 758).

Something similar is recorded of the Kalmucks.

Moreover, we also find men as regular helpers at birth in many tribes, so, *e.g.*, on the Hawaii Islands. Likewise Felkin and others have come across men as birth helpers, especially in difficult cases, in many negro tribes (*e.g.*, Bari, Madi, Moru, Bongo, etc.).

Pallas records of the Koibali :

“They are said to be delivered on their knees and in this let themselves be supported by a male person.”

And of the Kalmucks, he says :

“They have at parturition not only midwives, but there are also male assistants who receive and wash the child.”

Among the Soongar, a division of the Kalmucks, according to Klemm, there are reported to be men who understand how to dismember the child in the womb with little knives, and the Lesghian shepherds in the mountain valleys of Trans-Caucasia are said to be able to deliver their sheep very skilfully and even take a forceps with them for this purpose ; and they are said also to be called in as skilful performers at difficult confinements of women (N. von Seidlitz).

At the parturition of a Tenggerese woman, according to Kohlbrugge,³ one sees only male assistants. He states that “the male helpers, also called *dukun* here like the doctors, are absolutely ignorant. The husband must always support his wife’s head.”

In many tribes also we see the sorcerer, the priest and the medicine man acting as helpers at birth. Generally, in this case, it is a question of difficult births or other retardations of the usual course of birth. The help which these people try to give the poor woman is not midwifery at all in our sense, but a supernatural and mystical help in accordance with their profession. Their manipulations and performances will be given thorough consideration in a later chapter.

Here, however, *two* groups in coloured clay are worthy of mention (which were acquired by Adolf Bastian on the island of Bali for the Ethnological Museum in Berlin), for they furnish proof that there also male help in parturition is customary. Figs. 711 and 712 show these groups. Fig. 711 shows the woman in labour sitting on the ground with her legs stretched straight out. A man has sat down at her left side and supports her by pressing her body closely against him. That it is a man,

in spite of the twisted plait of hair, is proved by the kris, the short Malay sword which is sticking in his girdle behind.

Whether this is the husband or another male helper cannot be decided. But the couple are not alone, for the woman is supported by an individual on the other side as well. This seems to be a bigger child, and judging by the style of the hair, is probably a boy. The woman has her arm round his shoulders, whilst he has his left

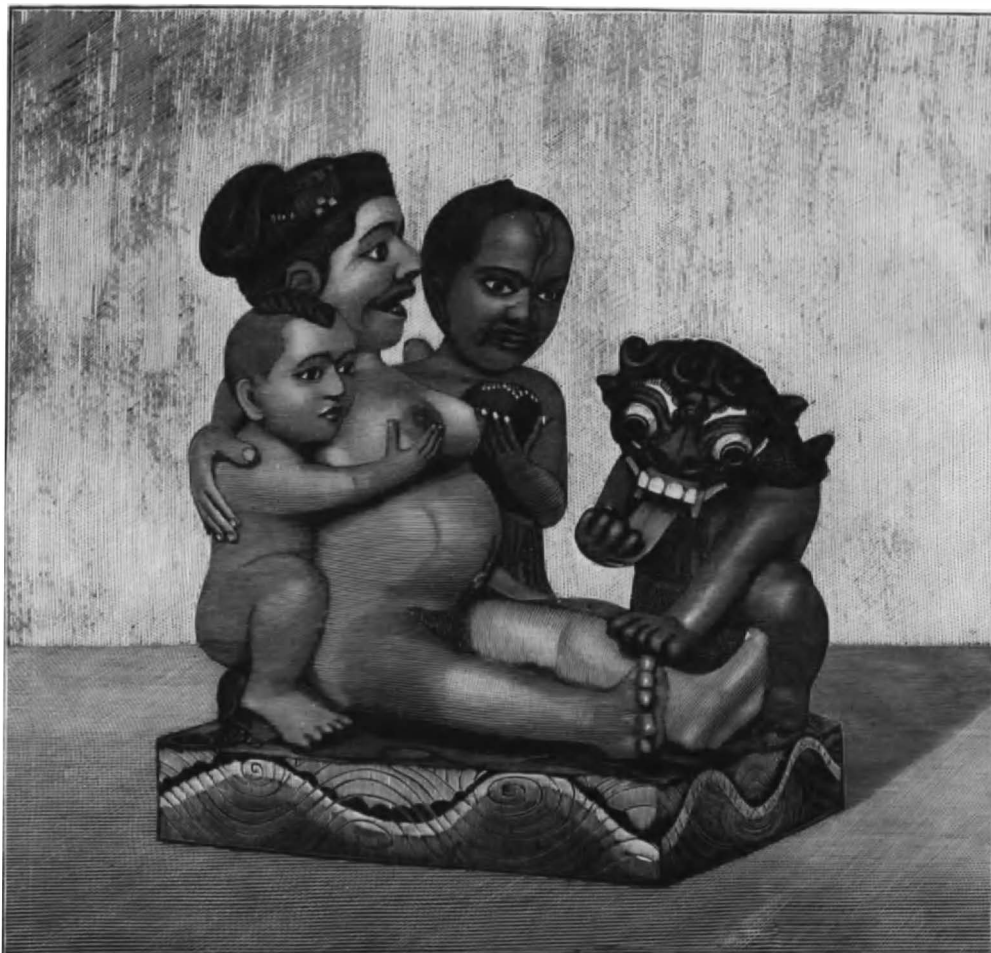


FIG. 711.—Male assistance during labour in Bali. Mus. f. Völkerk., Berlin. (Photo : Max Bartels.)

arm across her back and with his right hand is touching her right breast. He is crouching down in such a position that the woman's right buttock is between his legs and is supported against his abdomen.

But there is still a fourth figure in the group: this is a demon with gaping mouth. He is crouching beside the woman; his left fore-paw rests on her left leg, and the monster is licking his slightly raised right paw with his extended red tongue. One sees the avidity with which he lies in wait for the child about to be born whose fate appears to be decided.

The second group, Fig. 712, also shows a woman in labour sitting on the ground. Again the man sits beside her to support her in her exertions. She has her left arm round him, whilst he has his right arm about her shoulders to support her and presses her abdomen with his left. The assistant child is not present here, so the

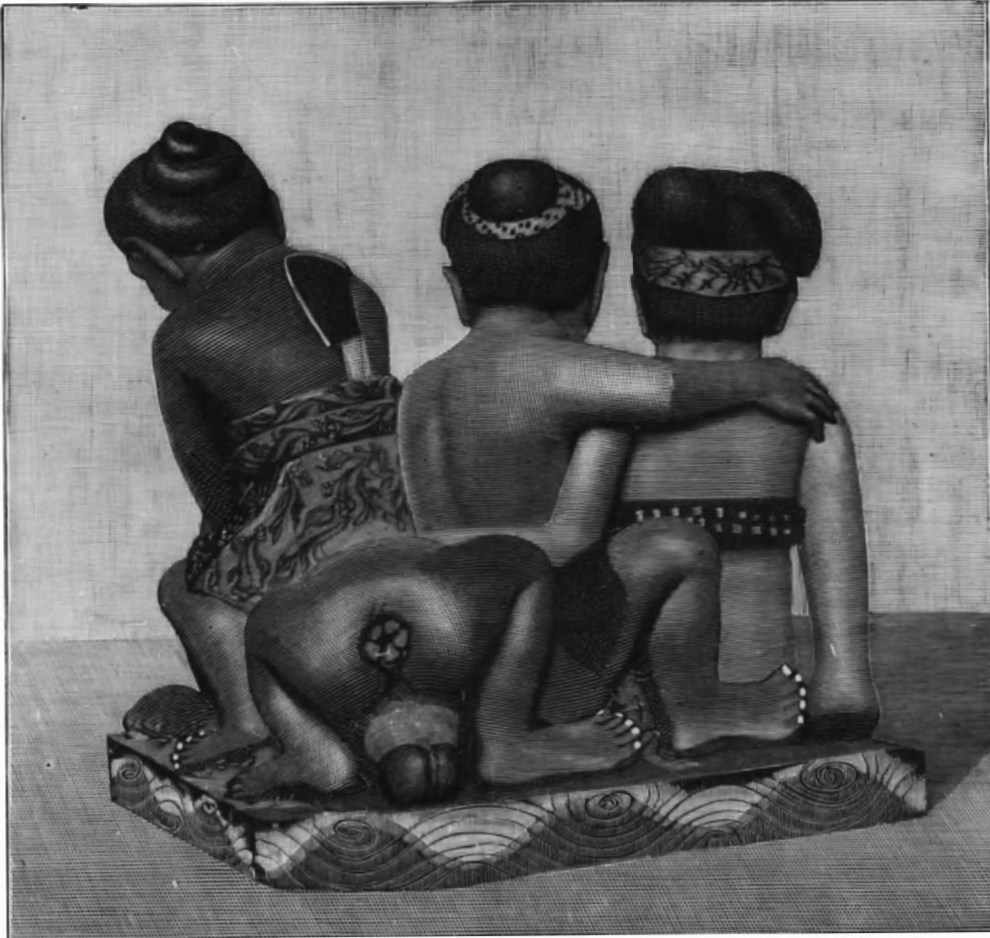


FIG. 712.—Male assistance during labour in Bali. The demon is overpowered. Mus. f. Volkerk., Berlin. (Photo: M. Bartels. Cf. Fig. 757.)

woman in labour supports herself with her right hand on the ground. In this case, too, the demon witnesses the parturition. But his power has already been broken, for a man, again with a kris in the back of his girdle, has jumped on his back and is pressing him forcibly to the ground, both hands being planted firmly on his head. The colossal force of the pressure has pushed the enormous genitals of the demon far out backwards. This conqueror of demons is most probably a priest or wizard.

CHAPTER XXIX

ANCIENT AND MEDIÆVAL OBSTETRICS

1. GENERAL SURVEY OF THE HISTORY OF OBSTETRICS IN EUROPE

WE have so far tried to get a general view as to how the establishment of midwives arose among peoples which are, even nowadays, at a more or less low stage of cultural development. It will not surprise us to find that they do not possess a systematically perfected science of obstetrics, but we must not hold our heads too high. For even among the civilised nations of Europe, in spite of the training established by law and the licensing of midwives dependent on a State examination, we still find among them many abuses which have been preserved by tradition. However, these survivals of a cruder age, in contrast with those of the peoples already discussed, do not fortunately occur very frequently ; and with ever-increasing progress, these evils will become still more rare.

We wish now to acquaint ourselves with the historical development of midwifery and to see how this has taken form among the modern civilised nations of Europe. Here, however, we can only attain the desired understanding by casting a glance at the practice of midwifery of those peoples which have declined in the course of time, but on whose knowledge and skill the culture of modern Europe and its colonies has been built. In doing so, we shall meet conditions like those which we have found in the preceding chapter among the so-called "savages." But they have fortunately extricated themselves from these primitive conditions.

With some ancient peoples,* a more favourable influence from outside on the part of a more civilised nation has considerably promoted the development of midwifery. Thus, for example, midwifery in Rome developed under the influence of that in Greece ; and also later the Arabs derived a great part of their obstetric knowledge from Greek sources. On their teaching again, the scientific midwifery of mediæval Europe was built up.

Prochownick gives the following description of the course of this development.

"From the stagnant condition of midwifery all uncivilised peoples and also some civilised ones did not emerge. A number of settled peoples striving for higher development made the first step forward. Increased observations, in the first instance directed to pathological phenomena, led to certain customs and measures and even to legal regulations, especially where circumstances in legal disputes were involved. With this came the transition to midwifery in the narrower sense. 'Birth,' in this case, as the expression of something typically observed, and, finally, in the particular phases of it known, was opposed to the 'giving birth' as a merely mental perception. A closer acquaintance with a physiological process, and reflecting on it could, however, *a priori*, only be the concern of those who were chiefly concerned with the suffering and physical afflictions of mankind (*i.e.*, the doctors and surgeons respectively) ; and, at this point, male intervention in the province of midwifery begins. At the same time, however, the endless struggle which this male-medical impulse towards culture and improvement of our science has always had, is still being opposed by two closely allied enemies, female helpers and female modesty. . . . Female modesty has for more than 1000 years been a hindrance to

* [See Braams.]

our science, and it has remained so until exceedingly recently, for only a few highly endowed nations can separate true modesty from false, decency from prudery, and even among these this achievement is really only an asset of truly cultivated people ! Now, if it were in accordance with nature that, owing to the modesty of woman, midwifery fell into female hands exclusively, then it was again a logical consequence for this science also to be claimed and defended as a domain of the female sex.

“Any other kind of help in birth than female was little known in ancient times. The whole management of it lay (we are speaking now only of ancient civilised peoples) with the midwives who everywhere progressed from midwives by custom to midwives by profession. Individual ones became by ability and experience very skilful representatives of their profession, and the whole profession was highly esteemed with most of the ancient peoples, who put special value on the bearing of children. . . . Now, when and where the doctors in ancient times came into contact with midwifery can be surmised rather than proved. It probably happened as it very often happens nowadays. When the midwives were at the end of their resources they looked about for further help, and naturally it was those doctors who had a good reputation as surgeons who were summoned.”

Prochownick draws attention to two peculiarities in later periods of civilisation. Firstly, it was at the time of the highest development of Greek civilisation that the best doctors and medical schools succeeded in capturing a share in midwifery, and a considerable portion of female medical science for themselves. Secondly, at the highest peak of Greek civilisation, when women were given greater freedom, the gentle sex was stirred to mental activity. There appeared women poets, philosophers and, above all, women who aspired to become doctors. And where this was practicable, they claimed first of all the province of our science for themselves. Where, however, the State did not repeal the law that neither slaves nor women might be doctors, the women, of course, remained “midwives” in name, but they studied the works of doctors, and they themselves wrote books about their profession. With the political and intellectual decline, these beginnings disappeared ; in Rome they were again repeated at the summit of the Empire’s prosperity, then again to disappear, with few exceptions, till the centuries of intellectual activity in which we live.

“And like the Greeks,” says Prochownick, “so the Romans, the Byzantines, and, to a still greater degree, the Arabs. Everything done in obstetrics is either surgical or the work of midwives. We have to pass over a period of far more than 1000 years from the summit of the Roman, more correctly, Romanised Greek civilisation, and almost 600 years from the time of greatest development of Arabian medicine to reach a period which for our subject may be called similar to the pre-Hippocratic.”

Until the sixteenth century, obstetrics in nearly all the nations of Europe was almost entirely in the hands of midwives, by whom it was managed more or less empirically. If, in exceptional cases, they were assisted by doctors, these had a more or less subordinate part. Only the ancient Hindus permitted doctors a share in obstetric assistance ; in rare cases, the Greeks and Romans doing the same.

In this way were laid the foundations (which should not be undervalued) for a science of obstetrics. In the Middle Ages, however, this developed but little. Doctors and surgeons first took an active interest in it in the sixteenth century, and from that time it has grown gradually into a fine scientific construction which, especially in our age, has undergone very important developments. We shall now turn to the consideration of obstetrical capacity among the civilised peoples of antiquity.

2. METHODS USED IN ANCIENT ISRAEL*

We learn from the older parts of the Bible that the Jews of the Old Testament had a particular rank of midwives. In the difficult delivery of Rachel, of the effects

* [See Schapiro.]

of which she died after a short time, we are, it is true, told only of consolation given by the midwife. When Tamar gave birth to twins, they tied a red thread round the hand which the first child stretched out from the womb in order to be able later to tell which was the first-born. Rachel and Tamar, in their difficult confinements, were attended only by midwives: at that time, people did not call in doctors. Also, when the Jews dwelt in Egypt, they had midwives, for the king of Egypt applies to two of them, Shiphrah and Puah, and bids them kill all male children of the Jews (Exod. i. 15).

We shall revert later to the disputed question whether the Jewish midwives of that period had a parturition chair. The services of the midwives as regards the care of the new-born child were confined to dividing the umbilical cord, washing the child, rubbing it with salt, and wrapping it in swaddling clothes.

Indeed, they pointed out to the king that they were seldom called in as the women in most cases were confined without their help. It is also mentioned in the Midrash Bērēshith Rabba that the Hebrew women in childbirth employed no midwives:

(The wives brought food to their husbands) . . . "they gave them food, washed, anointed and gave them to drink and then accomplished coitus. . . . And when they were pregnant, they went to their houses, and when the time of their delivery was come, they went into the fields and brought forth their children under an apple tree." See Song of Solomon viii. 5: "I raised thee up under the apple tree" (Wünsche¹).

The biblical laws about menstruation are well known. The period of the woman's impurity always lasts for several days reckoned from the beginning of menstruation, even if the menstrual flow was of short duration. There is nowadays no doubt that the rules as to menstrual impurity did not arise by reason of hygienic considerations but developed on the basis of those animistic views which as early as prehistoric times had been involved in the tabu idea. This was due to the idea that the godliness inherent in man or thing tends to expose him and others to harm in the ungodly world of everyday life.

At the time when the Talmud was written down, there were in existence women who assisted in childbirth and were considered competent in regard to discerning a normal birth or a first birth. A woman of this kind was called in the Talmud *femina sapiens*, or also *femina vivida*; and we see from the tractate *Qōdāshīm* that the Jewish midwives were held in no little esteem and must have been very skilful women. But in difficult cases doctors were also summoned. The skill and practice in delivery of these Talmudic midwives will be recorded in detail later. Here will only be said that they used a special parturition chair; the examination of the genitals with the finger was familiar to them, and also that with the whole hand was sometimes practised, although discouraged. Of abnormal presentations of the child, they seem to have had but little knowledge. In their manipulations in childbirth they were often superintended and supervised by the doctors who were always Rabbis.

A. H. Israels¹ quotes a passage from *Qōdāshīm* from which it appears that a man has taken part in a case of version. He also refers to the fact that doctors have made examinations in difficult confinements. In accordance with this, one is obliged to assume that when they examined they were also active throughout the confinement. According to J. Fischer, there is no mention in the Bible of any malformations unless we include hypertrichosis and also the polydactylism of the giant in 2 Sam. xxi. 20. The theory of shock in pregnancy has its oldest basis in the tale

of Jacob and his flocks. The woman who has given birth to a boy is to be regarded as unclean for 7×33 days, but she who has brought forth a daughter for 14×66 days.

Since the examination of the genitals is also often undertaken by men among the Jews of the Talmud, Israels¹ says: "that they differ in this respect from all the peoples of antiquity for with the others this was always done by midwives." This opinion of Israels¹ is erroneous, since, states M. Bartels, he has not taken into account the ancient Hindus, etc.

3. METHODS USED IN PERSIA AND INDIA

As long ago as the year 1909, von Reitzenstein began a chapter on Iran with the following words: "Ancient Persia within the time of recorded history—at least from Darius onwards—already represents a theocracy in the fullest sense of the word and therewith is a declining state." Culturally, too, no fresh progress is perceptible since the priesthood—as is the case wherever priests govern—endeavoured to isolate the country as much as possible, a mode of action which we have already seen with the New Kingdom in Egypt and with the Hebrews, and which we shall see again with the Hindus, the Chinese and in Christendom. This activity of the priests made marriage above all a religious matter, and so it must not surprise us that the love-life could have no great development. This is here of some importance, for Persians and Hindus were very active as regards sex. The religion * of Zoroaster originally appertained to a very small area, and may have had its original home in North-West Iran, whence it spread by degrees. The priests must thus have had two interests: the elimination as far as possible of foreign influences on the tribe of believers by showing strong preference for patriarchal endogamy, and the encouragement of large families to increase the number of supporters of their teaching. These two fundamental motives pointed the way for the development of Iranian marriage. But since here as always in priestly rule these ideas were pushed to extremes, they could only have an apparent success, and it is not going too far to assert that all the Persian States were more or less ruined on the sexual and woman's question because the leaders did not understand how to keep the priests at a distance. . . . Thus, it is not surprising that, in spite of the very strict religious rules, sexual intercourse was fairly free, and, according to *Vendidad* (XV., 29), it appears that illegitimate births were not rare, and in these cases abortion was very common. The Avesta religion, like all such religions, fought against this; but obviously without success, for it is seen from *Vendidad* (XV., 9) that people were satisfied with having prohibited abortion. . . . The circumstances were, as with us, the outcome of superstition. Extra-marital intercourse was not penal (which goes without saying), but the girl who became pregnant through it was despised (see v. Reitzenstein²⁰). Hence, it was to be expected that far-reaching regulations were made by the priesthood for the religious, narrow-minded and nationally inclined Persians under the pressure of this idea of guilt.†

* The Zend-Avesta is the sacred writing of the Persians, the oldest preserved manuscripts of which derive from the thirteenth century A.D.; in their elements, however, they go back to the great reformation of the old Iranian faith by Zarathustra (Zoroaster), about whose lifetime there has been much dispute. Certainly we must not put him before 700 B.C., but whether, as has been maintained, King Vishtāspa is equivalent to Daragavausch (Darius) is very doubtful, since the reformation is too great an event to have been passed over by the Greek writers. Cf. also Ed. Meyer, *Gesch. d. Altertums*, Stuttgart, 1907; A. V. W. Jackson, *The Prophet of Ancient Iran*, New York, 1899; and the same author's *Zoroastrian Studies*, New York, 1928.

† [Certain of von Reitzenstein's conclusions may seem to be open to question.]

The pregnant woman is placed under the special protection of the law. The father of the child, whether the mother is married or not, is legally obliged to take charge of the pregnant woman in every respect. The period of pregnancy lasts nine months. At the end of pregnancy the child turns itself downwards. For the delivery the assistance of 10 women is necessary ; five of these to superintend the arrangement of the cradle ; one for helping at the left shoulder ; one at the right ; one to support the neck ; one to hold the woman in childbirth fast round the middle ; and, finally, one to receive the child when born and to divide the umbilical cord. The woman in childbed is regarded as unclean for 40 days ; during this period sexual intercourse is forbidden, and it is even regarded as a crime deserving of death if the woman suffer harm by it. . . . The ancient Persians speak of male and female seed. If the male seed is the stronger, then a boy is conceived, in the reverse case, a girl ; but if the male and the female seed are equally balanced, then twins and triplets are the result. From the description of the female seed, we must conclude that by it is meant the menstrual blood, of which the part not used in conception passes over into the vessels of the woman to be transformed into milk after the birth. In the so-called traditional literature of the Persians, embryological questions were apparently treated in detail ; however, only the statement of the contents of the chapter have been preserved.

The first information we possess as to the cultural life of the ancient Hindus comes from their sacred books, the Vedas, which are supposed to date from about 1500 B.C. About 2000 B.C., Hindus, still linked with similar tribes of Iranians, were, perhaps, settled in Iran. Even at that time they were doubtless possessed of a certain knowledge of medical science, and they had also a special caste of doctors, as appears from the Rigveda. Their treatment of diseases was still much intermingled with hymns and formulæ of exorcism.

A delay in delivery was, as von Reitzenstein always emphasised, ascribed to the malicious attacks of a demon. In the Rigveda, an exorcism is preserved which is supposed to drive away this demon and make his evil influence harmless. For example, one passage reads :

“ May Agni, the destroyer of Raksha, joining in this prayer, drive away the disease of evil name which dwells in thy womb and bowels.”

Of Indian ideas J. Fischer states that “ of pregnancy as such, we find that its duration of 10 lunar months was known. Numerous regulations of the books of ritual are concerned with the ceremonies which are intended to serve the purpose of guaranteeing the normal issue of pregnancy. They are chiefly directed against those demons or evil spirits of which people believed that they bring danger to the child in the womb, to which assumption experience of the dead or deformed children may easily have led. The characterisation of these demons as double-mouthed, fingerless, hunchbacked, etc., argues in favour of this supposition. The foetal movements are known also as labour pains.”

That in the oldest literature the “ wind ” plays a certain part, a part which with the old Hindu doctors, dominates the whole of physiology and pathology, is proved by passages where the wind is spoken of as “ he who is destructive to the attainment of descendants,” or “ he who kills the children in the womb.” . . . The Hindus apparently had no actual gods of birth. The menstruating woman is regarded as unclean, so that people are not allowed to sit beside her. Blood shed at deforation is understood. Of women’s diseases, only sterility is mentioned, the cause of which is assumed to be “ sealing ” spirits ; but along with incantations and exorcisms, specifics for promoting conception were also in use, as appears from the mention of an “ embryo-creating potion,” or of “ herbs and plants ” which are supposed to help to attain the “ production of a son.”

At a later epoch, we find the priestly Brahman caste provided with a considerable store of medical knowledge, and they already possessed considerable surgical and obstetrical skill. This caste was held in great esteem ; their pupils were regularly instructed, partly from the practical side and partly from text-books, and,

moreover, by teachers who had the necessary scientific, technical and moral qualifications. Besides these, there were assistants for performing minor operations as well as midwives.

From the old text-books of these priest-doctors, some of which have been preserved, we get information on their knowledge and activity. The oldest of them is Charaka, which has only to a small extent been translated, and it appears to contain nothing about the procedure at labour. On the other hand, Suśruta's Ayur-Veda (Book of Life) containing the discourses of Dhanvantara, acquaints us, not only with ancient Hindu medicine, but also with an already widely developed midwifery which, according to Häser, is quite equal to that of the Hippocratic school, although the Greek physicians were far better informed as to the structure of the human body than the Hindus. As Hessler's Latin translation of this remarkable book is somewhat incomplete, the fact that the Sanskrit scholar Vullers took the trouble at a comparatively advanced age to study medicine in order to translate the obstetric part of Suśruta's Ayur-Veda into German, merits much gratitude.

The period from which the work of Suśruta comes has long been placed too early by many (by some 600 years, and by Hessler 1000 years B.C.), whereas the careful Hindu archaeologists think that this important source came into existence in the period after the birth of Christ. Stenzler² seeks to prove that no century can be stated, even conjecturally, but he has no doubt that Suśruta's work might have been written a few centuries after Christ rather than in the tenth century B.C., and would have it borne in mind that the Hindus themselves concede to the work a comparatively late place in medical literature. It would not surprise him if it were to be proved that the system of medicine expounded in Suśruta has borrowed much from the Greeks. To-day we are, perhaps, in a position to state more precisely, with J. Fischer, that on the strength of the latest results of research, Suśruta is put in the sixth century B.C., and Charaka in the second century A.D.; whilst it is vouched for in the Bower manuscript discovered in Chinese Turkestan that it was put into writing in the years A.D. 350-370.

It is important that the approximate date of origin should be determined in order to decide the question how far other nations could have drawn their medical opinions from this source.

E. C. v. Siebold, in his *Versuch zur Geschichte der Geburtshilfe*, has said "that throughout antiquity, help in parturition was left in women's hands only." This is not correct, for it is clear from Suśruta's writings that the Hindus called in doctors to help in confinements. Vullers believes that only deliveries proceeding normally were presided over by midwives, but that doctors were called in in abnormal confinements in order to perform the necessary operations. That proves to be true, for we see from Hessler's translation that the service of the midwives was much more limited, and that the doctors seem to have taken charge even of the normal confinements as well. For everywhere, even in the performance of little matters during normal parturition, a doctor *only* is mentioned, e.g.: "Tum parturientis telum internum medicus inungat." In this and in similar cases, Vullers always translates "medicus" by midwife. According to Hessler's translation, female help is confined merely to four women who are *partui habiles*, i.e., stout-hearted and of ripe age, and whose nails are cut, standing round the woman in labour (*parturientem circumgrediantur*) and one old woman (according to Vullers, one of the four) urging the woman in labour to press down.

J. Fischer states that numerous were the indications of the approach of delivery. Among these we find the sinking of the belly, a feeling of heaviness in the abdomen, frequent passing of

urine, and a mucous discharge from the genitals. For expediting parturition, along with walking about and pounding in the mortar, medical specifics are also recommended : liniments, fumigations, sternutaments and amulets as well. The head of the child moves downwards only at the end of the dilatation period, which is indicated by pressure on the bladder and greater frequency of the pains. At this stage the woman is to be laid on the bed, the women round her have to give her strict injunctions not to press down without pains : they say pressing down without pains is not only useless, but might also have injurious effects on the child, which might then come into the world deaf, dumb, deformed or diseased. The division of the umbilical cord is done by tying the cord eight fingers' breadth from the navel with one end of a thread ; the other end of the thread is then passed round the child's neck. After the tying, the division is done above the ligature.

Vullers calls these four women midwives, and has " one of these " and not the doctor (like Hessler) take charge of the anointing of the genitals of the woman in childbirth. Now, whilst Vullers has the doctor appear only when the course of the birth is interrupted, in this case, according to Hessler,² a senior doctor is called in by the obstetrician for consultation :

" Idcirco protomedicum consulendo et summam operam dando rem peragat " (Hessler,¹ II., p. 111). Hessler² (Fasc. II., p. 65) says in explanation : " Vocabulum *ad'hipati* superiorem (*ad'hi*) dominum (*pati*) denotat. Quis vero in medendi arte summus sit dominus, facile est intellectu. Mihi quidem memo alius, nisi *protomedicus* esse videtur. Alibi *ad'hipati* est princeps, penes quem est summa civitatis potestas ; imo vero et summus *Deus* ipse, Si quis igitur *Ad'hipatim* hoc loco summum *Deum* (*Brahma*) esse mavult, qui sit invocandus, equidem hanc sententiam non prorsus impugnabo." Thus, one sees that Hessler himself has no quite definite opinion in the matter. That there may be a question of a *protomedicus* here is very possible, for the reason that there was in fact a higher and a lower rank of doctors among the ancient Hindus. Hessler says in his *Comment*, Fasc. II., p. 4 : " Quamquam antiquissimorum Indorum medendi ars habebatur religionis pars, et medici, religiose inaugurabantur, attamen non soli *Brahmanae*, sed etiam homines inferioris ordinis (*kshattriya*, *Vaisya*, *Sudra*) mysteriis medicinæ initiari licebat, in quibus animi corporisque indoles egregia quaedam et praeclara, et ad hanc artem exercendam apta erat conspicua. Quisque autem e superiori ordine quemque ex inferiori inaugurare potuit." That these subordinate doctors were also employed at confinements is clear from the fact that Suśruta calls the birth house *Conclave Brahmanarum, Kshattriyarum, Vaisyarum et Sudrarum*.

Then, if we are to follow Hessler's translation, all births are managed by doctors. This is not improbable. For the Brahmans, who, as already mentioned, were at the same time priests and doctors, had, to be sure, what Vullers does not mention, namely, a special "*Conclave obstetriciale Brahmanarum, Kshattriyarum, Vaisyarum et Sudrarum*," in which they received pregnant women in the ninth month. It may be assumed that this specially arranged birth-house which " custodiis et faustitate praeditum," that is to say, in a sense *consecrated*, was for the purpose that women in confinement and lying-in could be secluded from the world and free from all disturbances in diet, and might be specially watched over, delivered and given treatment by the Brahman physicians. This arrangement was obviously a religious one strictly observed by the priestly caste, as is clear from Suśruta's description.

J. Fischer, giving more details, states that " if in the treatment of a pathological birth incantations and medicines are unsuccessful, then manipulations must be resorted to. This must be undertaken only by an expert, and even then only with the greatest caution and presence of mind. If both legs are presented, then the foetus is drawn down by them ; if only one leg is presented, then the other is stretched out and the child drawn downwards ; in breech presentations this is pushed upwards and the foetus drawn out by the feet ; in transverse presentation the head is turned downwards and the child then drawn out. The same happens when the

head is turned sideways and in the presentation of one or both of the arms. In the two last "irremediable" presentations the knife is to be resorted to. With this, the skull is first cut up, the skull bones are then carefully removed, and the child extracted with an instrument applied to the breast or shoulder. If the head is not cut up, then it must be grasped by the cheeks or eye-sockets and drawn out. If the shoulders have stuck fast in the birth passage, the arms of the foetus are to be severed and it is then to be extracted. If the child's abdomen is swollen up like a leather bag, it is perforated, the intestines are extracted and then the child drawn out. The *sectio Cæsarea post mortem* was very probably performed by the old Hindu doctors. Bhishagratna points out that Cæsarean section also in the living cannot have been unknown to them, and in fact it may have been performed in cases of eclampsia, which Suśruta describes clearly. The after-treatment of the woman operated on was considered of great importance."

The priest doctors thus appear to have managed the parturition personally, and also the whole confinement, as they did the act of consecration of the child's nurse, which took place on a Monday. The consecration of the nurse with the required blessings is cited also in Suśruta's text, like all the other acts of the doctor, and he expressly assigns the naming of the child to its father and mother. Vullers, who in previous sections of his text has had only "midwives" in evidence, writes (without stating why he now changes the persons) of the functions of the nurse: "The nurse was initiated on a lucky Monday," etc., so that, according to his description, it is not clear who exactly undertook the inauguration. The reason why Suśruta described this act so thoroughly for his colleagues can only have been that it also was one of their functions.

The arrangements for the approaching delivery began in the ninth month of pregnancy. The women, at least those of higher castes, were brought to the hut built for the confinement. In this period they had to drink a great deal of gruel in order to promote the expulsion of the child. The delivery took place with the assistance of four women at the lying-in bed. The umbilical cord was tied four fingers' breadth from the abdomen, divided and fastened round the child's neck; the dilatory afterbirth was removed by external pressure and by the mother's body being shaken by a strong person. They attempted to achieve the same purpose by tickling the pharynx.

After the delivery, the mother and child were washed: the first part of the mother's milk was not considered fit to use. The woman in childbed was, after a month and a half (according to others, with the reappearance of menstruation), declared "free from the uncleanness attached to her during confinement." In difficult deliveries, fumigations with evil-smelling things, the skins of the black snakes and similar things were employed.

Suśruta also gives his opinion on disturbances in the process of labour and the means of removing them; but we may pass over this here as we have to revert to them later.

The Hindu doctor had a number of duties which could only be carried out by reason of a wealth of experience: in any case, this experience was gained because the priest-doctors were permitted to manage a great number of parturitions and to make them the foundation for their further methods of treatment.

Since these doctors belonged to the priestly caste, it will not appear surprising that a prescribed ritual of hymns and prayers accompanied their actions as doctors.

The Hindus themselves set the origin of their healing art in a mythical period. Their god Brahma is said to have written the first work on medicine, then followed Daksha, the Aśvins and the god Indra, each of whom imparts the art of healing to the others. From the last named a man Atreya was the first to receive it and it was transmitted by him to Agniveśa, Charaka, Dhanvantara and Suśruta. We see that legend gave the oldest teachers of medicine the names of gods, that the original principles were transmitted from pupil to pupil, and that these pupils

also probably added independent new material. Nevertheless, it may be assumed that the Brahman caste to which these pupils belonged in general kept to certain methods of obstetric practice, and that, in particular, the teaching of the two doctors, Dhanvantara and Suśruta, was very widespread among the Hindus.

At the time when Suśruta's work was written the midwifery of the Hindus was still in process of development, for we find that Suśruta, or his master Dhanvantara, upset a few traditional dogmas (as, for example, those on the presentations of the child), and replaced them with better opinions of their own. Here we are looking at a science of obstetrics which has progressed from hoary antiquity and is still continuing its progress. Suśruta, however, not only gives fairly thorough dietetics for women in pregnancy, in childbed and in childbirth, as well as a pathology and therapy for their ailments, but he also gives the manipulations necessary for carrying through parturition in faulty presentations of the child, and appropriate prescriptions for perforation and the removal of the brain; he is even, as we shall see, acquainted with Cæsarean section *post-mortem*.

On the question of abortion, which plays a very special part among the Hindus, J. Fischer says: "Two particular sub-species of abortion which are said to be caused chiefly by errors in diet are mentioned: 'in the one case 'the fœtus, since its strength has drained away, no longer grows; it stays attached for an excessively long time'; in the other form, 'it shrivels up, and remains attached for a very long time and is without movement.' In both cases we must suppose a missed abortion; yet Suśruta cites specifics for the latter form which make the fœtus grow again. Among these the use of immature embryos as a kind of organotherapeutics is recommended. Of phantom pregnancy, Suśruta says that illiterate people ascribe it to the injurious influences of the *Naigamesa* (a demon specially dangerous to children)."

In sharpest contrast to the ability of the ancient Hindus is, as we have seen, the practice of midwifery among the Hindus of the present day. With them we still find the invocations of the gods during parturition, an exceedingly strict diet and the giving of spices, as formerly, in childbed. But the lying-in institution of the Brahmins is now changed to a miserable lying-in hut, and, in place of the experienced doctors, ignorant women have appeared with their thoughtless interference, which is not seldom very disastrous for the women in labour.

As Buddhism penetrated into India, the influence of the learned Brahmins was gradually lost; but the old legend of the Buddhists still says that when Buddha was born Brahma and Indra instituted the service of midwives. Here, no doubt, we have an echo of the recollection that it used to be men who assisted women in childbirth.*

4. METHODS IN MIDWIFERY USED IN ANCIENT EGYPT, BABYLON, ETC.

The assistance of midwives was called in at a very early period. We learn this from the Bible, where it (Exodus i. 19) runs: "The Hebrew women are not as the Egyptian women; for they are lively and are delivered ere the midwives come in unto them." That would, of course, be no proof, but fortunately we are otherwise tolerably well informed about both peoples. In Egypt professional midwives seem to have been employed, since the honorarium for services consisted, according to Stwolinski, of 10–15 lb. of barley.

* According to another version Buddha was born with Maya's assistance.

We have no precise information as to whether the priests who practised the healing art also practised midwifery. Danz thinks it very probable, but his opinion is based only on the fact that Celsus, Galen and physicians and surgeons like Philoxenus, Ammonius, Alexandrinus, Sostratus, Georgias, etc., mention that the surgeons may at the same time have also practised midwifery, and that Hermes Trismegistus and Cleopatra also wrote books about diseases.

The whole of the healing art lay in the hands of the priests, each of whom practised a particular speciality. With the burning of the great library at Alexandria by Christians, a great part of the sources and records of medicine was lost to the scientific world. Some of their literary works, however, have been preserved (Papyri in Berlin, Leipzig, Paris, Leyden, etc.), of which one of the most interesting is the Ebers papyrus in the University Library at Leipzig, which dates from the middle of the seventeenth century B.C. and contains many prescriptions for women's diseases among other things. We shall append here some information from J. Fischer, for he gave so excellent a summary of the chapter concerning ancient Egypt that we should like to impart some of the details to our readers.

One of the oldest-known medical papyri is exclusively gynæcological. It comes from Kahun, where it was discovered in 1899,* and a computation of the date is given us in so far as we know that this town was built towards the year 2200 B.C. and destroyed again in the year 2100 B.C. The obstetric content is confined to particulars for the recognition of whether a woman is to be pregnant or not and whether she is already pregnant or not respectively. The basis for the rules for the establishment of the diagnosis—the text is very fragmentary—appears to be the condition of the breasts, the possibility of causing vomiting, the investigation of muscleirritability and the condition of the colour of the face; then follows some manipulation with a bulbous plant, and, finally, there is not lacking a mere formula of exorcism, which, however, is the only one in this papyrus. . . . As regards time, the Ebers papyrus ranks with the gynæcological Kahun papyrus. It was written about the year 1550 B.C., but in its compilation and editing may be dated back to the year 1900 B.C. Five columns of this papyrus deal with obstetrics and gynæcology. The obstetric rules and prescriptions relate to the acceleration of parturition, to the methods of producing abortion, to the determination of the quality of the milk of a nursing mother, to the affections of the female breasts, and, finally, to the birth prognoses for the new-born child, which depend upon the nature of its first cries and its way of holding its head, all circumstances in which a medical adviser was consulted, although midwifery itself was still entirely in the hands of the midwives. . . .

Here, too, it is difficult to distinguish the individual gynæcological diseases, but an advance on the Kahun papyrus lies unmistakably in the fact that local affections of the genitals are more clearly given, from which we may assume a closer observation of nature and more thorough methods of investigation. We hear of inflammation of the vulva, of pustules which have arisen in the vagina, of affections of the labia pudendi, swellings of the vaginal orifice, of hæmorrhages, discharges, etc. A case is described of "a woman who lived many years without menstruation having set in"; further, there is mention of methods of making the uterus of a woman "go into place." It is questionable whether here we are to suppose that prolapse is meant, or similar ideas to those in the old Greek teaching of the wanderings of the uterus. While the Hearst papyrus has only surgical contents, the great Brugsch medical papyrus (Neter-Hetep) of the Berlin Museum (Papyrus Berolinensis, 3038), which comes from the period about 1350 B.C., is of considerable gynæcological interest. Along with prescriptions for diseases of the mammary glands and contraceptive specifics, we find here a number of diagnostic signs of pregnancy, and further signs by which the course of the birth or the sex of the expected child can be ascertained. The signs of pregnancy are important historically because they are not only linked with the rules in the earlier Kahun papyrus, but also because some of them reappear about 1000 years later in the Hippocratic writings and also in Galen, and in the Middle Ages almost word for word or very little changed in form.

* See F. von Oefele.*

The fourth papyrus which is of importance for gynæcology is the London medical papyrus (British Museum, No. 10,059), which has been attributed to about 1200 B.C.

Girls in ancient Egypt who appeared to reach the age of puberty very early also entered into marriage very young, generally at the age of from 12 to 14 years. Ebers even found a nine-year-old mother. The excision of girls was regarded, at least in later times, as a preparation for marriage. Ploss has shown this in the case of ancient Egypt by a passage from a Greek papyrus, and it is attested further by St. Ambrosius (*De Abrah.*, Lib. 2) in the fourth, and Paulus of Ægina (VI., 70) in the seventh century A.D. With the great part which sexuality played in oriental life in general and of Egyptian women in particular, it is easy to understand that greater importance was attached to the care and cosmetics of the genitals than is the case even to-day. This is proved by the prescriptions for fumigations and fumigating pastes as well as for the scented substances for perfuming the genitals. Sexual anæsthesia seems to have been very widespread among the Egyptian women, as is suggested by a number of prescriptions. Thus "for increasing the love of the wife for her husband" it is recommended that the membrum virile be anointed with certain substances. [These may, however, be merely suggested means for heightening sexual gratification.]

The duration of pregnancy is known, for in the tales in the Westcar papyrus (from the

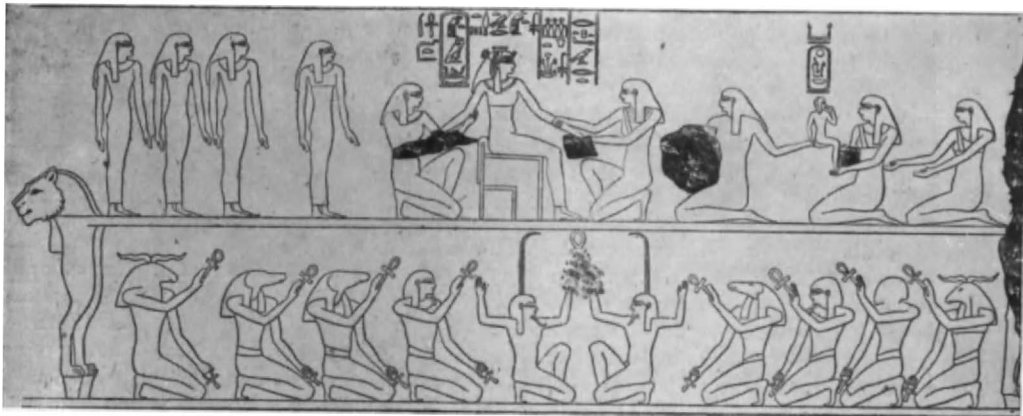


FIG. 713.—Egyptian birth scene. Luxor. (After Witkowski.)

seventeenth century B.C.) the date is reckoned in advance. Normal delivery is managed exclusively by women helpers, as the old Egyptian portrayals of birth show.

The parturition chair, which is mentioned as early as the Westcar papyrus, consisted in its simplest form of two bricks or stones. The so-called *lying-in houses* or *lying-in rooms* by the Egyptian temples (*e.g.*, in Deir el-Bahri, Luxor, Philæ, Denderah), the walls of which were adorned with portrayals of birth, prove that among the common people too the custom existed of having confinements in special houses, a custom which is still retained in Abyssinia at the present day. As proof that midwifery lay outside the scope of actual medicine the circumstance has been cited that none of the medical male gods, which the Egyptians possessed in great numbers, has anything to do with confinement. Isis is to be regarded as a goddess of birth, and the many representations of her with the little Horus in her lap indicates this. In her are later merged all the other gods connected with fertilisation and birth. With regard to lactation, Reinhard refers to a passage in the small Berlin papyrus which admits of the conclusion that in the ailments of the suckling baby medicine was given to the nursing mother, whilst an amulet was put on the child to encourage the secretion of milk in the mother, a procedure which Reinhard seeks to explain by assuming that the demon, which causes the mother's milk to dry up, is really inimical to the child. Abortion was extraordinarily common in ancient Egypt, as is proved by the numerous abortifacients in the Ebers papyrus. However, it would appear

from a passage in the Turin papyrus (55) that induced abortion, at least in the case of illegitimate pregnancy, was punishable. According to the records of the classical authors, twin births must have been particularly numerous among the Egyptians, and in the Westcar papyrus there is actually a record of a birth of triplets.

We now have more information as to how midwifery was practised among the rest of the ancient civilised nations of the Orient, among the Assyrians and the Babylonians.

It may be assumed as certain that people of such advanced civilisation will also have practised a very well-developed midwifery.

We learn of old Babylonian medicine from the statute book of Hammurabi, and

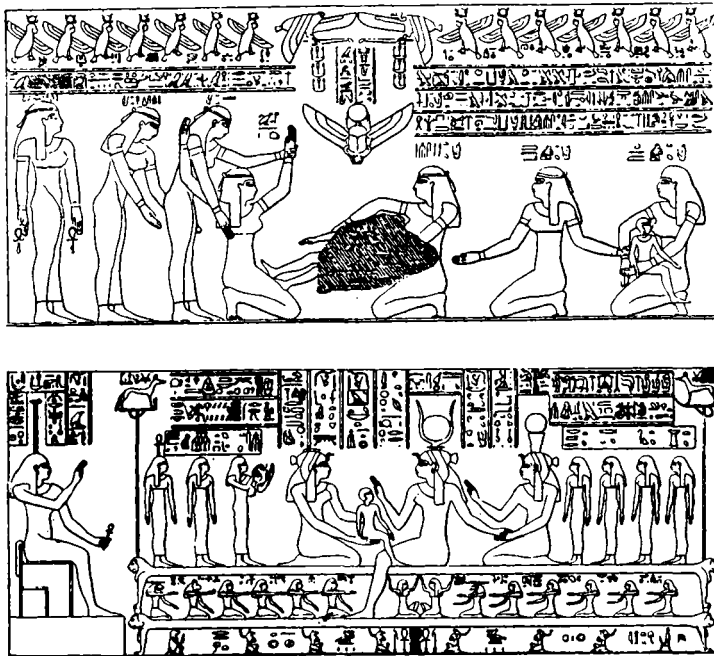


FIG. 714.—Egyptian birth scene. Upper, Erment; lower, Denderah. (After Weindler.)

still more from special texts in cuneiform writing, thus providing a quantity of valuable knowledge.

v. Oefele, in some of his works, has mentioned 25 tablets on births, as well as extracts, several specimens of which were found in the Royal Library of Nineveh. These are now in the British Museum. According to v. Oefele, the work began—and the beginning, as was customary at that time, conformed to the title—in both variations, with the words, “When a new-born child” or “When a woman is pregnant and labour sets in.” He considers, according to this, that these lines are the title of an ancient Babylonian text-book on prognostics of birth. So far very little has been deciphered; this much seems certain, according to some attempts at translation by v. Oefele, that in a few passages it treats of deformities in births (cleft palate, hare lip). Here, too, J. Fischer has made some remarks. He states that an exorcism text quoted by Zimmern shows us that the diagnosis of pregnancy, at least in its beginning, was known, for the omen texts expressly mention abnormally long pregnancies of 11–12 months. Of normal birth we hear very little. It is true that it is said of Ishtar in the Gilgamesh Epic that she cries out “like a woman in childbirth”; and in the Atarhases myth there seems to

be a legend of exorcism involved, which the women in advanced pregnancy or in childbirth had to recite, or have recited, and which in any case was supposed to serve the purpose of making birth easier. In this text, which is exceedingly imperfect and difficult to translate, a "brick" plays a part, a fact which is reminiscent of the "lying-in bricks" of Egyptian obstetrics. Assistance in confinements was given by a midwife, who was designated "knower of the inside," an expression similar to "*sage-femme*" and analogous to the physician as the "knower of healing water."

As we have said, the belief in demons (*labartu*, *ekimmu*, etc.) is of very special interest. Of them J. Fischer says :

"The birth of twins of the same or of different sex as well as recurrent twin pregnancy is known. Numerous passages in the texts containing omens are concerned with abortion, premature birth and hereditary constitutional weakness. As all diseases among the Babylonians and Assyrians are attributed to the influence of inimical gods or evil demons, so also it is said of Ishtar that, without her help, the fœtus dies before delivery, and of the demon Labartu that he tears the children from the womb of pregnant women. Mention is made in these texts of an occurrence extremely rare in pregnancy and parturition respectively, namely, *vagitus uterinus*. There, too, we learn of difficult labour, and also in the Etana Legend, although it is questionable whether an actual birth is meant in the latter case. In this legend, which has come down to us only in fragments, a 'herb of parturition' is also mentioned. The statement in the birth omens that the woman brings an 'insensible' child into the world suggests *asphyxia neonatorum*. The Babylonian exorcism texts, edited by Thompson, speak of death in childbed. For this death, as for the death of the baby, Labartu, a female demon, is held responsible, so that for this reason she has been called by Jastrow a 'gynæcological demon.' According to the description which is given of this demon we have to regard her as a demon carrying fever, and in particular features of the description we can almost get a clear picture of puerperal fever with all its symptoms which are so obvious even to the layman, and so alarming."

It is not surprising that among the peoples of the Near East, who had an interest in the rising generation for military and political reasons, child welfare was advanced. Fischer reports further that "the children were nursed by the mother or a *wet nurse*, and, according to some authorities, the suckling period must have extended to three years. Certain ceremonies of exorcism also suggest that they had knowledge of defective breasts. That the employment of wet nurses must have been fairly common in ancient Babylon seems likely from the circumstance that we find a special paragraph devoted to wet nurses in the Code of Hammurabi (c. 2300 B.C.). Mastitis is differentiated from cancer of the breast. A case of the latter is recorded where it developed in the breast of a wet nurse and caused her death."

Thus it is no wonder that people used all sorts of protective charms to ensure successful birth. For example, there were stone amulets against sterility, *molimina graviditatis*, and the risk of abortion; for the acceleration of the birth, and, finally, against galactorrhea. Also, in the old Babylonian legend of Ishtar's journey to Hades, mention is made of a "birthstone girdle" which Ishtar wears round her hips.

5. METHODS USED IN ANCIENT GREECE

As early as 1850 Welcker tried to shed some light on the measures which were in use in the realm of midwifery in ancient Greece. What there is in the Greek myths and sagas he collected for this purpose. But he forgot to penetrate more deeply into primitive methods of thought, which, to be sure, is a first consideration in such studies.

Information was also gathered on this subject by E. C. v. Siebold (I., 108 ff.). He points out that archæological monuments with sex as subject have, fortunately, now been found, and are sometimes no longer destroyed from prudery as in times now happily past, but are made

accessible for the investigation of one of the most important occurrences in civilisation, namely, the growth of human beings. [See Morgoulieff.]

In Plato's time (born *c.* 429 B.C.), that is to say, just after Hippocrates (*c.* 460 B.C.), women who were beyond the age of childbearing still acted as midwives; they themselves, however, had to have been mothers. So it was no doubt assumed that incidental observation of other women was not sufficient to qualify them for the profession of midwives: experience in their own persons as well was considered necessary.

Of a male assistance in birth, says Fischer, there is direct mention only in a tale of Hyginus (*Fab.* 274), according to which there were originally no midwives in Athens, since slaves and women were prohibited from practising the art of healing in any form, until the young woman Agnodice, in men's clothes, learnt midwifery and spread her knowledge abroad. She is said to have found her way into the lectures of Hierophilus, so that, finally, the doctors complained about her and she was summoned before the Areopagus. Thus Agnodice was instrumental in making instruction in midwifery open to women, till then excluded from it. This fable of Hyginus, however, is nowadays generally regarded as fiction. But there are expressions which argue in favour of male assistance in birth: ὁ ὀμφαλοτόμος, ὁ μαῖος, ὁ μαιευτής, which we come across occasionally. But there were unquestionably midwives in the very earliest times: ἡ μαῖα, ἡ μαιεύτρια, ἡ ὀμφαλοτόμος. Whether besides the ordinary midwives there were other kinds of higher midwives, women doctors, and special women doctors for women, it is difficult to decide with certainty, although we have expressions like ἡ ἀκεστρίς, ἡ ἰατρό-μαῖα, or ἡ ἰατρῖνη.

In Greek writers, there are two different names for midwives. This seems to suggest that two different classes existed. Under the μαῖαι one would comprise the ordinary midwives, whose business it was, among other things, to decide whether there was a pregnancy at all. The higher class comprises the ἰατρόμαῖαι, which means literally medical or doctor midwives. They had the privilege, like doctors, of making use of pharmaceutical remedies; also in certain circumstances they prescribed medicines to induce an abortion or a premature birth. It was also their business to pronounce hymns of exorcism for the furtherance of the confinement. In parturition the goddesses were invoked to whom the welfare of the women in childbirth was entrusted, such as Eileithyia, Artemis or Hera.

These midwives (unlike the philosopher) had not to determine whether the beings brought to light by an act of delivery were "really" children or not—real or counterfeits (see Plato, *Theatetus*). But still another privilege, which was of no small importance, appertained to them. That is to say, they had to determine which girl was for a young man the wife most fitted to secure the best offspring for him. Therefore the influential office of matchmakers was there also (Plato, *Theatetus*).

Hippocrates quotes a few more designations for midwives, which terms refer to their duty of dividing the umbilical cord. According to Plato (*Theatetus*), Socrates was the son of a midwife, brave and burly, whose name was Phænarete.

There was very probably no special theoretical instruction for midwives in ancient Greece. They acquired skill by experience in their practice. The expression μαῖα used for midwives signifies originally, it seems, any elderly woman or female servant of the household (*cf.* K. F. Hermann, p. 280). Osiander states that the old Greek midwives bound a cloth round the abdomen of the woman in childbirth and compressed it. The Lacedæmonian women are said to have been confined upon a shield. At a later date, besides the bed, a parturition chair was certainly used in Greece in certain cases. The midwife wrapped up the new-born child after she had

carried it ceremoniously round the domestic altar, and washed it amid religious ceremonies ; but the hardy Spartans scorned the wrapping up of the child.

Our knowledge of midwifery at the time of the height of the greatness of Greece comes from scattered statements in the works of Hippocrates (500–400 B.C.) which E. C. v. Siebold has collected. According to them, the help of doctors in parturition seems to have been summoned only in very rare cases. They therefore could not contribute much to the real advancement of the science of obstetrics. v. Siebold says :

“The few obstetric rules in the so-called ‘spurious writings’ of Hippocrates have regard only to an unregulated, crude procedure which might have belonged to an earlier period but about which our Hippocrates puts nothing in his writings.

“At the time of Hippocrates, the woman in childbirth was shaken to take the place of the movements lacking in the child ; likewise, in protracted deliveries, people tried to shake the child out of the womb by the position of the mother, who was bound fast to the bed with head downwards and feet upwards. In wrong presentation of the child the doctors managed to turn it on its head, and cut the child to pieces if this operation did not succeed. The umbilical cord was not ligatured and divided till after the expulsion of the afterbirth, and if this expulsion was dilatory, they gave sternutaments or tied weights to the umbilical cord or let the weight of the child exercise a pull on the afterbirth.” The material is more abundant in J. Fischer’s work, where there is an excellent description, from which we extract the following :

Some of the Greek physicians like Pythagoras and Democritus assign semen to the woman, for the woman has internal testicles.

And still more intricate is the teaching of the two authors Parmenides and Anaxagoras in a description which has come down to us. When the semen from the right side reaches the right side of the womb, or that from the left side goes into the left half of the womb, then males come into existence ; but if there is an exchange, then a female being is formed. Leophanes (or Cleophanes, according to Plutarch) is the only writer who speaks directly of the right testicle from which males, of the left from which females, are said to come (see Arist., *De gen. anim.*, IV., 1 ; Plutarch, *De plac. philos.*, V., 7).

Strangely enough, many ideas from these ancient times are still preserved in popular belief, and that of the non-viable eight-months’ child is one of the most interesting.

The view that children cannot be born alive in the eighth month is said to have been expressed first by Epicharmus (550–460 B.C.). Thus this view, still popular among the masses, is of very venerable age. The sources to which these observations of the Greek natural philosophers are traced back may be seen from Censorinus, who thus forms a link with the old “Chaldean” theories which are, no doubt, the Babylonian-Assyrian ones. Further, we see the development of the children in the right half of the uterus, then, finally, the theory first propounded by Empedocles that in the uterus the male embryo reaches full growth more quickly than the female. The name “ἀμνίον” for the delicate and soft foetal membranes comes from Empedocles (*ap Poll.*, 2, 223), while the name “χόριον” given to the tissue “in which the embryo grows and is nourished” appears, it is said, first in Antiphon.

According to the opinion of the Hippocratic school, the semen was a product of the whole body, but it came not only from the man but also from the woman. This had to impregnate “the uterus.” Strange to say, man as well as woman can secrete both, *i.e.*, the kind of semen depends on the child, in the one case it was male and in the other female. The mixture of semen forms membranes, and absorbs a substance with which, at the same time, blood is absorbed from the mother and this forms the flesh. Boys are completely formed in 30, and girls in 42 days. Thus, quantity as well as quality play a part. Then come the nourishment of the mother, the place where the growth takes place (especially the right or left side of the uterus), the source of the semen whether from the right or left testicle and, finally, the time of conception and its relation to menstruation.

Plato has somewhat different ideas. In the *Theatetus* he tells about midwives ; in the *Timaeus* he says that the uterus “is an animal within them [*i.e.* women] desirous of procreating

children, and when remaining unfruitful long beyond its proper time gets discontented and angry, wandering in every direction through the body, closes up the passages of the breath, and by obstructing respiration drives them to extremity, causing all varieties of disease" (p. 514). Plato considers the semen a product of the spinal cord, and it sounds like a premonition of the existence of the spermatozoa when he says "that desire and love, like little animals in a field which, owing to their smallness are invisible and not fully developed, sow seeds in the womb and separate again, feed to full growth within the womb and then, conveying them to the light, complete the generation of the living being (*Ib.*, p. 514).

It is of great importance that Aristotle (*fl.* 350 B.C.) knew approximately the nature of the semen. That is to say, he admits male semen only, and ascribes to it the impulse to development in the embryonic child, but not the supply of substance for growth, which the menstrual blood exclusively supplies. Sex is determined by the male principle already contained in the semen. "If this is not strong enough, then the opposite must necessarily come into existence and the opposite of man is woman" (*De gen. anim.*, I., 13, etc.).

Menstruation lasts at least three days, but, in most women, still longer; at the beginning and end the discharge of blood is less and thinner: in healthy women the blood is "like that of a sacrificial animal" and flows quickly. The measurement of the quantity of blood discharged was undertaken by the Hippocratic school; it amounts in a healthy woman to two Attic cotylæ.

As regards the position of the fetus in pregnancy, the Hippocratic school supposes that up to the seventh month of pregnancy, the fetus is in the position of breech presentation, whilst the head is held fast above by membranes which proceed from the navel; but that, in the seventh month, these membranes are loosened or ruptured, and thus the fetus comes to lie with the head downwards. By this change of position (*culbute, inversio fetus*, etc.), not only the mothers but also the children are affected, and as a result of this, children born in the eighth month are not born viable.

The opinions of the followers of Hippocrates with regard to the duration of pregnancy are very diffuse, and in individual writers not consistent. It amounts to 280 days, which are split up either into 7×40 days (7 τεσσαρακοντάδες), or into 4×70 days (4 groups of 10 weeks). But seven months' children are also "in order," since a pregnancy of 210 days corresponds to three groups of 10 weeks, and, in this time, the child is already completely formed. More complicated, however, are the statements in other passages when a pregnancy lasting 182 days, on the one hand, and a 10 months' pregnancy, on the other, are discussed. Pregnancy cannot last longer than 10 months, however, because at this time the alimentation supply to the uterus for the fetus is no longer sufficient, and the child, as a result of nourishment, gets into violent movement by which means the foetal membranes are ruptured and delivery takes place.

Herophilus of Chalcedon, in Asia Minor, belongs to a later period (about 335–280 B.C.) and was a brilliant teacher in Alexandria. That he was much occupied in practice as an obstetrician emerges from the fact that he knew how to diagnose pregnancy from the condition of the *os uteri*, gave his attention to the theory of the movements of the child, and raised the question of killing the fetus, etc. He is (even if only in legend), and certainly without intention and knowledge, the first instructor of midwives (*cf.* the tale of Agnodice).

A fragment of a speech by the famous orator Lysias has come down to us, in which the problem of abortion is broached, and the main issue examined: whether the fetus is already an animate being or not. For this purpose, according to Lysias, authorities, doctors, physiologists and philosophers are to be consulted. According to Galen, prohibitions in regard to abortion are said to have been issued by Solon

and Lycurgus, which statement, however, is contradicted by passages in Plato and Aristotle, according to which abortion for the purpose of limiting the population was permitted.

Alexander the Great, by his extensive campaigns, brought Europe into close contact with the peoples of Asia. His great army reached India. But that did not suffice to convey the obstetric knowledge and skill of this great civilised race to the European peoples. Moreover, no influence on the midwifery among the leading nations of Asia, the Hindus, Chinese and Japanese, can be traced to the invasions of the Greeks.

6. METHODS OF MIDWIFERY USED IN ANCIENT ROME

The Romans, as is well known, owe their civilisation to the Greeks. This is true also of their knowledge in obstetrics, and even in later times, Greek women often came to Rome as obstetricians. They formed a special class, the *nobilitas obstetricum*. They also treated women's diseases, acted as experts in legal cases, and probably had obstetric practice entirely in their hands. At the time of Celsus, however, they also consulted experienced doctors, at least in difficult cases.

Asclepiades of Bithynia (born about 130 B.C.) is again very important. From his school comes the first extirpation of the uterus. According to Soranus, it was observed by Themison of Laodicea that the uterus could be taken out without injury.

One of the most important doctors of that period, however, was Soranus of Ephesus (beginning of the second century A.D.). The original work of Soranus had also illustrations (especially with representations of the fœtus), later copies of which have been preserved (*cf.* Figs. 637, 638 and 715), showing presentations of the fœtus from the Codex Hafniensis, twelfth century). The Brussels Moschion manuscript (*circa* A.D. 900) also belongs here (*cf.* Fig. 326). In the second book of Soranus at the end, the use of the uterine speculum, a two-leaved instrument provided with screws, is shown (see Buchheim).

Caelius Aurelianus (perhaps about fifth century A.D.) also translated from him ; and a small translation of a kind of catechism by Soranus was made by the above-mentioned Moschion, a work which was to make the teaching of Soranus more popular with midwives. It is of interest also that by the later Aretaeus, the uterus was designated as an organ "almost animate." As to the other important physicians, such as Galen, Celsus, etc., readers may be referred to Fischer's treatise.

Moschion's book for midwives defines the midwife as follows :

"Mulier omnia, quæ ad feminas spectant edocta, immo et artis ipsius medendi perita ; ita ut illarum omnium morbos commode curare valeat."

Soranus requires the following qualities in a woman who is going to be a midwife :

She must have a good memory, be industrious and patient, moral so as to inspire confidence, be endowed with a healthy mind and have a strong constitution ; finally, she must have long, delicate fingers with nails cut short. But to be a good midwife, an *ἀρίστημαῖα*, according to Soranus, involves still other excellent qualities. She must have theoretical as well as practical training ; be experienced in all branches of medicine so as to give dietetic as well as surgical and pharmaceutical prescriptions ; so as to draw correct conclusions from what she observes, and to be able to attach the proper importance to the relationship of the individual phenomena

of the healing art. She must encourage the patient by cheerful talk, help her sympathetically, be unflinching in any danger so as not to lose her head when giving advice. She must, besides, already have given birth to a child, and must not be too young. She must be decorous and level-headed, very reserved, as she participates in many secrets of life, not avaricious so that she may not cause trouble by being insulting in order to get money; and not superstitious so as not to mistake the true for the false. Further, she must see that her hands are soft and tender: and

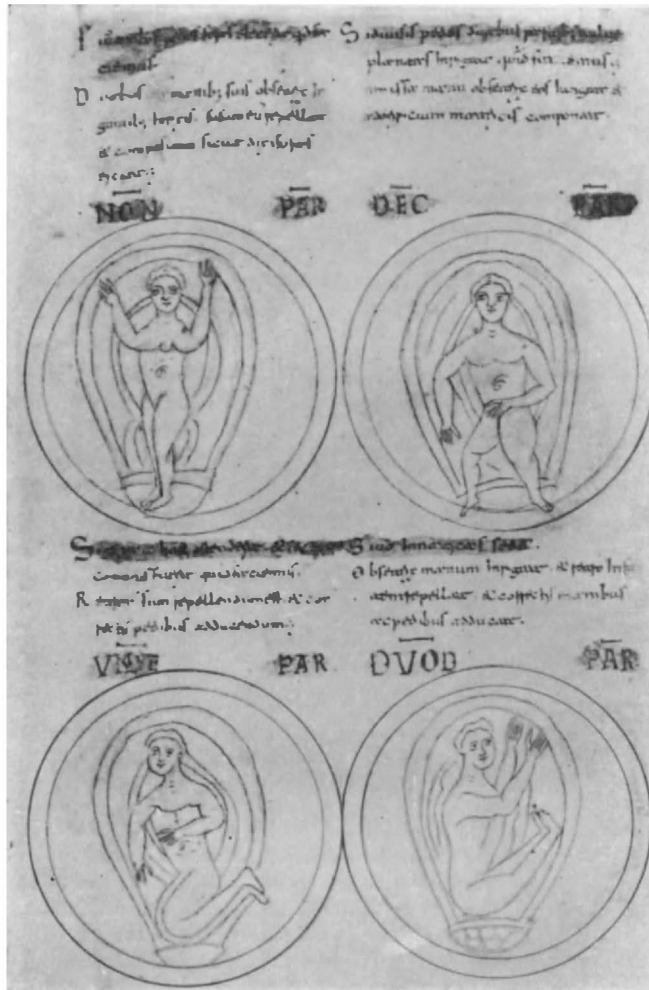


FIG. 715.—Fœtal positions portrayed in the Codex Hafniensis of about the Twelfth Century.

she must not do work to make them hard. If they are not soft naturally, then they must be made so artificially by softening ointments.

As with the Greeks, so also with the Romans, special gods were invoked for support during delivery, in Rome, Lucina, Postverta, Mena, etc. These have already been discussed above (Vol. II., p. 544).

Midwives, at least in late Roman times, considered it necessary to enlarge the os uteri; and in protracted labour they dilated the os artificially. This emerges

from the works of Moschion which give very detailed instructions for all these manipulations.

The same author gives instruction for the assistance of the midwives to accelerate the expulsion of the child by pressing the mother's abdomen downwards. The umbilical cord was not ligatured and divided until the afterbirth had been expelled. For the division of the umbilical cord in earlier times, a piece of wood, broken glass, a sharp cane or a hard bread-crust was used. The use of scissors and the ligature of the navel cord came from a later period.

The midwives were acquainted with examination by inserting the hand. For the expulsion of the afterbirth, sternutaments seem to have been used; weights were hung on the navel cord for the same purpose. Moschion opposed these measures. If the removal of the afterbirth was not possible by inserting the hand, then it was allowed to stay and decay.

Soranus of Ephesus, still earlier than Moschion, composed a work on the diseases of women.* By his writings, he substantially advanced obstetrics. He knew, and in many respects diagnosed correctly, obstructions to delivery; prescribed the proper dietetics of pregnant women, women in labour and in childbirth; and in normal and abnormal parturition, used a parturition chair which he describes in detail and as an apparatus long in use. With regard to retention of the placenta and disturbances in the process of labour, great experience is shown in his works. He is familiar with the various presentations of the child; he is acquainted with the rearrangement of parts of the child which have fallen forward, turning the child on its feet, the dilatation of the os uteri and dismembering of the child. He asks that, besides the midwife, three more women should give help to the woman in labour, two at the sides, and the third at the back, so that the mother may not move from the proper position. At the same time, these must help her to bear the pain by talking to her.

Later writers on obstetrics—Galen (A.D. 130–200), Philumenus, Aspasia and Aetius (A.D. 550)—depended on these practices and doctrines, and others joined them but contributed very little more to the improvement of obstetrics. The activity of these writers is all the more worthy of recognition, since their practical sphere of influence was limited, as they were called in almost only in deliveries in which they could no longer observe the regular processes of nature. Of the writings of Aspasia, unfortunately only odd parts have come down to us.

In the first of Moschion's books, which deals with conception and delivery, he made use of the *Responsiones* of Caelius Aurelianus, plagiarised from Soranus. In the second, which discusses the diseases of women, he used the principal gynæcological work of Soranus and appropriate sections of an unknown work (*Triacontas*) comprising 30 books on medicine as a whole. The catechism form of the first part is, in the second, used only in the chapter on difficult labour. Moschion was probably an African living in the sixth century of our era.

His work, originally written in Latin, was first translated into Greek in the fifteenth century; since then this translation has been regarded wrongly as the original writing of a Greek Moschion. Our illustration (Fig. 326) comes from the Brussels Moschion manuscript.

In conclusion, Paulus Aegineta must also be mentioned. He lived between A.D. 625 and 690, and surpassed his contemporaries considerably in his scientific knowledge. He was educated in Alexandria, and spent most of his life in Egypt and Asia Minor. The Greeks, as well as the Saracens, who preferred to call him "the obstetrician"—*Al-cawa-beli*—esteemed him very highly, and midwives came

* Cf. Pinoff in Henschel's *Janus*, 1847, II, p. 735, and the editions of Soranus' book by Ermerins. Also T. Goerlitz, "Über die Bedeutung des Soranus als Geburtshelfer." Berlin, 1873.

to him from remote places to get advice and instruction in difficult cases. He already used the uterine speculum for the diagnosis of diseases of the uterus.

7. MIDWIFERY IN ISLAM

With the decline of the Roman Empire, and, above all, of its civilisation, much knowledge and ability were lost in the West. Christianity was hostile to it; a revival of the arts and sciences first came from Arabia. As Islam gradually extended its dominion over wide areas of Europe, the influence of Arabian learning and civilisation was also diffused throughout almost all the known countries, and was in the highest degree important for the growth of civilisation, since it saved the remains of the ancient civilisation. Scientific obstetrics, however, had no share in this growth, for the trained Arabian physicians were without any understanding whatever of the process of labour, because Mohammedan morality did not permit them any self-instruction by personal control and observation of the process of labour.

Confinements, in accordance with the Mohammedan code of morality, were left entirely in the hands of women whose knowledge was very meagre. We already find the hymen mentioned in the tenth century A.D. by Rhazes (Abū Bakr Muḥammad ibn Zakarīyā el-Rāzi, a native of Persia).

According to 'Alī ibn el-'Abbās (fl. A.D. 1000), who was physician in ordinary to the King of Buṭa and wrote a work comprising the whole of medicine, these women performed the most difficult of all operations themselves. It is true, doctors instructed them in particularly complicated cases, and also prescribed medicines, but they could never take an active part. Only in the most extreme necessity were surgeons resorted to, and they, as the writings of Abulcasis (died 1122) and of other Arabs bear witness, knew just as little about obstetrics. They undertook the extraction or dismembering of the child with clumsy instruments and apparatus.

Abul Hasan Garib alone seems to have been distinguished above his contemporaries by special attention to obstetrics. The MS. of his "Tractatus de fœtus generatione, ac puerperarum, infantiumque regimine," written about A.D. 970, is in the Escorial Library (see Casiri, I., p. 273).

The most important was to be the Persian Abū 'Alī al-Husain ibn 'Abdallāh ibn Sīnā (980–1037), usually known under the name of Avicenna. His work, the *Canon of Medicine*, a result of Greco-Arabian erudition, was for centuries the main source of all medical knowledge.

Of interest also is Abūl-Wālid Muḥammad ibn-Aḥmad Ibn-Muḥammad ibn-Rushd (Averroes) (1126–1198), because he, so far as we know, first brings forward seriously the problem of a possible pregnancy which, to be sure, already occurs in the Talmud, namely, a bathing in a tub in the water of which a man has previously discharged his semen.

The after-effects of Arabian civilisation were felt in Europe long after monasticism dominated men's minds. But for midwifery better times did not yet begin to dawn. It was still in the hands of untrained women. Incantations and superstitious remedies were still much used by them. Physicians were not called in. At best, they were asked for a medicine, the prescription for which came solely from an Arabian author. The writings of Albertus Magnus, who lived in the thirteenth century, provide a conspicuous example of this.

This, then, was the state of obstetrics all over Europe at that time. For, if

the women giving assistance continued to be quite untaught and untrained, if no book gave them instructions for their procedure, if they had to depend entirely on their own meagre experience, then they acted wholly in the spirit of their time by resorting to exorcisms and incantations in difficult cases ; for they always sought the cause of obstructions in a diabolical influence or in witches or evil magic powers.

These deplorable conditions were interrupted for the first time by an epoch-making occurrence. Mondino, professor of medicine in Bologna, had ventured early in the fourteenth century for the first time to dissect three female subjects. Thus, the way was prepared for natural scientific observation which gradually, but surely and continuously, brought the light of truth and the emancipation of Science.

8. AMONG THE MEDIÆVAL TEUTONS

The peoples of Europe in the Middle Ages stood quite below the remains of the ancient civilised world which we owe to Arabian doctors. What they had was not much more than belief in magic like primitive peoples, and this was not improved by Christianity but rather made worse, because now asceticism and hypocrisy took the place of simplicity. Heinrich VI. and Friederich II., by their fight against the Papacy, weakened Arabian influence. This was the scientific deliverance of Europe.

What then had the early Teutons ? To be sure, we do not know many details ; but it was not much more. Höfler is justly of the opinion that they had not much more knowledge of the female genitals than those of animals at the time of labour. The women were in a separate room, the women's room, which among the poorer people was a hole underground, spread with dung. A cowhide covered with straw, which was covered with fragrant herbs, served as a couch. The position in labour Höfler assumes to have been the kneeling posture. Originally, only women were called in to give help in labour. Höfler believes that demons and later gods as well were invoked for help ; hence Perchta with the cowhide, Salige and Idisen. In the Edda, a midwife, who had arrived on horseback to give help, sat down between the knees of the young woman and sang loud melodies. Demons were kept at bay by making loud noises, and amulets, such as images made of tin, were employed. Höfler also thinks that our forefathers were familiar with Cæsarean section, and children delivered thus and those born " with a caul " were looked on as fortune's favourites.

It was not much better in the other States of Europe, but as mentioned above, under the influence of the Arabian writers, the light of antiquity still glimmered faintly through the fog of Christianity, and it was the Arabian scholars who kept it alight by adding to its scanty fuel. It was the University at Salerno which preserved the light of science amid Christian superstition. Fischer says, very justly, that everything in the Salernitan writings comes from Hippocrates, Aristotle, Galen, and later also from Arabian writers. In the earliest times of Salerno, a woman professor named Trotula plays a very great part although her position is not at all clear. This need not surprise us, because at that time learning was mainly to be found among women, for women of high rank all learnt Latin and Greek. It is clear from her writings that she did not share overmuch the superstitions of the Christian priests, for she ascribes to the amulets an influence which indeed is obscure to us, but which was commonly used by the midwives. Trotula is the first to describe the complete rupture of the perineum (*" sunt enim quaedam, quibus vulva et anus*

fuint unum foramen”). She mentions as a new gynæcological disease the nocturnal enuresis of women, and further the pediculi on the pubic hair, in the arm pits, and on the eyebrows; she records, besides, that labia pudendi sometimes appear ulcerous and covered with red spots, and that at the same time, thirst and falling of the hair set in, a condition which draws from Fischer the remark: “in this and similar passages, I cannot dismiss the thought of syphilis from my mind.”

At this period, too, began the domination of uroscopy, which was later to govern almost the whole of medicine, and at that time began to play a part owing to the “*Regulae urinarum*” of the younger Platearius and the treatise *De urinis* of Matthaëus de Archiepiscopo.

In Germany, the old customary religious way continued. Here the famous Abbess of the Convent of the Rupertsberg, near Bingen, Saint Hildegarde (1099–1179), is most prominent. It is natural that the concept of virginity, that hobby-horse of Christianity, should play an important part. Thus, Fischer quotes the following passage on menstruation: “The discharge is lighter in the virgin than in the non-virgin, whose blood is more leaden in colour. At the same time, the blood in the case of the virgin is more in the form of drops as it comes from the vessels, whilst in the non-virgin it is more like a little stream as, owing to defloration, the veins are already opened. The cause of menstruation is the fall of Eve.” On the other hand, it is very singular that Saint Hildegarde attaches great importance to constitutional pathology. This section is nevertheless so comic as to be laughable. Thus she speaks of the sanguine women who are very fertile, and who are only healthy when they are married. If menstruation with them ceases before the normal time, they sometimes become melancholy, or they get pains in the sides or the worm (vermis) grows in their flesh, or glands burst open in them which people call scrofulæ, or a leprosy which, of course, is only insignificant in form.

We must not forget here one important authority of the thirteenth century, Albertus of Bollstädt, Bishop of Regensberg, usually called Albertus Magnus. Quite apart from his really great knowledge of antiquity, a work held sway in the following centuries which was falsely ascribed to him as early as the fourteenth century, *De secretis mulierum*, a book which possibly was written by Henry of Saxony. The German editions of this work are, of course, always different and variously popularised. They very often contain illustrations of birth presentations and are frequently bound up with Rösslin’s *Rosengarten* and the *Frauen-Artznei* and similar works. We shall have occasion to revert to this in other chapters.

CHAPTER XXX

THE EVOLUTION OF OBSTETRICS IN EUROPE

1. OBSTETRICS IN ITALY

PASSING on now to observe conditions in modern times and to note the historical development of obstetrics, the conditions, as they evolved in Italy, may come first.

It was in Italy that the most important groundwork for the progress of the science was done. For it was here that the anatomical examination of the human corpse was for the first time introduced into the resources of medical science. These post-mortem autopsies, undertaken by Mondino in Bologna at the beginning of the fourteenth century, have been already mentioned. But some time earlier, many things occurred on Italian territory which had a favourable influence on the science of obstetrics. Here, as we have also seen, Salerno in Central Italy was the centre of development.

We have already observed that several women doctors came from the Salernitan school. Among them, the most important for us is the famous Trotula, who is believed to be the author of the work *De mulierum passionibus ante, in et post partum* : her work on the diseases of women, however, we know only from an extract made in the thirteenth century. It shows that knowledge in the sphere of medical science at that time extended beyond domestic remedies, and that people made special efforts to promote and develop instruction in the diseases of women and in obstetrics, although the ways and means of doing so were in the beginning somewhat imperfect (S. de Renzi ¹).

Two Italian works which are, however, mere compilations, give a complete survey of the gynæcological and obstetric knowledge of the Middle Ages : the work of Franciscus de Pede Monte, in his *Complementum*, which is almost entirely attributable to Hippocrates, Galen, Aristotle and Serapion, and the *Sermones* by Niccolo Falucci (Häser). These works, like those of Savonarola, were printed in Venice at the end of the fifteenth century.

A curious work must be referred to here, which was written in hexameters by Aemilius Vezosius. It bears the title : "*Gynaecyosos, sive de mulierum conceptu, gestatione, ac partu lib. tres.*" In the year 1598, it was published with notes by Antonius Biondius, whose name was really Antonio Biondi, in Venice. It can hardly have been of much use to midwives, as it is extraordinarily verbose. In it the ancient gods are much appealed to, as well as Christ, the Virgin Mary and the Saints.

In the seventeenth century, Italy had a special influence on the obstetrics of other countries through certain publications for the instruction of midwives. These were soon afterwards translated into other languages and could thus be used for guidance by doctors and midwives. Among them, the work of Scipione Mercurio, which was published in Venice in the year 1621 under the title *La Ccmmare oricco-glitrice*, deserves mention. It was translated into German by C. Welsch, and for a long time had remarkable authority in Germany. In his illustrations of the presentations of the child, Mercurio has much that is fantastic and artificial. The representations of how the woman in labour is to lie during difficult deliveries are very

peculiar. Thus, according to his rule, women who are very fat must kneel on the floor and lean back so far that their heads and shoulders rest on a cushion pushed

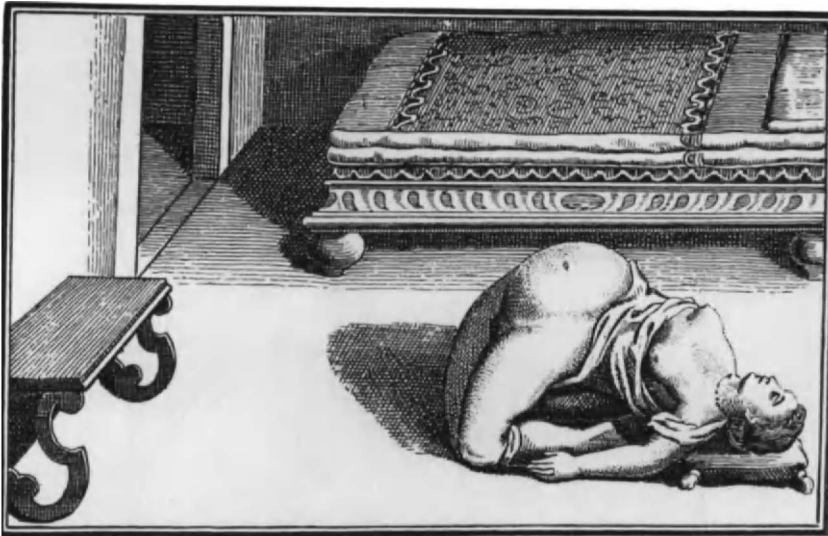


FIG. 716.—Combined dorsal and kneeling position. (After S. Mercurio, 1621.)



FIG. 717.—Dorsal position with feet on the ground. (After S. Mercurio.)

under them, while the elbows are on the floor and help to support the body. From the pictures, we get information also about the Italian midwife of that period (see Figs. 716, 717 and 718).

For more thorough study of obstetrics in Italy, the exhaustive work of Corradi

may be referred to. However, some further illustrations which relate to our subject may find mention here.*

Giulio Romano, in one of his pictures, shows us an Italian midwife of the sixteenth century. She is an old person who is busied about the woman in labour, examines her attentively and feels her pulse. The carefully prepared cradle stands by the lying-in bed for the reception of the young child. Beside the midwife there is a younger woman.

But we get more light on the kind of midwifery in Italy from other pictures. In this country in the sixteenth century, there prevailed the custom of conveying nourishing food to women in childbed in special majolica dishes. These dishes bore



FIG. 718.—Dorsal position with elevated abdomen. (After Mercurio.)

the name *puerpera* or *scodelle per le donne* (women's dishes). The cup-shaped dish was filled with meat broth, and the lid with eggs. They are adorned with pictorial representations generally relating to the care of the child: women have a little child in their lap or are rolling wraps round it. Sometimes, however, delivery scenes are depicted inside the dishes. Two such dishes from Urbino, painted in the style of Orazio Fontano and dating from about 1530 to 1540, are in the possession of the Kunstgewerbe Museum in Berlin.

One dish (Fig. 719), ornamented on the outside with prostrate forms of naked children, shows in the inside the picture of a room, through the window of which the blue sky is visible. To the left one sees a woman kneeling in front of, and adding more fuel to, a fire already burning brightly. In the background on the right,

* [For the lying-in room in art, see Muellerheim.]

the bed is being put in order by a woman. In the middle of the picture a woman, the woman in labour, stands upright, fully dressed but with bare feet, her hands are half raised. She is supported under the arms by two women also standing. In front of her on a chair sits a woman who is acting as midwife and has her hands under the clothes of the woman in labour. Finally, a seventh woman is holding out her hands from the right towards the woman in labour. Here, then, a delivery while standing is portrayed.

The second dish (Fig. 720) is cup-shaped with a fairly high foot; it is



FIG. 719.—Standing position. Majolica dish. Urbino, sixteenth century. Staatl. Kunstgewerbe Mus., Berlin. (Photo: M. Bartels.)

ornamented on the outside with forms of animals in the style of the Italian Renaissance. The inside of the dish shows a delivery scene, still more crude in design than the foregoing. A lady sits on a folding-chair with curved arm rests but no back. She is, like the foregoing woman in labour, fully dressed. A page standing behind her supports her under the arms. Near him, on the left of the woman, stand two young women, and, to the left of them, one sees a bed ready. A young woman kneels on her left knee in front of the seated woman with her right knee up. She is acting as midwife and has her hands hidden under the woman's clothes.

These illustrations are highly instructive in a medical respect as well as regards

the history of civilisation. In the first place, they show that in Italy at that time the same position was not always customary but that different positions were used. Delivery on the chair, as illustrations of somewhat later date show, was very common also in the rest of civilised Europe. But we see in our dish scenes a very considerable difference. The illustrations mentioned show us, as in the sketch of the first dish, the midwife sitting on a chair in front of the woman in labour, whilst, in the second, she does her manipulations kneeling on the ground. This is something quite new for which we have no analogy among the other nations of Europe.

As regards the history of civilisation, the first dish teaches us that a great company of women busied themselves about the woman in labour; we also see this in the approximately contemporary portrayals of lying-in rooms. But how little the light of publicity used to be shunned in confinements at that period we see from

the picture in the second dish, where a young page has a very important part as assistant (a sign that the so-called morality of the old times exists only in the heads of modern anti-sexual faddists). Similar dishes are to be found in the South Kensington Museum in London, yet there appear to be no reproductions of them known.

The reports of Italian political writers on the progress of obstetrics in France at that time are valuable. Thus, Marcellus Donatus (died 1600), a doctor in Mantua, in his book *De medica historia mirabili libri sex*, groups together rare obstetric and gynæcological cases.

The Cæsarean section* performed by Christophorus Bainus in Italy in the year 1540, and described by Donatus (pp. 436 ff.), has become famous. This is the first quite in-



FIG. 720.—Sitting position. Majolica dish. Urbino sixteenth century. Staattl. Kunstgewerbe Mus. Berlin. (Photo: M. Bartels.)

dubitable case of a real Cæsarean section performed on the living. The operator is described by Donatus as one of those people "qui per villas percurrentes peregrinantur." A dead child was extracted and the woman gave birth to children four times more in the natural way. [Other authorities regard this case as inconclusive, and are of the opinion that the instance recorded of Trautman (1610) is better substantiated. Cf. J. W. Williams, p. 531.]

Likewise, the work of Mercurio is of importance in the history of obstetrics because the author records the experiences of Cæsarean section, which he accumulated in his travels in France in 1571 and 1572 (pp. 169 ff.). In Toulouse, e.g., he saw two women delivered by Cæsarean section, one of whom became pregnant nine further times and had successful deliveries. This operation, he says, was as well known in France as blood-letting for headaches in Italy. Among the indications for operation in the first and only case in the sixteenth century was the narrow pelvis and consequent contraction (see J. Fischer).

* See Hembold: Gurlt, II. 519.

2. THE DEVELOPMENT OF MIDWIFERY IN GERMANY AND SWITZERLAND DURING THE MIDDLE AGES

As far as the ancient times of the German people are concerned, we have but little knowledge of matters connected with the midwives at that time, and the little that is known has been already mentioned. The midwives, skilled in magic, exorcised and cured by magical means the very great pain of the women in labour : mechanical help was probably confined to the reception of the child, the ligation and division of the umbilical cord and the further attendance on the new-born infant.

In the ancient romances of the Teutonic peoples, there is very little that relates to this subject. In the Edda, as a supernatural specific for accelerating delivery, is mentioned Mimir's Tree, which neither fire nor sword can harm. It runs there :

“ Now thou of many kin, what would I ask,
I would that I knew
What doth the famous tree, what is its task,
If neither fire nor sword
Doth injure it.”

The answer runs :

“ Before all wives in labour's woe,
Its fruit bring in the fire :
What would else tarry within,
Then presses forth ;
So doth it increase men.”

People tried to effect delivery with the help of magic runes. When Sigurd (in the Volsunga Saga) has awakened Brynhild from her enchanted sleep, she teaches him all manner of runes with magic powers. Among other precepts, she gives him runes to ease delivery.

“ Help-runes shalt thou gather
If skill thou would'st gain
To loosen child from low-laid mother ;
Cut be they in hands hollow,
Wrapped the joints round about ;
Call for the good folks' gainsome helping.”

Then she speaks also of *Thought-runes*, which are cut :

“ On loosing palms
And pit's path.”

It is clear from another song of the Edda, what part was played at that time by women skilled as midwives. This song is called the “ Lament of Oddrun ” (*Oddrúnargrátr*) ; it runs as follows :

“ I have heard tell
In ancient tales
How a maid there came
To Morna-land
Because no man
On mould abiding
For Heidrik's daughter
Might win healing.

“ All that heard Oddrun
Atli's sister,
How that damsel
Had heavy sickness,
So she led from stall
Her bridled steed,
And on the swart one
Laid the saddle.

“ She made her horse wend
O'er smooth ways of earth,
Until to a high built
Hall she came ;
Then the saddle she had
From the hungry horse,
And her ways wended
In along the wide hall,
And this word first
Spake forth therewith :

“ ‘ What is most famed,
Afield in Hunaland,
Or what may be
Blithest in Hunaland ? ’

Borgny said :

“ ‘ Here lieth Borgny
Borne down by trouble,
Thy sweet friend, O Oddrun,
See to her helping !

Oddrun :

“ ‘ Who of the lords
Hath laid this grief on her,
Why is the anguish
Of Borgny so weary ? ’

Borgny :

“ ‘ He is hight Vilmund
Friend of hawk-bearers,
He wrapped the damsel
In the warm bed gear
Five winters long
Without her father's wotting.’

“ No more than this they spake methinks ;
Kind sat she down
By the damsel's knee
Mightily sang Oddrun
Eagerly sang Oddrun
Sharp piercing songs
By Borgny's side :

“ Till a maid and a boy
Might tread on the world's ways,” etc.

After the delivery, Borgny gives thanks for the services rendered :

“ ‘ So may help thee
All helpful things
Frigg and Freya
And all the fair gods,
As thou hast thrust
This torment from me ! ’ ”

incantations or exorcisms, which he designated as *godless*. Owing to the intellectual tendency still prevalent at that time, he was, of course, unable to combat these effectively. The Premonstratensian Thomas of Breslau, Bishop of Sarepta and also a physician, and others, were zealous disciples of Arnaldus in the realm of medicine.

Also, the above-mentioned works of such Italians as Franciscus de Pede Monte and Niccolo Faluccci were not without influence on the doctors in Germany. Thus, the skill and knowledge of German doctors in this realm depended upon that of foreign countries.

The practice of obstetrics, however, was not entirely in the hands of midwives at that period. They had to share the trust which they had among the people with other very questionable elements. Thus, in the year 1580, Duke Ludwig of Württemberg had, by special decree, to prohibit delivery by shepherds and herdsmen. This is not surprising, for such cases still occur at the present day.

The great and noble in the sixteenth century even called in good midwives from a great distance for their wives. The last grand-master of the German Order of Knighthood, subsequently Duke Albrecht von Preussen, got a midwife from Nuremberg for his wife (*cf.* Voigt).

E. C. v. Siebold says of that period :

“ Prejudice against midwifery being practised by men no doubt contributed its share to keeping the profession at a low status, whilst owing to this fact doctors and surgeons were deprived of the opportunity of gaining experience in obstetrics. If they were called in to cases with which the midwives could not deal, these latter were little in favour of the use of humane help, but certainly urged them to perform only the crudest operations in destroying the children.”

The doctors themselves, however, were to blame in this matter, for not a few of them considered it beneath their dignity to give help with their hands in parturition.

A doctor who wrote a learned book on gynæcology and obstetrics, the Portuguese R. a Castro, who worked in Hamburg in 1594, says, in plain words : “ *Haec ars viros dedecet.*” And shortly before, Le Bon, in France, who had also published a book on obstetrics without having any practical experience, claimed that the midwife when at her wits' end should call in, not the doctor, but a surgeon. Thus, practical obstetrics was actually only in the hands of midwives, and those surgeons whose skill and knowledge were still extremely meagre.

Nevertheless, instruction in obstetrics must have been given at an earlier date. We see this from a manuscript of Galen in which the initial letters are ornamented with miniatures. This is in the Dresden Library, and has been discussed by Choulant. It was written in Belgium (probably in Brussels) at the beginning of the fifteenth century. One of these miniatures portrays a teacher sitting on a chair and two pupils standing at the side. A naked woman in advanced pregnancy, with her long golden hair hanging loosely, is walking towards the instructor, who, as is evident from the position of his hands, is incontestably giving a lecture which he is demonstrating by reference to her (see Fig. 626, p. 392).

3. THE DEVELOPMENT OF MIDWIFERY IN GERMANY AND SWITZERLAND IN THE FIFTEENTH AND SIXTEENTH CENTURIES

From the sixteenth century onwards, we can see a very favourable turn for the better, an improvement such as is shortly to be experienced also in the science of

sex which has, in the same way as obstetrics, to combat ecclesiastical doctrine (asceticism, etc.) and various antiquated laws. We already hear of obstetricians who were held in high esteem by the population and who intervened successfully where the help of midwives would not have been sufficient. A significant example of this was recorded in the year 1516 at Freiburg in Switzerland.

Alexander Zitz (also written Seitz, Syz, or Seiz), who came from Württemberg, had practised in Baden (Aargau Canton), but, owing to "defamation" of Duke Ulrich of Württemberg by his confederates, he got into ill favour with the government of Freiburg, which exiled him. But, within the first half-hour after his apprehension, a woman in Baden was confined, and the case proved so difficult that the women present thought the patient would not survive. They, therefore, applied to the Governor of the Province to set free the obstetrician who had so often proved trustworthy, so that he could render assistance, and their request was granted. Zitz was therefore recalled and brought the delivery to a successful issue. Now the ladies of Baden met and made a petition to the government requesting that this man, who was so experienced in obstetrics, should not be made to leave Switzerland, but that he should at least be permitted to defend himself and that he should be pardoned even if he had really done something punishable (Meyer-Ahrens⁴).

As regards the profession of midwife also, with the beginning of modern times, we have a few important improvements to record. One of them consists in the fact that by degrees payments from the public purse were at their disposal; on the other hand, regulations for midwives were drawn up, and it was decreed that women who applied to be established should have to submit to a systematic examination. Certain doctors were commissioned to give them the necessary instruction. In the middle of the fifteenth century, Johann Leidemann, in Frankfurt-am-Main, gave a legacy to his native town, from the revenue from which midwives were to be indemnified so that they should give help gratis to the wives of poor men. As a result of this legacy, a midwife was appointed in 1456 for the first time and paid four guilder annually. This measure appears to have proved advantageous, for again in the year 1456, the appointment of a second midwife took place; in the year 1479, there were four of them who were paid two guilder each; and in the year 1488, their number was increased to five. These midwives were at that time all in the old town: they were called "municipal" or "council" midwives. Besides them, there were, of course, other midwives in the town. These had to get a licence for their establishment from the council, when it was also granted to them that they might have the town pastor make them known from the pulpit (see Kriegk).

This arrangement must have been imitated in other towns for, in the year 1485, we come across four municipal midwives in Freiburg, in Switzerland, to each of whom a quarter of the town was allotted. They received a salary of 49 sous for the year. As a sufficient number of suitable persons was not always found there (for example, in the year 1491, there were only two paid midwives), it appears even at that time that they required a special kind of person for the profession. About the year 1496, there existed in Basle a committee of women who supervised the midwives. Herein lay the first germ of a satisfactory improvement (Meyer-Ahrens¹).

As early as the year 1451, regulations for midwives were passed by the town authorities of Regensburg: in these, too, a public examination of candidates was prescribed. Among other things, they had to pledge themselves to appear immediately they were called. The supervision of these people here, too, was assigned to "respectable women."

In Frankfurt-am-Main, an examination of municipal midwives by the physician

of the town is mentioned in the year 1491 : the examination of other midwives first began in the year 1499 (Kriegk). We made the acquaintance of one of these Frankfurt midwives slightly later in date, in Fig. 628.

At the Parliament in Regensburg, in the year 1532, Emperor Charles V. issued his criminal code, in which, in Art. 35, we read :

“ Then the midwife, together with all that is useful, serviceable and good in her equipment, shall have as well the parturition chair, scissors, sponge, needles and thread.”

We may regard it as a good result of the attention and supervision now given

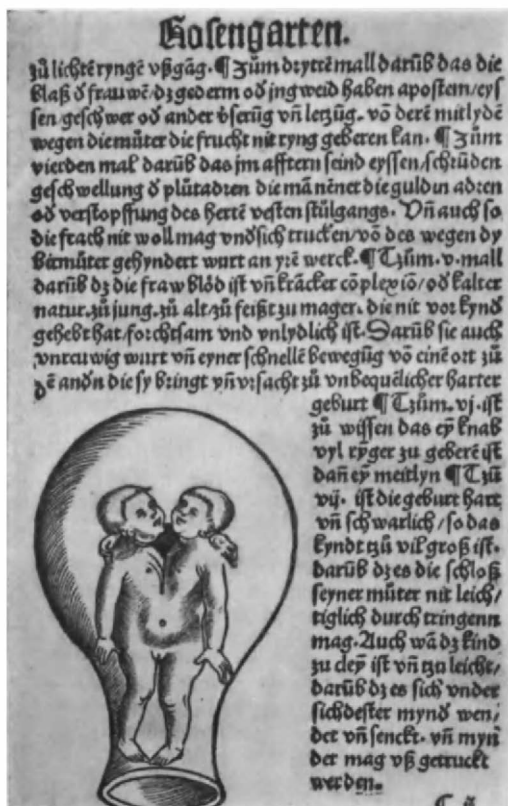


FIG. 721.—Fœtal position. (After Rösslin.)



FIG. 722.—Fœtal positions. (After Rösslin.)

to midwives by the town authorities that doctors were induced to publish obstetric text-books for their instruction, of which the first is dated 1480 from Würzburg. Moreover, a regular service of midwives was established in a few towns.

In the second decade of the sixteenth century, Katharina, hereditary Princess of Saxony and widow of Duke Sigmund of Austria, later spouse of Erich I., Duke of Brunswick and Lüneburg, who died at Göttingen in 1544, caused Dr. Eucharius Rösslin in Worms (later in Frankfurt-am-Main) to write a text-book for midwives. This was printed at Worms in 1513, and in a short time achieved an extraordinarily wide circulation. The book is a collection of the teachings of Hippocrates, Galen, Aëtius, Avicenna, Albertus Magnus, etc. In his dedication to the Princess Katharina

the author expresses the request that she will distribute the book among the respectable pregnant women and midwives.

J. Fischer says :

“ This work by Eucharius Rösslin was published in Strasbourg in the year 1513 under the title of *Der Swangern Frauen und Hebammen Rosegarten*. About the author himself we do not know much. He is mentioned in the records of the town of Freiburg i. B. in 1493 and 1498 as an apothecary ; in 1506 he became a physician of the town of Frankfurt a. M. ; in 1513 we find him in a similar post in Worms ; in 1517 again, in Frankfurt ; and 1526 is presumed to be the



FIG. 723.—Fœtal positions. (After Rösslin.)



FIG. 724.—Fœtal positions. (After Rösslin.)

year of his death. As regards matter, the *Rosengarten* appears not to have been created from his own experience, but to be compiled from the old authors, yet it differs from the medical works of the previous centuries in the respect that it has illustrations, especially the well known ‘pictures of the presentations’ (see Figs 721-724), which, as we now know, originate from Soranus and from Moschion and which were handed down in manuscript. The importance the work gained from this is best shown by the fact that, according to G. Klein, about a hundred editions of the *Rosengarten* are known. Rösslin’s son translated the work into Latin, which was no doubt intended for doctors at home and abroad. It bears the title *De Partu hominis*, and in it appears the author’s name in Greek form as Eucharius Rhodion. In 1536 the work was translated into French by P. Bienassis. English editions (first ed., 1540) with the title *The Byrth of Mankynde*, come from Richard Jonas and Raynold.”

In this popular manual the author tried, too, to check the ignorance and carelessness of midwives. He writes :

“ I mean the midwives every one,
Who have too of knowledge none,
By their carelessness besides,
Kill off children far and wide.
And such evil zeal have shown,
In duty they have murder done,” etc.

“ That so to heart I now have ta'en
To God's glory and our gain,
Those poor souls will be relieved,
Who by this will now be saved,
Of murder not so much will be,
As ofttimes I have used to see,” etc.

The example set by Princess Katharina found imitators. Two directors of the most important society of surgeons in Zürich, Joerg Müller and Rudolf Cloter, induced the lapidary Jacob Ruff or Rueff (to whom was entrusted both the instruction and examination of midwives) to compose a popular guide for midwives, pregnant women and women in childbed. Rueff completed this in the year 1554, and besought the burgomaster to send the book to all the midwives and nurses both in the town and in the canton (Meyer-Ahrens²). In Rueff's book, which also went through a number of editions, many things were presented more clearly and intelligibly than in Rösslin's *Rosengarten*, yet it is by no means free from absurdities and superstitions. But, in J. Rueff's book for midwives, *Ein schön lustig Trostbüchle von den empfangknussen und geburten der Menschen*, etc. (published in Zurich in 1554 both in German and Latin), we find, especially with regard to the new attainments in anatomy, a more independently written work, although the anonymous author is, strangely enough, still immersed in demonism, and therefore able to contribute nothing essentially new from the sphere of the theory and practice of obstetrics (cf. J. Fischer).

These writers themselves and the authors of books on midwifery who came after them could not have got sufficient practical experience. Therefore, as E. C. v. Siebold remarks, there was nothing left for them to do but partly to conform to the accounts of midwives and the representations of their predecessors who had drawn from the same sources, partly to embellish these books with their own inventions. From this, one can estimate how little is the scientific value of such a work.

Still, in spite of their weaknesses, these books were of no little importance for the development of midwifery in Germany. For, in a practical respect, Rösslin's work had a very far-reaching influence, and contributed not inconsiderably to the theoretical instruction and enlightenment of German midwives.

With the publication of these books begins in Germany the intervention of doctors in the business of midwifery. For us, they are the sources of knowledge of the way of viewing things and the methods of treatment which prevailed among midwives in Germany at that time.

A real improvement in midwifery in Germany could, of course, only be achieved satisfactorily by the further extension of regulations for midwives, and above all by the establishment of good training schools for them.

However, it is evidence of a considerable advance when Walter Ryff * says in the year 1545 that instruction is given to midwives by experienced doctors, and when he advocates the appointment of licensed midwives. On the other hand, as has been said, J. Le Bon, physician in ordinary to Charles IX., declared in his little book *Therapia puerperarum* (1577), that the practice of midwifery is a business which disgraces a man.

Also in Ulm, Nuremberg, etc., we find that as early as the sixteenth century, all matters concerning midwives were regulated. In Ulm, the midwives, after having been given instruction by the medical officer, were examined and not admitted till then; there, too, as in other places, the sanitary supervision of the prostitutes in the brothels devolved upon them.

In Zurich up to the year 1554, Jacob Rueff had the task, along with some other gentlemen, of "examining" a few times annually. Now, however, Councillor Conrad Gessner, the famous natural philosopher, among his duties as superintendent of the medical school of the town, was ordered to take over the instruction and examination of midwives:

"Likewise, at all times when the town councillors summon or command him, he shall also test, examine and instruct also the midwives to the best of his ability."

Gessner's qualifications for the instruction of midwives certainly did not amount to much, for he himself had no experience in midwifery. The instruction consisted in the contents of the Midwives' Catechism being recited by the midwives. This appears to have been used about the year 1536. It is printed in Johannes Muralt's *Kinderbüchlein oder Wohlbegründeter Unterricht* (Zurich, 1689).

Besides this catechism, the Zurich midwives used also Rueff's midwifery book; they were also examined on a chapter of this work, and they were obliged to have the third book of this read aloud by a well-read woman at every confinement, where possible, during the first stage of birth (Meyer-Ahrens³).

In Frankfurt-am-Main, Adam Lonicerus published in the year 1573 the first regulations for midwives for this town. The title, translated, reads, "Reformation of Regulations for midwives, useful to all good police authorities. Passed at a proper council meeting in the town of Frankfurt-am-Main of the Holy Empire, by Adamus Lonicerus, medical officer of the town. Printed in 1573 at Frankfurt a. M. by the successors to Christian Egenolff, published by Drs. Ad. Lonicerus, M. Joan. Knipy and P. Steinmeyer."

We learn from this what was the ideal at that time of a person trained for service as a midwife. However, we also see that in those days it was considered a sufficient practical and scientific training for a midwife if she were connected with other midwives for a time. Moreover, the second part of the regulations for midwives of Lonicerus is a kind of text-book for them, and in its rules for nursing in pregnancy, delivery and lying-in differs very little from the similar text-books for midwives of Rösslin, Rueff, etc. In the fifth chapter, the book has various lists of questions for midwives: "how they should act when the presentation of the child is abnormal," "if the child lies crosswise or on one side," etc. The examining of the midwives was done by "matrons appointed," and all difficult obstetric cases were left to the midwives or to a council of midwives.

For the sake of completeness, it may also be stated that in Hamburg, a council

* Reiff, also Ryff, Rivius, Riif, Riffus, must not be confused with Jacob Rueff. According to report, he was banished from various towns for base actions. In his *Frauen Rosengarten*, he shows himself a plagiarist. Julius Beer (*Das Hebammenwesen im Mittelalter im Reflex des Allertums und unserer Zeit*, Deutsche Klinik, 1862, nr. 34, p. 330) spells his name wrongly "Ruff."

midwife is first mentioned in the year 1534. The town accounts show that she lived gratis in the cellar below the council dispensary (see Gernet).

The regulations for midwives of Passau prescribe as early as 1547 an examination by the medical officer of the town (Frank, VII., 2, 8, p. 519). From this time, it became more and more common in Germany and Switzerland for the appointment



FIG. 725.—German midwife of the sixteenth century assisting at the delivery of a woman who is seated on a parturition chair. In the background two men consult the stars. (After Rueff.)

as midwife to depend upon the passing of an examination before the municipal medical officer.

On the other hand, at Leipzig, in the year 1653, it was still customary for the wife of the Burgomaster to undertake the examination and choice, as we see from the work of the Leipzig professor Welsch (p. 197).

A further advance in the evolution of obstetrics was accomplished in Munich towards the end of the sixteenth century. In order to give the necessary instruction in midwifery, a lying-in room was established here in the year 1589

for the first time in Germany. This took place in the hospital of the Holy Ghost (*cf.* Höfler).

Pictorial representations of midwives of the sixteenth century are frequently to be found in the printed works of that time. Fig. 725 is taken from Rueff's textbook for midwives of the year 1581, and this sketch was probably made by Hans Burgkmair. The midwife sits on a low stool in front of the woman in labour, who is in the parturition chair and is supported by two neighbours. Everything is ready for the reception of the child. The bath and the can of water stand on the floor close to the women; the scissors for dividing, and the ball of thread for tying the umbilical cord are lying on a table at hand. In the background, at the window, sit two men who observe the moon and the stars and are busy with astrological instruments, calculating the horoscope of the new arrival. The midwife has a big pocket, and her obstetric instruments in a girdle fastened round her body. She has on a short sleeveless jacket over her dress, the sleeves of which are rolled up. On her head she has a peculiar cap.

The authorised and official instruction of midwives extended not only to technical practice, but it made a serious effort to combat the superstition still deep rooted, and particularly noticeable in this class. Thus, for example, in the Gotha regulations (Appendix, Part III., No. 32) as to superstition, and the instruction of midwives, it runs:

“They should hear God's word frequently, attend Holy Communion constantly, and apply what they have learnt and comprehended to faith and the Christian life. On the other hand, however, superstitions and the misuse of God's name and word such as the saying of blessings, making character or letter signs, strange gestures and the sign of the cross, dividing the umbilical cord with certain questions and answers, hanging up any strange things in opposition to the superstitious invocation of the children, sprinkling before or after the bath and the like are strictly prohibited. Moreover, if they observe such unchristian and reprehensible actions on the part of other people, they are to warn them earnestly and also to inform the priest or official.”

The Augsburg regulations for midwives, too, prohibit all “pronouncing of blessings, useless customs, sayings and sinful wages.” They cite four students and nine paid, licensed midwives. In addition, there were the midwives appointed for people living on the outskirts and those for the “pox house.” The midwives had to hang a “midwives' sign” outside their houses. Those still in training, however, were not to put the city arms on it. The midwives' oath was to be taken before the worshipful board of works (see Birlinger ¹).

4. MIDWIFERY IN MODERN GERMANY AND SWITZERLAND

In the seventeenth century the town council in Zürich extols the fine regulations of Johann Muralt, “which rules our forefathers asleep in God had observed in the past century for the health of their citizens, both parents and children, which are astonishing even to the most learned of our time and which they can do little to improve. Moreover, it would be lamentable if they were to fall altogether into disuse. These regulations with us are those relating to child-birth, consisting of a survey of medicine and surgery from earliest times by which the practice of midwives is promoted: how, too, the examination of our midwives is to be carried out which is the duty of a town physician in Zurich. It is to be held on all solemn occasions and in the presence of persons of high rank; the answers to the questions set are to be heard; he is to instruct them and to punish their mistakes, and so to do in all things that everything proceeds in all honour in accordance with skill and knowledge.

“ These questions, however, mostly relate to the common accidents of pregnant women and women in childbirth before, during and after delivery, with which the first part of this little treatise also is concerned : the second part, however, relates to the children, how they are to be looked after and cured. May the All Highest bestow his divine blessing on our purpose ! ”

As to the class of midwives, Muralt says as follows :

“ It is a very important and difficult profession to be a midwife in such a populous town ; for there must be perfection of mind and heart, strength and mercy, sobriety and watchfulness, experience, reticence and propriety ; the woman who is accepted as midwife shall be well proportioned, not too fat or too short, but easy and skilful in movement, have clean, smooth hands, so that no harm or injury may befall either the woman or the child which she might receive from clumsy, rough, knotted and scabbed hands.”

Then the following rules of conduct are given to the midwife starting out in her profession :

“ In particular, shall midwives guard faithfully against cursing, swearing, drinking too much, ill-will, squabbling, quarrelling, angry and unkind gestures, words and deeds and other unchristian behaviour, so that they may not bring the wrath of God upon them or arouse evil slanders against themselves. Also they are not to burden themselves with other occupations or resort too much to other things, but let themselves be found at home, or if they are away, to confide in their household so that they may be fetched quickly if need be.”

How delivery was carried out, however, we learn from the same work of Muralt. We are surprised to hear the prescription in a difficult delivery which the midwife records in her examination :

“ And if I need screws, forceps and other instruments and necessity requires, I go to the town physician to get these, and he shall instruct me in these operations, and act in all ways as is meet and proper and in accordance with our art.”

In certain circumstances, they are even supposed to undertake the dismemberment of the dead child. The fact that they are also permitted to undertake the turning in suitable cases will no longer surprise us.

If the midwife can make no further progress, then she is to call in a colleague to her assistance, put her with the women in labour and herself hasten to the town physician to get his advice. Then it continues :

“ But should it be a case too difficult for the appointed midwives and the women present and there is great risk in the matter, they are not to act in matters in which they are doubtful of their skill, but to go and get good advice first from the doctors, surgeons and the people prescribed ; get information and instruction in doing all things and not, as usually happens, go from mere greed to hangmen and other such people who do not understand such matters and seek their help ; therefore, they should act carefully and with thought, that they may in all honour account for it to God the Lord and themselves have a better conscience.”

In the second half of the seventeenth century, a new text-book for midwives was published, written by the electoral “ court midwife ” of Brandenburg, Justine Sigemundin, who was of so much importance in her time. She was the daughter of the clergyman Elias Dittrich in Silesia, and she gave her assistance not only at the Court of Elector Friedrich Wilhelm in Berlin, but also at other courts. Her book was first put before the Faculty of Medicine at Frankfurt a. O. for censorship and was approved on March 28th, 1689. It is written in colloquial form, and inadequate as it is, it does, nevertheless, contain very intelligent teaching based on good observa-

tion. Another less efficient text-book was written by the Brunswick town midwife, Anna Elisabeth Horenburgin (1700).

The doctor, already repeatedly mentioned, who wrote a number of text-books in the form of a romance under the pseudonym of "Faithful Eckarth," had in this way no inconsiderable share in obstetric instruction in Germany. In the year



FIG. 726.—German popular midwife at the beginning of the eighteenth century. Frontispiece to Eckarth's *Die unvorsichtige Heb-Amme*, 1715.

1715, he published in Leipzig a book on such matters of which the title reads when translated :

"Faithful Eckarth's careless midwife, in which how a midwife who will be conscientious may be qualified, and how along with the necessary medico she may faithfully support and help unmarried as well as married, and children in their illnesses and afflictions, etc."

The general condition of midwifery in Germany is indicated here as still at a fairly low stage, and the frontispiece (Fig. 726) shows a midwife holding in her hand some part of the body of the woman in childbirth which has been torn out. At her side stands a table on which lie two new-born children ; an arm and a leg have been

torn off one, and even the head off the other. In the background of the room one sees a canopy-bed, and beside this a woman in advanced pregnancy is sitting on a clumsy parturition chair. The poem explaining this frontispiece begins with the lines :

“ See, carelessness has got the worst of it here,
The children’s nurse becomes a children’s murderess,
This woman is more cruel than harpies or striges,
And to Hecate sacrifices many hundreds
From the pregnant woman she rends a piece of the womb
From the children even head, foot and arms,
Lilith tortures the woman in childbirth,
Upon her torture chair and sends her to the grave.”

Her godlessness, however, will not go unpunished, for

“ The eye of God has seen the evil deed,
Although with earth the bodies now are spread,
A heavy judgment sure her will befall,
Before which her bold spirit quails with fear and terror.”

The book, like the kindred works of the same author, is a mine of wealth for the history of civilisation, and a reflection of the state of medical skill and knowledge at that time. We shall have to revert to it repeatedly.

The condition of midwifery in Germany during the years 1710–1720 is described by Heister in the preface to his surgical work as follows :

“ In difficult deliveries, people had still mostly midwives at that time, and they knew how to extract or receive the children which came easily and normally ; in difficult cases, however, and in unnatural presentations, most of these women as well as the surgeons were very unskilled in turning and extracting ; whenever they had to do anything they came with axes, and in the most pitiable and horrible way dismembered the children which, if they had had the proper knowledge, they could very often have got out with their hands alone ; and in doing so, as has happened not infrequently, the wombs of the unfortunate women were ruptured along with the children and they too lost their lives.”

The first beginnings of a practical instruction in obstetrics have already been mentioned above. This was practised on a greater scale in Strasbourg from the year 1728. Here, too, the first obstetric clinic was founded (at that time French).

Then, at the instigation of intelligent doctors, the State began to attend to the improvement of midwifery, while till then practically only the municipalities had been taking charge of it. In Austria, the training of midwives was introduced by van Swieten in 1748 ; in 1774, a professorship for theoretical obstetrics was founded in Vienna ; in Berlin, this obstetric instruction dates from 1751 ; in Copenhagen from 1751 ; and in Brussels from 1754.

On the basis of a theory of a good organisation of midwives propounded by Josef Peter Frank in his *System einer vollständigen medizinischen Polizei* (1784–1819), Suppl. 1823, VII., 547 ff., legislation and public law for midwives came into existence, proceeding from the *Collegiis medicis*.

In spite of these advances in most parts of Germany, obstetric practice, at the end of the eighteenth century, was still in a wretched condition. For example, a Westphalian physician, Dr. Finke ¹ (II., 426), expressed his opinion as follows :

“ The dislike of our women for a master of midwives is amazingly strong. People always let things get to extremes. If one were summoned in the first 24 hours, that would mean a great

deal ; generally at least 36 hours have passed. Now is one then to perform a miracle. If a case occurs where, owing to fatigue or because it is beyond our strength, a colleague has to be asked to assist, no matter how well the case ends, our reputation is quite done for ; people do not say : there is a limit to human strength, it is not like a bull's, but they say : if only I had sent for the second man at once, then the first would not have been necessary : he cannot understand the work. In this country of ours, for those who practise this beneficial science, everything that is unpleasant and disagreeable is associated with it. Base ingratitude, wrong judgment by ignorant people and slanders are often the only reward for the employment of our skill, which every sensible person values, and which I for my part would have let rest a long time ago but for the struggle with my conscience about it."

Up to the first decade of the eighteenth century, the Universities of Leipzig and Wittenberg, like the whole principality of Saxony, had still no theoretical and practical training for midwives prescribed by the State. Only isolated incorporated parts, Lower Lusatia at Lübben and the Cathedral Chapter of Merseburg maintained for their own districts small and inefficient institutes for the training of midwives. The women who wanted to become midwives in Leipzig at that period had to act as nurses for a time in the municipal hospital, Jacob's Hospital, when confinements occurred there ; they had as well, an hour's instruction twice a week with the "town accoucheur," and then, after having been approved by him, were as assistants associated with the older midwives to aid them, and, in case of need, to represent them. The town accoucheur, however, whose duty it was to perform operations in difficult deliveries, to train the future midwives, and to instruct the surgeons and barber-colleagues in the usual obstetric duties, had had to acquire the necessary knowledge and skill in Vienna or Paris, in Holland or in England since, except in these places, there were no satisfactory training schools (E. A. Meissner ¹).

However, up to modern times in many parts of Germany the lower and uncultivated classes still prefer to entrust the welfare of their wives and children to untrained female persons. The activities of these quacks do not come under the observant eye of the doctor. Thus Goldschmidt, who wrote a little paper on popular medicine in North-West Germany, recorded the customs in Oldenburg in particular, and admitting that he knows as good as nothing at all about the midwifery practised and the treatment of women there, he says :

"The midwives who alone wield the sceptre, when a woman is confined, consider it more advisable not to let the doctor get a glimpse of their method of treatment, and they have generally so much power over the women confined and the people about them that these too observe a deep silence as to the means employed to expedite delivery and to manage the functions of childbed." In another passage, Goldschmidt says : "In the last decade these 'wise women' who were concerned with curing with medicines chiefly among the lower classes, seem to have become fewer ; the midwives with their injections and their jumble of knowledge of domestic and popular medicine commonly take their place ; they often get as much in the way of the unbiassed doctor, and not only in confinements, as the wise women."

Max Boehr described the extent of the activities of midwives in the *Gesellschaft f. Geburtshülfe* in Berlin on May 26, 1868 :

"With the officially regulated and yet relatively limited number of midwives, it happens as a rule in the bigger districts, as we all know, that a few specially well-known and popular midwives have far too much, and the others comparatively little to do ; in smaller places and in the country the midwives at hand are protected from any competition. A midwife who makes on an average 500 deliveries in a year (as happens in Berlin with busy midwives) has more than she, in her subordinate position, can conscientiously do. About 20 years ago, there were numerous 'monthly nurses' in Berlin who, in place of the midwives, were modest and obedient

assistants of the obstetricians, and who managed confinements without midwives but acted as untrained 'monthly nurses.' Now, when this nuisance had to be checked and justice done to the complaints of the unoccupied midwives regularly appointed, the Society for Obstetrics 20 years ago interested itself with the authorities on behalf of the obliging monthly nurses who, however, only practised quack medicine. But the obstetricians themselves have gradually abandoned the old procedure and now in their own practice recommend women in childbirth to engage midwives who are well trained, but, at the same time, modest and obedient to the doctor."

Starke, too, gives a not very satisfactory report of the more recent state of matters connected with midwives in certain parts of Prussia :

"Anyone who has worked in rural districts will have had the opportunity of getting experience of the ignorance of midwives. Legally, midwives must send in reports of their activities, and the district medical officer is supposed to question them on these reports in order to ascertain whether the midwives continue to apply themselves to their book ; but I know from my own experience how rarely they take their reference book in their hands and how they act contrary to the most important rules of their profession."

Starke ² urges that the State should make different demands on midwives than hitherto, and that more women from cultivated classes might devote themselves to the profession, a change which would undoubtedly be hailed with joy. In more recent times this, too, has already made a satisfactory beginning.

Dohrn instituted in 1885 an interesting investigation into untrained midwifery in East Prussia.

From the difference between the intimations of births by midwives and those simply with the registrar, he draws a conclusion as to the number of deliveries without skilled assistance, *i.e.*, by quacks. In the year 1883, in the administrative area of Königsberg, out of 48,169 women in childbirth only 24,298 were treated by midwives ; that is, about 50% remained without skilled help. "In the most favourable districts of the administrative area, the latter total amounts to 10-30% ; in the worst, Neidenburg and Ortelsburg, it rises to 88 and 89% respectively. In the administrative area of Gumbinnen, in the year 1881—of 29,528 births, 11,939—40% took place without the help of midwives ; in the year 1882, of 32,284 births, 19,694—61%." There, too, in the district of Johannesburg, the latter total rises to 89%. This lamentable state of affairs as Dohrn shows, is directly connected with the lack of trained midwives.

The importance which midwives have at the present day in contrast with earlier times is rightly characterised by O. Walter (p. 75) :

"Opinions as to the functions of midwives have in the course of time undergone substantial changes. Whilst the earlier text-books for midwives were intended to train midwives to be complete obstetricians, our century, in accordance with the ever-growing demands of the advancing science, has relegated them to an ever humbler position at the lying-in bed. Yet, until about 15 years ago, the whole weight of instruction rested on the purely technical side of obstetrics, and diagnostics as well as manual help, including a few obstetric operations (such as version or separation of placenta), were regarded as the most essential services rendered by a midwife. With the knowledge of the infectious nature of most puerperal illnesses and with the increase in experience of the means of preventing them began the first medical rule that it would above all do no harm if medical help were much more to the fore even in the instruction of midwives. The use of disinfectants became quite half of the midwife's duties. Accordingly, the midwife is no longer, as was the case formerly, to be regarded as an obstetrician, even one of the second class with the limited optional right to perform obstetric operations, but is so to speak, only a watcher over the course of birth with the obligation of calling in medical help in any departure from the normal."

In Switzerland, not so very long ago, there still existed remarkable conditions :

An electoral assembly of women took place in 1866 at Oberstrass near Zurich ; there were 300 present who conducted the proceedings (election of two midwives) with parliamentary dignity. The meeting elected a president and made the election by a secret voting. After the proceedings, a simple banquet took place to which the Parish Council had given three mule loads of wine. But, as the women could not consume this quantity alone, they summoned their husbands to help them and a gay dance concluded the meeting of the women.

Such councils of women took place all over the canton and were confined to choosing midwives, but single women might not take part in the proceedings.

In the German Empire in 1885, matters concerning midwives had a very exceptional position, for while in Germany the medical profession is, generally speaking, open to everyone, the practice of the profession of midwife was limited to those female persons who had gained a certificate from the competent authority in accordance with the laws of the country. On the other hand, legislation neglected to make other rules or in any other way to create a uniform position for midwives ; on the contrary, the exercise of the law relating to midwives was left entirely to the decrees of the law in the individual states. Later, the women who wished to be midwives were trained in state schools for midwives, and to help them in their theoretic work they got a special text-book for midwives. When the course of instruction was finished, they were examined by their teacher and bound by oath by the medical officer for service in some district. The midwife appointed, however, was under the disciplinary supervision of the district medical officer to whom she had to give a report on her work. Midwives were not allowed to move freely from place to place in the German Empire, so that the district councils might see that the midwives were suitably distributed even in the less populated parts.

Even if it was convenient to leave to the individual governing bodies in the country the distribution of midwives and the decision as to the place where they were to settle, yet a uniform training in the Empire and the validity of the certificate for all the individual states would have been desirable, so that it might be possible for the governments in the country, in case of need, to employ midwives from other states without re-examination.

5. THE DEVELOPMENT OF MIDWIFERY IN ENGLAND *

In an earlier section we gave evidence of supernatural midwifery from the early times in the British Isles. It concerned the girdles, of which Ossian speaks, in which magic power was inherent for making confinements easier (see Aveling ²). These girdles were preserved with great care until much later times by many families in the Highlands of Scotland. They were covered with mystic figures and signs, and they were put on amid ceremonies and customs which suggested great antiquity.

In *The Creed of Piers Plowman* it was said of the monks that they

“ . . . maken wymmen to wenen
That the lace of our Lady smok
Lighteth hem of children.”

In the documents of an investigation of the year 1559, the following interrogation occurs :
“ Whether you knowe anye that doe use charmes, sorcery, enchantments, invocations, circles,

* [For the best account from 1650 to 1800 see H. R. Spencer.¹]

witchcrafts, southsayings or any like crafts or imaginations invented by the Devyl and in the tyme of women's travayle."

In John Bale's *Comedy concernynge thre Lawes of the year 1538* "idol worship" is shown as follows :

" Yes, but now yeh am a she,
And a good mydwyfe per de,
Yonge chyldrenn can I charme.
With whysperynges and whysshynge,
With crossynges and with kyssynges
With blasynge and with blessynges,
That spretes do them no harmes." (423, p. 37.)

In the records of an investigation in the parish of Canterbury in the sixteenth century, there are to be found the following questions : " Whether any use charmes or unlawful prayers or invocations, in Latin or otherwise, and namely, midwives in the time of woman's travail with child ? "; " Whether parsons, vicars or curates be diligent in teaching the midwives how to Christen children in time of necessity, according to the canons of the Church or no ? "

According to this, the Church of England had already censured the abuses of midwives at this early date. As early as the seventh century, midwives were permitted to perform private baptism, but only in circumstances where it became urgent.

According to investigations by Aveling,² women in England in the middle of the sixteenth century appear to have been rather dissatisfied with their untrained midwives ; people realised that they needed better instruction. Then one man (probably Jonas) undertook the translation from the German of Rösslin's text-book for midwives in the year 1537, and this was published by Raynold under the title of " The Woman's Booke." In the second edition of the work in the year 1540, the publisher expresses great satisfaction with its success and with the approval it had found among women. Rösslin's work was for a long time the only source from which English midwives could acquire their knowledge.

They seem not to have learnt much, for in the last part of the sixteenth century, Andrew Borde writes about inexperienced midwives in his *Breviarie* as follows :

" In my tyme, as well here in Englande as in other regions, and of olde antiquitie, every Midwyfe shulde be presented with honest women of great gravitie to the Byshop, and that they shulde testify, for her that they do present shulde be a sadde woman, wyse and discrete, havynge experience, and worthy to have the office of a Midwyfe. Then the Byshoppe, with the consent of a doctor of Physick, ought to examine her, and to instructe her in that thyng that she is ignoraunt ; and thus proved and a[d]mitted, is a laudable thyng ; for and this were used in Englande, there shulde not halfe so many women myscary, nor so many chyldren perish in every place in Englande as there be. The Byshop ought to loke on this matter " (*The Extravagantes*).

This passage is remarkable because it suggests for the first time in England the necessity for the instruction of midwives so that the public may have a certain guarantee of their skill.

Aveling² enumerates from old sources a number of midwives who acted at the royal court and received an annual salary : Margaret Cobbe in the year 1469 ; Alice Massy, 1503 ; Eliz. Gaynsforde, 1523 ; Joh. Hamulden, Jane Scarisbrycke, 1530.

At the beginning of the seventeenth century, Peter Chamberlen (see Aveling¹) practised in London as the first and indeed very distinguished obstetrician ; he recognised the evil state of the profession of midwife at that time, and in the year

1616 made the humane and sensible proposal to the King : " That some order may be settled by the State for the instruction and civil government of midwives." Had this well-meant proposal been agreed to, England would have the honour of being the first among all other countries to have regulated the profession of midwife and the population of the country would have had trained and controlled midwives one or two centuries earlier than actually happened. Chamberlen's son also acquired excellent obstetric knowledge, and had an enormous practice in London ; in the year 1646, he wrote a famous little book : *A Voice in Rhama ; of the Crie of Women and Children ecchoed forth in the Compassions of Peter Chamberlen* : in this, he deplored greatly that his father's advice had not been followed and described convincingly the distress caused by untrained midwives.

In the sixteenth century, there were only translations of Rösslin and Paré. In the seventeenth century, there was added to them the *Directory for Midwives*, 1651, by N. Culpepper, and the pseudo Aristotle's *Compleat Midwife* made English by William Salmon. Modern obstetrics began in England only after the translation of the work of Mauriceau by Hugh Chamberlen.

Rueff's book, *De Conceptione et Generatione Hominis* was translated into English in the year 1637 with the title, *The Expert Midwife*, by an unknown writer. The prejudice against this class of works in the mother tongue was, nevertheless, still very great in England ; and the author had to make excuses in the preface for having undertaken the work. A document of interest in the history of the profession of midwifery in England is a pamphlet of the year 1643 which is in existence in the British Museum : " The Midwives just Petition," which, in the words of the title showed " to the whole Christian world their just cause of their long sufferings, in these distracted times, for want of trading."

As in medical science in general, so also in the history of English midwifery, a new and better epoch began with Harvey whom Aveling² and Spencer¹ call the father of English obstetrics. His own studies and the work of another prominent " man midwife " (as Aveling² expressed it), Dr. Percival Willughby, a contemporary and friend of Harvey, were of great importance.

The latter complains that the younger midwives stupidly continue to try to increase the expulsive forces of women in labour ; that they make the woman sit on the three-legged parturition stool too soon, and that in this way they greatly endanger the lives of the poor women. This stupid treatment also caused another distinguished modern obstetrician of that period, William Sermon, to write an explanatory text-book.

How different are the unjustified praises which the charlatan Nicholas Culpepper gave to English midwives in his work a short time before :

" Worthy matrons, ye are of those whom my soul loves and whom I include in my daily prayers." etc.

Culpepper certainly contributed nothing to the reform of obstetrics in England.

Gradually it became customary in England to call in doctors as obstetricians in confinements : this, however, did not take place to any great extent till about the middle of the eighteenth century, at which time a violent struggle was going on between Smellie,* Hunter, and the midwives. Sterne took part in this struggle, for he attacked the man-midwives, and the character " Dr. Slop " has been recognised as an example of the type to which they belonged (see Doran²).

According to Gusserow, the instruction of midwives was still very poor in Great

* [Cf. Nihell.]

Britain even in the year 1864. As midwifery in the better classes was almost entirely in the hands of the doctors, women of little education were employed as midwives in the lowest classes of the population.

In Dublin, it is true, the lying-in hospital had twelve places for midwife pupils ; but there were never so many under instruction. This they had along with the students, but, in addition, they had instruction from the assistants in the hospital. After six months there they got the licence for practice.

In London, on the other hand, extraordinarily few midwives were trained for their profession. To prevent this evil state of things, the Obstetric Society of London had for many years a commission to instruct midwives and ascertain their qualifications by an examination. In spite of the private nature of this institution, it enjoys a recognition which increases from year to year ; in three years the number of midwives who presented themselves to the society for examination increased from 12 to 44. However, as the Obstetric Society did not regard this as mainly their duty, they brought forward a motion in Parliament that it should be a punishable offence for women to call themselves midwives without first having passed a State examination.*

One real advance must not be forgotten which, with Fischer, we may call the most important advance in obstetrics in modern times, that is, the invention of the harmless head-forceps. This invention is linked with the above-mentioned name Chamberlen, but remained for years a family secret, the possessors of which may be regarded as probably Peter Chamberlen (I.) the elder (c. 1560–1631), then his brother Peter Chamberlen (II.), the younger (1572–1626) ; the latter's son, Peter Chamberlen (1601–1683) ; his grandson Hugh Chamberlen (I.) the elder (born c. 1630), and his great-grandson Hugh Chamberlen (II.) the younger (1664–1728). Likewise, a great-grandson of the elder Peter Chamberlen on the female side, a certain Dr. Walker is designated by William Douglas the inventor of the English Lock of the midwifery forceps.

6. MIDWIFERY IN HOLLAND

An interesting description of the state of midwifery in Holland in the seventeenth century is given by Cornelius Solingen, a doctor in the Hague, in his work : *Handgriffe der Wund-Artzney*, translated from the Dutch, and issued in Frankfurt a. O. in 1693. He writes :

“ It is, therefore, no wonder that respectable women who are prudent hesitate to take midwives. And all the more so because daily experience shows that many of them are found who can neither read nor write, and some who after they have fallen into dire poverty, learn with one experienced midwife or another nothing, or the little they have been able to scrape together. And when they think they are half-taught, they immediately want to play the master ; especially if they have delivered two or three burger's wives and another whose husband belongs to the profession and not for gain ; then their nostrils expand to twice their size with snorting, bragging and blowing. But those who can read a little sometimes put down in writing how they are to proceed on a half-skin of parchment with few letters, which are so neatly put together and each set so excellently in its proper place that it is a pleasure to read. I say this because such instructions cannot consist of five and twenty lines with expressions of a kind that they make me ashamed that I have them by me, and then they go sailing before the wind as if they had bought the wind from the Laps and Finns tied up in a napkin. So it goes. on in the country where they often have no comfortable chair or other necessaries of which I

* [For an account of later developments and the history of the Midwives Act (2 Edw. VII, c. 17) see Fordham.]

have had experience in the many years in which I have practised this profession, and have described in my historical observations their many and various deeds of omission and commission. Nevertheless, there are honest and intelligent midwives to be found with whom I have practised and continue to practise willingly. But these are the old customers who have had some experience. However, so that the new midwives may not be permitted to enter this profession so soon, some towns have already fixed a certain time in which they shall get used to it and be instructed. And when they have acquired some knowledge it has been ordained that they must go for some time longer to practise with a skilled and experienced midwife, as well as give things and order medicines as much as they are permitted, and since they know nothing



FIG. 727.—Dutch midwives of the seventeenth century assisting at delivery which is taking place beneath a sheet. (After S. Janson.)

about medicine, they shall give no internal medicines except after they have consulted a doctor," etc.

Even when people began to admit doctors as obstetricians, things were made very difficult for them. Thus, the Dutch obstetrician Samuel Janson, in his book published in 1681, gives an illustration (Fig 727) in which one sees the doctor and woman in labour sitting opposite each other, whilst between them is a big sheet. One end is round the operator's neck and the opposite end is tied round the woman's body, and under this sheet, the sides of which are held up a little to two women, delivery is taking place.

A forceps, the invention of which was not connected with the Chamberlen instrument, was invented in Gent in the first quarter of the eighteenth century. The inventor, Jean Palfyn (fl. 1700), professor of anatomy and surgery in Gent, who laid his model before the Paris Academy in 1725, can claim credit for having at once made it generally accessible, and not like the Chamberlen family keeping the invention secret from greed of gain. The Palfyn forceps consisted of two separate and fenestrated blades of steel which were fixed in a wooden handle and provided with strong curved arms. The well-known surgeon Lorenz Heister, in the second edition of his surgical treatise, depicts one scoop of the instrument sent him by Palfyn, and soon the very imperfect instrument was modified by improvements, such as fastening the handles together, affixing hooks and screws, and by these means gradually brought nearer to the Chamberlen forceps (see Figs. 728 and 729). The forceps constructed by Grégoire the younger originated from the Palfyn forceps, and this again was widely distributed in Holland by Cornelius Plevier, an obstetrician in

Amsterdam, who, as early as 1751, established a comparison between a woman in childbed and a seriously wounded man. (According to Petit, John Douglas, a doctor in London who died in 1759, is supposed to have been the inventor of the forceps which Palfyn devised later. Also Ledoux described a similar forceps, and therefore people in France spoke of the "Palfyn," and in Belgium of the "Ledoux" forceps) (see J. Fischer: Doran^{1, 3}).

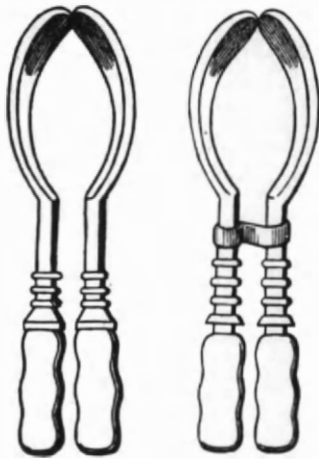


FIG. 728.—The Palfyn Forceps (left). The Heister Forceps (right). (After Fischer.)

7. THE DEVELOPMENT OF MIDWIFERY IN FRANCE

Material advances were made in obstetrics in mediæval France where it is true a strong ancient tradition was preserved.

The way in which the surgeons of the fourteenth century understood and treated obstetrics can best be seen from Guy de Chauliac's works. His information about obstetrics was confined to the two chapters on the extraction of the fœtus and the afterbirth; everything else was left to the midwives (see Carrier).

However, it appears that in France, too, in the fourteenth century, medical instruction was given now and again on the dead body. For in a manuscript of the works of Guy de Chauliac, dating from the fourteenth century and preserved in the library of Montpellier, there is a miniature drawing which is reproduced in the natural size in Fig. 730 after the copy by Nicaise.

We see lying on a table a female corpse on which two students are busy. One has just severed the skin from the breast bone with a big knife; the other is putting aside the intestines in the opened abdomen so that the uterus becomes visible. Beside these is another with a long needle and in his left hand an open book. Of six others some are crowding through the door, some have already taken their places beside the table. On a stool, instruments for the autopsy are lying. A servant is approaching with a tub, probably to collect the organs cut out. Behind him at the top end of the table stand two women and a young man. In the background stands a big bed and beside it a nun praying. Hence the room in which the examination is taking place is probably the ward of the hospital in which the woman died.

While in Germany the instruction of midwives made advances, new methods were not brought to light: we owe to France the reintroduction and spread of podalic version, as well as the first impulses towards the performance of Cæsarean section on the living woman. The first achievement is linked with the name of the French surgeon Ambroise Paré (1510–1590) (see J. Fischer).

Besides this, however, an important change for the better was accomplished in the sixteenth century by Paré, who endeavoured to get recognition for medical assistance in midwifery. The improved teaching of Paré appears to have influenced the great mass of the midwives only slowly, for in the year 1587, Gervais de la Touche published a book in Paris with the title: “La très haute et très souveraine science de l’art et de l’industrie naturelle d’enfanter contre la maudite et perverse impéritie des femmes, que l’on nomme sages-femmes ou belles-mères,

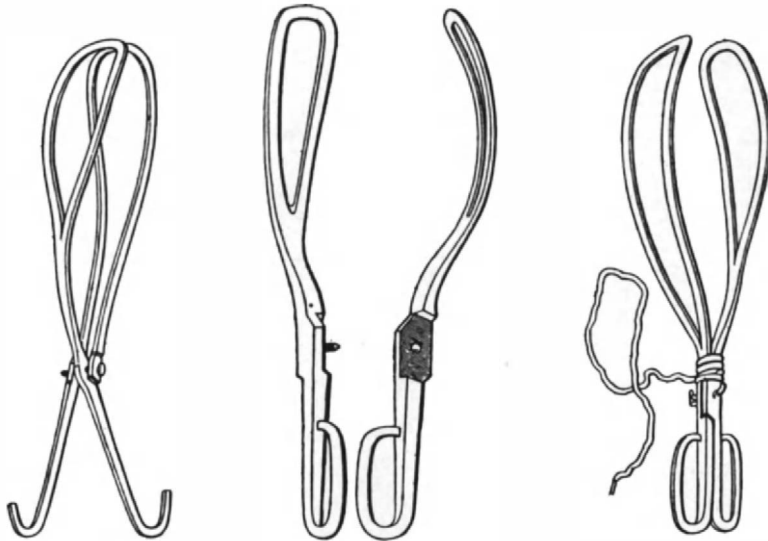


FIG. 729.—The Chamberlen Forceps, initiating one of the most important steps in modern obstetrics. Seventeenth century. (After Fischer.)

lesquelles par leur ignorance font journellement périr une infinité de femmes et d’enfants à l’enfantement,” etc. (Paris, 1587).

That Paré’s efforts were, however, not without effect, is proved by Louise Bourgeois, called Boursier (born 1564), who was trained in Paré’s school for midwives in the Hôtel Dieu. She wrote a text-book for midwives, which bears witness to her knowledge, and the first edition of which appeared in the year 1609; the second in 1626; and the third in 1642. This book had a very good influence on the knowledge and skill of midwives in France: it bears the title: “Observations diverses sur la stérilité, perte de fruit, fécondité, accouchements et maladies des femmes,” etc. It was translated (in parts) into German at a fairly late date (from c. 1628, that is, 19 years after its publication in French) by Matthäus Merian, and, by this means, it became generally known in Germany also.

The next author who advocated podalic version was Pierre Franco. This happened in his *Traite des Hernies* (1561), in which he was not afraid to copy word for word the arguments of Paré on the matter. Franco, moreover, anticipated the idea of the head forceps when he recommended the use of a three-bladed speculum to hold and extract the head (or the feet) in the case of a living child (see J. Fischer)

The introduction of the hand into the womb to determine whether the child is alive by a pupil of Paré, named Guillemeau, is, however, above all, new. He tried to determine the sucking movements of the lips of the child.

In France, doctors first came into power as obstetricians after Jules Clément delivered La Vallière in the year 1636, and had honours heaped upon him for it by



FIG. 730.—Dissection of a female cadaver. Miniature from a MS. of G. de Chauliac. Fourteenth century. (After Nicaise.)

Louis XIV. From then onwards, surgeons who practised midwifery called themselves “accoucheurs,” and male midwifery became fashionable. At the other European courts it was good form to be delivered by a doctor; surgeons were sent to Paris for instruction in obstetrics, and Parisian obstetricians were sent for; thus Clément was in Madrid three times to deliver the wife of Philip V.

An interesting engraving by Abraham Bosse (Fig. 731) shows a delivery in the seventeenth century. It shows us the well-furnished room of a woman of high rank during labour, whose bed has been prepared for her reception. She herself is lying

near the brightly burning fire on a kind of operation table which is covered with a mattress. This is the so-called *lit de misère*, which Mauriceau prescribes. He calls it a little, very low, folding bed; this is to be placed near the stove when the season requires it; round the bed there must not be a throng, so that one can get all round it in order better to help the patient where she needs it.

The prestige of doctors in midwifery was in France also in the eighteenth century greater than in Germany. The question whether in doubtful cases the doctor's decision or that of the midwife had greater weight was decided by a commentator, J. P. Kress, of the Carolina, the penal code of Charles V., in the year 1721;



FIG. 731.—Delivery on the *lit de misère* in the seventeenth century. The midwife is supporting the perineum against the oncoming head. (After A. Bosse.)

he decided for the latter, for he said: “*Les accoucheurs apud Gallos quidem, non apud nos celebrantur.*”

However, it appears from Puéjac's statements in 1863, that many evils prevailed among the midwives in the lower classes in the provinces of France, *e.g.*, manipulation of the abdomen to strengthen the labour pains, too hasty extraction of the placenta, and in spite of the earlier development of a practical and scientific midwifery, the French midwives would, states M. Bartels, be inferior to most of their German colleagues at the same date.

In Brittany, the midwives were, until a few decades ago, still regarded as witches, although in a good sense, for, states Perrin, they did their work in the crudest manner with superstitious customs.

CHAPTER XXXI

THE DEVELOPMENT OF OBSTETRICS IN THE REST OF MODERN EUROPE

1. THE DEVELOPMENT OF OBSTETRICS IN RUSSIA

LET us now turn to the other countries of Europe and begin by considering conditions in Russia. Here the profession of midwife was mostly in the hands of quite untrained and merely self-taught women.

Before the Great War (1914) and the later revolutions, midwives in small town were rarities ; in the villages, these female obstetricians were non-existent and the peasant women helped themselves according to their own discretion and experience, and even in serious cases a doctor was not called in unless there happened to be one in the place. In the smaller towns, where there were midwives, these were usually old women who had taken to this business and perhaps had as much knowledge and understanding of it as the peasant women themselves ; for those who followed this calling did not need to be certified midwives, as no examination of their knowledge and aptitude was made ; the Government in general did not trouble about matters concerning birth and medicine, and only the towns which were in direct contact with the Emperor and his family were deemed worthy of consideration in this respect.

The work of one of these “*sages femmes*” (Russian *babka, babussja, babussjenka* = *grandma, granny*) is described in the following White Russian verse (prov. Smolensk) (see Paul Bartels³) :

“ Oh, so and so wanders about the hall
And granny leads her by the hand.
Thou proud Babussja, with thy help is bearing light !
I give thee a fine young pig,
Bathe for me my aching loins !
I give thee seven bushels of hemp seed,
For this make my sick body well ! ”

Krebel, in the year 1858, writes of the procedure followed in confinements :

“ The woman in labour hangs on cross-bars swaying over her like a kind of swing, and awaits delivery in this half-lying, half-sitting position, and assists by making jumps, or tries to shake the child out as it were. The child then often falls out before the midwife can catch it ; and the umbilical cord is often torn off, or the uterus is pulled down and out. These evil occurrences also often take place if the midwife pulls the umbilical cord too hard, in order to remove the afterbirth. If the uterus is drawn out in this way, the poor woman is taken to the bath house, laid on a board which is placed on the steam-bench steps, so that the feet are higher than the head and then the board with the unfortunate woman on it is raised quickly several times in succession in order by thus shaking the body to shake the uterus back into place. According to the popular conception, the child comes into the world all curled up, as it were ; therefore it is actually stretched by the midwife ; she rubs and heats it with a bunch of birth-twigs, presses the head on all sides, stretches the limbs and, finally, takes the poor little thing by the feet so that the head hangs downwards and shakes it hard and quickly several times in succession to bring the intestines into the proper place.”

These statements have been confirmed by Demič : they throw a very unfavourable light on the state of midwifery in Russia at that time.

An attempt has, of course, been made to bring about better conditions. As early as the beginning of the eighteenth century, a German midwife was for the first time summoned to the Russian court. Later, midwives were brought from Holland, for which reason a "*clever Dutchwoman*" was for a long time synonymous with an experienced midwife (see Heine).

The Empress Catherine II. instituted instruction for midwives in St. Petersburg, and in the year 1782 the first Russian text-book of midwifery was published. A second school for midwives was founded in 1839 near the big school in St. Petersburg. E. C. v. Siebold states in his letters about obstetrics that he had occasion as early as the year 1844 to examine a Russian midwife in Göttingen, whose knowledge astonished him. But, whatever fine results may have been attained by this institute, yet the degree of culture of the great masses of the people continued to be at such a low stage that the better educated midwives could exert only a limited influence on the manners and customs at confinements among the common people. Indeed, such an extensive empire as Russia could not clearly be uniformly supplied with efficient midwives.

According to the information in the Russian State calendar, 29 pupils were trained in the institute for midwives at Moscow in the year 1850, and 15 in that year at St. Petersburg, and just as many in the year 1851. European Russia had at that time 60 million inhabitants. Ucke (p. 252) writing in 1863, says :

"The Russian Government appoints one midwife to each town, and two in a Government town where the sphere of action extends practically only to higher classes ; the common people take no notice of them, yet many know them at least by name, and what their work is. The higher classes in the town of Samara always seek a midwife of good repute and luck, do not shun the accoucheur and call him in, unless the midwife makes a mistake, at the right time. On the other hand, the peasants, burgesses and shopkeepers employ untrained old women at confinements who have the crudest ideas of the process of birth and the means which have the effect of hastening it."

The farther from Leningrad and Moscow the individual parts of the great empire are, the fewer naturally are efficient midwives. Similarly, obstetric treatment is proportionate. The situation in Leningrad in earlier days was interesting.

F. Weber² states that the administration was not infrequently found fault with because persons were tolerated who practised midwifery professionally without having the least knowledge of the profession and without having undergone any course of training. On the other hand, it may be said that every possible measure, every possible form of penalty had been used against persons of this kind without having the least influence on eliminating this class of worker. From this it is evident that these women had become an unavoidable evil and yet a necessity for the simple classes of the people, so that a woman of the lower classes preferred her *povitucha* to a trained midwife, even if the latter offered her assistance free of charge and she had to pay the quack her few pence directly or indirectly. The reasons for these abnormal conditions were to be found in the work these women used to do in the house of the woman in childbed. As soon as the woman, say, the day labourer, who did very hard work and had children in the house as well, began to have her labour pains, she at once sent for her *povitucha* or *babka*, who settled down in her patient's household, and not only managed the delivery, but undertook the whole work of the household ; she did all the housekeeping, cooked for the husband and children, scrubbed, ironed and was astir the whole day long and did not leave the mother until, according to her professional opinion, she was able to take over the duties of housewife herself. Moreover, the mother had not to pay for all this work and trouble herself, but the *povitucha* generally contented herself with what she got at the christening, of which entertainment she herself bore

the cost when possible. The god-parents, as well as the guests and witnesses at the baptism, put their mite under the last cup of tea served to them, and also a few coins were dropped into the washing trough, which was used as bath for the new-born child. These people were difficult to get hold of legally since they asked no payment for their trouble and the law even imposed on every woman the moral obligation of helping a woman in childbirth if no qualified midwife was at hand. No measures, not even the strictest measures taken by the administration, could, therefore, put down this evil.

In what was formerly Russian Poland there were two classes of midwives, the first of which consisted of trained women. They had two complete years' training in a school for midwives, and learnt the commonest obstetric operations which they, just the same as obstetricians, may perform. Indeed, these midwives often had, technically, greater skill in operating than many obstetricians. The second class of midwives, on the other hand, who were called *babka*, were only trained so far as to be able to do the ordinary service of female attendants at normal confinements; they neither could nor might operate, and in those cases which do not proceed normally and require operative help, they were instructed to call in a midwife of the first class, or an obstetrician.

The state of midwifery in Russia was, in the year 1875, discussed by the obstetric and gynaecological section of the General Medical Society of St. Petersburg.

On this occasion some doctors argued that in practice it seemed necessary to train two different categories of midwives, one for the big towns and the other for the country; with this difference, that the latter should have a better training, to the extent of being fitted to perform operations. On the other hand, it was argued that there were already three different categories of midwives in Russia: (1) Simple peasant women, excellent practical midwives who, without laying claim to any special training, knew very well what it was necessary for them to know, and did not meddle with what they did not know; (2) half-taught women, who had a certain modest measure of theoretical knowledge which they could utilise, imperfectly, it is true, and often just enough to do harm to their patients; and (3) those who had recently been trained in the Academy, of whose practical value there was as yet no precise knowledge. Another doctor thought that there were not only three, but still more different categories of midwives in Russia, as the various training schools had a very unequal standard of knowledge; to add fresh categories to those already in existence was hardly to be recommended. Finally, it was decided by the Society to draw up a memorandum in which the necessity for a compulsory text-book of midwifery should be put before the Medical Council. According to this, it is a fact that up to 1875 there was still no text-book of midwifery which, as in other European countries, gave the midwives rules as to what to do and what not to do.

The Russian Government, however, made a serious effort to continue making improvements. Thus, from the year 1884, midwives of the first category were required to have had a good education, for, in order to be admitted to the midwifery course, they had to have a certificate that they had passed the examination at a secondary school. This is a laudable effort to attract women of the better educated classes to the profession of midwife.

With the Russian Revolution there is no doubt that the attempt has been made to make the most thoroughgoing innovations with regard to "mother and child." As we have already mentioned, in this case, too, we must wait and see what the result will be, for in this, as in all Soviet decrees, the complexion is partly political.

The Soviet authorities declared motherhood a social function of woman, and the newspaper *Neue Russland*, No. 8, p. 8 of November, 1924, maintains that the workers' and peasants' Government pledged itself to safeguard them socially. In questions of women's work and the protection of mothers, the following laws were

issued and give an idea of the regulations of the Soviet Government about 1924.*

(1) Women are not permitted to do night work, work in industries injurious to health, work connected with lifting heavy weights.

(2) Women workers get leave of absence from two months before confinement to two months after. During this leave of absence they get full wages and their posts are kept open.

(3) Women in childbed get from the insurance pay office (in Soviet Russia compulsory social state insurance of the whole of the working population is carried out) a single subsidy of the highest month's wages to get the necessary things for the child.

(4) During the whole period of suckling (nine months), insurance is paid to the mother as an additional subsidy to the extent of a quarter of the average wages.

The following types of institutions have been organised in Russia to carry out the protection of mothers and the care of sucklings :

(1) Consulting offices for pregnant women, which bureaux are supposed to urge the mothers to take care of themselves during pregnancy. The doctor observes the state of the health of pregnant women, conducts them to the ambulance or hospital in case of illness ; and finds accommodation for them in an obstetric clinic and generally explains sex-hygiene to them.

(2) For women workers and women who have posts (also for unemployed) and especially for women living alone, the " House of the Mother and Child " was set up. Here the mother spends the leave of absence granted to her by law (two months before and two months after delivery) and, of course, in hygienic surroundings and under medical supervision. Here it is possible for the mother to get a thorough rest before her confinement ; after confinement she does a formal course in the care of sucklings. In this way collectivist habits are imperceptibly inculcated in the mothers ; when they happen to have an excessive supply of milk they feed a few orphan children in this institution.

(3) Midwifery is, on the whole, satisfactorily organised ; nevertheless, the number of beds and midwives is still far from meeting the requirements, especially in the open country.

(4) Consultations for nursing mothers and for the care of sucklings and a systematic supervision of children of the most tender age. It was proved that these consultations were the best means of fighting child mortality. Nursing sisters are attached to the advisory doctors, and they visit the mothers in their homes. By this means the consultation organisation is more intimately linked with the worker's family and the mother.

2. MIDWIFERY IN EXTRA-EUROPEAN RUSSIA

A few short observations are now to follow on the state of midwifery in extra-European Russia ; and the Esthonians and Finns, who were not taken into consideration in the foregoing section, are to be considered later. In this section, of course, only civilised midwifery is to be discussed.

In the former Russian provinces of North-Western America, in New Archangel and Kadiak, special midwives were established several centuries ago, whose help, however, in general was for the benefit of the Russians living there. The natives, on the other hand, had to make shift with *sages-femmes* from among themselves. Ritter, who records this, says :

* For recent work see Halle.

“ A few Aleut women were to be instructed in this science so that they would gradually become of general benefit and displace the old clumsy superstitions.”

The Aleuts, however, like the Russian women of the lower classes, do not greatly esteem the advice of the “ instructed ” women.

Old women assist the Russian women in Astrakhan who, if an unfortunate position of the child is suspected in pregnancy, try to put it right by pressing (*prawit*) the abdomen. The women in labour keep them constantly going the round, and their help when the child appears is confined to supporting the perineum ; but immediately after delivery they take the mother and child to the bath-house. In the latter place, then, it appears that the actual confinement does not take place.

“ The obstetrician,” says Meyerson, “ is to the Astrakhan women worse than the devil ; even with the women of the higher classes the accoucheur may, it is true, prescribe medicine, but on no account apply his own hand. If the delivery takes an abnormal course mother and child are left to the good God.” *

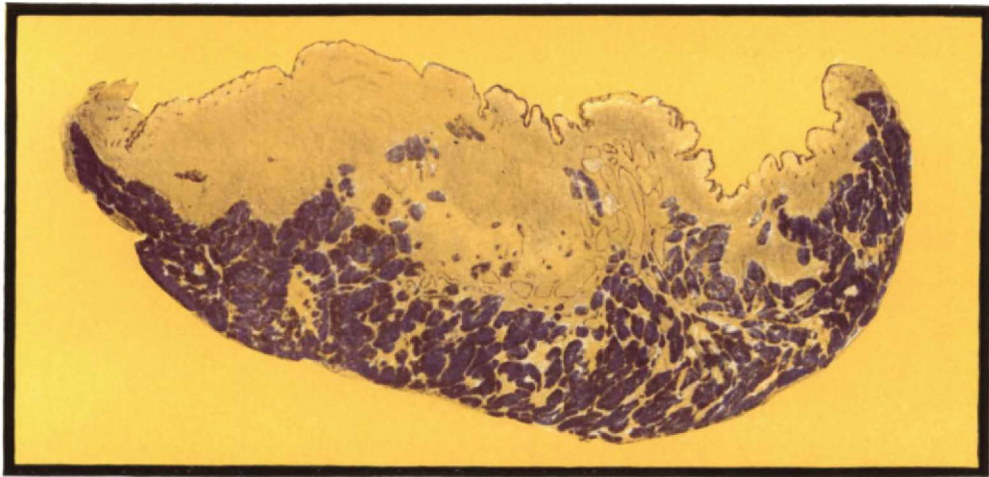
The progress which has been made in the training of midwives in Russia itself has exerted a favourable influence beyond the governments of European Russia. For example, about the year 1860 several Kirghiz tribes applied to the Government in St. Petersburg to send them a few women trained in midwifery. Their request was granted and the Government, at their own expense, had a number of women trained for this purpose. After some time one of the Kirghiz tribes went further in its demands, and petitioned that women might be sent to it who were not only skilled in obstetrics but were also trained in other branches of medical knowledge. One woman, who had already studied midwifery, let the Kirghiz know that she would like to study medicine thoroughly and then go to them as a doctor if they could get permission for her to attend the Academy at St. Petersburg. On the application of a Russian general this permission was obtained ; the Kirghiz at once sent the means for the instruction ; from time to time they sent for reports on the health and welfare of their woman doctor, and when they heard in the summer of 1868 that she was not well, they had special arrangements made to do something for her health. (See *Mag. f. d. Lit. d. Auslandes*, 1869, p. 221.)

3. MIDWIFERY IN SWEDEN, FINLAND AND ESTHONIA

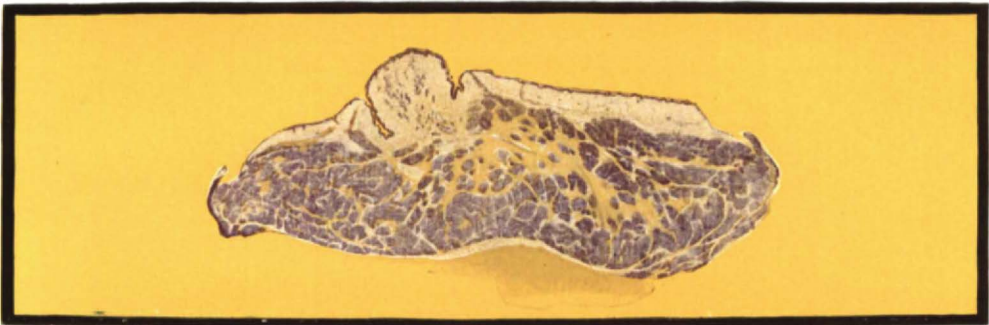
In Sweden, according to Ekelund, the people have more faith in old women than in midwives, whom they call in to help only in case of the greatest necessity ; and many districts refuse even to grant the money necessary for the maintenance of the midwives.

In Finland, in 1884, there were seldom certified midwives in the country. Midwifery here, too, was chiefly in the hands of old women who knew practically nothing about it. The Finnish peasant women, however, were quite satisfied with their help. As soon as a pregnant woman felt labour pains she had the bath-house warmed and straw put on the floor in order to get her bed ready there. There the child was born amid smoke, heat and draughts. The Government, however, made an effort to bring about better conditions in this case also, and for this purpose a big training school for midwives was built in Helsingfors in the year 1878.

* [The author of *A rich closet of physical secrets* (c. 1652) also called upon Our Lord as an obstetrician when occasion arose. We read that “ therefore when there appeareth difficulty in bringing forth the child, Jesus Christ, the onely preserver and saver in danger, is heartily to be called upon, that with his gracious favour he would be pleased to be assistant to the wretched party in travell ” (p. 10).]



1.



2.



3.

Section through the mammary gland of (1) a woman of twenty-three years, five days after the birth of a first child ; (2) a woman three days after the birth of the first child ; (3) a woman, twenty-six years of age, nine days after the birth of the second child.

[To face p. 688.

Of the Esthonians, too, Holst (II., p. 114), reported in 1867, that among them a popular midwifery has been indigenous since ancient times. The rough, uncultivated people, when it could have midwives, did not resort to them, but to untrained old women who acted as midwives among them. These latter are said to do the ordinary services not unskilfully, but when the course of delivery deviates from the normal they do not know what to do, and they maltreat the child and the mother in the most horrible way. In such cases they are very clever at delaying the calling in of the doctor by intimidating the relatives.

We shall hear of many of their unwise measures later ; here only a few will be quoted ; thus the hanging on the arms, dragging up and down a bed with cross-pieces like steps on it, squeezing the abdomen, the premature rupture of the membranes, etc.

“ In a face presentation they squeeze the eyes out of their sockets, break and lacerate the lower jaw ; whilst in transverse presentations they tear off the arms, tear open the breast and abdominal cavities, etc.”

Krebel also confirms the fact that the midwives of the lower classes of Esthonians in difficult confinements try to expedite the course of birth by tying the abdomen, by suspending and by shaking the woman in labour.

We have detailed information about the state of midwifery among the Esthonians in earlier times from Alksnis. It was not easy to collect the information as “ the midwives do not like to speak to men about this, their sacred office.”

“ So then,” continues Alksnis, “ I got some obstetric facts from the statements of women who had given birth to children themselves ; they told me that with them untrained midwives acted. For other information, I have to thank a very busy, untrained midwife who liked criticising the trained midwives and doctors, in doing which, of course, she put her own knowledge in the best light.”

Esthonian midwives think the external examination of little value ; the internal examination of the women in labour, however, they do zealously, and they determine from it whether the child presents the head or the breech, or whether a transverse presentation is in question. Of the last they are extremely afraid. Mistakes are often made in the examination. The vagina is rinsed with a mixture of soapy water and brandy just before and just after delivery.

“ Before delivery, usually a cloth is wound round the woman’s abdomen which makes delivery easier. Parturition may take place in the most varied positions. Not seldom in difficult births the legs are dragged apart by force so that the vulva may be torn, and causes the women frightful pain which, however, must be patiently borne by them. The midwife stands in front of the woman, between her knees and performs her duties. If the delivery is difficult, the uterus is pressed to stimulate the pains ; they also make the woman stand with legs apart and put her weight alternately on one leg and then the other and shake herself a little, so that in doing this the child may come out the more easily.”

Alksnis then mentions another statement by Dr. Blau :

“ The untrained midwives also attempted to stretch the birth passage with their hands, in doing which injuries occurred ; by these no doubt rupture of the perineum and of the os uteri may be understood.”

Exorcisms, too, play a great part, and Alksnis quotes several of them. He continues :

“ A forceps operation is even now regarded as an unnecessary, crude interference, since the child generally dies in any case. In breech presentations, assistance is given with the index

finger round the groin. In foot presentations the feet are pulled, in doing which one has to be careful not to grasp a hand instead of a foot. A hand must never, never be pulled ; if it does present, or if it has fallen forward, it must be pushed back."

Now, however hard these midwives try to keep the doctor away from the woman in labour, yet there is one situation in which his help is much desired by them. That is in transverse presentations. In these cases, said Alksnis's authority, they knew of nothing to be done, and they also did not know of other midwives knowing how to help in such cases ; they simply sent for the doctor to escape the responsibility.

4. MIDWIFERY AMONG THE SOUTHERN SLAVS AND IN MODERN GREECE

Among the Southern Slav tribes the solicitude of the State has not yet been able to destroy the old, traditional, popular midwifery.

In Galicia there are thousands of primitive midwives, old women, of whom two, three and more are to be found in each village, and who, for the want of any other occupation, call themselves midwives ; but midwifery is practised also by young women whose mothers were considered midwives, and to whom, therefore, the art has been transmitted. These women, whose whole technical skill hardly extends beyond the ability to tie up the umbilical cord, know that in normal birth the head should come first. Hence they consider anything that comes towards them first to be the head. At the very beginning of parturition they smear the woman's abdomen with a mixture of brandy and fat ; then they knead it and perfume it. In addition they let the woman bear down till her strength is exhausted. If, in a transverse presentation, there is prolapse of an arm they try to draw out the child by it. About a retained placenta they do not bother ; they leave it to decay.

Among the Slavs in Istria, according to v. Reinsberg-Düringsfeld, elderly women assist women in childbirth. They have learnt the art of delivery from their mothers. In spite of this, confinements usually proceed successfully, and it is extremely rare for a woman to lose her life in childbed.

Of Serbia, Valenta reported in 1872, that there were no midwives there who had been approved by the Government. The peasant women in Serbia give birth to their children in the open air and need no midwife at all. During the first day of confinement an elderly woman stands by her side. Widows, however, are not allowed to fulfil this function.

Also in Bosnia and Herzegovina, trained midwives are rare. Elderly women help women in childbirth, and a number of superstitious specifics come into use in the process. We shall come across some of them later. Glück says :

"To my knowledge, only the Jewesses in Bosnia and Herzegovina are delivered lying down. The woman acting as midwife holds out her hands to protect the child from the fall and takes it away from the mother at the front."

Massage of the abdomen and the sacral region is practised here also, when the course of birth is retarded ; in addition, however, the woman is wrapped in a blanket and well shaken several times in succession in order to get the child in the right position. The women do not trouble about the placenta ; they wait till it passes off of itself.

In Dalmatia and in Zara, to be precise, a school for midwives was erected as early as the year 1821. The instruction lasted for a year, and was given in Italian and in the dialect. On an average, there were 12 pupils there. With the sparse

population of Dalmatia this number would have been sufficient if the midwives had been better distributed, had had more supervision, and been kept within defined limits. Their treatment of pregnant women and of the children has been described by Derblich as rather barbarous.

In Banat, according to v. Rajaesich, an old woman generally acts as midwife.

We have information from Eton about the state of midwifery in Greece. This information, it is true, comes from the beginning of the last century but one, but it is historically interesting.

He states that the midwife he saw was a very old woman whose knowledge and experience were highly praised. She brought with her an assistant who was almost as old as herself. She also brought with her a kind of tripod on which the woman in labour had to sit ; she herself sat in front of the mother and received the child, whilst the assistant put her arms round the mother's abdomen and thus held her.

Then Ploss has obtained more recent information through Damian Georg in Athens. According to this in almost all the towns in Greece there are trained midwives who have received their training in the school for midwives established in Athens many years ago. In the country, on the other hand, practical midwives who have had no systematic training give help in confinements. They deliver the women whilst the latter lie or kneel, insert their hands into the vagina, press back the labia and tear the perineum. When there is delay in the course of birth they use only popular specifics ; they know nothing of false presentations of the child and use no instruments. If the measures adopted by these women in difficult cases are without success then shepherds are often called in to assist.

CHAPTER XXXII

EVOLUTION OF OBSTETRICS IN MODERN ASIA

1. MIDWIFERY IN TURKEY

THE reader will understand if the Turks are reckoned among the civilised peoples of Asia although the information we possess about their obstetric conditions comes almost entirely from Constantinople. We shall be able to regard what takes place there as approximately customary in Asiatic Turkey with the single qualification, of course, that the conditions in a large town like Constantinople must always be regarded as the better ones, and that earlier conditions do not correspond with those of to-day.

Obstetrics here, as in the whole of Turkey, is exclusively in the hands of midwives, as the wives of Turks, as everyone knows, until recently might not be seen unveiled, and could never be touched on the genitals by a doctor.

Hasselquist wrote in his *Reise nach Palästina* in the year 1762, "Midwives are to be found among the Turks as well as the Greeks, but they know their art only from experience without having had the advantage of instruction from anybody." Oppenheim (pp. 45 ff.) in the year 1833 made a very bad report of the morality and intelligence of these midwives called *ébé-caden*.

In Constantinople theoretical instruction for midwives began as early as the year 1844. Nevertheless, Eram describes the state of the organisation of midwives as extremely insufficient. Trained midwives are to be found only in the towns. The majority of these women have a free life behind them before turning to their new profession, so that a proverb says :

"Every woman who has begun with prostitution ends with the status of midwife."

As a sideline they carry on the business of matchmaker, and prove very clever at arranging marriage alliances. They walk along the street feigning great modesty and carrying a stick with a silver knob. Most of them are really Turkish women, but Greek and Armenian women also enjoy great esteem among the common people.

Eram writes :

"La sage femme insiste pour être accompagnée de la mère ou de la grand'mère de l'accouchée pour rejeter sur elles une partie de la responsabilité en cas d'accident et, au besoin, pour utiliser leur expérience, sachant bien qu'ayant accouché elle-mêmes, et souvent assisté à des accouchements, leurs concours pourra quelquefois la tirer d'embarras. C'est un moyen comme un autre de masquer son ignorance."

As may be understood, he has never succeeded in witnessing one of these confinements. He could only draw a conclusion as to the roughness with which the women assisting in childbirth were accustomed to go to work from the many cases of serious diseases of women which came to him for observation in the hospital in Constantinople, and which had almost all to be regarded as the evil consequences of delivery. While Oppenheim reported : "However unskilled the women assisting at birth are, yet, on the whole, few cases of misfortune take place," Eram, on the

other hand, knows numerous deplorable results of unskilled help : in difficult cases, the death of the child, rupture of the uterus, acute peritonitis, pus infection, etc.

If any hindrance in parturition delays delivery, the midwife waits patiently, unacquainted with the mysteries of the mechanism of parturition and the causes of the difficult labour. Then, when the patience of the woman's family is exhausted, another or several midwives at the same time are sent for ; in such cases the woman in labour is very lucky if she escapes with her life. But there are in the Orient also families, especially Christian ones, who even in a simple delay in labour either withdraw their confidence from the midwife entirely, or urge her to speak to a doctor about the case ; then the midwife either resorts to an ignorant charlatan or the report she gives to the doctor of the condition of the patient is so confused and vague that the doctor is unable to get a proper idea of it. If the doctor asks about the uterus, she says it is big, if he then asks if she has examined the patient, she says that she has found the abdomen very hard. Now, if the doctor desires that she should make an internal examination and report the condition of the os uteri, she runs back in haste, forces her fingers into the patient's vagina and gives the doctor a report on the os uteri by comparing it with a number of things. But the doctor also wants to know something about the amnion sac which may be felt in the os uteri ; the midwife runs back again, examines and, in fact, finds the amnion sac—or the parturition has already progressed, perhaps even finished.

Another informant says :

“ The help of the midwives, these untrained women of all nationalities who undertake the most stupid manipulations with the woman in labour, extends not only to the business of delivery ; they are also called in for diseases of women and children, prescribe specifics for sterility and thus produce many uterine diseases. But their special department is artificial abortion ” (see *Med. Times and Gaz.*, 1861, 430).

Prado says of the midwifery practice of these so-called midwives :

“ People should have seen these Megæræ at work as we have ; how in the failure of abortion transactions they dare to undertake the most delicate and difficult obstetric functions with terrible rashness. They dare do these things doubtless from ignorance and because they know beforehand that they will escape punishment whatever happens. It may be assumed that the whole monopoly of the business of abortion as well as midwifery is in such hands. A deep secrecy prevails here as to the practice of midwifery and it is very seldom that an obstetrician is called in.”

Now a report from Rieder-Pasha (quoted from a report by Vogel) :

“ Likewise, not the least difficulty is put in the way of the admission of women (to the hospital Guelhane in Constantinople) : the influx of women to the outpatient's department is continually increasing. Rieder himself can only state from his great private practice in the harem that the Turkish woman does not shrink in the least from being examined physically.”

2. MIDWIFERY IN CHINA

We have information about the conditions prevailing among the Chinese in the first half of last century from the books written by a Chinese doctor to teach women about confinement and their conduct in it. Obstetrics in ancient China, so far as we can gather from ancient sources, and so far as is shown in the manners and customs of the people, which have undergone little change in China, was predominantly theurgical, in which magical specifics and exorcisms played a substantial part. It is all the more astonishing that works on the diseases of women are mentioned as early as the thirteenth century, that there is in the seventeenth and eigh-

teenth centuries a very great number of obstetric books like the *Shi-sheng-pi-p'ou-tsung-yao*, i.e., "Most important Secret Explanation of Obstetrics," which is said to come from the year 1638; the *Ta-sheng-p'ien*, i.e., "Birth of Human Beings," from the year 1715, revised by Ki Chai Chu She; the *Ta-sheng-pao-chi*, i.e., "Things worth knowing about Birth," in 1735 by Fang Tung Juan; the *Shou-Shi-p'ien*, 1785, made accessible in a translation by Hübotter in 1913; and further, two Manchurian works which were published by Rehmann in 1810 and a treatise on obstetrics which H. v. Martius translated in 1820 (see J. Fischer). It can be seen from these books that in China also, intelligent doctors had to go through a struggle with the stupid prejudices of midwives.

The most popular text-books on obstetrics come from the Imperial printing works in Peking. One of these is entitled: *Pao-tsan-ta-seng-pien*, as Hureau de Villeneuve writes it; or *Boo-tschan-da-schenn-bian*, as Rehmann has it. The former title means, according to a translation, *protéger, produit, sortie, vivant, livre*; i.e., the book destined to protect the life of the child in parturition. Its motto is:

"The ignorance of midwives can bring about the death of their patients."

The same book which Hureau de Villeneuve perhaps knows only from the extracts of Dr. Hegewald in Philadelphia, is, in any case, the original from which Rehmann made the translation mentioned.

Tatarinoff also mentions a work from Peking under almost the same title. He calls it *Da-schein-pjan*, and apparently it is an instruction for pregnant women and women in childbed, edited by a certain Ni (the date uncertain). This little book, written in language easy to understand, was considered "indispensable in every well-regulated household, therefore it has already been many times reprinted by charitable persons at their own expense and will be sent free of charge to anyone who wants it."

Rehmann got the book mentioned above into his hands when he accompanied a Russian Embassy to Irkutsk. It was written in Manchurian from which the Embassy interpreter translated it into Russian, and from this Rehmann then translated it into German. It is a manual for pregnant women and nurses, but not an actual text-book for midwives, as Hureau de Villeneuve considered it. Also, the popular Chinese treatise which v. Martius edited in the year 1820 was originally written in Manchu (i.e., the language of the Chinese Court) and resembles the *Pao-tsan-ta-seng-pien* so much, even to the question and answer form, that the suspicion arises that one Chinese writer has here made abundant use of another. Also, v. Martius thinks that this treatise was intended less for doctors and midwives than as a kind of popular handbook or a manual of instruction for nurses.

The real text-books for midwives in China are somewhat different. v. Martius says:

"The women who practise midwifery learn their art from special books on obstetrics, of which there are undoubtedly several; for it has become known to foreigners that they have no canonical work. The instruction in these obstetric books is usually in the form of questions and answers, and, to make it easier to understand, these are explained by very clumsy illustrations. Very probably the midwives are unable to read these text-books for themselves, but the contents become impressed on their memories after being read aloud repeatedly and in their practice they are guided by the illustrations in the books."

In the Chinese book which Rehmann translated, the question whether a midwife is necessary at delivery is answered as follows:

"One can have them there but let them have no control over the woman in labour; for the majority of midwives are stupid and ignorant. As soon as the midwife crosses the threshold,

without knowing whether delivery is near or not, she at once begins to spread hay on the floor and says: 'Exert your strength, the child's head is already there!' Or she rubs the loins, strokes the abdomen, or she inserts her hand to make experiments, thus to show her exertion



FIG. 732.—Visiting a Chinese lying-in woman. The midwife holds the child in her arms.
(From a Chinese water-colour. Ehrenreich Coll.)

and solicitude and that she is not there idle without anything to do. I should like to give evidence here, but pity restrains me—of all the incurable misfortunes which crafty and cunning old women bring about merely from self-interest because they want to prove their efficiency. The very name 'midwife' shows that she is an old woman who knows how to receive a child

at birth and put it in the bed, but not that she is supposed to have the skill to accomplish anything with her hands or otherwise handle women in labour. In many of the wealthier families they even have her there long before the confinement. But if anything unpleasant happens during the process of labour people fetch many of them, and they only make unnecessary work for themselves, and run hither and thither."

We get in this a classic description of the conduct of these women from the pen of the Chinese doctor.

We make the acquaintance of such a midwife in a Chinese water-colour drawing (see Fig. 732). She is kneeling on a raised platform, her clothes protected by a kind of apron, and is holding the fully dressed new-born baby in her arms. The wash-basin, in which it was cleansed, is still standing beside her. On the same platform the mother is also sitting upright and supported by cushions. Three children, probably the brothers and sisters of the new baby, one still in arms, are visiting the mother; three adult women, one smoking, are also paying their visit. A fourth woman with a closed sunshade is holding one child in her arms. The midwife is represented as an old white-haired matron (M. Bartels).

The treatise translated by v. Martius also mentions that "stupid midwives" urge the woman in labour to exert her strength.

"It is still worse when any of these women disturb the child in the uterus by feeling and pressing the loins and the abdomen of the mother, all which is done by these women merely with the intention of making experiments or to show the importance of their own presence." Further, it says: "No doubt it is always good to have such a person near, but she should not be allowed to have any control over the woman in labour because these women are generally very inexperienced, and without any reason, merely to make themselves important or to show their experience and their great solicitude for the woman in labour, they worry her by unnecessary noise." And, finally, we read: "In this way, so many women die in childbed, especially primiparæ, because they had absolute confidence in the tales of midwives, and allowed them to lay hands on them and to bring nature into disorder."

Chinese midwives, as v. Martius heard in China, are said to be trained for their profession with movable anatomical figures by a few doctors who are concerned with confinements. The knowledge of these doctors, however, cannot be very wide. For, according to Hureau de Villeneuve in 1863, no man, not even the husband or the ordinary family doctor, may enter the room of the woman in labour at the risk of his life (p. 30). Staunton, too, recorded in the year 1797 that no doctor was permitted to observe women in childbirth or to practise obstetrics.

Deviations from this strict rule must, however, have been possible sometimes. For v. Martius's doctor relates:

"In my life, so long as I have been a doctor, I have used the teachings of the great Manlaa for guidance, 'and at all the births at which I have been present' I have always followed the natural laws of nature. With thorough examination I never found it necessary to disturb the natural course of labour or to prescribe drugs. Because I wish to make my methods general I have had them printed. The first and best rule to promote the easy delivery of a child is rest, patience and abstention from drugs."

According to the more recent reports of Hureau de Villeneuve (1863), Chinese midwives are, however, not inexperienced in the internal examination; they can, from the state of the cervix, recognise the beginning of parturition, but they continue to think they can use certain signs from the pulse as characteristics for the prognosis and diagnosis of the course of pregnancy and labour.

When labour begins the midwife engaged comes with her assistant and several

women friends of the family, who put themselves at her disposal. The midwife first orders the people in the house to make no noise. Whilst she imposes silence, she spreads on a piece of furniture the numerous medicaments which she usually carries with her.

Then she determines the presentation and position of the child, makes the prognosis for delivery from the look of the patient's face, makes her walk about first, then stand up with her arms raised, and when the labour pains become very strong, puts her in the position which is customary in China during parturition.

M. Bartels obtained from Grube the following information about the obstetric conditions in Peking towards 1900. A few days before the expected beginning of the confinement, the female relatives of the pregnant woman who want to help her in delivery, appear on the scene. The equipment necessary for the lying-in room has already been produced in the seventh or eighth month. Shortly before her confinement a doctor is summoned who prescribes for the future mother a specific for regulating the vital energy. The primipara gets besides the powder "which opens the bones," of which mention has already been made. With this the activity of the doctor seems usually to be at an end; only he may, if necessary, call again before the third day of confinement. If this period is past, then, for reasons to be discussed later, he is not allowed to enter the lying-in room.

Now, when the doctor has given his medicines, a midwife is summoned. She feels the middle finger of the pregnant woman, and if a quivering can be felt at the first joint, the confinement is considered near. By touching the abdomen the midwife then tries to determine the beginning of events more exactly. After this she leaves the pregnant woman again, and she is summoned when the first labour pains set in. How the confinement progresses now will be discussed later.

Great importance is laid on the hygiene of the pregnancy, which lasts 270 days. For example, restriction of sexual intercourse, continuance of the usual work, regular movement, avoidance of alcohol, keeping unpleasant things out of sight; and sleeping on each side alternately also is recommended. The movements of the child are known precisely. Preliminary labour pains are caused in pregnancy by the movements of the child, but may, however, also be aroused by colds, errors in diet, etc. It is of importance to distinguish them from the real labour pains so that the woman does not begin labour too soon. The abdomen of the pregnant woman is enveloped in a binder. For the individual months of pregnancy, exact rules of diet and corresponding medical prescriptions are given. The turning of the child with head downwards does not take place till immediately before or at the beginning of labour. When labour is beginning, sleep is recommended before everything else, *i.e.*, the patient must avoid any excitement, restlessness, bearing down, any exertion of strength, and must suppress her pains as far as possible and wait patiently, "saving her strength for the time when it will be needed; this is particularly urged" (see J. Fischer).

In the Chinese text-books of midwifery the following five presentations of the child are differentiated: the head, breech, arm, foot, and trunk presentation.

As Chinese midwives regard the head presentation or the presentation of the feet as the most favourable so, if one foot or a hand is in front, or if it is a question of a transverse presentation, they try to bring about these favourable positions. They endeavour to accomplish this by making the woman in labour lie down to rest, and by manipulations, which are not given in detail. If the procedure does not meet with success, then the Chinese doctor writing on the subject, "does not know himself what method to suggest." To be sure, it is said that the midwife, when the child has died in such cases, proceeds to draw it out by means of a hook, or dismembers the child, *i.e.*, amputates the limbs and breaks the bones; yet no details

of this procedure are known, and it can hardly be assumed that the midwife really sets about this important interference herself. According to the records of Dr. John J. Kerr, there is no question at all of manual assistance in the practical obstetrics of the midwives in Canton. Amulets, however, play a great part in confinement; thus the woman in labour must, in some cases, put on stockings which have been consecrated beforehand by the Dalai Lama. When there is delay in the expulsion of the placenta the midwife tickles the woman's palate with a feather to bring on the action by vomiting. In the treatise published by von Martius it is said that delay in the expulsion of the placenta arises from the fact that the woman was put in the parturition chair too soon; the matter is not dangerous, only delicate, and does not necessitate drugs; but the umbilical cord is to be wrapped round, then bent over; after this, to be tied up and divided with scissors. Then it will shrivel in from three to five days, and the placenta too will shrivel and fall out.

The supervision and control of the lying-in, as well as the treatment of any maladies which may occur in it, appear to belong to the functions of midwives in China. For in the Chinese works mentioned these things are often under discussion.

3. MIDWIFERY IN JAPAN

Whilst the culture of Japan is to some extent derived from that of China, midwifery in Japan, on the other hand, appears to have gone through an autochthonous evolution (see M. Ogata). This emerges fairly clearly from E. V. v. Siebold's report on what his pupil Mimazunza, a doctor of Nagasaki, stated. Obstetricians of Japan were not examined and licensed by any authoritative body; while other doctors received a kind of approbation; the former, as Mimasunza said, have applied themselves "theoretically and practically to obstetrics and we are called in where the process of birth is irregular."

Until about 100 years ago midwifery in Japan was almost exclusively in the hands of certain women who transmitted their knowledge by tradition. Their whole procedure was without any scientific basis; it was confined, moreover, to the most ordinary functions, dividing the umbilical cord, removing the placenta, bathing the child, etc.

Even the oldest medical book of Japan which has been preserved, the *Ishinto* of Yasuyori-Tamba, from the year A.D. 982, contains embryological information. Before the third month the foetus shows no sex differentiation; in the sixth month, muscles and bones develop; in the eighth, the skin; in the ninth, the hair. Rules for the procreation of boys and girls also are not wanting among the Japanese (see J. Fischer).

Obstetrics was, at that time, regarded as part of medicine. However, only general theories about the position and development of the embryo were taught, without the people having any conception of the functions of the uterus or of its existence. The whole activity of doctors consisted in prescribing a number of anti-spasmodics and specifics for deadening pain.

In the year 1765, a doctor who had settled in the Province of Omi, Sigen Kangawa, first put the tenets of his knowledge and experience into a book, which bears the title *Sang-ron* or *San-ron*, i.e., "Description of Birth." It has already been quoted repeatedly. Kangawa had earlier practised acupuncture, and his teaching was based less upon anatomical knowledge than on the consideration of the points which are of importance in acupuncture.

He also made use of *ambuk* for obstetrics, a massage in use in Japan from ancient times which is said to help in various maladies. He introduced it as a methodical, careful and gentle pressure or palpation of the abdomen for the diagnosis of pregnancy, as well as for the acceleration of delivery and for the elimination of various ills of pregnant women (Fig. 733). Further, Kangawa opposed with success the use of the parturition chair and the evil custom of making the patient remain on this chair without sleep for a whole week (Fig. 734). He had the woman put in a comfortable "bed," i.e., on padded quilts or mattresses, and also recommended that the living-room be better aired, etc. Among obstetric operations, Japanese doctors, after Kangawa, practised external version (*seitai*) which is accomplished by a kind of *ambuk*; when necessary, they extract the child with the hand, or carry out dismemberment with the knife or hook.

Ambuk or *Amboekoe* (*ampuku*) is carried out both by midwives and doctors, and Mimazunza says :

"To hasten delivery, one presses the abdomen now



FIG. 733.—Japanese physician massaging the abdomen of a pregnant woman. (After Witkowski.)



FIG. 734.—Delivery of a Japanese woman. (After Witkowski.)

and then with great care, following the rules and manipulations employed in *ambæka* and *setai*."

Midwives may have learnt a great deal just by watching obstetricians. Another informant, a Russian doctor in Hakodate, writes in 1862 :

"Japanese midwifery lies in the hands of rough old women and obstetric operations naturally do not take place."

However, he also says that the midwives perform version by stroking the abdomen. He ascribes the frequent occurrence of puerperal diseases chiefly to the binding of the abdomen in pregnancy (to keep the child as small as possible), and in lying-in (to prevent congestions from the uterus to the head) as well as to the over-cold and unpleasant "beds" of the women lying-in; while Scheube, on the

other hand, declares this use of the abdominal binder for five weeks after delivery to be very expedient.

Mimazunza concludes a very interesting treatise with the words :

“ However much the number of unsuccessful and dangerous confinements has decreased in these enlightened times owing to the improvement in obstetrics and to the manner of living during pregnancy (for which thanks are due to more than one famous obstetrician), accidents still occur both before and after parturition, and the women in childbed can only just or not at all be saved from the danger, especially in places where no experienced obstetrician or midwife can be called in.”

The oldest Japanese form of obstetrics, as described by Ogata, gives precise rules for conduct in pregnancy, the duration of which is specified as ten months. The wearing of an abdominal binder also was regarded as important. The midwife came two or three times a month to stroke the pregnant woman's abdomen with her hands and thus bring about a correct presentation of the child. At the birth, which took place in special lying-in rooms or houses fitted precisely according to rule, exorcisms and amulets, and drugs as well were used as specifics for accelerating delivery. The woman first lay on a straw mat covered with mattresses during the stage of expulsion, and during delivery, she knelt down, with her trunk bent forward. A kind of support of the perineum was carried out by pressing the anus up towards the orifice of the vagina. The umbilical cord was divided about 3 in. from the navel with a knife of copper or bamboo, with pieces of porcelain, or also with gold and silver knives. They tried to hasten the expulsion of the placenta by rubbing the abdomen. In case of retention it was brought out with a special ivory forceps, or with the hand. After delivery, compresses of cotton-wool soaked in rape seed oil were applied, various medicaments were administered which were no doubt intended to stimulate the contraction of the uterus, and the patient was ordered to lie on the left side with the trunk raised. Absolute rest and strict diet were in force for childbed (see J. Fischer).

According to information from Scheube, who practised as a doctor in Japan, in about 5 per cent. of obstetric cases at that time, operative help was necessary. In how many cases the operations ended successfully for mother and child unfortunately remains unknown. He reports that puerperal fever, too, occurs there.

On the other hand, according to the statement of Dr. Kauda, in Tokio, Japanese women are so healthy, so well-built and beautifully developed, that confinement generally proceeds of itself and without further help.

Vedder, who was physician-in-ordinary to the Prince of Nagato and Suwo, makes a similar report. Midwifery was, as he says, in Japan, for the most part in the hands of women, and only the performance of bigger operations (version, cephalotomy, etc.) was left to men. In Japan, at delivery, the woman in labour usually kneels on mats which are covered with oil paper and old clothes, and something is put under her arms to support them. The midwife presses with both hands against the sacral region. Later, in order to guard against rectal prolapse, she supports it with her hands. She feels in the vagina with her finger whether the head is coming, and when the head is passing through she presses the perineum forward to avoid perineal tears.

That Japanese women are delivered also lying down has already been mentioned and one such delivery scene is portrayed by a woodcut from a Japanese book entitled “ What to do when there is illness in the family,” which is in the Ethnological

Museum in Berlin. It is reproduced in Fig. 735. Behind a screen which only partly conceals the bed, we see the woman in labour on her couch, with which a later illustration makes us better acquainted. At each side of the bed kneels a woman giving help, one of whom appears to have pushed her hands under the cover and is doing some kind of manipulation in her pelvic region. The patient is lying on her right side.

As we have said, the way for an improvement of obstetric conditions in Japan was prepared by Sigen Kangawa ; those coming after him worked with the same aim. The theories of Kangawa, which he gives in the *San-ron*, are still free from European or Chinese influence ; they emanate from pure Japanese civilisation. Correct anatomical ideas we can, of course, not expect in him.

He calls his description of the process of birth and its treatment "Choice of the Bed" ; he differentiates, quite correctly, the various presentations of the child, and for the various acci-



FIG. 735.—Pregnant Japanese woman, in the lateral recumbent position, being assisted by two women. (From a Japanese woodcut.)

dents and disturbances in parturition he has specified five different "manipulations" which consist, in particular, in a presentation and position of the women to be chosen according to the circumstances, as well as in certain manipulations of the obstetrician (external version, etc.).

We owe the following description of his contemporaries to Kangawa :

"Most doctors leave all active procedure, *e.g.*, giving orders for the 'sitting on the mat,' the decision as to the position, whether the child is alive or dead and the necessary interference, to the midwife, and do not trouble about it ; then if they do come across a difficult case, they do not know what to do and have to see mother and child die ; this, however, is not the task of our profession, which aims at alleviating pain. The midwives who are employed are, for the most part, ignorant widows, who can only do the wiping off and washing, but are absolutely incapable of being instrumental in saving life. For this reason, it is urgently necessary for doctors to know what has to be done in pregnancy and the methods of treatment. Both these are most urgently needed, however, during parturition ; here the obstetrician can be of real service, but only one-fifth of the help consists in medicinal treatment ; in four-fifths of the cases, on the other hand, mechanical and manual help is necessary, while doctors almost without

exception turn their attention to medicinal treatment which can accomplish nothing at all."

Kangawa appears to have resorted to instrumental interference where labour was prolonged for three days. Then, however, as a rule, the child was already dead (see Fig. 736).

His so-called "five manipulations" are: (1) "Sitting on the mat," *i.e.*, in normal presentation of the head, the squatting position to be taken up by the woman with the support on the part of the obstetrician by protection of the perineum, lifting the body of the patient and stimulation of the pains by rubbing; (2) the extraction of the child in breech presentation; (3) the version of the child by external manipulations in transverse presentation; (4) the treatment of twin births by introduction of the head presenting first by means of pressure from the abdomen outwards; (5) the use of the hook (as it seems the sharp and blunt, that is, the double hooked retractor) in transverse presentation of the child with prolapse of the arm or



FIG. 736.—Instrumental assistance at a Japanese delivery. (After Engelmann.)

shoulder. The last manipulation was still regarded as a secret; at least Kangawa has not described it in detail. However, it seems to have become known even to the midwives since then. At least Miyake records that the latter use the hook.

In Japan it is the custom for a profession to go from father to son; however, the sons often do not get the first instruction from their father, but from friends of his. There are families in which a certain kind of profession has been transmitted from father to son for centuries, and, therefore, these families, because of the efficiency they have attained, are held in great esteem. Owing to the general custom of adoption in Japan, the extinction of an art is prevented. Just as there are famous families of painters and doctors, so also are there famous families of obstetricians. Of these, that of Kangawa enjoys the greatest esteem. His successors up to the present time have continued to improve Japanese midwifery.

These successors of Kangawa, who came from his school in Kioto, recorded to some extent their own experience and inventions in special publications.

Thus, Kangawa Shikei wrote a supplement to the *San-ron*, a two-volume work under the title *San-ron Riaku*, 2 vols., 1775).

The *San-ron* itself is divided into four books :

- (1) Of the evolution of the embryo, theory and practice during pregnancy.
- (2) On the choice of the lying-in room and the seat to be complied with.
- (3) Treatment after delivery.
- (4) On the chair to be used after delivery and the abdominal binder.

The *San-ron-Riaku* (Supplementary volume) in two books and 24 chapters, contains rules about the diagnosis of pregnancy, the examination of the uterus, the diagnosis of the death of the foetus, normal milk, the diagnosis of the presentation of the child, possible replacement of a faulty presentation, diagnosis of twins, further abdominal massage, drawing off of water, etc.

There were also other families of obstetricians in which knowledge and skill were transmitted from father to son, or to a younger relative adopted by the former ; thus Scheube possessed an interesting work on obstetrics in 12 volumes, which was

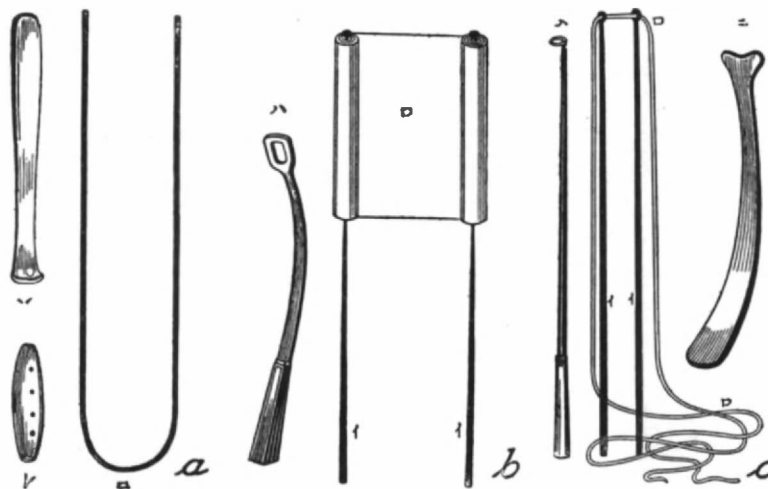


FIG. 737.—Japanese obstetric instruments. (a) Tanganki (after V. Fujikawa) ; (b) Tentōken (after Fujikawa) ; (c) Seiōchū (after Fujikawa). (After Fischer.)

published by Mitzuhara in the year 1849 under the title of *Saniku-zen-sho*, or the "Complete Book of Midwifery."

In this, numerous illustrations explain the operative procedure ; the position assumed in protracted labour, in which the obstetrician uses pressure, the manifold manipulations of *ambuk* in transverse presentation of the child, the way the placenta develops, and also a remarkable pulling apparatus with which the obstetrician, by means of a rope wound round a crank promotes the expulsion of the child round which, in the uterus, a sling is put (see Fig. 736). We shall revert to this later.

J. Fischer says of these slings : " The famous fish-bone slings (*tanganki*) (Figs. 737a and 738), characteristic of Japanese midwifery, are said to have been invented simultaneously, but independently of each other, by Sansetsu Mitzuhara and Ramsai Kangawa at the beginning of the nineteenth century. After they were closed and provided with a wooden handle, they were used to extract the head whether it came first or last. However, in order to avoid the weals caused by it, the last-named used, instead of the fish-bone sling, a silk cloth (*tentoken*) (Fig. 737b), which was put round the child's head with the help of two fish-bone rods. Ranko Kangawa used a silk ribbon (Fig. 737c) (*sei-ochū*) and Ryūtei Tatsuno a silk net (*hō-tōki*).

In later times intercourse with Europeans continually increased. With this, Japanese doctors slowly became acquainted with our medical science and also with the use of the forceps.

In modern times we find in Tokio a school for the instruction of midwives, and

those desirous of training in the profession can get instruction in all the schools from the medical official established in them. The law about instruction of the ninth year of the Meiji (1876) says in Art. 2 :

“ Anyone who intends to be an obstetrician, oculist or dentist can obtain a licence after he (or she) has passed satisfactorily an examination in general anatomy or physiology, and, finally, in the pathology of those parts with which he (or she) has to deal.”

On the other hand, Scheube asserted that :

“ Obstetricians occupy a special position with regard to the state in so far as they have not had to pass examinations as doctors and apothecaries have had to do. The same is true of midwives. Obstetricians and midwives are not trained at public or private educational institutions, but go as pupils to older obstetricians and midwives respectively. The pupils accompany their masters on their rounds and try to learn as much as possible by watching them ; in addition, they study the prescribed text-books industriously.”

According to this the acquisition of a licence as obstetrician would be optional ; it is also not acquired as the result of an examination in an obstetric clinic.

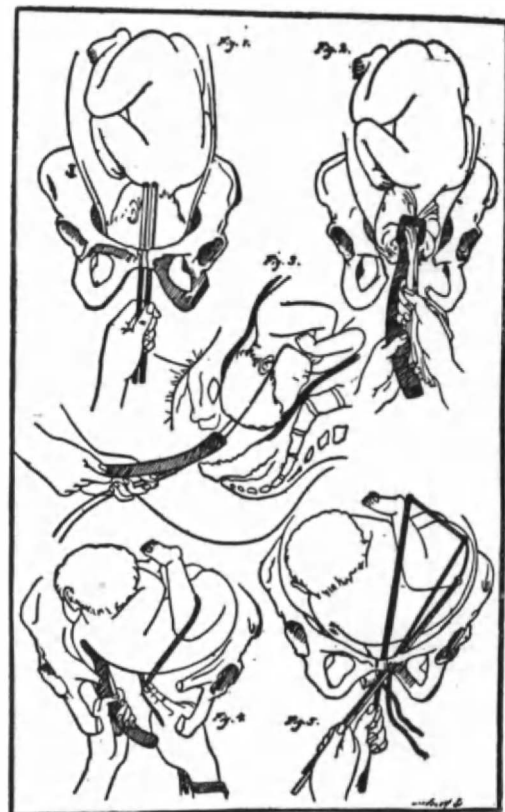


FIG. 738.—Japanese obstetric instruments in use.
(After Witkowski.)

In the last few years the study of medical science in Japan has been organised more and more after the German pattern. In this the Dresden International Hygiene Exhibition of 1911 was largely instrumental. Already there is a great number of efficient and thoroughly trained doctors, who are capable of entering into full competition with those of Europe. Also the training of midwives now takes place very much as with us in systematic courses of instruction, which end with the acquisition of the certificate.

CHAPTER XXXIII

MIDWIVES IN PROVERBS AND FOLKLORE

1. THE NAME AND DESIGNATION, THE IMPORTANCE AND INFLUENCE OF MIDWIVES

IN every country where there are midwives who pursue their vocation professionally, these women are not without considerable influence on the general life of the people. Not only because they were at the side of the women in childbirth in the hour of danger, but also they remain in close connection with those families in which they have helped the children into the world. In these and also among the people generally, they are regarded as unquestioned authorities and advisers in matters of health generally. Owing to their long and trusted intercourse with families, their continual sympathy in any family events, and a certain degree of knowledge of humanity, their energy and decision in their personal conduct, which brook no contradiction and which they gradually learn from experience and practice how to adopt, they obtain in a moral respect no little esteem, and a superior position and an influence on the whole population. The profession of midwife thus becomes a very important social element.

As early as in the Talmud the midwife was called *Majalledeth*, "the wise woman." The wise woman is supposed to be able to give advice in all cases of distress and illness; she also shows herself ready to take part in these, and by no means only where diseases of women and children or some part of the science of midwifery are involved, but also in every possible difficulty in life.

The designation "wise woman," as is well known, is also in use with us (in Germany), and the French call her *sage-femme*. Yet it must be called to mind here that, in the opinion of some, the word *sage-femme* must be derived from the *sage*, the witches, who were notorious in particular for their skill in inducing abortion (*cf.* Galliot).

A Chinese doctor says: "The word midwife indicates that she is an old woman who knows how to receive a child at delivery and to put it in the bed." On the other hand, it is said that the Chinese name for midwife means "reception woman." The midwives in Northern China are accustomed to have on their dwellings a painted shield to make it easier to find them. Fig. 73E, which we owe to Grube, represents such a trade shield from Peking. On the front is the name of the midwife and the indication of her activity. In this case the inscription runs:

"shou Wang
hsi shih."

i. e., Mrs. Wang receives, washes.



FIG. 739.—Trade sign of a Chinese midwife in Peking. (From a Chinese woodcut, Staatl. Mus. f. Völkerk., Berlin.)

The back of this midwives' shield contains some lucky motto or a clever allusion to her occupation, e.g., "quick horse," "easy journey." In Central and Southern China, according to information kindly given by Professor Haenisch, the shield, instead of *shou hsi*, generally has the sign *ts'iu-sheng*, i.e., "hastens birth" = delivers.

In Cochin China, states Mondière, people address the midwife as *Bà-mu*; *Bà* is the title of respect for women and old women are called *mu*.

The Japanese call them *samba san*, which means impoverished women. A Japanese "*Samba-san*" is portrayed in the already quoted Japanese work which bears the title "*What to do when there is illness in the family.*"

According to information from Professor F. W. K. Müller, the midwife is also called *toriagebaba* in Japanese. This is compounded from the root *tori*, take; *age*, lift up; and *baba*, granny; thus this designation would mean the taking, lifting granny. This, as we see, is reminiscent of the "reception woman" of the Chinese.

According to Baas, midwives were called *meschenu* among the ancient Egyptians. As we saw earlier, the Greeks had the *Maiai* or *Jatromaii*, who were also called by their names, such as "dividers of the umbilical cord"; the Roman midwives were called *obstetrices*, or also quite commonly, *matronae*.

We have already come across the designation for midwife among many other nations. Thus the Turks call them *ebe-caden* or also *mamy*; the Persian *mama*; the Circassians, *betia*; the Algerian Arabs, *qabela*; modern Egyptians, *dayeh*; the Basutos, *babele xisi*; the Swahili, *kungwi*. On the Philippines the midwife is called *mabutin gilot*; in North Celebes, *talohoelanga*; on the Island of Ceram, *ahinatukaan*; on the Tenimber and Timor Laut Islands, *wata siton*; on Nias, *solomo talu*, and among the Ainu, *ikawobushi*; on the Fiji Islands, *alewa vuku*; among the Siamese, *yi* and *mhrak-sah-eran* or also *mo-tam*, i.e., nettle doctors.

Bastian writes in his *Reisen in Siam* (1867): "Midwives are called *mo-tam* (nettle doctors), either because they have to be constantly on the point of departure, and may be summoned hither and thither also at night, or because their hands come in contact with things which others would not know how to take hold of. Also the use of the urticatio as a stimulus is not unknown."

Among the Orang-Lâut in Malacca, according to Stevens, there is in every family group one or several old women who enjoy a reputation as midwife, and are preferred to others. The midwives of the Orang-Bêlenda have a special hut, which is built right on the ground and not, like all the rest of the huts, raised on bamboo piles. No man of the Orang-hûtan enters it, and usually the children also are not allowed within, so they may do no mischief. The women, however, are admitted. The door is particularly small and low, so that people cannot see in. If the midwife is married, she lives with her husband in one of the usual huts; however, she has also a midwife's hut constructed as described. Some give as the reason for this special structure that the house is situated so low because the midwife is old and weak; others, so that the Hantu, the ghosts, cannot slip under it; others again, however, and this is perhaps the most probable reason, that the house is easily recognisable, and will not be entered by mistake by intruders. In this house the women of the tribe are delivered, and remain there for 14 days afterwards.

The midwife of the Orang-hûtan has a favoured position in so far as she is exempt from the work done in common by the women of the settlement. But if it is work like binding rotang, searching for herbs, etc., in which the women have to

go out of the village, then the midwife is obliged to take all the children of the village under her charge. But individual women also who have to fetch heavy burdens bring her their children to look after in the hut while they are away.

Among the natives of the former German New Guinea the woman in childbirth is aided in her hut by two women friends, and later looked after by them.

“ These women who give assistance at birth, enter into a peculiar relationship to the newborn child : they are addressed as ‘ mother ’ by the child if a girl, until she is herself married, or, if a boy, till he leaves his mother’s house to live with the men. Thus the Kanake are in the position of being able to boast of several mothers, and, in order to find out which is the real mother, one has to add to the question about her that one means the one who gave birth to the person questioned ” (Graf Pfeil).

In the Finnish tribe, the Syryenians also, the woman who divides the umbilical cord enters into a relationship to the child as well as to the two god-parents ; the relationship of the midwife and the god-parents with each other is shown in the fact that they may not have sexual intercourse with each other or the child will fall ill (Nalimov). The designation and position of this woman is a thoroughly honourable one and the least insult offered her would be punished.

Among the peoples of the Romance languages the midwife is called *comadre* (from the Latin *cummator*) among the Spanish and Portuguese, and among the Italians *la commare*, also *levatrice*. The French have their *sage-femme*, also *accoucheuse*. In a work written by Gervais de la Touche in Paris in 1587, the midwife is called “ *belle-mère* ” in the title. In the Mexican provinces she is called *partessa*.

The Russians used to call the midwife the *clever Dutchwoman* because, as we have said before, the first trained midwives came to Leningrad from Holland ; now, however, the midwife is called *povitucha* or *babka* in Russia.

She is also called *babka* by the Poles, whilst the Wends call her *baba*.

The German woman calls her midwife *Hebamme*.

In Holland the midwife is called *Vroedvrouw*. In Swedish and Danish she is called *Jordgumma*, *Jordemoder*, literally, “ earth mother,” because, as Grimm supposes, she put the child on the ground and then, if the father did not want to put it to bed but to recognise it, she lifted it from the ground at his bidding. Weigand believes that the German name *Hebamme* is derived from a similar custom.

The importance of midwives in the history of civilisation should by no means be put too low. While primitive midwifery rested in their hands alone, while the professional representatives of medical science, the doctors, did not practise midwifery, then, naturally, the welfare and travail of pregnant women and those in labour, as well as the fate of the coming generation, remained solely in their hands. This power they did not give up willingly. The doctors and surgeons had a hard and difficult struggle with the midwives. The last, moreover, had a powerful ally on their side ; this was woman’s (acquired) modesty.

With regard to this Prochownick says :

“ Only thus and only then can this everlasting struggle be understood when one keeps in mind the naturally close alliance of these two factors ; only then is much that seems lamentable in our present-day conditions comprehensible, when one recognises the civilising factor of female modesty as the final cause of the struggle. And assuredly this characteristic of woman, which is made manifest in the oldest myths of most nations, which is noted in the oldest records of civilisation and which even to-day is manifest among the most barbarous and debased peoples in some way or other, may with absolute justice be called an important civilising factor in the

evolution of mankind. Its influence has affected the social position of woman everywhere, the advance in respect for her, the moral condition of marriage and the family."

How difficult the struggle was can be understood from the fact that even learned men ranged themselves with the midwives. Philipp Hecquet in the year 1705 published in Paris a work which bears the significant title : *De l'indécence aux hommes d'accoucher les femmes*, and the indignant utterances of the Englishman Sterne have already been quoted (see also *Man-midwifery analysed* (1764) ; J. Blunt (1793) ; Proprietas (1825) ; J. Stevens (1849) ; G. Gregory (1852)).

Women's untrained help will, to be sure, always be invaluable in childbirth. But it has its limits, and it must take a second place where the trained medical practitioner alone, with deeper knowledge and greater discretion, can give the suffering woman the proper help. And thus all civilised nations are at one in agreeing that the science of obstetrics can no longer be confined to the midwives alone who have for so long obstinately claimed child-bed and lying-in as their exclusive domain.

2. THE MIDWIFE IN SUPERSTITION *

The exceptional and undisputed position which midwives occupy in human society, their riper experience and their greater knowledge of all kinds of physical and spiritual needs, have given support to the superstition that they possess knowledge of supernatural forces, and that they have innate in them a special capacity for curing diseases by all kinds of secret remedies. In this respect they are linked with shepherds, blacksmiths, huntsmen and executioners. Especially in rural districts many of them practise quackery extensively.

But there is another belief which we find associated with midwives. It is they who dispatch earthly beings from the unknown dwelling place of the unborn into their existence on earth. This place which other mortals may not enter must, therefore, be accessible to them. Usually it is some pond or other from which the midwives have to draw the young children (a later conception). In the Vogelgebirge, therefore, she is called the "Born-Eller" (well-alder).

In this connection a belief prevalent among the people on the Island of Amrum, according to the periodical *Am Urds-Brunnen*, is of great interest :

"From *gunskölk* (goose water) and sea-foam, the Amrum women, accompanied by the midwife, fetch their babies. The nurse in charge of the babies, however, who rules over the water with the babies living in it, will not let the latter go and lays about her with the scythe when the women approach to take a baby. Nevertheless, the women usually succeed in catching a baby, but the woman seeking it must let herself be *wounded in the leg* by the guardian of the many children swimming in the water who has her scythe raised ready to strike" (see Frau Hollenteich, etc.).

Riccardi reports a curious superstition from Modena :

"Two must always go to summon the midwife, or if only one can go, *she must carry two loaves of bread with her* so as to have *la grazia di Dio* with her, otherwise the devil causes confusion on the way and thus delays the arrival of the midwife."

In Iceland a woman knows when her help will be needed "to sit by" when she feels an itching in the palm of her hand or on her finger (see Max Bartels¹²).

* [See *Handwbt. d. deut. Abergl.*, III, 1587 ff.]

A midwife who has killed a child must, according to a tale prevalent in Wolfratshausen in Bavaria, after her death go about in heavy slippers as a *Markt-G'schlärjf*. This is a ghost which can make itself as big as it likes, and not seldom horrifies people by looking at them through the window on the first floor (see Höfler).

Among the Syryenians, a Finnish tribe, the *gegen*, or woman who divides the umbilical cord, gets a towel or other cloth from the father and mother of the child. On receiving it she acts as if drying her hands. The Syryenians imagine that if she gets no such cloth she will, in the next world, have to stand for ever with wet hands between two piles, and beg the passers-by for water to wash off the *pez* (cf. Vol. I., pp. 273, 274; II., p. 261), and for a towel to dry them afterwards. In remote villages it is said that the child whose navel cord the woman has divided will fall if the latter does not receive this towel (Nalimov).

The midwife among the gipsies in Serbia has to bring the new-born child a little shirt on the third day. On this day it gets its name. In regard to this custom Gjorgjević quotes the following popular belief: "The gipsies believe that the midwife has to receive in the next world every child which she has received in this, and if she were to fail to give one a shirt here she would have to receive it naked in the next world, and that would be a horrible sin."

The tale is still quite common in Germany that dwarfs or subterranean beings, also water sprites or pygmies, used to fetch midwives to deliver their wives. Thus it is told, e.g., in Thuringia, that a water sprite came to fetch a human midwife to his wife who was about to be confined; he then presented her with a thing of apparently little value, which, however, turned into gold later. If the midwife refuses to go with him then, the story goes that she is taken by force and afterwards her dead body is found floating on the water (Wucke, pp. 25, 40).

Grimm³ (I., 49) turned his attention to these tales. In one of them the delivered water sprite warns the midwife, who has been called in, against accepting from her husband more money than is due to her; she also told her that her husband usually murdered the child on the third day. In Austrian Silesia the story goes that the midwife gets some rubbish from the sprite in payment, and it changes into gold in her apron (Peter, p. 16). In the Baden version the midwife who delivered a woman in the Mummelsee received as payment a bundle of straw, which she contemptuously threw back into the water when she arrived home; however, she found one straw left in her apron had turned into gold (Klüber, II., 192).

These tales have probably a foundation in fact: these dwarfs, cobolds and water sprites are, perhaps, the original inhabitants whom the immigrant Germans found there and overcame; a peaceable, settled people much occupied with mining and work in bronze. They had retreated before the invaders to hidden places, difficult of access, and they will no doubt have often annoyed their oppressors on account of thieving. But if they got into difficulties then they had to seek their help, and hence probably also the help of midwives, where they themselves had none among them (v. Reitzenstein,¹⁷ pp. 348, etc.).

The tale common in very many parts of Germany that pygmies fetched a midwife to a pygmy wife to help her in her confinement reappears among the fairy tales in Scotland. Here, too, a midwife is taken in the night to the brilliantly lighted subterranean hall where a fairy lies in labour (see *Folk-lore Journal*, 1883). There are similar tales in Iceland of the wives of trolls when in labour.

These tales are, however, not confined only to European territory.

An interesting example of this is a tale of the Annamites, printed by Landes :

“ There was once a tiger, whose wife was in labour and could not be delivered. Then the tiger ran to the house of a midwife, watched till she came to the door, and carried her off to the place where the tigress was. There he made the midwife understand by signs that her help was needed. She understood that she had been brought to deliver his wife. She said to him : ‘ Look away for I am terrified when you are looking at me.’ The tiger turned aside and the midwife set about the delivery. When it was all finished, he carried her home again. The following day, he stole a pig and took it to the midwife to show his gratitude.”

CHAPTER XXXIV

TECHNIQUE OF NORMAL DELIVERY

1. THE ORIGIN OF METHODS OF ASSISTANCE

SINCE many peoples see in birth, *i.e.*, in the beginning of a new human being, *the reincarnation of an ancestor* who is called upon to carry on the horde or tribe, and who enters the mother in a supernatural way, so they think they can help this process by magical methods. Naturally, in these dealings, along with all the other magical chaos which is the final result of conclusions drawn from false hypotheses and wrong associations of ideas, the actual principle of utility is also involved. Thus it happens that now and again a really effective impulse is observed, the action of which is then tested further in practice. The result of this can then be used as common property, or it may appear in the realm of Shamans, medicine men, etc., and then it becomes as these dignitaries generally do—hereditary. Thus it becomes the property of certain families, as happened, *e.g.*, in the case of the midwifery forceps in the Chamberlen family in England, and this is a trait very characteristic of primitive peoples.

It also happens that some method of help is proposed which may have been found good on several occasions. If it is again successful, it is approved all the more and its use penetrates farther and is loudly praised and further recommended. For all these reasons there evolved first in a family, but very soon afterwards in the whole tribe, a fixed, consistent procedure, an actual public midwifery.

Thus, as has already been elucidated, it was not *instinct* which created the methods which interest us here, but the imitative impulse, which fixed, and made stable, methods chosen originally at random.

The first help of all seems to have depended upon magic (II., 426, etc.) ; it was not till much later that a " humane " movement appeared, because of which people tried to make birth easier and to alleviate pain. Hence people arranged a couch for the women in childbirth to lie down, which varied extraordinarily according to the ideas and habits of life of the people. With this customary way of lying down and position of the body was then associated a corresponding method of support which was supplied by the hands being held out or by special manipulations. These actual hygienic arrangements, however, were continually broken by dealings which resulted from magical beliefs and from false conclusions. This is true of many places in our time, and Christianity, which is in general not better than the ideas of many savages, has not only done harm but continues still to do harm to the progress of a midwifery founded on facts. The only reason, as we have already stated, that this harm has not been still more evident is that Christianity no longer dominates the intellect, but men use the advances in modern knowledge even when it is in opposition to the fundamental principles of Christian teaching. Yet many measures of private baptism and the sacrifice of the mother to save the child's soul (see Vol. I., pp. 483, etc., and pp. 529, etc.) still have a primitive influence. [To-day the most noteworthy medical example of the obstructive influence of Christianity on human progress is not to be found in the domain of obstetrics, but in that of the venereal diseases.

Attempts to prevent the spread and occurrence of these terrible scourges are often met by obstruction, since, even among educated persons, it is still believed that these diseases are punishments inflicted by a Spirit.]

Let us now discuss the methods which are intended to promote the expulsion of the child. Pressure and massage of the abdomen, binding it, etc., play a great part here ; but also prayers and exorcisms to obtain the help of the gods and to appease, frighten or drive away the demons are abundantly used. The idea even occurs to try to achieve the issue of the child by shaking the mother, and where people believe that the embryo itself co-operates in its delivery from the womb, they try to stir it to a speedy egress by means of sympathetic and material inducements, *i.e.*, to decoy it. From this, then, there actually arise various expedients, as people soon learn to make the parts of the body through which the child must emerge sufficiently soft and elastic ; and, therefore, fomentations, anointings, and baths are used. Also, they endeavour to make " the gate wide," no doubt to the detriment of the woman in labour.

It appears to me very valuable to extract from among many other things at least one chapter of this theological work in the sphere of " midwifery."

Dr. K. Werner writes : " The birth of a human being in civilised countries occupies the doctor no less than the clergyman. The doctor has to attend to the welfare of the body ; the priest to the health of the soul of the new-born human child. The Christian world requires for happiness on earth and in heaven a kind of ceremony—baptism. Without this, at least according to the Catholic belief, man is assigned to the devil. The impossibility, in certain cases, of having the ceremony performed by an authorised priest has led to a makeshift, private baptism, being permitted. This may not only be performed by lay believers (doctors, midwives, etc.), but even by adherents of other faiths (Jews, Mohammedans). Either it is immediately and permanently valid as such or a subsequent or re-baptism respectively is required which, nevertheless, may only be performed by reason of the provisional character of the preceding ceremony."

So long as the Christian religion with its rules for baptism exists, conflicts must take place when, in the process of birth, the death of the mother or of the child is threatened. Actually, the questions in dispute on this subject are as old as the Christian institutions themselves, and there has been a great deal of discussion over this point, both spoken and written.

We follow in this the record in serial form compiled by the well-known professor of obstetrics and gynæcology, Dr. F. Ahlfeld.

The occasion for this compilation was the well-known Tyrolean case, which was in all the newspapers. It concerned the demand of a Catholic Mother Superior on the occasion of an operation, which resulted unsuccessfully, to baptise the foetus in the womb just before the death of the mother. As a method that recommended by the Catholic doctor, Dr. Treitner, came under consideration. It is published in the *Theologisch-praktischen Quartalsschrift*, edited by Dr. Hiptmair and Dr. Fuchs, professors of the Episcopal Diocesan School in Linz (1908, 2), and bears the peculiar title :

" *Baptism in the uterus by means of the hollow-needle. A new method, in a simple way, of baptising a child in utero legally. For pastors, Christian doctors and midwives.*"

In accordance with unprejudiced, purely scientific deliberation there was, of course, only one radical demand, namely, indiscriminate abolition of the baptism of the new-born child. With this demand, however, medical science, in opposition to the powerful Church, does not succeed. The dogma of the blessed effect of baptism

is an expedient of the Catholic religion to get faith and power which they would never submit to reasonable deliberation, but would, at best, give up if forced to do so.

Since when have we been successful in reducing to a minimum the puerperal fever which used to be epidemic, which snatched mothers away in a terrible death ? Since Semmelweiss, the unfortunate investigator who was jeered at and ridiculed and died mad, convinced his successors that puerperal fever is an infectious disease and is caused by dirt generally from the hands of the examining persons themselves.

Midwives were therefore forbidden to penetrate into the uterus. Their finger had to stop at the os uteri. But intra-uterine baptism itself requires penetration right into the inside of the womb. Private baptism has to be done either with a finger dipped in water or with a syringe. The syringe must contain the baptismal water and this shall by pressure be sprinkled over the dying fœtus in the dark interior of the womb simultaneously with the utterance of ceremonial formulæ of baptism.

It is only too well known to medical jurists how the famous (or rather infamous) uterine syringe in the hand of a conscienceless midwife has caused death when used for the purpose of inducing abortion.

The above-mentioned suggestion of Dr. Treitner of private baptism with a hollow needle seems remarkable.

Imagine an enlarged morphia-syringe. The hollow needle is twice as thick and three times as long. This is to be driven in a straight line through the abdomen of the pregnant woman to the head of the dying fœtus. What path does this needle take ? What parts must be injured by it ? (1) The epidermis ; (2) lying under this a layer of fat, often very thick ; (3) the inner layer of the delicate and easily inflammatory peritoneum ; (4) an open space in which the gravid uterus is adjacent to the abdominal wall ; (5) the outer and also very easily irritable peritoneal covering of the uterus ; (6) the thick muscular wall of the uterus swollen with blood ; (7) the inner wall (mucous membrane) of the same ; (8) again an open space ; (9) the amniotic sac ; and finally, (10) the pericranium of the unborn child to be baptised.

Moreover, failing diagnostic palpation of the fœtal skull, an operation which, owing to the muscular apparatus of the abdomen, can also present its own particular difficulties, what path may the needle take ? It may cause great damage and, for the sake of baptising a dying child, the mother may be allowed to die from hæmorrhage. [It appears that recently a more modern form of apparatus has been designed by which the fœtus may be baptised *per vaginam*. This important matter has for long occupied the minds of Catholic theologians as have other questions relating to embryology (see Cangiamila, Debreyne, etc.).]

It need hardly be said that this really brutal operation, which is dealt with here solely to pursue the imaginary Christian concept of the soul to its extremely illogical conclusions, is no less cruel and stupid than similar illogical performances of savages, for there can be no doubt that the life of the mother is more valuable than the supposed soul of the child.

Another expedient, of a doubtful kind also, which is often practised, is pulling the parts of the child which happen to be first visible.

When delivery is successfully over, then the care of the new-born babe, the tying up and division of the umbilical cord and the removal of the placenta, as well as the further nursing of the mother, need the helping hands still longer. In the following sections we shall have to give our attention to these things in detail.

2. CUSTOMARY POSITIONS OF THE BODY IN PARTURITION

If one considers the advice of obstetricians of modern times, as to how the woman in labour is to move and lie down, one finds a general agreement that in the so-called period of dilatation, she has not to follow any special rules, but that before the end of this period lying down in bed is recommended. Now, of course, where the resistance of the generative canal is not remarkable and does not retard labour, the recumbent posture does not much matter ; it might be left to the woman in labour to lie as she likes, and the lateral and dorsal positions will mostly be involved. It is, however, advisable to choose the positions in which the pelvis is fixed as far as possible and so placed that the presenting part of the child can easily advance into the pelvic axis, but that also, on the one hand, the involuntary propulsive forces of nature, that is to say, the contractions of the uterus, can act quite freely ; on the other hand, that the bearing down of the woman be made considerably easier.



FIG. 740.—Supporting the perineum in the dorsal position. France. (After Maygrier.)

Therefore, by many obstetricians, the dorsal position, with the trunk raised as much as possible, is recommended for the dilatation period. In the period of expulsion particularly, the patient must be able to strengthen the pains. That is to say, then, that when the child protrudes, the lumbar portion of the spine must form as obtuse an angle as possible with the pelvic inlet. Now, though obstetricians may not be quite at one on many points, though many national peculiarities may appear in this (*e.g.*, the lateral position in England) (the position in France and support of the perineum in the nineteenth century is shown in Fig. 740), yet there is no difference of opinion among German doctors that the position on lying down should be changed in a suitable way as required in conformity with the progress in parturition.

Also in nearly all nations one finds that women change their position and posture in the course of labour ; and in the preparatory period the restless behaviour of the women can be demonstrated.

This is expressly forbidden to the Gilyak woman, and her pain is greatly increased owing to this prohibition. In Pilsudski's records, it is said : " During labour, the woman sits and does not stretch out her feet. The seat is of the same height as the bed put up in the yurt, that is,

about half a yard above the floor. The woman in labour must keep still during the whole period, must not move about from place to place or even try to stand up and must also not lean to one side or the other. If, during a difficult delivery, the woman cannot keep herself in the prescribed position and writhes in pain, then it is the duty of the woman helping her, or of the husband who is present, to take the patient by the shoulders in order, in this way, to prevent the forbidden movements. Women who try to stand up during parturition fall ill, in the opinion of the Gilyak, with a disease which results in curvature of the spine." Pilsudski was shown one such woman, who was said to have contracted her trouble in this manner.

The English obstetricians, White and Rigby, described the conduct of women in labour in 1773 and 1857 respectively.

The latter said that a woman left to herself and overtaken by labour alone and in a field will first walk about for some time, then sit down again, then get up again and walk about once more, and continue doing this till she shall find it necessary for her own relief and the safety of the child to lie down again; thus parturition will proceed, and only when it is completed will she get up again and attend to the child.

Other obstetricians (*e.g.*, Hohl) made corresponding observations in their clinics; and others, like Cohen von Baeren in Posen, tried to prove the "natural" bearing of the mother at the expulsion of the child by compiling cases in which unfortunate girls were delivered in secret or in concealment.

In a comparison of these confinements alone, it appeared that of 100 cases which v. Bæren found, 50 took place in the usual positions, 30 standing, 18 crouching or lying on all fours, 2 kneeling. Other examples enumerated by other observers showed that more than half had chosen unusual positions.

Here a note from Höfler deserves mention. This states that until the middle of last century the Jachenau women in Upper Bavaria were delivered in a squatting-crouching position (old Germanic way), and that it was regarded as a disgrace there to be confined in bed or on a parturition chair.

When labour begins with the Indian woman on the coast of the Pacific in the State of Oregon, she comforts herself, according to Dr. J. Field's description, quite like her white sister, except that she does not groan at each pain like her, but utters a deep wail or whimpering or whining sound. If she does lie down, she leans backwards, and while bending the thighs towards the trunk, she draws in her legs. Then she tries to assume the dorsal position with her head pillowed high. Her couch is prepared on the ground, and in cold weather near the fire. She lies, as we have said, with her legs drawn up, and her knees and feet are held fast at each side by a helper; she herself presses her hands hard on her thighs and, in severe pains, against the fundus uteri. The woman assistant gets down at the patient's feet and presses her hands against the buttocks, the perineum, the vulva or the abdomen, according as the circumstances seem to require. As parturition advances the upper part of the uterus is pressed together by one of the assistants. If delivery is retarded a procedure is introduced of which we shall hear later.

Among the Cheyenne, the Kiowa, the Comanche and the Eastern Apaches also, the women seem to be confined in the dorsal position, as Major W. H. Forwood observed in at least one case. On the other hand, a surgeon records of the Brulé, a small tribe of the Sioux Indians, that the woman in labour sits or lies down at the beginning, but during the expulsion period she stands quite upright, or nearly so, and holds fast to a strong man with her arms. This, however, is the same tribe in which the women as a rule stand when they make water and sit down to defæcate, while the reverse is the case with the man; according to this, it seems as if these

Indians have customs which differ greatly from those of other tribes (see Engelmann,² pp. 57, 65, 67).

The wives of the Maori in New Zealand, with whom parturition is unusually easy and quick, seem to be confined sitting or kneeling. Goldie tells the following tale with regard to this :

The position in birth is that devised by the god *Tura* or "grey head." When his wife was to be confined, he fixed two posts (*туру-туру*) for her ; one, *pou-tama-wahine*, he put in front of her, the other, *pou-tama-tane* ("post of the son"), behind her. Then he said : "The post behind thee is for leaning against, that in front for holding on to." According to another version, there were three posts, one as support for the feet, two to hold fast. Thus, even to-day, labour proceeds. Sometimes, however, it takes place kneeling, while the woman holds the branch of a tree with her hands ; or she kneels down and bends her trunk far forward over two posts driven into the ground, which bear the weight of her body.

When one takes into account the circumstances that the very peoples who follow their own customs show a comparatively favourable course in labour, the question is justified whether women in civilised nations ought to take the original conduct of these savages as a pattern ? However, we do come across conditions among the so-called primitive peoples which do not resemble those in which our women live.

The natural gestures and involuntary movements of the woman in labour certainly seem to indicate that the various periods of parturition required varied conduct and posture. Unfortunately we do not always find stated in records of travel whether in certain stages of labour certain attitudes and positions of the body are assumed.

As soon as an effort to direct women in childbirth to take up a certain position makes its appearance the preference now for one, now for the other, is decided. In China the practice of midwives appears to be to have the woman in labour sit on a chair and bear down as early as possible, for if that were not general there, then the Chinese doctors in the popular midwifery booklets edited by v. Martius and Rehmann would not oppose it so zealously. Instead of this method the Chinese doctor in the v. Martius treatise recommends the dorsal position with the loins raised, and the woman is to rest and sleep during the process. But if it is not possible for her to lie and rest, then he allows her to act as every woman in labour does. He describes labour as follows. She can get up for a little and sit down ; she may also walk about the room ; or she can stand before a table or easy chair and hold fast to it. Only at a later stage of labour is she to lie down, and only after that is she to sit on the chair.

The description which Grube got from a Chinese doctor in Peking in the year 1898 sounds somewhat different. When labour has begun the woman betakes herself to the bed by the stove and there assumes a squatting position. In this she supports her back against the wall. To get the lower part of the body farther away from the bed a brick is put under each foot, which raises her body somewhat. When this is done a basin is pushed under the genitals to catch the impurities discharged and the placenta.

Similarly, the midwife Louise Bourgeois, in her manual of midwifery published at the beginning of the seventeenth century, believes that the needs of the woman in labour are best complied with by leaving her entirely to her own pleasure and instincts. She complains that people do not get the woman in childbirth into a proper and comfortable position in bed ; they should let her walk about as long as

she wants to ; then the proper time would come when she has to lie down. In this walking backwards and forwards two persons may take her arms and hold her so that when the pains come on she will be kept upright ; also they might let the woman sit on a low chair at a table so that when the pains come on she may press against her knees, but can lean the upper part of her body over the table on which a cushion has been put ; afterwards, however, she should walk up and down again. Many women, however, like to lie down on the bed soon, and this Bourgeois finds better than the former way, as when lying down parturition usually does not last so long. She orders the bed to be so made that the head and upper part of the body are high.

In Welsch's translation of Scipione Mercurio's text-book for midwives we find the woman in labour shown in bed and in the recumbent position, with the loins high and the head low. She holds fast to a wooden peg which is fixed to the edge of the bed. The midwife stands beside her (see Fig. 741). This, however, is supposed not to be the position to be chosen for all cases, but it is the plan of the position and couch of a pregnant woman in a "wicked and unnatural delivery."

An attempt to group nations according to the positions customary with them in parturition would present great difficulties. This would have only one purpose if we could state with certainty that these positions are the result of certain physical structures. However, apart from the fact that this is improbable, we must not forget that very often in quite closely

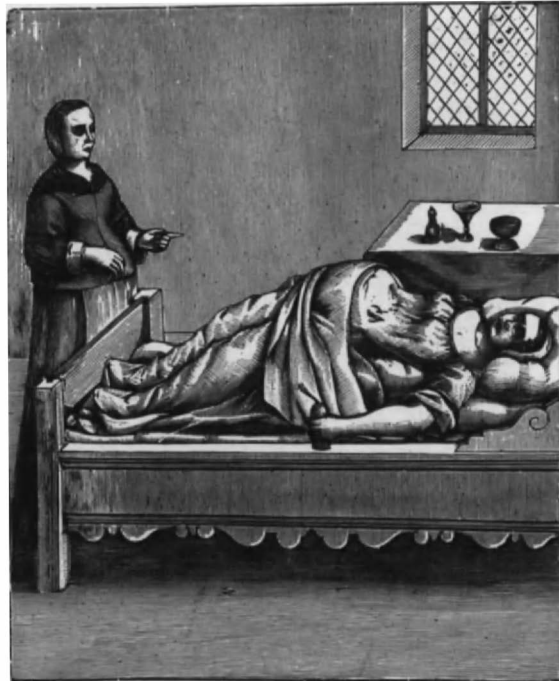


FIG. 741.—Position of a woman undergoing difficult labour. Italy. (After Mercurio.)

related tribes quite different positions are customary ; on the other hand, even in the same tribe, we find not one but several positions used. Of the inhabitants of Doreh-Bay, for instance, von Hasselt² states that they are confined sitting on a mat on the ground, with their knees raised, or also in the kneeling position, so there are three different methods to record in this case. On the other hand, parturition among the Hennebedda Veddas takes place only in the crouching position, while the women of the neighbouring Danigala Veddas are confined in the half-leaning backwards position in which the body rests on the hands placed behind on the buttocks, and in front on the feet (see Rütimeyer).

Nevertheless, in this field of investigation also the road is prepared in so far as several doctors have already taken the trouble to analyse and compare the chief positions observed among the different peoples. Ploss³ made a beginning : he was followed in the year 1884 by Engelmann² in his work translated by Hennig, and a year later Felkin² published his well-known work. All three authors have made

clear the conditions in question by numerous illustrations. A work that is more of a compilation was published in Paris by Witkowski¹ under the title "Histoire des Accouchements." The positions from illustrations used by him, but also to be found in more recent statements, may be arranged in the following groups, in which, however, it must not be forgotten that here also many positions, which are of comparatively rare occurrence, have also been taken into consideration.

3. SURVEY OF THE POSITIONS OF THE BODY CUSTOMARY IN PARTURITION

If we are to give a brief summary of the positions and postures of the body which women are accustomed to assume in parturition, we must draw up eight main classes, each of which by itself then falls into a number of subdivisions. For the sake of brevity we quote, with additions, these various classes here in one of the tables compiled by M. Bartels :

I. Recumbent :

- (1) Horizontal dorsal position (in bed or on the ground).
- (2) Dorsal position (on the table with legs hanging down : Walcher posture).
- (3) Dorsal position with buttocks raised and head and shoulders low.
- (4) Lithotomy (simple or exaggerated) position.
- (5) Horizontal lateral position.
- (6) Horizontal abdominal position.

II. Semi-recumbent, sitting whilst leaning backwards :

- (1) In bed with slanting back support (cushions, reversed chair).
- (2) On the ground, with slanting support (cushions, reversed chair).
- (3) On an easy chair, in the arms of an assistant.
- (4) On an easy chair, between the thighs of a person sitting on the same chair.
- (5) On the parturition chair (with slanting back).
- (6) Sitting on the lap and lying back in the arms of another person.
- (7) On the ground, between the thighs of, and leaning back in the arms of, an assistant.
- (8) On a stone, holding herself balanced on two posts.

III. Sitting :

- (1) In bed.
- (2) On a hammock, twisted together like a rope (as in a swing).
- (3) On an easy chair or on one of the cushions.
 - (a) Free.
 - (b) Supported.
 - (c) Leaning against a person standing behind.
- (4) On the ground.
 - (a) Free.
 - (b) Leaning against the back of another person, and having the arms linked with that person.
- (5) On the parturition chair.

IV. Squatting or crouching :

- (1) Free, as in defæcation.
- (2) Free, but held at the head by a person standing behind.
- (3) Free, but with the hands laid on the shoulders of a person sitting in front.
- (4) Supported against the back of another person.

V. Kneeling :

- (1) With the upper part of the body erect.
 - (a) Free.
 - (b) With the hands in a vertical holder (rope ,stick).
 - (c) Supported under the arms by another woman.
- (2) With the upper part of the body leaning back.
 - (a) Holding a horizontal handle.
 - (b) Supported against the breast of another woman.
- (3) With the upper part of the body leaning over backwards horizontally.
- (4) With the upper part of the body bent forwards, resting on a support, a block of wood or a chair.
- (5) In the knee-hand position.
- (6) In the knee-elbow position.
- (7) In the knee-breast position.

VI. Standing :

- (1) Straight up and with legs apart.
 - (a) Free.
 - (b) Supported by another person.
- (2) Bent forwards.
- (3) Bent backwards with the back supported against a tree.

VII. Hanging :

- (1) On a horizontal holder, or a tree branch, drawing the body up with the hands as on a horizontal bar.
- (2) Drawing herself up with her arms round the neck of a taller person standing.

VIII. Swinging :

- (1) In the dorsal position, the shoulders supported by cushions ; on a cloth drawn through under the buttocks, the middle part of the body is kept swinging to and fro by two women assistants standing beside the bed.
- (2) Hanging vertically in a rope sling drawn through under the arms.
- (3) With raised arms tied to a tree, half-hanging so that the tips of the toes still touch the ground.

The next section is to show with similar brevity how these positions of the body in parturition are distributed.

4. THE DISTRIBUTION OF THE POSITIONS IN PARTURITION

A glance at the above tabulation will make it clear to the reader that it would go far beyond the scope of the present work if we were to make an analysis of all the nations of the earth in respect of the positions in use among them in parturition ; all the more since, as has already been said, the same tribe is, in certain circumstances, accustomed to use several positions.

However, in order at least to get an idea of how little regularity can be shown in these customs, again a short survey (given by M. Bartels) will suggest how the previously quoted eight main positions are divided among a few countries.

Women are confined

- (1) Recumbent in :

Europe : Germany, France, Italy, Great Britain, Swedon, Norway, Bosnia and Herzegovina (but only the Jewesses).

Africa : Uganda, Massaua, Congo.

Asia : India, Burma, Siam, China, Sumatra, Keisar, Luang and Sermata Islands.

Oceania : Australia (natives and English settlers), Hawaii.

America : Brazil, Antilles, Oregon Settlement, Cheyenne, Comanche, Kiowa, Eastern Apache.

Africa : Former German South-West Africa (left lateral position).

(2) Semi-recumbent, sitting, or leaning over backwards in :

Europe : Germany, Italy, Great Britain, Ireland, Russia, Spain, Greece, Turkey, Cyprus,

Africa : Egypt, Abyssinia, Old Calabar and Massaua, Madi, Kidj, Moru and Shuli Negroesses,

Asia : Palestine, Syria, Arabia, Southern India, Achin, China, Japan.

Oceania : Hawaii, Andamans, Carolines.

America : Chile, Peru (ancient and modern), Venezuela, Mexico (Indians and Mestizoes). California, United States (whites and Indians), Canada (French settlers).

(3) Sitting in :

Europe : Spain, formerly also in Germany.

Africa : Egypt, Abyssinia, East Africa, Madi, Niam-Niam, Shuli, Kerrie, Old Calabar, Baganda, Jekris, Lohos, Ijos, on the Niger Coast Protectorate, Canary Islands.

Asia : Palestine, Arabia, India, China, the Amboina Group, Ceram, Ceram Laut, Gorong, Kei Islands, Aru Islands, Luang Islands, Sermata Islands, Keisar, Romang, Dama, Teun, Nila, Serua, Bali, Engano, Astrakhan, Sakhalin (Gilyaks).

Oceania : Australia, Doreh Bay.

America : Guatemala.

(4) Squatting and crouching in :

Europe : Great Britain, Russia.

Africa : East Africa, "Kaffirs," Wasegua, Gold Coast.

Asia : Arabia, Persia, Nias, Engano, Buru, the Amboina Group, Leti, Moa, Lakor, Eetar, North China, Ceram Laut, Aru Islands, Tenimber and Timor Laut Islands.

Oceania : Micronesia, Polynesia proper, Wanigela River (New Guinea).

America : Guatemala, Mexico, Ancient Peru and present-day Indians (and Mestizoes), Negroes, Indians of the United States.

(5) Kneeling in :

Europe : Great Britain, Italy, Spain, Greece, Russia.

Africa : Ethiopia, Abyssinia, Masai, Nigeria.

Asia : Georgia, Armenia, Persia, Kamtchatka, Mongolia, Japan, Watubela and Babar Islands.

Oceania : New Zealand, Murray Island, Doreh Bay.

America : Nicaragua, Mexico (Indians and Mestizoes), United States (Whites, Negroes and almost all Indians).

(6) Standing in :

Europe : Germany, Italy.

Africa : Ethiopia, Dafur, Somali, Wakamba, Bongo, Hottentots.

Asia : India, Sikhim, Ceram.

Oceania : Philippines, New Britain.

America : Mexico (Indians and Mestizoes), United States (Whites and Indians).

(7) Hanging in :

Europe : Great Britain, Italy, Russia.

Asia : Kara-Kirghiz.

America : Indians, Apaches, Iroquois.

(8) Swinging in :

Europe : Germany.

Asia : Siam, Ceram.

America : Venezuela, Indians, Negroes.

In the following sections we shall learn of further customs in parturition.

5. APPARATUS USED IN PARTURITION

In the foregoing brief tabulations of the positions customary in parturition we have heard of a good deal of the apparatus which the inventive minds of men have hit upon to simplify and make easier the strain of parturition ; however, we want to cast a hasty glance over them again. Substantially they might be divided into contrivances for fixing the whole body, such as holders, foot-supports and supports for the buttocks, the knees or the back and, in abdominal positions, for the breast.

As fixing contrivances for the whole body must, above all, be designated the method customary in Ceram, of tying the woman in labour to a tree with her arms crossed above her head (see Fig. 742) ; or passing a rope under her pendent arms and letting her hang on this as in Siam ; or on which she is drawn up over the branch of a tree as with the Coyotero Apache Indians. Next there are to be reckoned the trees, piles and house walls used to support the back when the upper part of the body is erect (the Bongo and Shuli, the "Kaffirs," the Northern Chinese and the inhabitants of Darfur in Africa). In the case of the handles we must distinguish between the vertical and the horizontal types. The vertical holders are ropes which hang down from the rafters of the hut as on the Islands of Ceram and Keisar, Watubela, Tenimber and Timor Laut, in the Babar Archipelago, on the Wanigela River and in Doreh Bay in New Guinea, or from a slanting post as in Mexico, or there are stakes fixed vertically into the ground (among the Shuli (Fig. 680), and the Unyoro in East Africa, among the Comanche and Blackfoot Indians), or the supports of the hut (in Kerrie on the White Nile), or, finally, a slanting stick placed firmly against a forked tree (in the Lango tribe* in Africa). The horizontal holders are fixed above the height of the head (a tree branch among the negresses of the Southern States of America ; a pole put across one or two branches like a horizontal bar in the Bongo territory in Africa (Fig. 681)), or they can be held if the hands are held out horizontally (*e.g.*, the outstretched hands of helpers sitting facing the patient in Virginia, or the elbows of an assistant sitting back to back with the woman in labour with their



FIG. 742.—Labour in Ceram. (After Engelmann.)

* Cf. Driberg, pp. 138 ff.

arms linked (Fig. 743), Madi, Africa); or ropes fastened to the foot of the bed, in Germany and Virginia; or finally, a thick horizontal pole, which with supports underneath to raise it is held in place by two persons sitting at the ends, among the Chippewa Indians.

The foot supports in most of the localities where parturition takes place in bed are the walls at the back of the bed or the chairs, on which the persons helping the woman in labour have sat down, or wooden pegs driven into the ground, as with the Madi and in Kerrie on the White Nile; whilst among the Shuli the foot supports are fixed close to the vertical poles used as holders (Fig. 680).

The objects for supporting the knees, back, breast or buttocks are stones, blocks of wood, chairs, tubs, pots, cushions, etc., or the above-mentioned cloth drawn under the buttocks (in the district of Meerane in Saxony). Special parturition chairs also have been constructed, which will be discussed in detail later.

A special framework for confinement was, according to the records of Kauda, used in Japan until 50 years ago (Engelmann, p. 97). It gives the impression of a big, flat square box with the lid raised vertically. The latter formed the back support for the patient. Now, instead of this, a number of bed things are heaped up over which is put the under-sheet. We have reproduced this contrivance in Fig. 734 (p. 699).

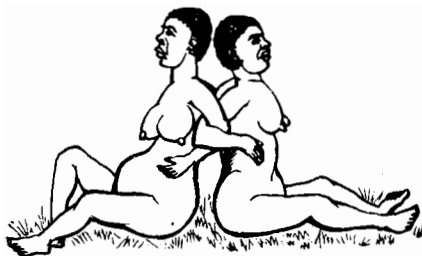


FIG. 743.—Madi negresses (Central Africa) assisting each other during labour. (After Felkin.)

6. THE PARTURITION CHAIR

One contrivance for support which has played a very important part in midwifery among civilised peoples, and which dates from very ancient times, deserves special mention. This is the parturition chair, the use of which still flourishes in many countries; and

also in many a place in Germany it still continues its hidden existence.

The parturition chair in Germany was originally a low, four-legged easy chair with a low back inclining outwards from the seat, in which such a big and deep oval was cut out that only a narrow strip of it was left, "scarcely three, if it is quite wide as four fingers' breadth" (Eckarth's *Hebamme*). In the course of time it has had many changes in shape.

Jacob Rueff depicts it (cf. Fig. 744) and describes it as follows:

"It shall have four legs or feet with a back board fixed behind it, being covered with a black woollen cloth so that the woman may be covered, and be hidden below, and the other women where necessary could also help behind, in front and at both sides, wherever it seems most useful. The seat of the chair must be bound with soft cloth at all the ends, and made so that the woman sits comfortably and that the child be not injured by the hard and sharp corners of the chair, if the woman should at times twist with pain as often happens."

Delivery on the parturition chair has been portrayed frequently (cf. Figs. 754, 755 and 756).

According to the opinion of various scholars, the ancient Jews in Egypt used a parturition chair. Thus they interpret Pharaoh's command to the Hebrew midwives (Exodus i. 16):

"When ye do the office of a midwife to the Hebrew women, and see them upon the stools (*efnoim*); if it be a son, then ye shall kill him; but if it be a daughter, then she shall live."

These *efnoim*, which occur only once more in the Bible as the name of potter's wheels, are explained by most commentators and philologists as parturition chairs, while Redslob is of opinion that it should not be translated "when ye see them upon the *efnoim*," but "when ye see by the *efnoim* that it is a son," and this means "when ye see by the stones," *i.e.*, by the testes, that it is a son. Naturally we cannot come to a decision in this difference of opinion. However, it may be regarded as established that at least 100 years before our reckoning of time a parturition chair was used among the Israelites not only in difficult but also in quite normal deliveries. The Talmudists called it *maschbar* (*i.e.*, Fractor, a vires feminae frangendo).

As to the word *efnoim* or *abnoim*, with which Biblical criticism has been occupied, the following may give a solution. The Arab calls stone *chadchar*, but also *eben*, *abnaim* (*i.e.*, plural): also the Jews in Jerusalem call stones *abnaim* ("hewn" stones). Hence the doubtful passage in the Bible should perhaps be translated "When ye see them upon the stones," etc. And as regards this, it is certainly of great significance that even up to modern times in Semitic tribes women in childbirth are made to sit on stones. The French Staff doctor Goguel (p. 363) has observed this to be the case among the Arabs on the borders of Tunis.

In the year 1858 he was called in to the wife of a sheik who had been in pain for 40 hours; even from a distance he heard the wailing which the women helping uttered at each pain. Near the pole in the middle of the tent lay two flat stones 15 cm. apart, on which the woman in labour supported her buttocks; to the pole a rope was tied which she held like a bell pull; two women held her under the armpits; at each pain they raised the sufferer and then let her fall as a miller shakes the sack when he is pouring flour into it. Goguel delivered the woman of a dead child and had to remove scarred adhesions when doing so. He thinks that those two stones are not without significance for the doubtful passage in the Bible, for the Jews in ancient times had, like the Arabs, lived in tents.

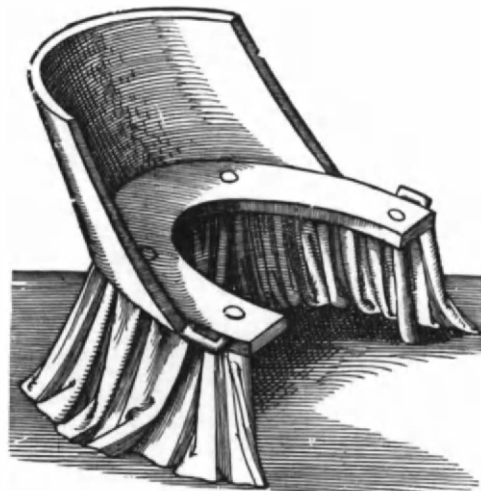


FIG. 744.—German parturition chair. Sixteenth century. (After Rueff.)

Nevertheless, more important still is the fact already quoted by Ploss,³ which the Prussian consul Rosen reported to him: "The midwives in Jerusalem still use the parturition chair as formerly; the peasants, on the other hand, have the women in childbirth sit on a cushion or stone" (of which nothing is said about former times).

The consul Gerhard gave the information that in Massaua on the Red Sea, the women of the lower classes also sit on a stone during parturition.

In Dakkeh in Egypt, Simpson³ learnt from the midwife that there the parturition chair was not used as formerly, but that she had the woman in childbirth sit on a few stones or bricks which are placed close together.

Likewise, we must mention the Persians here who, according to the reports of Polak and Hantzsche, supported themselves in parturition on their hands and knees, each on three bricks which are placed one on top of the other a little distance apart

(Fig. 745). Hence it is possible that the Jewesses in Egypt may also have gone through their confinements in the same way.

This supposition is supported by Müllerheim, who pointed out that, according to Spiegelberg, this way of delivery on stones can be proved to have taken place also in ancient Egypt. Thus it runs on a stele of the Nineteenth Dynasty: "I sat on the brick like the pregnant woman." On another stele (*Harris Z*, 12), the hieroglyph for parturition is represented by a female form squatting on bricks (Fig. 671, Vol. II., p. 531) From the apocalypse of Elijah (xxviii. 7, etc.), comes the sentence likewise contributing to this idea. "The midwife in the land will mourn, the woman in labour will lift her eyes to heaven saying: 'Why do I sit upon the stone to bring children into the world?'"

On the other hand, according to Sir P. R. Simpson,³ to whose kindness M. Bartels owes the three interesting illustrations, 704-706, there is a real parturition chair *at the present day*. In Fig. 704 the midwife is represented in her greatest state; she has the parturition chair in front of her, which is also dressed in its best, as is the custom when the midwife calls on her



FIG. 745.—Labour in Persia. (After Ploss.)

patient seven days before the supposed date of the confinement; a cover embroidered in silver is round it and a bunch of roses fastened on it. Fig 705 shows the midwife in everyday clothes sitting beside her parturition chair on which a cushion is placed; her Arab assistant stands behind it. To be able to carry the chair, it is folded together as can be seen in Fig. 706. The cushion is, according to custom, exposed to the rays of the sun, and the Egyptian sun should act, not only from the aseptic point of view, but also from the antiseptic. During parturition the woman sits on the chair with legs apart and holds the poles with her hands whilst leaning the body backwards: behind her stands an assistant who supports her.

Likewise, in Hippocrates, we can find the parturition chair (*δίφρος*), and from here it took possession of the ancient and mediaeval scientific world. Soranus describes it as follows:

"In the middle, a crescent-shaped, comparatively wide space has to be cut out, which must be neither too big nor too small. If it is too narrow the vulva will be pressed together and that is worse than when the opening is too wide, for then it can be filled up with rags. The whole width of the chair should be sufficient for a stout woman to sit in it. The height should be proportionate for, in the case of small women, a footstool put beneath fills up the space. The sides of the chair should be covered with small boards, the front and back should be open for

use in confinements. Behind, however, should be a back support so that the hips and flanks have something to lean against, for although a woman stands behind, yet by an unnatural position of the patient the successful birth of the child may easily be impeded."

The parturition chair was used in ancient Rome and taken over by the old Arab physicians. Through the latter it came to the European nations, in which it carried on its existence till last century, and here and there even to-day it continues its secret existence. The great importance ascribed to it at that time we can see from the fact that many clever doctors took the trouble to make alterations in it which they thought improvements, and Kilian could describe no less than 32 parturition chairs and eight chairbeds. And yet as early as the seventeenth century opposition to these instruments of torture was aroused.

"If one considers the shape of the parturition chair," it runs in Eckarth's *Hebamme*, "it is indeed a real stool of pain and torture rack. Where the wretched woman is to have her best rest is scarcely three, or, when quite wide, four fingers' breadth wide; it would be no wonder if the back and loins of these poor people were to break in pieces and they were to pass away from the severity of the pains. O civilised invention, I say the infernal Proserpina invented this chair."

Likewise, Kornmann opposes the use of this obstetric chair in the eighteenth century. He calls it:

"Reasonably and with justice a cursed chair of pain and anxiety on which pain first really commences."

But, as already mentioned, it has still not quite died out in Germany.

A doctor from Huelva in the South of Spain sent Simpson, in Edinburgh, a great earthenware vessel (Fig. 746) such as is still used in confinements in Spain and is sold in "china shops." It has the form of a high, steep-sided jar with a wide flat rim. From the rim, as well as from the front wall of this jar, a big place is cut out which is about two-thirds of the depth of the jar. Simpson² describes this utensil thus.

The vessel is made of strong, glazed earthenware and is precisely like the box of a night stool, apart from the piece cut out at one side through which the hand goes to the child. It is 11½ in. deep inside and 6½ in. wide at the bottom. At the edge its inside diameter is 10 in. and 15½ in. to the edge of the projection on which the patient sits, and which is 2¾ in. wide. It is usually called *bacin* by the natives; the same expression as is given to a wide vessel used as night stool or washing pail. It is often called *recado*, crockery or instrument, or *parideras*.

The sender, who was called into a confinement, found the woman in labour sitting on this vessel with legs wide apart, and in front of her a midwife on a low chair who was examining her through the opening of the jar. The liquor amnii, blood, etc., had collected at the bottom of the jar.

J. J. Kerr, in Canton, mentions tubs in this connection, and says that a chair is put in these which the woman uses for her confinement, and also in the Chinese treatise of v. Martius a chair is mentioned (*cf.* Vol. II., p. 716).

A Chinese water-colour drawing, (reproduced in Fig. 747) also suggests that a special parturition chair is used. To be sure, one sees nothing of a tub here. The chair, or rather the short bench, on which the woman who has just been delivered



FIG. 746.—Vase used in parturition. Spain. (After Simpson.)

sits, gives the impression that it, like the European parturition chairs, has a piece cut out for the middle part of the body. Moreover, in China, the parturition chair

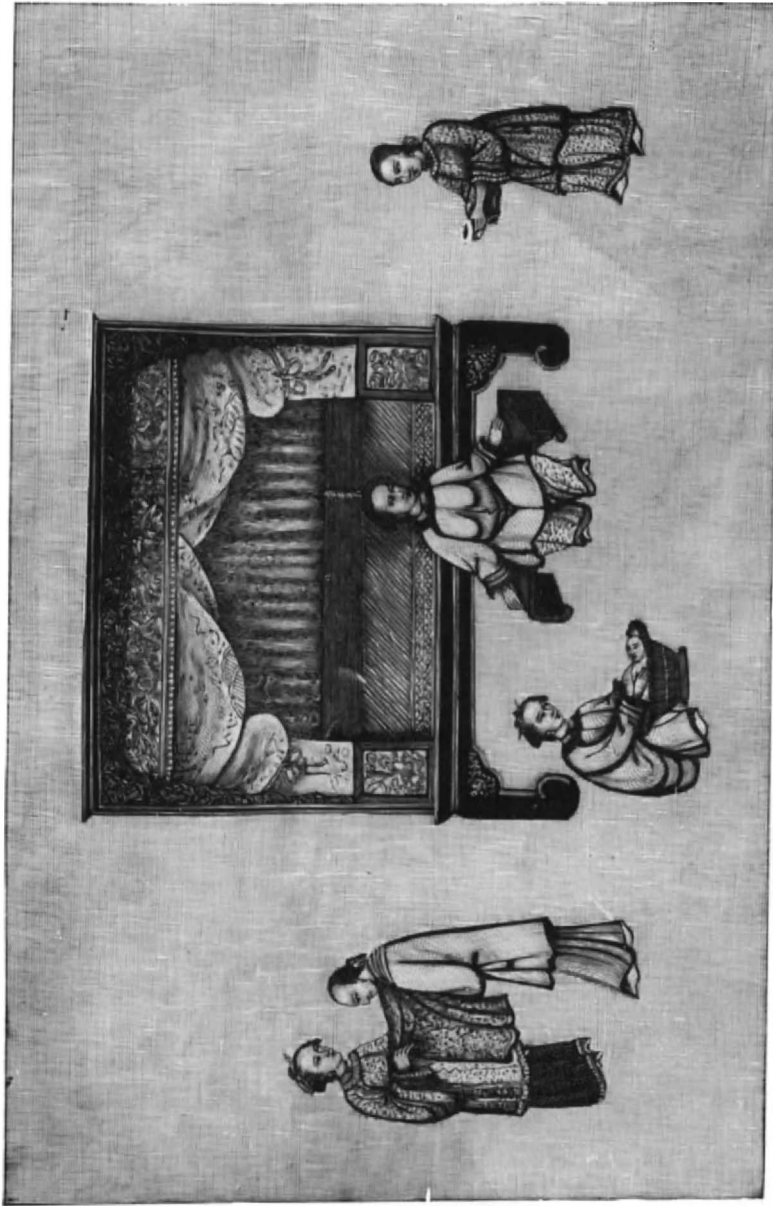


FIG. 747.—A Chinese woman is delivered. The mother is still seated on the parturition chair. A woman is bringing her some refreshment. Two other women busy themselves with a piece of material which will probably be used for wrapping up the child which is being bathed in the foreground.

is used at the present day, as well as in Syria, Egypt, Tunis, Turkey, Cyprus and Greece.

7. PARTURITION ON THE LAP

The opinion has been expressed that the peculiar custom of sitting on the lap of another person to be delivered gave the first impulse to the invention of the

parturition chair. This is highly probable and we have even a tradition for this. In Thuringia, at the beginning of the last century, a carpenter was specially renowned for the fact that a woman sitting in his lap had an easier delivery. He was conse-



FIG. 748.—Correct position for delivery as portrayed by J. Savonarola, 1547. On the right is seen the prototype of the parturition chair.

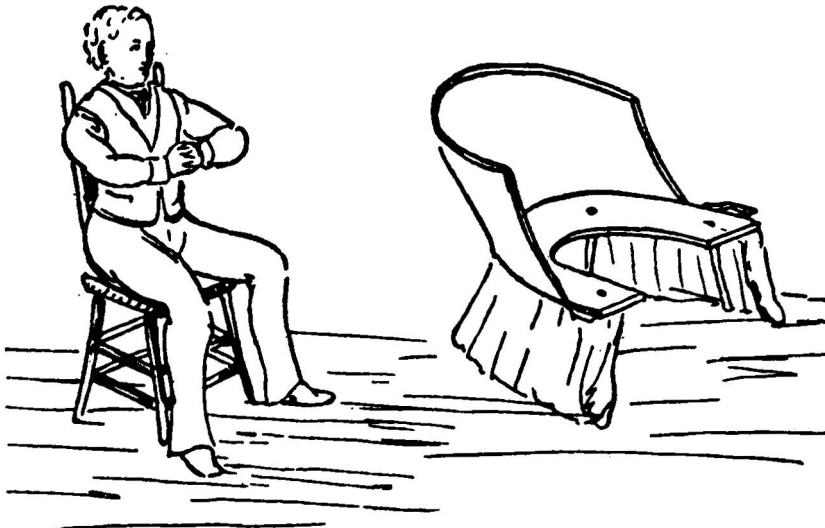


FIG. 749.—Origin of the parturition chair. (After Engelmann.)

quently much in demand. As this at length became irksome to him, and he found "that he would have a great deal to do if he were to seat any fool who wanted to calve on him," he hit on the brilliant idea of constructing a parturition chair, although he had never seen or heard of such a thing in his life (Mezler) (*cf.* Fig. 749). Someone may have hit on the invention in the same way at an earlier date.

The custom of using the lap of another as a parturition chair, so to speak, is very widespread even at the present day, and dates back to hoary antiquity. In the Bible, too, we find allusions to it. Thus Rachel says to Jacob (Genesis xxx. 3):

“Behold my maid Bilhah, go in unto her; and she shall bear upon thy knees, that I also may have children by her.”

In this case Bartels seems to be in error. This passage is no proof for customary delivery on the knees but is a kind of adoption of the child of the fellow wife. However, he comes nearer the truth with the following words: “To be sure, it cannot be denied that in this case a birth *per procuram* was involved so that, in this way, the child of Bilhah would be made as it were the child of the hitherto sterile Rachel.”

That women in ancient Peru also chose the same position for delivery is proved by Engelmann and others. In the old Peruvian graves an earthen jar was discovered on which parturition is portrayed. Engelmann² (p. 113), who obtained this jar in the year 1877, describes it as follows:

“The woman sits on the lap of the helper. I cannot determine whether this is the husband or a woman attendant, whether it is a male or a female person; in any case, she is sitting on the lap of a person whose arms are clasped round the thorax, in doing which the hands press hard on the fundus uteri. The midwife is sitting on a low seat between the thighs of the woman in childbirth and is about to receive the head of the new-born child. This vessel, called *huaco*, represents vividly a confinement exactly as it happens among the descendants of the Incas up to the present day, and Dr. Coates assures me that during his stay in Peru, he had to act as obstetrician not infrequently, and that the husband always stood behind the woman couched in this way.”



FIG. 750.—Ancient Peruvian vase representing a delivery. (After Engelmann.)

In the exceedingly rich collection of vessels from graves which Arthur Bässler brought back from his world tour there is a vessel (unfortunately broken), which represents a confinement. With Bässler's permission M. Bartels photographed it and published it in this book (*cf.* Figs. 751 and 752). “The group, executed in red clay, forms the lid of a clay receptacle which is broken off below the group. In this breakage the feet of the woman in childbirth were also sacrificed. She is sitting on the ground with legs apart, and not actually on the lap, but between the legs of another woman, who is likewise sitting on the ground with her knees drawn up. The woman in childbirth, the other part of whose back is pressed hard against the abdomen of the woman helper, has her arms stretched out behind and holds fast to the calves of the helper. The latter has her hands on the lower ribs of the patient and one can see from the position of the fingers that she is holding the woman in

labour with a strong pressure. Both women have a cloth on their heads which falls like a cloak down the back. For the rest, however, they appear to be naked; this is not quite clear in the case of the helper, but it is certainly true of the woman in childbirth, as can be seen by her breasts. Delivery is already fairly far advanced for, in the widely dilated vulva, the head of the child is already visible. So here, too, delivery takes place with the head first; the face is turned upwards (Fig. 752).



FIG. 751.—Ancient Peruvian group in terra-cotta, forming the cover of a vase and representing a delivery. Bässler Collection. (Photo: M. Bartels.)

Whether here, too, as in the case of Engelmann, there was a third figure in front of the woman in labour can no longer be determined; from the form of the line of fracture, however, I think it improbable.”

Just as in Engelmann's group, so the women in Chile and the Indians and Mestizoes in Mexico are confined; however, with the last, other positions also are common.

Among the ancient Romans delivery took place in this way, but only as a last resource. Moschion gives this as his opinion, and he is followed later by the Italians,

Scipione Mercurio and Savonarola (see Fig. 748), and the German, Welsch, while the Frenchman, G. M. de la Motte, again gave it warm support.

Now, tarrying a little longer among the ancients, we must mention that the old inhabitants of Cyprus also knew and practised the same custom. This is proved by a little group of terra-cotta figures, not hitherto described, to be found in the Louvre in Paris, and found there by Ploss in 1878. It was displayed in a room in the Louvre with the Campana Collection (Napoléon Bonaparte Museum) and was



FIG. 752.—Ancient Peruvian group in terra-cotta, forming the cover of a vase and representing a delivery. Bässler Collection. (Photo : M. Bartels.)

designated : M. N. B. 118, Ile de Chypre. It represents three human figures, of which one holds another on her lap, clasping her from behind, while the third, which has a cylindrical object in its arms, squats before the other two. The way it is set up in the glass case did not, in the first instance, permit of close observation but only a view from one side ; however, Ploss thought from the careless, almost crudely executed figures, that a delivery scene was very probably involved, and that the figure of the woman which he had to regard as the woman in childbirth is sitting in the lap of another person. In this case a votive offering for a successful delivery

must be presumed. As there was no time to stay longer in Paris, Ploss asked the well-known anthropologist, Emil Schmidt, to look at the group and describe it more fully. A sketch of the group made by Ploss helped him when he visited the Louvre in 1879 to find it; he succeeded also in observing it more closely and in sketching it from several sides. Finally we have to thank him for the thorough description and for the drawing which accompanied it (Fig. 753). The former is all the more valuable because, in the catalogue of the Campana Collection, information about it is lacking, especially as to the finder, the place where it was found, and the date of its finding.

Schmidt wrote as the result of his investigation the following description: "The group itself is 10 cm. high to the head of the highest figure; its length (at the base) is 10.5 cm., its average width 4-5 cm. It is, throughout, extraordinarily carelessly executed, so that the biggest things (legs) are often not recognisable at all, nor are even the faces well formed. It consists of three figures, two of which, (A) and (B), are sitting in an easy



FIG. 753.—Ancient group in terra-cotta from Cyprus representing a delivery. Musée de Louvre, Paris. (From a drawing by E. Schmidt.)

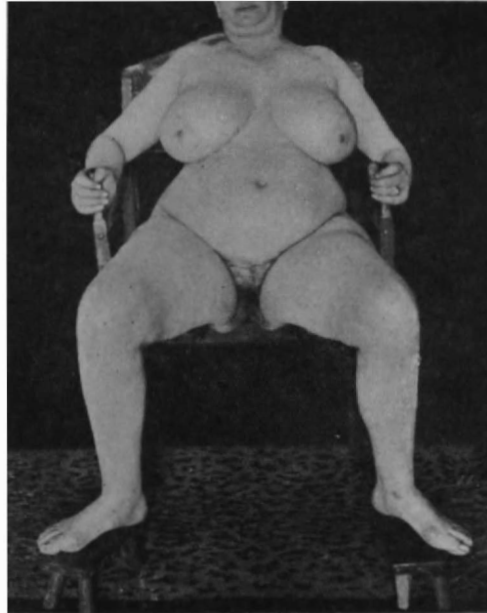


FIG. 754.—A Tyrolese woman on the parturition chair.

chair in such a way that (A) is holding figure (B) in front on its lap; the third figure (C) kneels in front of the other two and faces them. In all three figures, the back parts are unfinished; they look as if they had been cut through the middle by a knife from top to bottom and as if the front half had been left standing. All three faces have something soft, almost charming, about them: eyes, nose and mouth are in all cases well indicated; of beard no trace can be seen. (A) and (B) are passably executed as far as the abdomen, but farther down everything flows together with a short thin, wide, irregularly shaped mass below, and gradually into the base (easy chair). (A) has (B) sitting in front of her for her whole length; (A) holds (B) with her hand passed through (B's) right arm on to the abdomen; the left arm of (A) lies under the whole length of the left arm of (B). In the position of (A) a certain exertion is expressed, while (B) lets the head fall as if swooning. (C) too is fairly passably executed as far as the pelvis; below, however, the modelling passes into the base; she seems to be sitting right on the ground. In her arms she is holding a 'cylindrical object,' which reaches as high as the left shoulder, but does not extend below the right arm. It is rather sharply cut off at the top, pretty regular in form, and in particular shows no stricture which might be indicated as a neck. The lateral profile of (C),

which is seen from the back view to be particularly good, shows a slender breast, a finely-cut figure and widely-projecting hips. The base of (A) and (B) is an easy chair, a fact which cannot be recognised from the front view alone. Their legs on the right and left are joined together, but are separated in front and behind. The shape of the easy chair emerges clearly. The

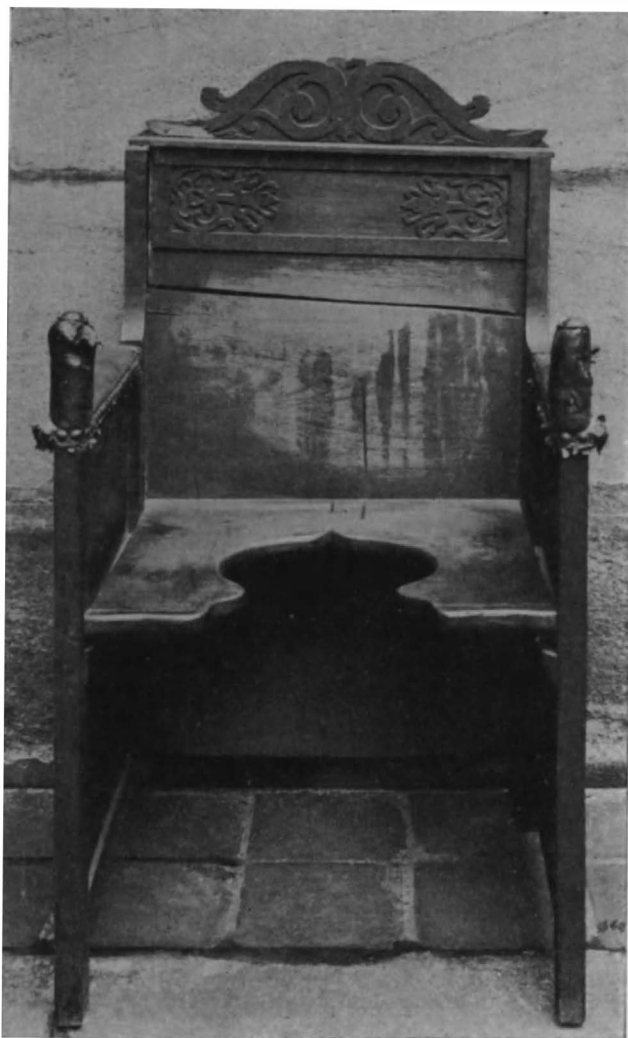


FIG. 755.—A parturition chair. (Germanic Mus., Nuremberg.)

figures are painted a reddish colour and show traces of black (at the eyes) as well as a streak which in (B) runs in front from shoulder to shoulder over the breast.

“ The question is, what does the cylindrical object, which (C) holds in her arms, signify ? According to the proportional size, it would quite correspond to a new-born child ; also the way it is held suggests this ; the fact that nothing of head or limbs is recognisable does not argue against its being intended to represent a child. It may easily be assumed that such detail was too fine in the crude execution of the rest, and was, therefore, quite neglected. If a little child is involved here, then the group could hardly admit of any other interpretation than as a birth scene ; the right hand of (A), which is laid on the abdomen of (B) appears to be rubbing it, and

the appearance of (B) would be in perfect accord with this. For me, the most probable explanation seems to be that this is a matter of a thank-offering to the goddess of birth for help in a difficult delivery. Such thank-offerings for recovery from illness are frequently to be found. The Museo Nazionale in Naples has, I might say, hundreds of breasts, fingers, hands, feet, eyes, etc., which have this significance."

If we now return to modern peoples, we have already come across the custom



FIG. 756.—A parturition chair. (Germanic Mus., Nuremberg.)

described here in Italy, France and Germany, and as late as last century it was found in Thuringia, in Vogtland, and in Holstein. In Tyrol, about 30 years ago, obstetric chairs were still to be found (Fig. 754). Two fine examples are in the Germanic Museum in Nuremberg (Figs. 755 and 756). In Holland, there were in the seventeenth century so-called Shott-Steers, *i.e.*, women who used to lend their laps for deliveries of this kind (see G. van Solingen). Also in England and Russia, such deliveries are to be met with. Of the Letts, Alksnis says :

“ Often they have the husband take the woman in childbirth in his lap ; the legs are kept sufficiently apart, and in case of need are kept in this outspread position by two persons at the knees.

In America, as well as in the countries already mentioned, they are used ; also in Pennsylvania, Ohio and Virginia. In Asia, we find this custom among the Kalmucks. Also the Andamanese, and in Africa, the Madi negroes have analogous customs. It is not always women who do this kind service. In the majority of cases, men must be also in readiness. Chiefly it is the husbands, of course, but also the father of the woman in childbirth or friends of the husband may represent him. Sometimes it is strange men whose laps have a reputation for making easier delivery. This seems to be the case among the Kalmucks with whom this living obstetric chair has to be abundantly entertained by the husband beforehand.

8. THE USE OF MEDICAMENTS IN NORMAL DELIVERY

We find one idea very widespread, namely, that from the moment that the first signs of the beginning of labour are perceptible, the woman herself has to keep to a simple diet, either by avoiding food and drink altogether or by taking medicines which are supposed to accelerate parturition. Thus, in the seventeenth century in Germany, so long as she had to be on the parturition chair, the woman was allowed to have absolutely nothing, and in Eckarth's *Unvorsichtige Hebamme* a case is related where the woman had had to spend 14 hours on this chair, and although she had already been given up by the people round her, yet they would not allow her to have a draught of wine for which she begged continually, till her husband, in spite of all objections, gratified her and by doing so, removed the weakness of the labour pains and finished the delivery. Similarly, according to Shortt, in Southern India, the women must fast during parturition.

The negresses in the Moru district in Central Africa, on the other hand, are kept able to do their part, as Felkin relates, by putting beside the bed a jar filled with native beer made from ground seeds ; leaves are put over it, and the woman can drink from it by means of a drinking tube when she wants to refresh herself. On the Canary Islands, as soon as labour has begun, the woman is given a glassful of brandy to strengthen her, but the midwife and the godmothers also empty their glasses at the same time (MacGregor, p. 66).

On the other hand, among isolated peoples, many medicinal specifics to be cited in a later section are used in difficult delivery by the helpers, and also fairly regularly in normal delivery, because it is believed that in the latter case specifics, taken internally, must give help in promoting delivery. Thus, a pepper decoction is used at almost every confinement in the Presidency of Madras in India. Also, on the island of Buru, an old woman prepares for the woman in labour a medicine which contains the extract of the *Kaempferia Galanga* L., so that delivery may proceed successfully. The woman in labour on the Amboina Group has to drink the juice pressed out of the raw leaves of certain species of the *Hibiscus* plant with holy water, over which an initiated person has said the following prayer to the gods :

“ Let the kanari fruit fall ; let the malady vanish from the body ; all ills flow away, so that the body of my daughter may be left healthy, so that her body may be relieved.”

Others drink a decoction made from an infusion of the leaves of the papaw or

other plants (Riedel). The Hawaii islander, before confinement, drinks copiously of a viscous fluid prepared from the inner bark of the Halo or Hibiscus tree.

The Samoans have a medicine "for women in childbirth"; they pound young fruits of the spondias tree, mix them with water, and drink it (Krämer).

Among the women in Doreh Bay, it is customary to drink infusions of certain plants shortly before confinement. These plants are called *saijor gedi*, *bænga sêpatoe* and *saijd*-leaves (van Hasselt²).

When the first labour pains set in with the Orang Bëlenda women in Malacca, hot water is poured over three plants which, according to Stevens, are called *mirian*, and quantities of this infusion must be drunk by the woman in labour.

Among the Russian women in Astrakhan, parturition is hastened by administering cinnamon water (Meyerson). In Guatemala, the midwife gives the woman in labour hot decoctions of herbs and between them now and again a mouthful of brandy.

In North America, the Indian women of the Uintathal district drink a great deal of hot water during parturition; the Crow Indian women of Montana, various kinds of root and leaf-tea (Engelmann²); the favourite is the tea of the *E-say* root, which is supposed to belong to a plant similar to tobacco. There, too, brandy in small quantities is frequently given. The Winnebago and Chippewa give the women in labour shortly before the expulsion of the child a drink prepared from a root which is reputed to relax the fibres and make birth easier. The Indians of the Skokomish district believe that a tea from the leaves of the red bear-berry promotes the expulsive power of the labour pains. In ancient Mexico, a decoction of a root of the *ciupactli* plant, which had some expulsive power, was given; however, if the pains were too strong, then a little piece of an opossum's tail carefully cleaned with water had to be taken.

Besides these, specifics for causing nausea and vomiting play a great part among many peoples. The contractions of the muscles of the abdomen and the diaphragm connected with retching are supposed to promote expulsion. The *doekoen* in the Dutch East Indies used nauseating specifics; they have the oldest woman present at the confinement, wash her feet in cold water, and give this or urine to the woman in labour to drink (van der Burg, p. 366). In Siam, a court physician gave a lady of high rank the following prescription in her confinement:

"Grind together splinters of sapan wood, rhinoceros blood, tiger's milk (freshly gathered as found on certain leaves in the wood) and the cast-off skin of a spider" (Engelmann²).

We shall learn of other medicaments later when disturbances in the course of birth are under discussion.

CHAPTER XXXV

MANUAL AND MECHANICAL AID IN NORMAL DELIVERY

1. TREATMENT BY ANOINTINGS, FOMENTATIONS AND BATHING

It is really a very natural idea that the softer, the more yielding and slippery the genital passages are, the more comfortable will be the issue of the child. Thus, it is easy to understand that many peoples have hit upon the idea of anointing and smearing with fat the genitals of women in childbirth. Suśruta writes :

“ A midwife shall duly anoint the inner and outer genitals of the woman in labour.”

Hippocrates (*De morb. mul.*, I., 5), too, recommends oiling the vagina. Likewise, Soranus had warm oil rubbed in ; further, also, Aëtius (*Tet. quart. Serm.*, IV., 15, 16), Moschion (*De mul. pass.*, 46, 50), Paulus Aegineta (*De re med.*, III., 76), and Avicenna (III., 2, 14).

Their precepts were then transmitted to the German doctors of the later Middle Ages. Thus, we read in Rueff :

“ Last of all the midwife shall sit down before the woman and salve and smear the foremost parts of the womb with oil of white lilies, sweet almond oil and poultry fat mixed together, which is excellent for women who are stout and have a narrow womb, also those with their first child and those who have a dry womb.”

These customs are still preserved, and Alksnis mentions a case where a Lettish midwife anointed the genitals of the woman in labour with sour cream.

Among many peoples also, it is believed that delivery is made easier if the woman's abdomen is subjected to these anointings. In Guatemala, oil is used for this ; in Northern Mexico, the midwife rubs the abdomen with an infusion of an astringent herb. On the Babar Islands, the abdomen is smeared with kalapa-milk. The midwives in Galicia do these rubbings with a mixture of fat and brandy (see *Wien. med. Presse*, 1867, nr. 39).

The transition to fomentations can be recognised in the washing and pouring over with water of various temperatures. To advance delivery and make it easier among the Campa Indians in Peru, the women assisting give the woman in childbirth hot water with which to wash herself (Grandidier,² 1861, 71, 85). In Australia, on the other hand, a woman pours cold water on the abdomen of the woman in childbirth (Klemm, I., 291). Also women in labour in New Guinea, according to Müller, have water poured over them.

We find the use of fomentations in parts of the earth very remote from each other. In East Prussia, according to Hildebrandt, fomentations of camomile tea are used. The woman in labour is placed on a chair and a vessel with hot camomile tea is placed between the thighs. On the White Nile among the Kerrie negroes, it is customary to make a local vapour bath for the woman in labour. A hole is dug in the ground in which a fire is kindled, and on this a vessel containing a concoction of herbs is placed. Over this the woman then squats, and lets the vapour rise

towards her abdomen. This experiment is reputed to make delivery considerably easier. It is also used by the Shuli negroes (Felkin ¹).

Fumigations with amber, we may imagine are used in a similar manner; by which, as Volmar records, delivery is supposed to have been made easier. He says:

“ If it on fire is put ;
Then is the smoke good
For her who bears a child,
If she doth duly love
Her own true wedded man :
Her child may she have
With great pain 'tis true
This I make plain.”

All these fumigations, etc., came originally not from hygienico-medical measures but from magical processes with which demons were warded off.

The use of vapour baths is very common among the peoples of Russia. Delivery in the bath-house has been mentioned in Vol. II., p. 567. Chinese women also use a vapour bath in almost every confinement. To do this, the woman has to kneel on a mat. On this is placed between the legs, a brick, which has been heated in a stove. It lies sufficiently far back not to hinder the manipulations of the midwife. The woman's calves are protected from the radiant heat by little boards placed in front. Then the midwife's assistant pours on the hot brick pure water, or water mixed with aromatic substances; the vapour thus formed rises to the vulva by following the direction of the boards. Besides this, a steamy atmosphere is spread about by means of several fires kindled round the woman in labour. The woman's costume, which consists of a camisole and an open dress, permits of her remaining fully dressed in this process (Hureau de Villeneuve, p. 33). In Cochin China, a fire is kept up quite close to the woman in labour. Also in North-West America among the Kenai tribes, the woman in labour is taken into a sweating-hut, in which a man keeps up great warmth by means of hot stones.

2. BEARING-DOWN IN LABOUR

The moaning caused in women by the painfulness of labour is naturally always linked with a bearing-down. But the bearing-down and straining of the woman should only take place in moderation if it is not to do harm but to help the delivery in the right way. This the ancient Hindu doctors, among others, saw even at that early date. Thus, Suśruta states in what stages of labour the patient is to be advised to bear-down more or not so much:

“ After the interior and exterior genitals of the woman have been anointed, she shall be told: ‘ Oh fortunate woman, exert thyself, thou has not yet got through the pains of delivery, put forth thy strength!’ And when the bond of the umbilical cord is detached: ‘ Work slowly with the aching loins, the genitals and the neck of the bladder’; and when the fœtus is coming forth: ‘ Work harder!’; finally, when the fœtus has reached the vaginal orifice: ‘ Work still more till delivery is complete!’ ”

According to this version of Vullers (p. 239), Suśruta confines the exertion of the woman in labour to the real labour pains, and prescribes, at the same time, in accordance with the advance of the child from the genitals, a stronger or less strong bearing-down in support of the pains. Too early bearing-down, he declares to be harmful for he says:

“ By untimely exertion, the woman in labour gives birth to a deaf and dumb child with distorted jaws, injuries on the head, suffering from cough, respiration and consumption, hump-backed or a monstrosity.”

The ancient Hindu doctors, according to Schmidt,⁹ prescribed :

“ First bear down gradually only, then always more strongly ; finally, when the fœtus emerges, very strongly till delivery has taken place. While she bears down, the women, to cheer her should call out : ‘ Born, born, a fine, fine son.’ ”

The Roman physicians also knew that bearing-down must not take place without some regulation. Soranus and Aëtius prescribed :

“ That woman in labour should press the breath to the lower part of the body so long as the pains lasted, and not keep it back at the neck for, in the latter case, an incurable malady, namely, goitre, would result ” (see Pinoff, p. 27).

Rösslin writes in his text-book for midwives :

“ Also the woman is to hold her breath and press down.”

Paré, too, gives warning against untimely working up of the pains.

Among the most primitive peoples, the women helping confine themselves to urging the woman in labour to bear down by encouraging words. Thus, in Massaua, the women assisting use no specifics for promoting delivery, but merely bid the woman in labour exert herself and press strongly in order to hasten delivery (Brehm). Among the Hottentots, however, the husband beats the wife to stimulate her to bear down. For the same reason, among the Chevsurs, the husband frightens the woman in labour with gunshots fired unexpectedly, possibly from fear of demons.

The positions and postures which have been adopted among different peoples as the customary ones for women in labour seem to have been chosen especially for this reason ; that people thought that thus the bearing-down done by the woman in labour would be particularly successful. Also the things to hold, described above, the ropes, crossed poles, posts, etc., mostly serve this purpose also.

Among many peoples, women in childbirth are most strictly forbidden to cry out, and though the prohibition was made very probably from quite different motives, yet it does attain a not inconsiderable increase of pressure, for the suppressed cry of pain is linked with a strong bearing-down movement. In Nicaragua, the woman in labour dare not moan or cry out ; she has to suppress the expressions of pain forcibly so as not to disturb her co-operation in the expulsion of the child (Bernhard,² p. 121). Obviously, the reason was originally the fear of demons. Yet, through experience, the hygienic motive soon appeared. We already saw above that among the Karau-Battak in Deli on Sumatra, a woman in labour was scolded because she let sounds of pain be heard.

Since with the Guinea negroes, the women helping regard the crying and groaning of women in childbirth as injurious, to prevent it they keep the poor creature’s mouth shut (Monrad, p. 47). Also among the Kalmucks, they sometimes stop up the woman’s nose and mouth with a cloth and expect that the effort which the almost suffocated woman makes accelerates delivery (Krebel, p. 56). Likewise, the North American Indians try to promote delivery in difficult cases by holding the woman’s nose and mouth closed (Rush,² I., 33). The same method for hastening the expulsion of the placenta was known to Hippocrates.

The Galician midwives do not fail to appeal repeatedly to the woman in labour to bear-down strongly with the mouth shut. And thus it not infrequently happens that the poor women are quite exhausted even before the membranes are ruptured (*Wien. med. Presse*, 1867, 978).

In China, too, in this respect, there is much faulty procedure. For the Chinese doctor says in the "Treatise on Midwifery" edited by v. Martius (p. 35) :

"Unfortunately, it happens only too often that stupid midwives call to the woman in labour, 'Exert yourself!' The mother must leave the coming forth to the child alone, for if she puts forth her strength while the child is turning round, its presentation may become irregular; only in the case where the child might have overtaxed its strength in turning so that it is too much weakened and sticks fast is the woman permitted to put forth her strength a few times in order to help the child. Only she must be very prudent and careful in doing so, else she will do harm."

Japanese obstetricians teach :

"Voluntary pressing and bearing-down on the part of the woman in labour is useless, and should, therefore, not be specially recommended; rather must the pressure be entirely *Yo*, and it will become stronger and quick of itself, since *Yo* accumulates above the fœtus." To make this obscure passage intelligible, the translator of it adds: "In all natural phenomena, one differentiates *Yo*, the male active principle and *In*, the female passive principle: here then is meant that the active, expulsive force must accumulate above the child to expel it" (see *Mitt. d. deut. Ges. f. Volkerk. Ostasiens*, 1875, 8, 10).

Krämer got from natives by word of mouth the following description of the confinement of a Samoan woman: "When the day of the birth approaches, two old women come, one of whom sits down at the legs, the other at the head. Then the one at the legs says: 'Maiden, be strong, do your work well and bear-down hard.' Then the one at the head stretches out her hands, presses her shoulders, hits her head and calls: 'Maiden, be strong, do not be weak! Or wilt thou die?' Thereupon, the maiden bears down hard and the child falls out."

3. PRESSURE AND MASSAGE IN NORMAL PARTURITION

The way untrained midwives often handle the woman in childbirth in order to seem busy has already been mentioned. To the idea "that something must be done" *i.e.*, that one must not stand about idle, a number of manipulations which we come across at labour owe their existence. First and foremost come the rubbing and stroking of the lower parts of the body. The intention clearly is to push the child out of the womb. Very soon, however, experience must have shown that this friction of the abdomen is, in a number of cases, really advantageous, as it sets up contractions of the uterus. This being so, it is not to be wondered at that the women helping resort to this expedient which, in their eyes, has the additional advantage of being quite harmless. Besides, by it they also do the service of soothing the woman in labour, who hopes soon to be released from her pain, since she feels and sees that people are really trying to help her and that something is being done with her.

Thus Puéjac, who made his observations in small towns in France, says of the practice of midwives there :

"Mes clientes exigent que je les aidasse pendant leurs douleurs, c'est-à-dire que par de nombreux attouchements, et de vigoureuses pressions sur le périnée, je sollicitasse une sorte d'exacerbation de la part des contractions musculaires du plancher du bassin, assurant par ces moyens être délivrées plus tôt."

In the Babar Archipelago, during the whole time parturition lasts, the abdomen of the woman in labour is stroked with *kalapa*-milk by one of the assistants and the back by another.

But still more vigorous manipulations are also practised on the woman in labour, and among these compressing the abdomen, even before any part of the child has emerged, is particularly widespread. We have already mentioned cases where the husband or another man has to clasp the abdomen of the woman and press it. Also the binding girdle must serve a similar purpose.

In Old Calabar, the midwife squats before the woman in labour who sits on a



FIG. 757.—Male assistance at a delivery in Bali. The waiting demon is overcome. (Staatl. Mus. f. Völkerk., Berlin. Cf. Figs. 711, 712.)

low block of wood, and, with oiled hands, exercises a continuous gentle pressure on the sides of the abdomen from above downwards, and from the front outwards, in order, as she says, that the child may find its way downwards (see Hewan, p. 223).

The negroes, the Indians of California, the Malays in the Philippines, the Kalmucks, the Tartars and Esthonians, make use of various expedients, discussion of which, however, is to be postponed to the disquisitions on difficult birth.

The stroking of the abdomen which, according to Modigliani is, on the island

of Engano, done by the husband, is perhaps also to be interpreted as the exercise of pressure. Although a very subordinate matter, yet, as in the group from the island of Bali, the man helping the woman in labour seems to be exerting pressure on the upper part of her abdomen. M. Bartels at least concludes this from the terracotta group in colour of which illustrations have already been given (*cf.* Figs. 711 and 712). Fig. 757 represents a similar group from the side: "We see the woman in labour sitting on the floor supported by a man who is rubbing or pressing her abdomen with his right hand. Another man has overpowered the demon watching the delivery. He has got on its back and is pressing its head against the floor with his hands."

New Guinea women in labour are massaged over the breast by the fists of the

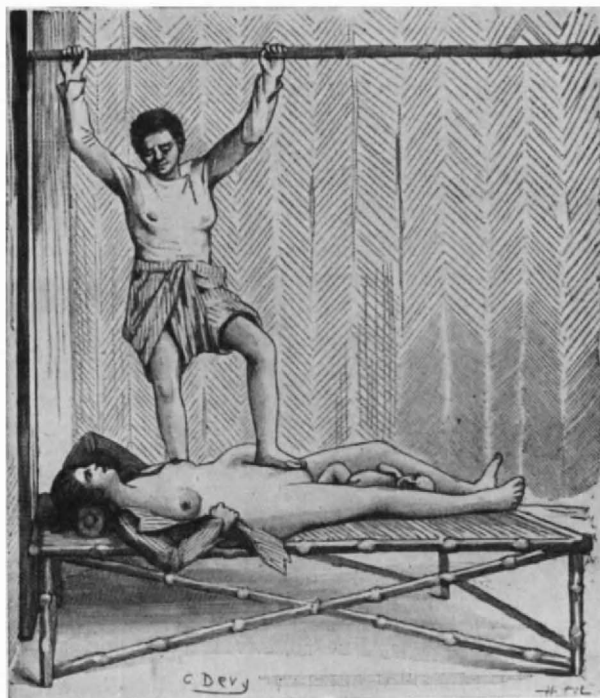


FIG. 758.—Massaging the abdomen of a woman with the feet. Annam. (After Witkowsky.)

women assisting; and of the dwellers of the Doreh Bay, van Hasselt² says that the woman sitting in front of the woman in labour gives her a kick now and again, whilst one sitting behind supporting her, gives her vigorous kicks in the loins from time to time.

According to Stevens' report, the wives of the Orang-Bélenda in Malacca when in labour have a cloth fastened fairly firmly round them at about the height of the false ribs. The woman who squats on the right of the patient presses on the abdomen from above downwards, and strokes the cloth with her hand from the navel downwards. This downward pressure, called *tampoo*, is done by using the part of the hands next the wrist with the finger bent outwards. These manipulations are repeated several times at short intervals, but not with very great force; they are very effective (M. Bartels).

Suśruta does not mention a compression of the abdomen in normal parturition. But the midwives among the Greeks compressed the abdomen of pregnant women by cloths which they wound round them. In Annam, the abdomen of the pregnant woman is trodden on by a man (Fig. 758).

Moschion orders the Roman midwives to have their assistants promote the expulsion of the child by pressing the abdomen of women in labour downwards. Also, Rösslin says in his text-book for midwives: "The midwife should press the abdomen gently over the navel and hips," and Rodericus a Castro recommended pressing the abdomen *ut infans ad inferiora depellatur*.

In a later section dealing with difficult births, these manipulations will be gone into more thoroughly. We must not forget, however, that in the eyes of the midwives of the lower classes, a merely somewhat protracted delivery becomes a difficult one which, in their opinion, requires help. Therefore they resort to the expedient of employing a *vis a tergo*. And thus almost all the methods of procedure to be mentioned in the section indicated come into use very commonly in the otherwise normal course, with some peoples even quite regularly.

4. ARTIFICIAL DILATATION OF THE GENITALS

It has already been mentioned above that people often tried by inunction, etc., to make the genital passages more pliable. From there, it is not a far step to the idea that a mechanical dilatation of those parts must have a particularly good effect. Thus, the Roman midwives already had the custom of dilating the os uteri with the hand, while the assistants pressed the abdomen of the woman in labour downwards. Soranus, however, considers that this artificial dilatation should be employed only when the pains are without result, but not when the uterus is contracted. Celsus describes the operation in detail:

"Ex intervallo vero paulum dehiscit. Hac occasione usus medicus, unctæ manus indicem digitum primum debet inserere, atque ibi continere, donec internum id os aperiat, rursusque alterum digitum demittere debet, et per easdem occasiones alios, donec tota esse intus manus possit" (VII., 29).

Moschion likewise speaks of this manipulation:

"Digito manus sinistræ oleo inuncto uteri orificium sensim dilatans aperiet."

Paulus Aegineta and Tertullian mention special instruments for dilating the genitals. These dilators were shaped like vaginal specula and could be screwed apart.

The whole instrumental aid of Roman physicians was confined to the use of the *speculum vaginae* (*διόπτρα*), which was used to dilate the vagina, when, owing to swellings, it was too narrow for the child to pass through. Several examples of this instrument have been found in Pompeii (*cf.* Guhl, McKay, Overbeck and Figs. 759 and 760).

The Arab doctors had an instrument similar to the present day cranioclast, of which it is said in Abulcasis:

"Forma contusoris, quo caput foetus contunditur." It is also modelled in two different sizes; of the longer form, Abulcasis says: "Et quandoque conficitur longus, sicut vides."

This instrument was very widespread, not only among the Arabs but also among the European nations in the Middle Ages. Avicenna says:

“Et fortasse quandoque indigebis, ut aperias vulvam ejus cum instrumento os matricis ejus et aperiatur.”

In France, Paré first described several instruments which served this purpose. De la Motte says that in his time, the midwives used these means of promoting delivery to the great detriment of the women in labour. In Germany, Rueff recommended such instruments. He also had the womb stretched out and pulled apart or, as Rösslin puts it: “the portal of the woman in labour widened with the hands.” Rueff and Rösslin had these manipulations carried out even in normal parturitions (Fig. 761).

Such vaginal speculi for dilating the os uteri were from then till Mauriceau's time very common in the equipment of the obstetrician.

Even now, similar manipulations certainly occur not infrequently, though we

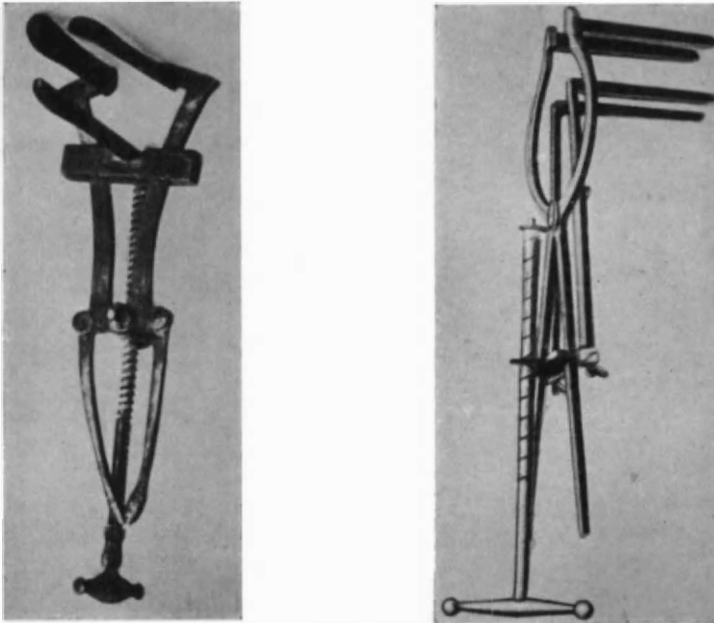


FIG. 759.—Ancient specula. (After Meyer-Steinegg and Sudhoff.)

have received no special information about them. In Guatemala, the midwife who, during the pains, presses her knees against the loins of the woman in labour sitting on the floor, in the intervals between the pains forcibly dilates the vagina and os uteri with her hands and finger nails. Also in Cochin China, as Mondière records, the midwives observe a similar procedure.

Among the Indians of North America, the women helping (according to Engelmann ²) insert their hand into the vagina.

“At most, this service is recorded in respect of some few examples; that is to say, for the purpose of the dilatation of the perineum, or to remove the placenta which has been retained in the uterus.”

Moreover, it is done also, it seems, among the Eskimo.

Among the Swahili, the midwife is said to widen the orifice of the vagina by a cut downwards with a razor (see H. Krauss ²).

In present-day Greece, the women assistants insert their hands into the vagina, push back the labia, rupture the perineum, etc. (Damian Georg).

The doings of the Lettish midwives in this respect have already been discussed in detail above ; their rough and forcible manipulations, therefore, need not be cited again here.

5. PROTECTION AND SUPPORT OF THE PERINEUM

Of any support of the perineum by the women helping in confinement, there is, on the whole, seldom anything recorded by observers of national obstetrics. The

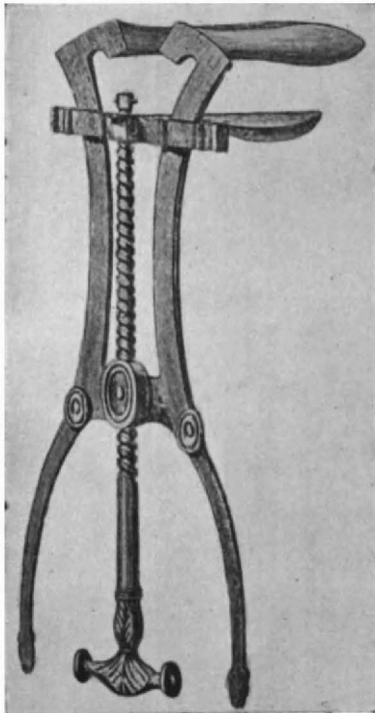


FIG. 760.—Birth delivery instrument. Speculum found in Pompeii. (After Kossmann.)



FIG. 761.—Specula. (After Rueff.)

importance of the positive information which has come to our knowledge is therefore all the greater. Thus Titus Tobler informs us from Palestine :

“The midwife supports the perineum carefully with her right hand in such a way that the latter covers the anus and thus helps to prevent the rupture of the perineum.”

The midwives who assist the Russian women in Astrakhan in confinement, likewise support the perineum (H. Meyerson).

In the small islands of the Malay Archipelago, the risk of rupture of the perineum is well known, and the squatting or kneeling position so commonly used there has the express purpose of protecting the perineum from rupture. But on the Amboina

Group one of the women helping must attend to it as well. On Ceram Laut and Gorong, the woman, who sits in front of the woman in labour, presses with her foot against both sides of the genitals. According to information given by the missionary Beierlein, in Madras the women helping the woman in labour on the East Coast of East India put rags and pieces of cloth "into the anus." This procedure recalls the method of Trotula who says (XX., p. 50) :

"Præparetur pannus in modum pilæ oblongæ, et ponatur in ano, ad hoc ut in quolibet conatu ejiciendi puerum, illud firmiter ano imprimatur, ne fiat hujusmodi continuitatis solutio." *

Perhaps Beierlein has not understood the matter properly and only the support of the perineum is involved here. For Shortt ¹ says that in Southern India, before the rupture of the membranes, the midwife puts a bag filled with ashes under the perineum of the woman in childbirth as a means of support, and to prevent the woman's clothes from being soiled.

The wives of the Masai, who have no actual protection of the perineum, according to Merker, are said sometimes to do a kind of episiotomy in that they enlarge the orifice of the vagina by a little incision above or both above and below.†

Also it is reported from Samoa (W. v. Bulow ²) that a kind of protection of the perineum is carried out by the helpers in parturition by pressing against it.

Most peoples seem to have no such precautionary measures. In China, "the midwives only make unnecessary work and run hither and thither" as a Chinese doctor records, and in the already often quoted popular treatises, the support of the perineum is not mentioned.

Neither, according to Polak, do Persian midwives support the perineum of the woman in labour in her squatting position.

The Ainu on Sakhalin, according to Pilsudski, have never heard of a rupture of the vagina during parturition, and so it is probable that this never occurs with them, or is never noticed.

Also in Nicaragua people, according to Bernhard,² do not support the perineum, yet in this country, where he practised for a long time, he never saw a perineal tear.

On the other hand, according to Pechuel-Loesche, ruptures of the perineum often occur among the negresses of the Loango Coast. The old Hindu, Roman and German physicians of the Middle Ages cannot have known these manipulations, for in their work no information about this aid is to be found.

Among the Letts, according to Alksnis, there is a kind of protection of the perineum which consists in "pressing the palm of the hand on it." This, however, seems not to be done in a very effective way for it goes on afterwards :

"Perineal tears are considered of no importance, let alone sewn up; they have no significance. Perhaps here again there is a vague idea that they make the next delivery easier so that they may even be regarded as favourable."

The perineal tear was well known to the ancient Israelites, and it is mentioned as early as Genesis. "And it came to pass that when she (Tamar) travailed, that the one put out his hand : and the midwife took and bound upon his hand a scarlet thread, saying, 'This came out first' " As he drew back his hand, his brother came out, and she said : "How hast thou broken forth ? This breach be upon thee : therefore his name was Pharez."

It is remarkable that it could escape the obstetricians of Europe for so long : for frequently in quite normal deliveries the perineum is torn and yet they troubled so little about this contingency. Giffard, who died in the year 1731, was, Leishman ¹

* [Cf. H. R. Spencer,² pp. 7, 8.]

† [A few lateral incisions are preferred by European and American operators.]

(p. 88) thinks, the first to describe a case in which he resorted to the support of the perineum to avoid tearing ; yet, at first, he had no successors.

The first writer who suggested a slight pressure on the perineum from behind to prevent perineal tears was Puzos (*fl.* 1750). This support of the perineum was then strongly advocated also by Levret ; to his recommendation was due the admission of the method into France in the year 1794 ; while in Germany, Osiander and Stein argued in favour of it in 1785 ; and in England, Harvie (1767), Smellie and Osborne recommended it (see Fig. 762).

However, a few opponents appeared (*e.g.*, Mende, etc.). Leishman¹⁻³ objected that the pressure on the perineum would result in disturbances in circulation, and that by the pressure confined to the centre and posterior parts the lateral parts of the perineum would be prevented from contributing their proper share to the dilatation effected by the pressure of the head. Mme. La Chapelle thought that by touching the perineum, reflex contractions of the womb would be aroused, which one tried to avoid in order to get a gradual passage of the head ; also Denman mentioned that he foresaw the most extensive tears if the woman in labour, in throwing herself about, were to draw off the pressure from time to time. Further, Goodall (Philadelphia) declared the methods in use for supporting the perineum unnecessary and even harmful and



FIG. 762.—Protecting the perineum. (After Smellie-Ritgen.)

proposed a new one instead ; Hurt agreed with him in many respects (see *Schmidt's Jahrb.*, 1872, nr. 3).

While the obstetricians in Europe were still arguing about this, protection of the perineum was being practised in Japan. Of the mechanism of delivery on the birth of the child, Japanese obstetricians have the following ideas :

At the moment of expulsion the uterus takes up the os entirely, the symphysis opens, the labia majora disappear. *E-in* (*i.e.*, the perineum) stretches upwards because of the squatting, bent-forward position of the woman, and the anus is pressed out backwards. Now, when the child advances from the uterus, its head will be right on the perineum ; by powerful recession and advance, it escapes from the genital passage. A perineal laceration, according to Kangawa, the famous Japanese obstetrician, is always the fault of the midwife ; she has, in that case, not properly supported the perineum ; the midwife, while sitting behind the woman who squats and bends over forwards, must move the child downwards (*i.e.*, backwards), where there is soft flesh which may easily rupture when touched by the knee. If a laceration of the perineum has taken place, Kangawa resorts to putting up a "skin-restoring" powder consisting of garlic, calomel and *Illicium religiosum ustum*, mixed with linseed oil. This salve is obviously antiseptic (see Miyake, p. 11).

It must be remembered that in this case the Japanese woman is delivered in a squatting position with the body bent forwards. In this position the presenting

head passes most easily through under the symphysis, without pressing too hard against the perineum.

The most unsuitable of all the various positions which come into use in parturition is the standing position. For in this an injury to the perineum may be reckoned on from the start.

6. PULLING THE PRESENTING PARTS OF THE CHILD

Another manipulation which is unfortunately much in use among the tribes which still have an imperfectly developed system of midwifery, consists in pulling the presenting parts of the child. That this procedure in a great many cases produces a considerable danger, not only to the child but also to the mother, need hardly be mentioned. Especially in faulty presentations of the child, it is the "prolapsed" parts which, owing to the slowness or absolute stoppage of the course of birth associated with false presentations, cause the assistants to pull in the hope that they will be able by so doing to hasten delivery and bring it to an end.

Perhaps the first step in this pulling of protruding parts of the child may also be traced back to the working of a spell, namely, to the enticement of the child by the midwife by another child (see Vol. II., p. 613), or by the father. A really splendid example has been given by the distinguished explorer of Greenland, Knud Rasmussen, in Greenland sagas.

In speaking of the Eskimo he mentions the great hunter, Navagialq, whose soul, after his death, migrated through animals of all kinds till it became incarnate even in a woman, whence it was then finally born again: "At last, the labour pains began and Navagialq was to be born. Then, however, Navagialq suddenly discovered in the woman's womb a little man with a crooked mouth of whom he was afraid. (Obviously a demon which had pushed its way into the woman along with him.) Soon after, two unpleasant hands appeared and, at the same time, he heard a voice calling: 'Come out of thy cover!' This was the summons of the midwife. Full of fear, Navagialq went as fast as possible out of the woman. Scarcely had he left her womb, however, than he was overtaken by a burning thirst; then the midwife came with a clear liquid and moistened his lips. This was the water which drops into the nail of their little finger and is given new-born babes to drink."

Later, the same author says:

A birth takes place in the great dwelling house where all its inmates, often as many as a hundred, wait for the moment when the child makes its appearance.

When a woman feels the labour pains coming, several old women are summoned who are to assist her; the real midwife sits down behind the woman on the plank bed and presses and rubs the patient's abdomen in order to make delivery easier for her.

The midwife tries to entertain the woman in labour by talking to her impressively so that she may forget the pains. If the birth is unusually protracted, the midwife has to call the child by making short flute-like sounds into the patient's womb. If the birth is protracted, she must call a child, a boy or a girl who has come into the world easily. She then takes a piece of sinew, strokes the abdomen of the woman with it, and gives it to the child which runs out of the house with it and puts the sinew on the wall by the entrance door, as well as the pieces of bacon, which she rubs over the abdomen of the woman in childbirth. While doing so, the midwife says incantations and, meanwhile, the sinews are supposed, in some mystical way, to help to draw the child out of the womb while the pieces of bacon merely gradually entice it.

If all these methods of procedure are of no avail, then the midwife calls in the woman's husband, who must keep going in and out of the house without ceasing to make the child go behind him. Meanwhile, the midwife continues to make her

flute-like sounds to the child, and calls into the womb : " Come, make haste and follow thy father."

As soon as the head of the child presents itself, the midwife must call three times : " It is coming."

Among the Esthonians, it frequently happens that midwives pull and tug very violently the presenting parts of the child. Thus, as already mentioned, Holst (p. 689) found in face presentations the eyes squeezed out of their sockets, the lower jaw broken in the middle, the mouth torn ; in transverse presentations, the arm torn off, also the umbilical cord separated from its insertion and even the abdominal and thoracic cavities torn open.

The midwives of the Letts have the habit of pulling the feet in foot presentations, but they have to be careful that they do not happen to take hold of a hand, for it must never be pulled (*cf.* Alksnis).

Ucke's description from the Government of Samara is characteristic of the roughness of the old women who assist women in childbirth among the lower classes of Russia :

" If a part other than the head presents, and they can reach it, they tug and pull it as much as possible ; for this reason, prolapsed arms are observed there more frequently than elsewhere : I even know an example of an arm having been torn off in this way."

Among the Votiaks, too, it is not unusual to pull in a senseless way on the prolapsed parts of the child even when transverse presentations are involved. This, according to Leclerc, also holds good among the Kabyles.

Likewise, the Ainu on Yezo pull the parts of the child which have prolapsed in wrong presentations ; but in doing so they make use of a strap or cord, and as soon as an arm or leg appears, it is pulled till the child is got out whole or in pieces (Engelmann²).

We come across this pulling out of the child in quite normal presentations, and in this case it is sometimes done in a well-considered and careful way.

While Chinese doctors advise that the child be left to come out of itself, since it emerges like a " ripe cucumber " ; in Japan, according to Mimazunza's statement, even in normal deliveries, people help by pulling the child with the hand. In Persia, according to Polak, the help consists in the midwife pulling each part which comes towards her. Also Häntzsche writes of the Persian Province of Gilan on the Caspian Sea : " The woman helping pull the child out by the head as soon as possible. Among the Romans, the midwife, as Soranus says, when the child was coming normally, used to pull, ' simply helping in the expulsion.' " In the Middle Ages the midwives had a similar procedure ; as Rösslin recommends, they are not to pull the child until it is visible outside, and Rueff says :

" Where the child seems to settle and stay still, the midwife must gradually direct and help."

In Southern India, according to Shortt, the midwife helps the head of the child with her hands when it stops. A similar procedure is followed also in other places ; this is reported by Mondière from Cochin China in particular. Duffield Bell saw it in the Philippines ; sometimes with very sad consequences for the child. In Monterey in California the midwife usually pulls the child with one or, if she can, with both hands. For this purpose, as King records, she inserts her hands into the vagina of the woman in labour.

In Germany also, midwives used to go to work very roughly and violently. This seems to emerge from the description given by the author of Eckarth's *Unvor-*

sichtige Heb-Amme. This was discussed on p. 671, and Fig. 726 reproduces the results of their calamitous activity.

However, these manipulations must not be confused with the quite blameless pulling on the child when the head and shoulders are already out of the mother's body. Then it promotes delivery considerably if, by a slight pull on the upper part of the child's buttocks, the lower half is guided out of the mother's vagina. This is done by nearly all midwives, and when carried out with the necessary prudence



FIG. 763.—The midwife draws out the child. (After J. von Schwartzberg, 1535.)

and care, it is quite a harmless procedure. It must have been customary in the sixteenth century also, as is shown by a woodcut of the year 1535 (Fig. 763) which is to be found in the work by Johann Freiherr von Schwartzberg's edition of Cicero. "The woman in labour supported by two women is sitting on the parturition chair; the midwife, sitting on a low stool in front of her, is busy drawing out the child. Of the latter, one sees the head, the right arm and the breast, which is lying on the midwife's left hand. Moreover, this young creature is no other than Cicero himself, whose birth is portrayed by the artist, probably Hans Burgkmair, in this way" (M. Bartels).

CHAPTER XXXVI

THE POSITION ASSUMED DURING LABOUR AMONG THE ANCIENT CIVILISED NATIONS

1. DELIVERY AMONG THE ANCIENT EGYPTIANS

THESE discussions of normal birth should not be concluded without some information having been given also about the manner and method used in parturition among the nations of classical antiquity. Isolated particulars have already been mentioned. In this chapter will be included a description of a few of the more artistic representations which have fortunately been preserved until the present day. These monuments appertain to the three most important nations of classical antiquity—the Egyptians, the Greeks and the Romans—and though they are few in number, nevertheless they advance our knowledge by no means inconsiderably in this field which is so important in the history of civilisation.

First of all, we have to mention here the pictorial decoration and the inscriptions represented in certain temple halls (Mammisi) of ancient Egypt, and which are concerned with the birth of the gods, to whom the main temple was dedicated. According to Champollion's description, the wall paintings of these halls of the temples are highly interesting for obstetrics as well as for the history of lying-in and the nursing of children. Unfortunately, however, the Egyptologists, not being ethnologists, have so far neglected to give us sufficient information about these remarkable survivals. But from the scanty material a few conclusions can be drawn. The establishment of these Mammisi erected at their own expense and by their own orders gave the rulers of Egypt the best opportunity for their own personal glorification, since it connected their birth with the gods and exposed it to view. The temple at Luxor, among others, has one such small side temple, on the walls of which there are several bas-reliefs depicting the wife of Thothmes IV. going through her pregnancy, delivery and lying-in; and in the Mammisi, in the special lying-in room, one sees depicted this queen lying in bed as she gives birth to King Amenophis. According to this, it may appear as if, at least in the higher circles, women in ancient Egypt were delivered lying down.

There are, however, similar Mammisi or small side wings in the temples of Hermonthis, Denderah, Philæ and Ombi (see Figs. 713 and 714); and each great temple seems to have had one such side temple for the mythological history of the triad of gods and in which people prayed to them. At Hermonthis, *e.g.*, the Mammisi erected in the reign of the last Cleopatra, the daughter of Ptolemy Auletes, was in solemn memory of the pregnancy of this queen and her successful delivery of Ptolemy XIV., Cæsarion, the son of Julius Cæsar.

On the Mammisi at Hermonthis the following description is given by Champollion-Figeac :

“ The cell of the temple is divided into two parts, a large main chamber and quite a small one, which was the real sanctuary; the latter chamber was entered through a small door. Towards the right wing, the whole back wall of this little chamber (in the hieroglyphic inscrip-

tion the 'delivery place') was taken up with a bas-relief representing the goddess Ritho, the wife of the god Mandu, giving birth to the god Harphre. The woman in childbirth is supported and attended by various goddesses of the highest rank; the midwife-goddess brings the child from the mother's womb; the wet nurse-goddess stretches out her hands to receive it with the help of the special woman attendant for the cradle. Amen-Râ, the father of all the gods, accompanied by Soven, the Eileithyia, the Egyptian Lucina, patroness of women in childbirth, is present. It is also supposed that Queen Cleopatra is present whose lying-in is regarded as an imitation of that of the goddess. The other wall of the lying-in room depicts the young god being nursed and brought up and, on the side walls, the 12 hours of the day and the 12 hours of the night are portrayed in the form of women each carrying a piece of a star on her head. The astronomical painting on the ceiling probably showed the position of the stars at the moment of the birth of this Harphre, or, more correctly, Cæsarion or new Harphre."

There is a copy of this relief in the work of Witkowski, which is reproduced in Fig. 764. The woman in labour rests on her knees sitting on her heels. Behind her stands a female form bending slightly over her and putting her left hand on the woman's left side, while with her right hand she grasps by the wrist the raised right arm of the woman in labour. The left arm of the woman in labour likewise raised touches the nape of the neck of the woman assisting with the hand. Behind this



FIG. 764.—An ancient Egyptian delivery. Ptolemaic period. Bas-relief from the temple of Hermonthis. (After Witkowski.)

latter woman stands another bending over still farther and holding out both arms ready to take hold if need be. Behind her stands bolt upright a human-headed goddess holding in each hand the ānkh, or symbol of "life." In front of the woman in labour two women kneel behind each other; the one behind has her arms half raised as if in admiration, while the other, kneeling right in front of the woman in labour, has hold of the child by the shoulders and has just drawn it out of the mother's womb.

In Witkowski's book there is a second illustration which reproduces a bas-relief from the temple of Luxor (see Fig. 713) and represents the confinement of Queen Mut-em-uāa, the wife of Thothmes IV. This representation is not identical with that mentioned above, for while there the queen is described as lying on a bed, here she is sitting on a chair with a low back. A woman kneeling before her is holding her outstretched left arm with both hands. Behind her kneels a second woman, who hands over the child sitting on her hand to another, again kneeling behind her. Behind this woman kneels a fourth with hands outstretched as if she wanted to take the child away from her neighbour. Behind the mother kneels with only one knee touching the ground a woman who supports the right arm of the mother with both her arms. In addition, there are four women standing behind her. In a strip of picture below this representation, five divinities, on each side, kneeling facing each other. The two in the middle hold both hands towards

heaven ; the eight others hold up the symbol of life in one hand, while the other, also holding the same symbol, rests on the lap.

M. Bartels owed to the kindness of Professor Dr. Steindorff particulars of an ancient Egyptian birth scene which, although it is mythical, nevertheless likewise gives a clear idea of the positions which the women assisting used to take up at that time at a confinement. The matter in question is the birth of the founders of the Fifth Dynasty, the four Pharaohs, Userkaf, Saḥu-Rā, Nefer-ari-ka-Rā, and Kakaā, which is described in the Westcar papyrus in the British Museum, which dates from the period 1800–1600 B.C. The wife of a priest is taken with labour pains. Distracted, the priest leaves his house and meets on the street the three goddesses Isis, Nephthys and Heqt. They ask him why he is so sad. He tells them his tale of woe, and thereupon they repair with him to his dwelling and lock the door. Then they go to the woman in labour. Nephthys takes a position behind the head, Isis takes her place opposite (this again recalls the obstetrix) and Heqt delivers the wife of the priest. Then Isis says to the latter : “ Be not strong in thy womb, as truly as thou art called strong.” Thereupon the child came forth in her arms as a child an ell long ; then its bones grew. After this they washed the child, and then divided the umbilical cord and laid it on a couch. Then a Fate appeared and uttered a prophecy for the child. The three goddesses then repaired again to the couch of the woman in labour, took their places as before and, with the same incantation, a second boy was born, with whom the same procedure was followed as with his brother, and in the same way the third brother was then brought into the world.

The actual goddess of birth, the deliverer, is thus Heqt, a goddess who is represented with a frog's or toad's head. Whether there lies in this a point of contact with the above-discussed connections, which exist even at the present day in popular belief, between the toad and the uterus, must be left to further research.

It will have occurred to the reader that the positions in delivery, so far as we see from these representations, were not always the same. We come across the woman in labour being delivered sitting on a chair ; we come across delivery on a bed, and allied with this, the hieroglyph which, as we saw above, signified birth ; this represents the woman in labour squatting while the child is being born. Thus we must either assume that with time custom changed in this respect—that is to say, that in different centuries different methods were customary—or it is also conceivable that in the highest and noblest families different customs prevailed from those among the common people. Ladies of high rank may have been delivered in bed or in the chair, as they preferred. Among the common people, in general, however, whose couches were certainly very inadequate, delivery will possibly always have taken place in a squatting position. Thus there would be a very simple explanation for the fact that a woman in childbirth in this position was chosen as the hieroglyph for birth (see Fig. 671).

With regard to Babylon, we have an illustration in Frh. von Reitzenstein's *Liebe und Ehe im Alten Orient* (Stuttgart, 1909), p. 56. This represents a sacrificial scene. We see a goddess with a crown on her head sitting on what may be a goose and holding a cup (of the water of life or fertility). On the right of this goddess is a female figure squatting with legs apart, that is to say, obviously in the position assumed in labour. If this explanation be correct, then the whole would doubtless be a votive plaque for a labour which has been gone through, for the circular hole shows that the plaque was intended for hanging up. Ninlil at Nippur, who also appears on seals with a goose at her feet, must be the goddess indicated.

2. DELIVERY AMONG THE GREEKS

Artistic representations of delivery from the time of ancient Greece and Rome which have come down to us are extraordinarily few in number. In Fig. 753 a plastic group from Cyprus was reproduced. It is, of course, of pre-Greek origin. However a second group, unmistakably representing a delivery, was also found in Cyprus, and everything about this suggests that it is the work of Greek hands. It was discovered by the well-known explorer of ancient Cyprus, Luigi Palma di Cesnola, in the year 1871 in Hagios Photios, a place in which the lucky finder appears to have discovered the famous temple of Aphrodite at Golgoi.

In Cesnola's work we read that at the northern entrance of the temple at Hagios Photios, between the first and second rows of great square blocks or pedestals, there was another kind of votive offering, namely, small stone groups of women who held, and sometimes suckled, the young of cows and other animals, also represented with their young. Another much maltreated group

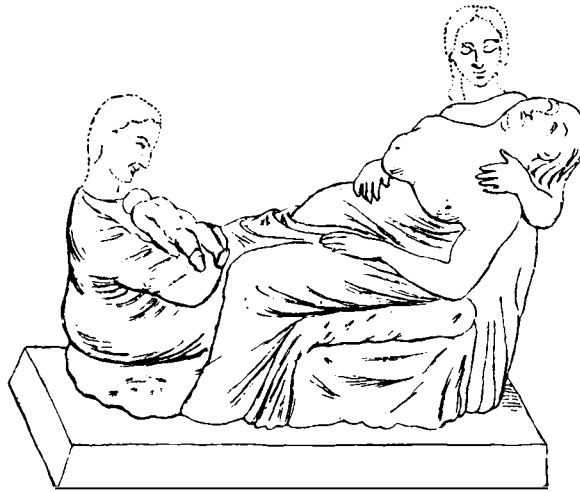


FIG. 765.—Delivery on a parturition chair. Limestone group. Greek, from a temple of Aphrodite at Golgoi (Hagios Photios), Cyprus. (After P. di Cesnola.)

consists of four persons, one of whom holds a new-born child, while the mother is stretched on a kind of chair, her features still twisted with pain. Her head is supported by an old serving maid.

A faithful copy of this group was sent by Bibby in the year 1875 to the Dublin Obstetric Society, which thought this object so important that they made it known to the scientific public by a pictorial representation. Also the Edinburgh Obstetric Society, in the year 1878, and the London Society later, received copies. A heliotype picture of the group is also to be found in the splendid work which Cesnola published on his collection in the Metropolitan Museum of Art in New York. It says there, in Volume I., Plate XLVI., Fig. 435: "Votive offering of calcareous stone, height $6\frac{1}{2}$ inches; length $11\frac{3}{4}$ inches. Found in the temple (Golgoi). Woman in childbirth, seated or reclining on a low, square chair, without back (similar to those used at the present day among the Cypriotes). The mother is supported by a female figure of which the head is broken off. Another female figure, likewise headless, is squatting at the feet of the invalid and holds the new-born babe, which has also been greatly defaced. The whole group, though very much worn, was well sculptured" (see Fig. 765).

There can be no doubt that in this case a confinement is really involved, and this was also recognised by the obstetricians in Dublin and Edinburgh. It is true

the group is very much defaced ; the heads of both the helpers are missing ; in the illustration they are sketched in. But the form of the woman lying back and supported by a woman behind her and between whose thighs an assistant sits with the new-born child in her arms admits of no other explanation than that of a woman just delivered.

We see from this that, at that time, the Cypriote women were delivered sitting on a chair. Whether this was an ordinary easy chair or a parturition chair must naturally remain undecided. However, it is interesting that Cesnola states that the Cypriote midwives of the present day have similar low chairs which they take with them when they go to a confinement. He had even seen the other details shown in the group ; it still represents the present-day confinement faithfully. A woman kneels behind the woman in labour and holds the latter's head on her shoulder ; the midwife, who sits on a low stool in front of the patient and between her thighs, has just drawn forth the child and holds it in her arms. The chairs which he had seen, and especially one which the midwife of Larnaca brought to the house of his friend, had no cushions, but two arms, and the seat was provided not with a hole, it is true, but with a peculiar central ridge, obviously to keep the legs as wide apart as possible.

Pouqueville gives an illustration from Greece which he interprets as a lying-in scene. A woman sits on a fairly high-legged chair with no back. She is leaning backwards and a woman standing behind her gives support to her back by leaning against her. In doing so, the woman standing seems to hold the patient below the armpits. At the latter's feet in front the midwife is lifting the new-born child from the floor, while a woman standing by is holding ready the child's wrappings. Two other women are busy unravelling the future lot of the child from the stars with the help of a celestial globe.

From the Hippocratic writings also, it appears that among the Greeks women in labour were, in certain circumstances, put on a chair and delivered in a sitting position. Ploss³ has told of this in his monograph. Hippocrates also states that when a woman in labour cannot sit on the *lasanon* she is to be put on a *diphros*, i.e., a chair which has a sloping back and a piece cut out of the seat. It is stated there that *lasanon* is probably a night stool ; that *diphros*, on the other hand, mention of which is made besides by Hippocrates, also by Artemidorus of Ephesus and Moschion, although in greatest detail, however, by Soranus, was undoubtedly a proper parturition or labour chair.

We have already described above how the chair of Soranus was constructed.

F. G. Welcker¹ (pp. 185 ff.) is of opinion that women in ancient Greece were sometimes delivered in a kneeling position also, yet he himself says that he ventures to surmise this only from myths and images of gods. From the marble figure of a kneeling woman which Bluet discovered on the island of Mikoni he assumes a Leto in labour.

3. DELIVERY IN ANCIENT ROME

Also from the times of the Romans some few representations of confinement have been preserved. F. G. Welcker¹ (III., 223) refers to a carving in a columbarium which stands in a Vigna of the Cav. Campana before the Porta Latina. In this is presented a woman in childbirth from whom the child seems to be protruding with force. Häser¹ (II., 393) rightly asks : " Is not this representation intended as a monument symbolising the manner of death of the woman ? " This is highly probable, and in this way the sculpture attains a greater importance in the history of civilisation.

An ancient ceiling piece which comes from the palace of Titus on the Esquiline in Rome and has as subject the birth of this emperor, is sketched by Singer and Reiche (Fig. 766). The child is about to be bathed by a kneeling servant while an old slave is pouring water into the little bath. The mother is reclining on her bed half erect, leaning on her left elbow. A woman standing holds her outstretched right arm.

Baumeister gives a copy of a fairly late Roman representation of the birth of Achilles according to a marble tablet, usually designated as the mouth of a well, and which is in the Capitoline Museum in Rome. The scene, which is of interest to us, shows Thetis seated on her bed with her feet resting on a wide footstool. Only her hips and legs are clothed; the whole of the upper part of her body as well as the abdomen are naked. The left hand rests on the couch, the right holds the left breast

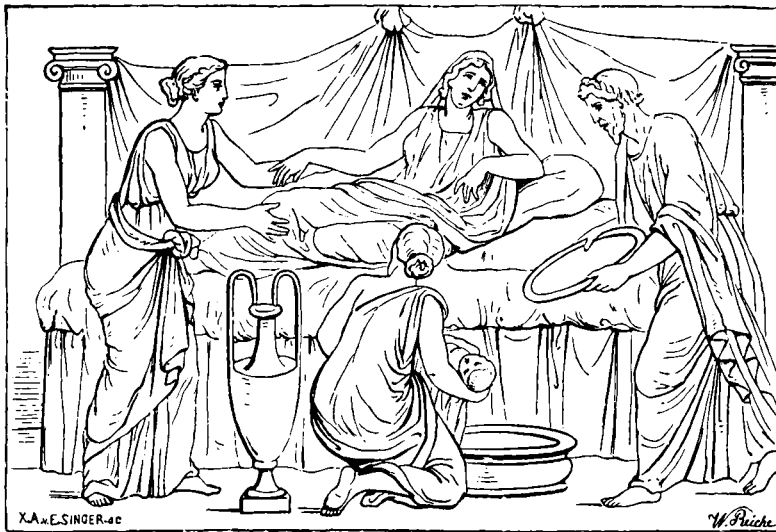


FIG. 766.—The birth of the Emperor Titus. Ceiling painting in the palace of Titus in Rome. (After Ploss.)

between the index and middle fingers ready to give it to the child. The babe lies in the arms of a crouching serving maid, who has just taken it out of the bath or is just going to put it in.

Morgouliëff gives a sketch according to Visconti's description of an ancient relief in the Museo Pio Clementino which represents Alcmena being delivered of the child Hercules. Morgouliëff writes of it the following :

“ La parturiente est sur un lit, couchée sur le flanc gauche, les deux mains pendent en dehors de la couche ; derrière elle est une servante qui tient le nouveau-né dans ses bras. Visconti dans son commentaire fait l'observation : On voit autour du lit plusieurs femmes dans différentes attitudes : quelques-unes paraissent des amies qui lui rendent les soins ; d'autres semblent émues d'un sentiment qui n'est pas celui du plaisir ; ce sont les deux dernières à gauche du spectateur. La dernière paraît continuer à tenir ses mains dans une certaine disposition qui annoncerait qu'elle avait eu les doigts croisés, geste qu'on regardait comme funeste aux accouchements, selon la superstition des anciens.

“ Ici, il est certain que l'accouchement a dû avoir lieu dans les décubitus latéral gauche

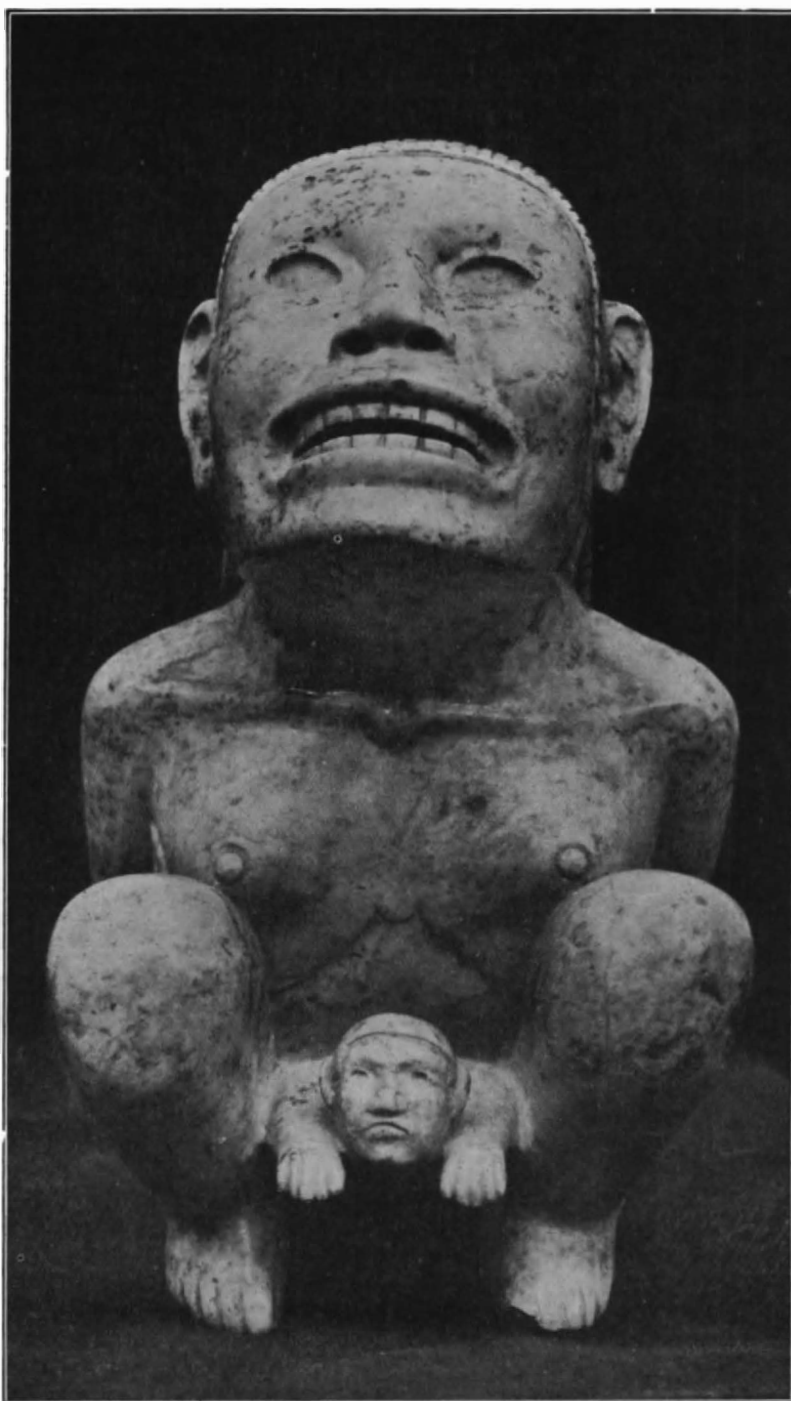


FIG. 767.—Ancient Mexican goddess undergoing delivery in the squatting position. (After Hamy.³)

et que l'enfant a été retiré par derrière, comme cela se fait généralement en Angleterre. C'est ce que prouve la position même de l'enfant dans la gravure qui nous reproduisons."

We see from these representations that the Roman ladies, although the parturition chair was known to and in many cases used by them, were certainly confined in bed—usually, a fact, moreover, which is established too by many ancient writers.

4. DELIVERY AMONG THE ANCIENT CIVILISED NATIONS OF AMERICA

In the information which has come down to us of the social conditions and the family life of the ancient civilised peoples of America, there is, unfortunately, little about the position which the women were wont to assume in parturition. In spite of this, however, it is possible to draw a conclusion regarding it. That is to say, a few works of art have reached us which permit of a solution of this question.

One is a small statuette 192 mm. high, 120 mm. wide, and 130 mm. thick in a

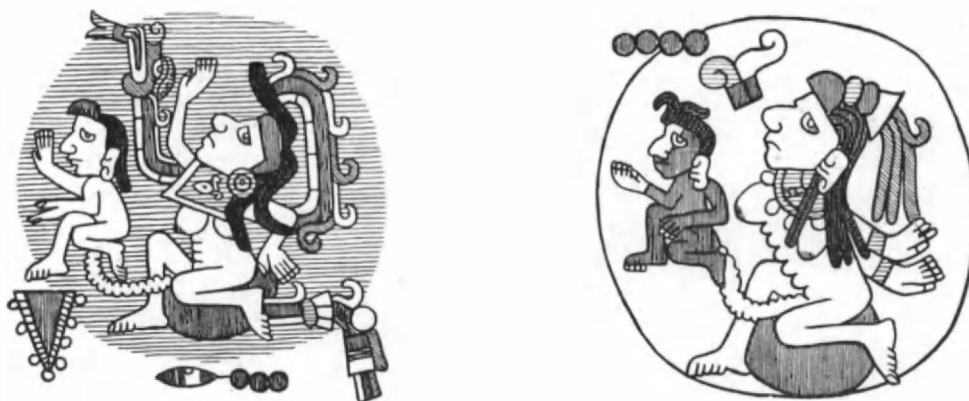


FIG. 768.—Birth scenes. (Codex Zouche or Nuttall.)

greenish smoothly polished mineral with, in some parts, brownish and black spots which Damour (provisionally) determined as wernerite.

For the sake of this mineral, he had acquired it for his mineralogical collection : because of the ethnological interest of the figure, he exhibited it to the Anthropological Society in Paris. Witkowski then gave a not very exact sketch of it in his well-known work, and this Bartels also used in the previous editions of this book. Then, after Damour's death, according to kind information from Professor Hamy in Paris, the figure passed into the hands of Ribemont-Dessaignes, a well-known Parisian gynæcologist. Hamy³ had a copy of it made for the Musée d'Ethnographie, and lately, without knowing of the sketch by Witkowski, described it to the Société des Américanistes de Paris (1906) ; also he gave an excellent photographic representation of this unique piece, which is reproduced here with the kind permission of the author (*cf.* Fig. 767).

There seems to be no precise information as to where this figure was found ; it is merely stated that it comes from Mexico.

"It is a female figure in a crouching position with knees apart ; the arms are extended downwards by the body and the hands are placed flat but firmly under the buttocks. The head is inclined slightly backwards ; the eyes directed upwards and sideways ; the mouth is open and drawn back so that the upper row of teeth is

exposed ; the corners of the mouth are drawn down, as if groaning with pain. The artist has obviously demonstrated very clearly and realistically that phase of parturition which gynæcologists are wont to designate as an expulsive pain. The head inclined backwards, the strained neck muscles, the hands held fast under the buttocks as if they would lift up the body, show excellently the strained bearing down of the woman, whilst the drawn and open mouth, as well as the eyes racked with pain, show the expressions of anguish in the expulsive labour pains " (M. Bartels).

Now there is, moreover, a second representation which gives sure proof that Mexican women at that time were really accustomed to be delivered in the crouching position. This is an illustration of the earth goddess Tlacolteotl from the old Mexican Codex Borbonicus which is reproduced in Fig. 678. One can easily recognise a human form squatting with the knees wide apart, which is adorned with a gigantic head ornament, big ear plugs, as well as with a nose ornament. As dress it wears a human skin, the hand pieces of which hang down to the wrists of the figure. It is a woman, the earth goddess Tlacolteotl, in labour ; the head of the child has already emerged from her genitals. Further, see Fig. 768, from the Codex Nuttall (Zouche), which represents a woman giving birth an infant, where the child and placenta are visible.

According to Hamy, the first-mentioned figure is identical with the above-described painting. One sees in the stone figure various holes which, in the picture given by Hamy, are plainly recognisable, but less exact and clear in the copy by Witkowski ; according to him, the ornaments which are reproduced in the painting were actually fastened, so that we should have imagined the statuette with a kind of clothing.

CHAPTER XXXVII

THE SEPARATION OF THE NEW-BORN CHILD

1. IS THERE AN INSTINCT GUIDING HUMAN BEINGS IN THE STAGES OF PLACENTAL DELIVERY?

FOR primitive peoples it must doubtless be extremely surprising and bewildering to see that when at last after the labour pains and strain the child has emerged from the womb, it still remains connected with its mother. The new-born baby already lies on the ground before the mother, but there still goes from its navel back to the mother's genitals the queer-looking, peculiarly gelatinous navel cord, which gives her palpable proof that she is still not completely rid of the child ; that it is still connected with her internally ; and, in short, that parturition is not yet quite finished.

If we were in a position to prove among the tribes of lowest civilisation a complete agreement in the treatment of the afterbirth, then we should have to regard it naturally as probable that here is an instinctive procedure in the true sense of the word. However, such agreement in the measures brought into use by the primitive peoples is not to be found.

Certainly we must not forget that even in the realm of the higher animals a consistent behaviour is not traceable. Among cows and mares, for instance, the umbilical cord is torn when the young falls to the ground or when the mother stands up ; the young pig treads on the cord and tugs at it till it tears ; among beasts of prey the mother devours the afterbirth and gnaws the umbilical cord near the navel.

However, until more thorough investigation has been made into animal psychology, we can at present say that even in this last part of parturition in the human female instinct does not guide the procedure, but here, too, usage and habit, or even the need of the moment, are wont to supply the rule of conduct.

2. LIGATURE AND DIVISION OF THE UMBILICAL CORD

It is necessary for the life of the child outside the womb that its separation from the afterbirth should take place, as it is now not only superfluous, but has become an appendage highly dangerous to the child. For if the separation of the afterbirth is neglected, on the one hand dangerous hæmorrhages may occur ; on the other hand, however, a putrescent decomposition of the placenta very soon sets in, and the products of the putrefaction would be transferred to the organism of the child as a dangerous poison. Hence the separation of the umbilical cord can hardly be designated as an instinct.

As everybody knows in all civilised nations, the umbilical cord is ligatured before being divided from the placenta, *i.e.*, a thread is tied round the cord and at a certain distance from the child's body so as to prevent a dangerous hæmorrhage from the child's vessels after the cord has been divided.

The neglect of this ligature of the umbilical cord would, among civilised peoples, generally be reckoned as a serious offence—a professional error coming under penal law. It is all the more surprising to learn that some of the less civilised nations seem to have no idea of this ligature. Among others it is known, but there are many variations in their way of doing it.

In the following lines there will be presented to the reader what we know from the statements of a few travellers about the manner and method in which the ligature and division of the umbilical cord are carried out among various peoples, and we shall see that often, even in the same tribe, the same method is not followed, but that several methods are customary among them. We are beginning with the tribes generally regarded as standing on the lowest rung of the ladder of human civilisation, the Australians.

3. LIGATURE AND DIVISION OF THE UMBILICAL CORD IN OCEANIA

On the Flinders River in Northern Australia, as E. Palmer reports, the umbilical cord is cut by the natives quite near the child's abdomen with a shell, but no further care and treatment of it takes place among them.

Among the natives of the River Pennefather in Queensland (Australia) the grandmother divides the navel cord with a kangaroo tooth (see Roth⁵).

Among the Central Australian blacks in Finke Creek a thread is tied round the navel cord before the removal of the placenta; it is then cut off with a stone or divided with the finger nails at the ligature (Kempe). This statement is in almost complete agreement with the reports which Hooker collected from several parts of Australia; one of his informants asserts positively that the Australian savages have from time immemorial always ligatured the umbilical cord with a string of *muka* (dressed flax) about from 1 to 2 in. from the child's navel; then only is the umbilical cord put on a piece of wood and, a foot away from the body of the child, is divided by means of a sharp stone or a shell. The same informant adds: "This custom was not introduced first by modern civilisation as several observers state." The sharp shell (*pipi* or *kutai*) is chosen, prepared and carefully kept specially for this purpose. The stone which was also used for the division is a *tuhua* (obsidian); they prefer it to a knife or scissors.

But, according to Hooker's statement, the ligature is at least not commonly used among the Australian natives. He says that the native of Australia sprinkles and powders the end of the severed cord with fine charcoal powder; some do not apply a ligature to the navel cord, but rub the end of it with ashes and powder it with charcoal; it is also said that they make an overhand knot in what is left of the cord after division.

Freycinet's report is somewhat different. He states that the father of the new-born child takes hold of the umbilical cord, which another man divides with a shell; the wound is then rubbed with a heated pelican or kangaroo bone.

Thus, according to all these reports, the Australians already know the various methods of preventing hæmorrhage: the division of the umbilical cord with a blunt instrument, the use of simple styptics (ashes and charcoal), knotting, and the application of heat and friction.

Of the wives of the Maori in New Zealand, Hooker learnt that they always bring forth their children alone, and have no help either for the division of the umbilical cord or for the removal of the placenta. Nickolas (see Rienzi,² III., 143 ff.), too, says the mother divides the navel cord herself, and, according to Dieffenbach,⁵

this is done with a shell. He ascribes the frequent occurrence of umbilical hernia to the bad method of treating the umbilical cord. According to Tuke, the umbilical cord is never ligatured but only knotted. The inhabitants of New Britain, too, according to Danks, tie the umbilical cord in a knot before they divide it.

Among the Dorese, a tribe on New Guinea, the umbilical cord is divided with a sharpened piece of bamboo cane (v. Rosenberg, p. 455). This, however, is not done till after the placenta has come away (van Hasselt²). (Among the Bukaua (New Guinea), according to Lehner, stuttering is traced to deficient circulation of the blood caused by cutting off the navel cord too short or too soon.) Bamboo is employed everywhere in the South Seas, where it is much used for tools.

A piece of bamboo also is used by the midwives on the island of Vate, one of the New Hebrides. The division takes place 3 in. away from the child, and the stump of the cord is neither ligatured nor wrapped up (Jamieson).

In the report on parturition which the natives of Samoa gave Krämer it is said that after the oldest woman assistant has cleaned the child and has sucked out the nose she tells another old woman to bring a bamboo knife to cut off the umbilical cord. She then cuts off the placenta. Then a strip of bast is brought with which to bind the child's end of the navel cord. When this is done an old piece of cloth made from bark is wrapped round the child.

On the Gilbert Islands, as Krämer² records, it is the mother herself, not the woman assisting, who divides the cord; the mother does this by biting off the umbilical cord and knotting it on the child. Külz records of our former colonies in the South Seas: "The first active manipulation on the new-born child consists as with us in dividing the umbilical cord, which is done (owing to the use of dirty instruments or substitutes) in a very questionable way. Sometimes they use no instrument at all, but carry out the crushing with their finger nails, or any kind of household utensil that will cut is used for dividing the umbilical cord; a rusty knife, a sharp fire stone, a fragment of glass or a shell which is otherwise used, as in the South Seas for example, for peeling potatoes or scraping the dirt off cooking utensils. In conformity with this doubtful instrumental hygiene is the technique of binding the navel wound. The fresh wound, in place of the protective binding usual with us, gets sometimes no covering at all, or sometimes one in accordance with the treatment of other wounds of the people concerned, such as the application of leaves, of lime, strewing with ashes or sprinkling with the juices of plants."

According to Thomson,⁵ on Savage Island, the umbilical cord used to be divided close to the new-born child by the midwife with her teeth. Now it is left longer and divided with a pair of scissors; it is then rolled up but not ligatured.

A piece of bamboo is used also in New Caledonia to divide the umbilical cord, but a shell is also employed by many midwives; and, according to Vinson's statement, before the placenta comes away.

On the Marquesas Islands, however, as Karl von der Steinen reported to the Berlin Anthropological Society, the umbilical cord is not divided with a piece of bamboo but with a stone knife because the former is too painful. Among the children of the chiefs, however, the umbilical cord is not cut through, but the duty of biting it through with the teeth falls to the grandmother.

On the Hawaii Islands the husband usually keeps near the lying-in hut in which his wife is being delivered; as soon as he gets the news that the child is born, he hastens there and with a sharp stone divides the umbilical cord about a foot away from the child's navel. Langsdorff (p. 131), who reports this, saw there many

people with big protruding navels like umbilical herniæ. He thinks that this is the result of the way the umbilical cord is treated. The stump is tied into a knot and remains hanging on the child till it sheds itself.

While division of the umbilical cord too near the child's body is generally held responsible for the development of umbilical hernia later, here excess in the opposite direction, leaving a very long piece of the umbilical cord on the child, is said to lead to the same result. This is a hypothesis which needs further proof.

English missionaries who visited Tahiti in the years 1796-1798 state that there the women were confined alone without anybody inclined to help. So they also divided the umbilical cord themselves, and did so about 3 in. from the child's body ; first, however, they ligatured it (Moreau, II., 126).

Blyth reports of the Fiji Islands that the native midwives wait till the placenta also has come away before dividing the umbilical cord. Then they divide it with a shell. The foetal end is never ligatured, but merely wrapped loosely in a piece of native cloth. Sometimes hæmorrhage occurs at this non-ligatured end, but no effort is made to stop it. The midwives simply rely on the healing power of Nature to make the hæmorrhage stop of itself, and they maintain that these hæmorrhages never have a fatal issue.

Also in the little island groups of the Moluccan Sea the bamboo plays a great part in the division of the umbilical cord. We come across it on nearly all these islands, and from the islands of Buru, Eetar, the Amboina Group, Tenimber and Timor Laut Islands and the Babar Archipelago we learn that the piece of bamboo must be sharp. On the island of Keisar, as well as on Romang, Teun, Dama, Nila and Serua, a bamboo husk is used ; on the Watubela Islands a piece of palm wood, and on Ceram Laut and Gorong a piece of a young *gabagaba* or the bark of sago. Here the division appears to be made only after the expulsion of the placenta ; this is directly stated of Buru, the Watubela, Keli, Tenimber, Timor Laut, Luang and Sermata Islands. Of a previous ligature of the umbilical cord we learn only in Buru and the Amboina Group ; on these last pineapple thread is used for this purpose.

The division is made on Leti, Moa and Lakor 3 cm. from the child's body, on the Kei Islands 4 cm., and on the Watubela Islands 1 to 2 cm.

On the Amboina Group styptic specifics are applied to the umbilical wound—lime and vinegar, also a poultice of *Curcuma longa* L. and nutmeg ; on the Luang and Sermata Islands finely chewed roots and leaves are used for this purpose ; on the Babar Islands a paste of finely pounded and warmed *sirih* leaves ; on Leti, Moa and Lakor, *kalapa* oil ; and on Eetar, wet sago flour with rotten wood.

On the Ceram Laut and Gorong Islands the new-born child with the placenta is washed in lukewarm water before dividing the umbilical cord. Here, too, the division is made with a piece of bamboo (Ribbe). On the Babar Islands, before this washing and division of the cord, the father first recognises the child by lifting it from the ground. The bath water for the child used on Eetar is lukewarm water from *kalapa* shells or bamboo, and on Keisar, after the lukewarm bath, the child is smeared with finely chewed roots of *Acorus terrestris* Rumph. ; on both islands, too, the navel cord is not divided till after this procedure.

A peculiar procedure prevails on the islands of Leti, Moa and Lakor. When the child is born, the woman who has received it turns it three times to the left round the placenta, for the purpose, it is maintained, of making the breathing comfortable. It is obvious that by this means a twisting of the blood vessels of the umbilical cord must be effected ; hence we have here a method of arresting

hæmorrhage carried out unconsciously. After this the child is bathed and the umbilical cord divided only after the expulsion of the placenta.

4. LIGATURE AND DIVISION OF THE UMBILICAL CORD IN ASIA

Riedel reports of the Sulanese that amongst them the umbilical cord is ligatured with a thread and divided with a piece of bamboo. On the wound they place poultices of finely pounded *kon* (*Curcuma longa* L.), *bana* (*Zingiber offic.* Roscoe) and *bawabote* (*Allium Cepa* L.).

According to Helfrich the umbilical cord in Kroë on Sumatra is first ligatured with a thread, or with the fibre of a plant called *harami*, and then bitten off, but sometimes divided with a bamboo knife. Here, too, they cover the wound of the stump with finely ground curcuma.

Likewise, on the Mentawai Islands, the umbilical cord is divided with a bamboo knife, and the latter is preserved for a long time. An islander said to Maass: "Near the child one divides the umbilical cord; near the mother one must not divide it."

Maass says further: "The mother herself, the husband or another woman can divide the umbilical cord."

On Java the midwives always use a bamboo knife in dividing the umbilical cord (J. Koëgel in *Ausland*, 1863, 167).

Also among the Tenggerese living on this island the umbilical cord is divided, according to Kohlbrugge,¹ with a sharp bamboo 4 to 5 cm. away from the child. If the stump bleeds, then they press it between the finger tips. It is not ligatured and a slight loss of blood causes no alarm. On the wound they strew dust scraped from the benches; it consists of a mixture of dust, sand, ash and lamp black.

Among the Danigala Veddas the division of the umbilical cord is made by tying with a cord of bast; among the Hennebedda Veddas the umbilical cord is divided with the arrow-blade (Rüttimeyer).

Until a short time ago among the Mincopi, on the Andaman islands, the umbilical cord was divided with the help of a Cyrene shell. Now, however, they use a knife for the purpose (Man, p. 86). A Brahman convict who took refuge with this extremely primitive tribe in 1858 and lived for some time with them states positively that with them the umbilical cord is divided a finger length from the child's body and is not ligatured.

Jagor, however, records that among the Andamanese the woman helping the mother divides the umbilical cord with a sharp edge of a shell; a piece 6 in. in length is left and the ligature is done with string.

In the Philippines, according to Schadenberg, the Eta divide the umbilical cord with a piece of bamboo; the Negrito, however, uses besides this an oyster shell or a sharp stone.

According to Jagor⁶ (p. 168), in the Southern Indian slave caste, the Vedas, the umbilical cord is cut with a cane-knife and then knotted. In the Pulaya slave caste in Malabar the umbilical cord is divided with a knife or a piece of bamboo and ligatured with a thread. Among the Badagas, a tribe in the Nilgiri Hills, the umbilical cord is ligatured with any kind of thread and divided with a razor (Jagor,³ p. 199). The Naak, or Naya-Kurumba, in the Nilgiri Hills, ligature the umbilical cord and divide it with a knife or with a sharp piece of bamboo (Jagor,⁴ p. 231).

Another statement from South India without more definite indication of the tribe, and hence perhaps concerning the more educated classes, we owe to Shortt.¹ He states that the midwives see to the ligation and division of the umbilical cord after the expulsion or extraction of the placenta. To carry out this procedure the child is first laid on a little mattress; then a rag is tied round the umbilical cord 4 in. from the child's navel; then the cord is divided on



FIG. 769.—*Tappar*, a knife made from the *B'rtām* palm and used by the Orang-Semang in Malacca for cutting the umbilical cord. (After H. V. Stevens.)

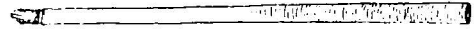


FIG. 770.—Bamboo knife used by the Orang-Běnúa in Malacca for cutting the umbilical cord. (After Stevens.)

the placenta side with a corn sickle, and the severed end covered with burnt rags, black paper or with ashes and water.

Marshall records of the Todas: "The umbilical cord is laid on a piece of wood and divided with a knife." Ligation is unknown.

Sintaram Sukthankar, speaking of the customs prevailing among the Hindus, states that the umbilical cord is divided 2 in. from the navel with a knife and the



FIG. 771.—Wooden knife used by the Orang-hútan in Malacca for cutting the umbilical cord. (After Stevens.)

stump is then rubbed with musk. After that it is ligatured with a cotton thread, and this thread is slung loosely round the child's neck, and remains lying there till the stump has dried up and become detached from the child's body. This shedding of the stump, as with the children of our race, occurs in from five to seven days. Then the navel is covered with a native tooth-powder preparation, and a piece of copper is put on above it and fastened with a piece of cloth, which is put round the

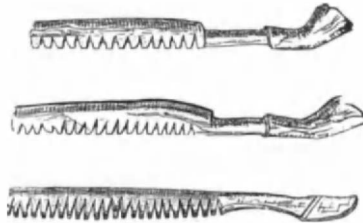


FIG. 772.—*Smee-Karr*, serrated wooden instruments used by the midwives of the Orang-Senoi in Malacca for cutting the umbilical cord and for making the magical designs on the *chit-norl*. (After H. V. Stevens.)

abdomen. This is done to prevent umbilical hernia. In Gujránwála (Punjab) the umbilical cord is not divided till two or three hours after the birth (Rose⁴).

Stevens has given some interesting information about the dividing of the umbilical cord among the savage tribes of Malacca. The cord is divided so far away from the child's body that the remaining portion reaches to the knees. Any woman can divide it, however, and for this purpose a piece of *julelong* wood, which is called *pontong pusat*, is put under the cord. An iron instrument must not be used for the division. Formerly they took a white snail shell, now a bamboo knife, called *semilow*, or a knife made from the leaf stalk of the *b'rtām* palm, called *tappar*

(Fig. 769), is used by the Orang-Semang. The Orang-Bénûa, too, use a bamboo knife (Fig. 770), which is shaped like a big carving knife. Large wooden knives are also used by the Orang-hûtan.

The most peculiar instruments are those with which the Orang-Senoi divide the umbilical cord. They are carved from wood and have a strong resemblance to a narrow pad-saw (Fig. 772). The wooden saw blade is connected with the ornamental handle by a narrow stock, and has on the underside a double row of teeth. These instruments are called *smee karr*, and they are also used by the midwife to apply the magical design to the bamboo vessels (*chit nort*) in which menstruating women are washed. Among the Orang-Laut the midwife measures three widths of the bamboo knife from the child along the umbilical cord and ligatures it there; this corresponds to three times the width of her middle finger. Measuring is also done among the Orang-Semang; they measure from the navel to the knee of the child, then the division of the cord is made with a sharp piece of *ergeissona* (Skeat and Blagden).

Among the Achinese the umbilical cord is divided about 10 cm. from the child, but the midwife does this only after the expulsion of the placenta. After the division it is not specially bound up; only the abdomen of the child near it is often rubbed with *kalapa* oil. The remainder of the umbilical cord separates on the fourth or fifth day (Jacobs²).

In Formosa after the birth of the child the woman divides the umbilical cord an inch from the body; it is not ligatured.

Among the Ainu the umbilical cord is divided by the young mother herself only when she happens to have been delivered alone. If there are women with her one of them performs this office, and, where possible, one of the nearest relations, even if she should be unmarried, for men never do this. For the division they use an ordinary knife, which, however, is kept only for this purpose, and which, as not every family has such a knife in its possession, is lent from one house to another (Scheube⁴). From another source we learn that the Ainu sever the umbilical cord up to 4 in. from the child's body, and a third informant says: "After the cord has been divided a sling is put round it" (Engelmann, p. 50).

Ph. Fr. von Siebold reports of Japan that, according to the statements of the obstetrician Mimazunza, the umbilical cord is divided immediately after the birth of the child very much as with us in Europe; however, according to popular opinion, iron should not be used for this because it has a harmful influence. Therefore they use for this purpose other sharp objects of bamboo, wood, or a fragment of porcelain. In wealthy families instruments made of precious metal are also used. The midwives bind the umbilical cord to the hips because they are afraid that otherwise the afterbirth may go back.

Florenz¹ gives the following information about the methods of dividing the umbilical cord in ancient Japan:—

"Su mentions the dividing of the umbilical cord with a bamboo or copper knife as a local custom; also the custom of biting through the cord, in which a thin garment is put between the cord and the teeth, is mentioned. Before the cutting one must breathe on the place concerned seven times. A remarkable superstition is shown in the fact that, for the cutting of the umbilical cord, the word *kiru* = 'cutting' is not used, but the word with the opposite sense, namely, *tsugu* = 'joining.' According to a work, 'Fujin-Yashinahi-Gusa,' the bamboo knife with male children should be made of female bamboo, and in the case of female children with male bamboo. That is to say, if a bamboo cane at the first sprouting

has only one twig from the stem it is called male ; if two twigs form at the same time, then it is called female."

Kangawa says that in Japan the umbilical cord is supposed to be divided about 2 to 3 in. from the navel. According to Scheube's³ statement, the ligature and division of the umbilical cord are now done by the midwife as follows : A double ligature of rough hemp is put round the cord 3 in. from the navel and the cord then divided with a pair of scissors ; it is then sprinkled with gall apple powder and wrapped in paper. According to Schiller, the distance from the navel is measured by the length of the sole of the child's foot ; the cut surface used to be cauterised with *kyii* (moxa) and wrapped in *suhigara* paper.

In China the umbilical cord is, as a rule, divided with a pair of scissors. If, however, the child was born apparently dead, "which," as it says in the treatise translated by v. Martius, "sometimes happens in severe cold in winter," then a special method of dividing the umbilical cord is prescribed.

"Wrap the child in warmed sheets at once ; then roll some paper together, dip it in hemp-seed oil, set it alight and cauterise the child's navel with it. By this process, the heat of the burning paper goes through the child's navel into its belly ; its life-spirits are warmed and the child begins to live."

The burning of the stump in this case is done with a purpose quite different from that for instance in Jerusalem, which method we have to discuss later.

The Chinese doctor in Peking who gave Grube information, told him that when the child is born, the umbilical cord is divided with a small red-hot iron rod.

In Cochin China after the expulsion of the placenta, the midwife binds the umbilical cord with a dry thread (silk, aloe or any fibrous material which happens to be about) 1 cm. from the navel. She does it certainly not always very carefully and, by repeated pressure, forces the blood and the Wharton jelly back towards the placenta to a length of 15 cm. Mondière (p. 42) then describes the division as follows :

"Quand le dégorgement du cordon lui semble suffisant, elle le coupe a petits coups et en sciant avec la lame de bambou, voire même à la rigueur avec un tesson de porcelaine. Elle pose alors vers la moitié de la longueur de la partie restante, c'est-à-dire, à 6 ou 7 centimètres du nombril, une ligature de fil non ciré, entortille tout le cordon, 12 à 15 centimètres, dans un morceau de papier chinois ciré ou verni, passe autour des reins de l'enfant une petite bande d'étoffe qui se noue par devant pour assujettir le tout."

In the settled population of Eastern Turkestan, the umbilical cord is divided at exactly half the length of the child's body (Schlagintweit⁴). In Kamchatka it was, at least in the time of Steller,² ligatured with yarn of nettle threads and then divided with a stone knife.

It is reported (Klemm) of the nomad Kalmucks in the south-east of Asiatic Russia that a woman cuts the cord laid on a board with a knife which remains her property ; and Krebel (p. 55) says of the same people : "As soon as the child is born, the umbilical cord is ligatured and divided."

Meyerson expresses himself just as briefly about the Kalmuck women in Astrakhan :

"An old Kalmuck woman who calls herself a midwife, or, for want of her, the mother herself, divides the umbilical cord with any cutting tool."

Of the Tatar midwives there, the author merely says : "When the foetus is expelled, they divide the umbilical cord."

Among the Tatars, Kurtines and Armenians of the Shorura-Daralagesh district in the province of Erivan, immediately after the birth of the child, the umbilical cord is ligatured with a woollen, cotton or silk thread and then divided regardless of whether the placenta has already come away or not. The division with the Tatars and Kurtines is done with an ordinary knife or a razor ; with the Armenians with a pair of scissors (Oganisjanz).

In Arabia, the lower-class women give birth to their children alone and without help ; in this d'Arvieux found :

“ Quelques moments après qu'elles sont delivrées, elles lient le nombril de l'enfant, coupent ce qu'il y a de trop,” etc.

Among the desert nomads in the Levant, the woman in childbirth left alone in her tent also often divides the umbilical cord herself, as v. Türk records (p. 145).

Syrian women wait for from 20 to 30 minutes after the birth of the child ; if, up to then, the placenta has not come away, then the umbilical cord is divided and the mother put to bed (Engelmann ²).

Stern ² reports of the Turkish women : “ In almost the whole of Turkey, it is usual not to separate the child by dividing the cord but to remove it first along with the placenta. Then only is the cord divided with a knife or a pair of scissors or another instrument ; sometimes simply bitten through by the mother, the midwife or another woman, after which the end left on the child is burnt with the flame of a wax candle and finally ligatured.”

5. LIGATURE AND DIVISION OF THE UMBILICAL CORD AMONG THE AMERICAN INDIANS

Among the peoples of America, there are in particular some South American Indian tribes of whom specially crude and primitive methods of dividing the umbilical cord are recorded. According to the statements of Prince Max v. Wied and Spix and v. Martius, the umbilical cord is torn or bitten off by the Indian women in Brazil who give birth to their children alone in the woods. Likewise, J. de Laet says of the Brazilian savages :

“ Après, le père coupe avec les dents ou avec quelque caillou tranchant le boyau du nombril.”

However, we see a somewhat more civilised procedure already gaining admission here. Marcgravius (p. 281) records in the year 1685 of the tribes inhabiting the northern part of South America :

“ Infanti umbilicum concha præcidunt et una cum secundinis coctum devorant.”

Among certain of the Indians in the neighbourhood of Rio de Janiero, the husband divides the umbilical cord with a sharpened stone or crystal. Among the Tupi, who dwell there, the father or a kind of god-father raised the child ceremoniously from the ground and divided the umbilical cord with the teeth or with a stone knife, or between two stones (Friederici ²). According to Barlaeus, among the original inhabitants of Brazil the umbilical cord was divided with a sharp shell. The Caripuna Indian woman (Brazil) divides the cord with her own hands by means of a shell kept ready with a sharpened edge (Keller-Leutzinger, p. 103), whilst the Arekaina Indian woman (on the Yary River) uses a piece of bamboo which looks like a paper knife (Crevaux, p. 71).

In the records just given, it is not mentioned whether the umbilical cord was also ligatured, and it seems as though this were not the case. Of the Caraya Indians on the Rio Araguay in Brazil, we learn explicitly that it is not done. Ehrenreich relates of them :

“ When the child is born, they wait patiently for the placenta ; then the umbilical cord is compressed and divided about 3 in. from the body by a strong *taquara* splinter. The blood contained in it is carefully expressed ‘ to prevent tetanus,’ and as styptic, hot ashes and powder from piranha teeth are strewn on the wound surface. As no ligature is used, it is not unusual for the child to bleed to death.”

However, many Brazilian tribes, which make use of the crudest expedients for the separation of the umbilical cord, also undertake ligature. J. de Lery himself saw an Indian who was helping his wife in her confinement. After he had taken the child in his arms, he first ligatured the umbilical cord and then bit it off with his teeth. The Warrau Indian woman in British Guiana, who has her confinement quite alone in a hut, as Schomburgk² (I., 166) reports, divides the umbilical cord with her teeth and ligatures it with a strand from the fibres of the *Bromelia Karatas* L., yet the Indian women seem not to understand the ligature properly. Schomburgk explains as due to this the fact that he found deformities at this place in “ nearly everybody.” Among the Macuani (tribal associates of the Waitaka in Brazil), the mother slings the firmly ligatured umbilical cord round the child’s neck (Spix and v. Martius). Among tribes in Guiana and Surinam (the Acawoi, Warrau, Arawak), the umbilical cord must, it is stated, not be cut, but burnt off (L. C. Finke, III., 258). According to this, the procedure to prevent impending hæmorrhage is different.

Among the American peoples, there is no consistency as to the place at which the ligature is made. Sometimes the division of the umbilical cord too close to the child’s body, at other times the division too far from it, is cited in explanation of the frequent occurrence of umbilical hernia.

Of the ancient Peruvians, we know that when they divided the umbilical cord “ a finger length ” was left hanging on the child (Baumgarten, II., 109). Of the half-savage shepherds of Spanish descent in South America, F. de Azara records :

“ As many women among them are delivered alone without the assistance of any stranger, but do not understand how the umbilical cord should be ligatured, I have seen a great many adult men and women among them who had a navel 4 in. long ; it was besides soft and always swollen ” (II., 301).

This was undoubtedly umbilical hernia. Similar consequences of wrong treatment of the stump of the umbilical cord were found in Central America.

In Guatemala also, after the expulsion of the child, they wait till the placenta is expelled. Only in exceptional cases is the umbilical cord ligatured and divided immediately after the birth of the child, and then the foetal end of the cord is charred at a candle flame and then smeared with Copaiba “ balsam ” (Bernouilli, p. 100). In Nicaragua, according to Bernhard,² the umbilical cord is not divided before the expulsion of the placenta ; and only when this is too long retarded do they decide to ligature and divide the cord earlier, the division being done too far away from the abdomen, so that the children retain a big navel.

We get details of the procedure of the North American Indians in the ligature and division of the umbilical cord through Engelmann.² In most Indian tribes the cord is not divided until the placenta is expelled. Among the Kiowa, Comanche and Wichita, as soon as the placenta appears the cord is taken in the hand and the

blood in it pressed towards the placenta (not towards the child). Also the Blackfeet, Hunkpapa and the higher and lower Yankton of the Sioux tribe do not divide the umbilical cord until after the expulsion of the placenta. The Flatheads, Kutenai, Crow and Creek, on the other hand, divide the umbilical cord immediately after the birth of the child. The Cheyenne Indian women, according to Grinnell, now use a knife for the division of the cord. Formerly, they used a flint knife which the midwives kept for a long time for this special purpose. The blood is squeezed out of the umbilical cord with the fingers and then the cord is cut off short.

Montezuma says of the Paiute and Shoshoni in Nebraska that they use a double ligature for the umbilical cord, one 4 in. and another 2 in. from the navel. Between the two knots the cord is divided, and what remains is bound to the first knot.

The division of the umbilical cord is done by the Apache Indian woman herself between Rio Grande del Norte and Rio Colorado, generally by squashing it between two blunt stones (Schmitz). W. H. Forwood (see Engelmann,² p. 66) reports of the eastern tribes of Indians, the Cheyenne, Arapaho, Kiowa and Eastern Apache (in Kansas, Nebraska and Colorado): "The Indians ligature the umbilical cord once, and then divide it almost a foot from the child's navel." Some Indian women ligature only the foetal end of the cord, like the Blackfeet. This can only mean that the ligature is not done till after the cord is divided. The Blackfeet, however, squeeze the placental wound to prevent hæmorrhage of the placenta.

The Blackfeet use, as a rule, according to Engelmann, a blunt instrument for the division of the umbilical cord so that it is squashed through rather than cut. Among the Indians of Alaska the umbilical cord, after being ligatured in two places, is divided between them (Dall²). The Eskimo, according to Holm, divide the cord with a shell.

Among the Shushwap Indians, in the interior of British Columbia, according to Boas, the umbilical cord is divided with a stone knife. According to information from the same source among the Songish in the south-east of Vancouver, an old woman divides the umbilical cord with a broken shell.

Of the delivery of a Fuegian woman at Cape Horn, we have information from Hyades and Deniker. Of the umbilical cord they say:

"Cette femme avait coupé le cordon a 11 cm. de l'ombilic avec un fragment de coquille de moule ramassé sur le sol de la hutte dans les débris de cuisine."

On the third day after delivery, the same author records:

"Le cordon est desséché et ne tient plus a l'ombilic que par un pédoncule filiforme. La mère l'a ligaturé aujourd'hui à son extrémité libre avec un bout de ficelle mince qui est attachée d'autre part à une bandelette de linge fixée autour de la jambe droite de l'enfant. On devait nous remettre le cordon ombilical après sa chute; mais en nous voyant ce soir l'examiner attentivement les femmes et même les hommes pensent que nous voulons le couper et protestent avec énergie contre une section qui, disent-elles, entraînerait sûrement la mort de l'enfant. Elles ajoutent que le cordon tombera tout seul la nuit prochaine et que nous pourrons alors l'emporter sans inconvénient."

6. LIGATURE AND DIVISION OF THE UMBILICAL CORD IN AFRICA

The African peoples likewise seem to proceed in many different ways in regard to the ligature and separation of the cord, and even in one and the same race, now and again, the individual tribes follow their own method. In examining them we shall begin at the west coast of the continent.

By the Bakongo negroes of the Loango Coast the umbilical cord is measured as long as double the first phalange of the thumb, or to the child's knees, and is separated with a sharp piece of the frond of the oil palm. Then they sit round a fire kindled in the hut and pass the new-born babe from lap to lap whilst they constantly press the cord with hands as hot as possible and, in this way, try to accelerate its withering. The end is achieved within 24 hours; the withered stump is knocked off with the thumbnail and at once carefully burnt in the fire (Pechuel-Loesche,¹ p. 30).

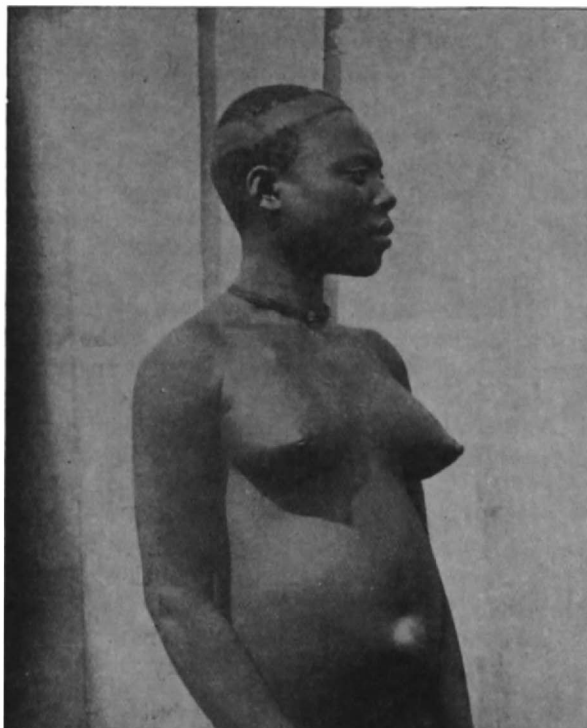


FIG. 773.—Bali negress from the forest in the Cameroon Hinterland. The protrusion of the navel is due to the umbilical cord being severed at too short a distance from the body. (Photo: E. Zintgraff.)

J. Murion d'Arcenant, in accordance with his observations among the negro tribes on the Senegal, says:

“La coupure du cordon ombilical se fait généralement assez mal, car presque tous les enfants ont l'ombilic excessivement développé, on peut presque dire qu'ils sont atteints de hernie ombilicale; mais ils n'y attachent aucune importance; chez les uns, elle subsiste, chez d'autres, elle disparaît avec le temps.”

A. T. de Rochebrune (p. 286) reports of the treatment of the umbilical cord among the Wolof negroes on the Senegal:

“Le cordon avait été préalablement lié, plus souvent tordu ou arraché par une matrone.”

Among the negroes in Old Calabar, after the expulsion of the placenta, the umbilical cord is separated by means of a razor: Hewan (p. 223), who records this, does not say whether a ligature is also made, but as his description of the obstetric

procedure of the negro is very thorough, we may well assume that they do not ligature the cord.

According to the statement of the negro women in the interior of Cameroon the tearing off of the umbilical cord without previous ligature is common (Hutter).

Zintgraff had an opportunity of taking photographs of Bali negroes in Cameroon. Some of them have conspicuous umbilical hernia, obviously the result of a very unskilful method of separating the umbilical cord in this tribe. Fig. 773 shows one such negress from the forest area.

Among the Kaffitscho (Abyssinia), the mother herself undertakes the separation of the umbilical cord; the cord is tied with a piece of cloth and divided with a razor (see Bieber).

In Massaua, on the Arabian Gulf, according to information which Ploss owes to the well-known explorer Brehm, the cord is divided as soon as the child is born; a short length is left on the navel; the ligature is not made till the separation has been done.

Among the Bongo, the umbilical cord is cut off very long; this is done with a knife, and that, too, without previous ligature (Schweinfurth,³ (I., 331)). The Wakamba use fibres of the baobab for the ligature of the cord. These are tied close together about 2 to 3 in. from the navel. The cord is divided with an ordinary knife. Among the Swahili likewise, the cord is left *very long*, and it gradually withers (J. M. Hildebrandt, p. 364).

Among the Masai, according to Merker, the umbilical cord is first tied close to the body with a bast thread, and then at a place an inch away from the body is divided with the instrument otherwise used as a razor. A navel binder is unknown.

Merker's statement that, according to the myth, a splinter of cane was in ancient times prepared from the fodder called *os sangasch* (*Pennisetum ciliare*, Link) which was used for the separation of the umbilical cord seems to point to an ancient method of dividing the cord.

Among the Wapogoro (Tanganyika, East Africa), according to Fabry, the umbilical cord is ground to powder between the fingers.

Felkin and Emin Pasha³ observed in Unyoro and on the banks of the Mwutan-Nzige that the umbilical cord was divided with a sharp piece of cane very far from the child's body, and the remainder tied on the child's abdomen. Ligature is quite unknown. Among the Madi and other negroes dwelling in Central Africa the cord is divided 4 in. away from the body by means of a razor; sometimes, however, it is bitten through. Should the cord bleed, then a woman helper takes it in her mouth and chews it between her teeth till the hæmorrhage stops; it is never ligatured (Felkin¹).

Of the Wanyamwezi in Central Africa, Reichard says:

"In the treatment of the umbilicus, they are very unskilled, and umbilical hernia often occurs, in which the protruding umbilicus is often as big as a woman's breast."

Strange to say,* he observed this more often in women than in men, and thus the former appeared as if, besides their two breasts, in the normal place, they had a third on the abdomen.

Among the Hottentots the umbilical cord is ligatured with a sinew close to the umbilical ring "so that it rots off and does no harm to the child" (see Kolben).

Of the care of the new-born child, Germann says that the new-born child is not cleaned with water but rubbed over with fresh cow dung, then it is put on a skin

* [There is nothing strange about this, since umbilical hernia is usually more common in females.]

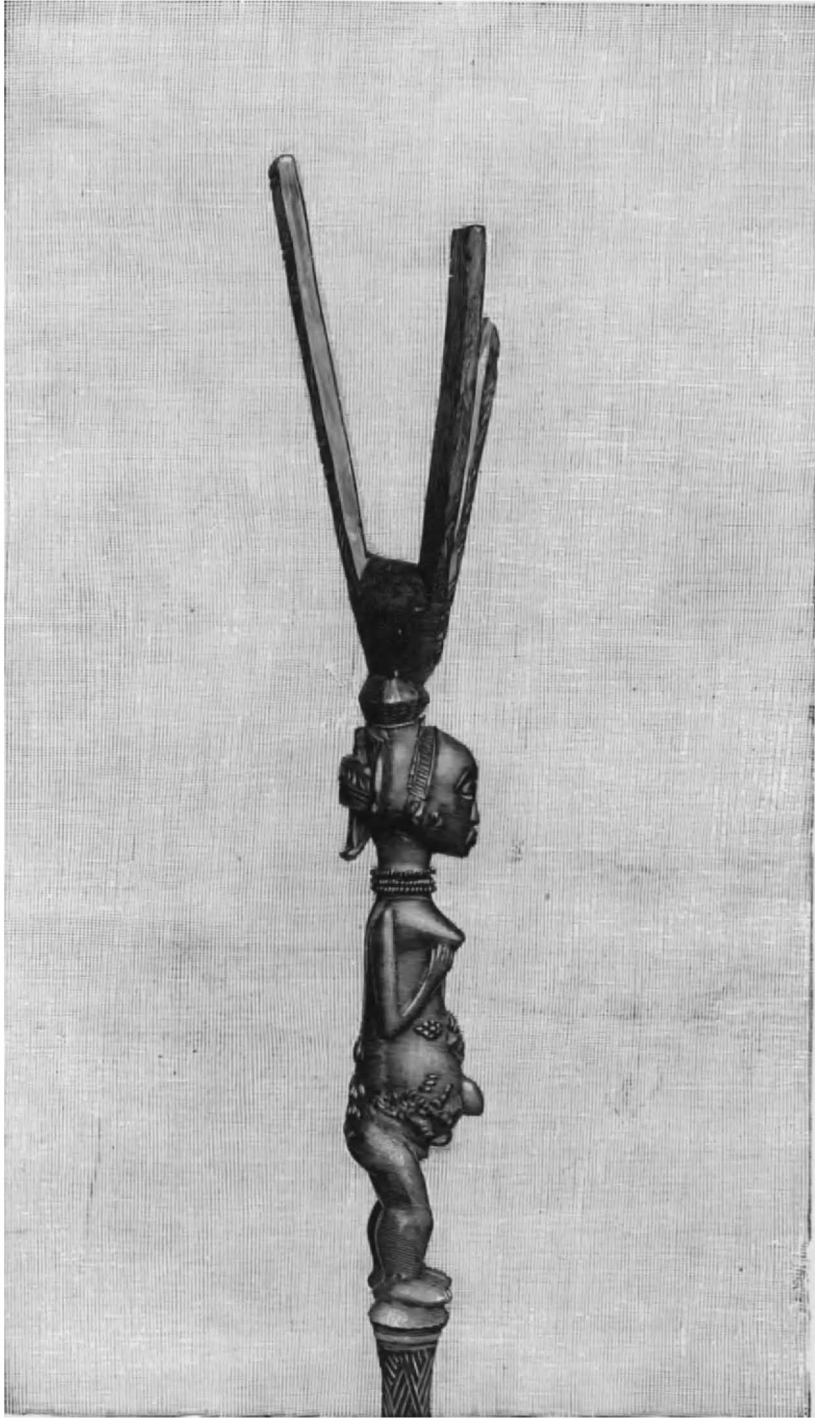


FIG. 774.—Carved wooden bow handle from Uguha. The female figure exhibits a protruding navel. Mus. f. Völkerk, Berlin. (Photo: M. Bartels.)

covering near the hut fire until the dung dries and falls off of itself, or can easily be rubbed off. Only after that were the juicy leaves of the Hottentot fig (*Mesembrianthemum edule* L.) taken, the juice pressed out and the child cleaned with it. Finally, they take freshly-melted mutton fat or butter and rub the child over and over, "so that at its tender age it might not be burnt by the sun, stung or otherwise injured." Finally they powder it with *buchu* powder (a toilet powder made from roasted and ground aromatic plants, especially leaves of the *Mesembrianthemum* species and the spores from one of the *Gasteromycetes*).

Kropf says of the Ama-Xosa that the mother either bites off the umbilical cord with her teeth, or cuts it off with a sedge rush. A rag is then put round the stump of the cord.

"This procedure," he states, "is the cause of the umbilical hernia so frequent in the children; but it disappears later."

Lübbert records of the natives of former German South-West Africa that the umbilical cord is thus treated in this way: two knots are made in it and it is divided between these. The stump on the child is wrapped in a rag."

Of the customs in South Tunisia, Narbeshuber says:

"As soon as the child is born the midwife divides the previously ligatured umbilical cord with a razor and hands over the new-born babe to the mother. With regard to the umbilical cord, only the end next the child is ligatured; this end is left about 5 cm. long; it is then bent round and tied again. Olive oil is put on it every day until it falls off."

We have a short statement from Leclerc about the Berbers in Kabylia, stating that the umbilical cord is cut off and that the stump falls off in eight days.

It has already been said that in consequence of dividing the umbilical cord too close to the child's body umbilical hernia is supposed often to develop later in the child. We saw this in the case of the Ama-Xosa, where the hernia is said to disappear again later, and in the case of the Wanyamwezi and the Bali negroes, with whom it is permanent. Among other peoples in Africa, too, this deformity is often observed, and it almost seems as if in the eyes of these people, umbilical hernia were regarded as beautiful. In a great many of their wood carvings umbilical hernia is portrayed. Fig. 774 shows one such case. This wood carving, representing a woman, forms the handle of a bow which Wissmann brought with him from Uguha, to the south-west of Lake Tanganyika, and which is now in the Ethnological Museum in Berlin. A great many fetish figures show similar conditions.

7. LIGATURE AND DIVISION OF THE UMBILICAL CORD IN ANCIENT CIVILISATIONS

It is now well worth the trouble to cast a comparative glance over the peoples of the ancient civilisations, the Egyptians, Jews, Hindus, Greeks, Romans and Arabs, and to examine the kind of manners, customs and views prevailing among them in regard to the division and ligature of the umbilical cord.

Among the ancient Egyptians, as Herodotus (II., 86) records, the separation of the umbilical cord was done by means of a stone.

The Jews of the Bible regarded the cutting off of the umbilical cord as absolutely necessary, the omission of which was regarded by them as the utmost neglect which

could only happen among despicable people living like beasts. For, in the Prophet Ezekiel (xvi. 4), it runs :

“ And as for thy nativity, in the day thou wast born, thy navel was not cut, neither wast thou washed in water to supple thee,” etc.

Ligature was done so that the child might not bleed to death, as it is then said of the maiden whose navel cord was not ligatured (v. 6) :

“ And when I passed by thee and saw thee polluted in thine own blood, I said unto thee when thou wast in thy blood, Live.”

Moreover, this must have been done fairly efficiently, since the navel, as Fried- rich has already pointed out, is compared with the round bowl of a mixing vessel, for in the Song of Solomon (vii. 2), as everybody knows, it runs :

“ Thy navel is like a round goblet which wanteth not liquor.”

We have already come across many peculiar ideas among the ancient Rabbis. Concerning the separation of the umbilical cord, too, they tell remarkable things. Thus they relate in the Midrash Shēmōth Rabba of the command of Pharaoh that the new-born Jewish children were to be killed by the midwives. Thus we read :

“ Rabbi Jehuda says : ‘ Who has glorified the Lord ? The sucklings, which Pharaoh wanted to have thrown into the river because they knew God. How is that ? When the Israelite women were in Egypt and a woman of the daughters of Israel was about to be delivered, she went to the field and gave birth to her child there, and when she was delivered, she left the boy in the hands of God with the words : ‘ Lord of the world, I have done my duty, do now Thine.’ ” And immediately, according to Rabbi Jochanan, God, in His splendour, came down and cut the navel cord, washed and anointed the babe. Thus, too, says Ezekiel (xvi. 5) : ‘ Thou wast cast out in the open field to the lothing of thy person,’ and then it says (verse 4), ‘ In the day thou wast born, thy navel was not cut.’ Further (verse 10), ‘ And I clothed thee also with broidered work ’ ; further (verse 9), ‘ Then washed I thee with water,’ and he gave him two stones in his hand, the one suckled the child with milk (oil), the other with honey as it runs (Deut. xxxii. 13) : ‘ He made him to suck honey out of the rock ’ ” (see Wünsche ²).

That it is here a question of theological and not medical wisdom needs no discussion. But this ecclesiastical erudition is at its best in the assertion that the new-born babe itself had to fetch the instrument necessary for the separation of the umbilical cord. This statement is to be found in the Midrash Wayyigrā Rabba.

“ If a woman was delivered by day, she said to her (new-born) son : ‘ Go and bring me a sharp rock, I will cut thy navel cord.’ If she was delivered by night, she said to her son : ‘ Go and kindle a light for me, I will cut the navel cord for thee.’ He went and kindled a light, and then the chief of the evil spirits met him and while they were engaged the cock crew. ‘ Go tell thy mother, said Satan, ‘ and say to her if the cock had not crowed I would have destroyed thee.’ ‘ Go tell this to thy grandmother,’ said the mother, ‘ that my mother has not cut my navel, for had she done this, it would have cost thee thy life in order to fulfil what is written ’ ” (Job xxi. 9) (see Wünsche ⁸).

However, the Rabbis of the Talmud who were trained in medicine put a ligature on the umbilical cord immediately after the birth of the child and then accomplished the division. Israel’s ¹ (p. 139) supposed that the physicians used a knife for this purpose.

Now, if we pass to the Hindus, we learn from Suśruta that, according to Vullers (II., 239), he gives instructions to the woman helper that “ when the bond of the

umbilical cord is detached, she shall call to the patient : Work slowly with thy aching loins, genitals and the neck of the bladder." This passage can hardly be explained other than that the separation of the umbilical cord had been done before the expulsion of the placenta. In Hessler's translation (II., 41), on the other hand, it is stated that after the birth of the child the doctor fumigated the patient's genitals with snakeskins or with *Vangueria spinosa* Roxb., fastened to a root of the corn marigold. Now the question arises whether these fumigations with snakeskins were supposed to alleviate the pain, or like similar fumigations in Europe at a later date, to hasten the expulsion of the placenta ? Then, however, it continues :

"In manibus et pedibus sustentet puerperam valde splendidam expertemque sagittae (embryonis)."

It is doubtful whether by "sagittae" is to be understood here the whole fœtus with the after-birth or only the new-born child. Among the ancient Greeks the patient, no doubt to hasten the expulsion of the after-birth, was put in as sloping a position as possible in the bed (Hippoc., *De superfoet.*), and the Hindu physician may have propped up his patient for the same purpose and in the same way. Thus it is not improbable that in ancient India also after the birth of the child they first awaited and expedited the expulsion of the after-birth before proceeding to separate the child from it. Then, after the child had been smeared with butter, the umbilical cord was to be ligatured with a thread eight finger breadths from the navel ; then divided and, after that, the piece of cord left on the child was tied round the neck of the new-born babe.

Among the Greeks in the time of Hippocrates the cord was probably not divided, as a rule, till after the expulsion of the placenta. For, in the book "De Superfoetatione" is described the procedure to be followed in removing the after-birth as soon as the umbilical cord is torn off, or if someone has cut it prematurely ; also, advice is given not to divide the umbilical cord in the case of apparently still-born children until they have micturated or cried or sneezed ; but the cord must be separated if the cord pulsates, or if the child moves, or if it cries or sneezes. In Aristotle's time the cutting off of the umbilical cord formed part of the duty of the midwives, as their name, *ὄμφαλοτόμοι*, indicates. The umbilical cord, however, was ligatured beforehand with a woollen thread.

Among the Romans Soranus directs that the ends of the umbilical cord be tied with a thread so that hæmorrhage may not occur, since blood as well as air passes from the mother's body into that of the child. Until then the midwives always tied the cord fast with a linen thread ; he advises them to use for this loosely twisted wool, or some other soft substance, as a linen thread, from pressure on the soft parts, causes unbearable pain. He also records that some have burnt the navel with a hot cane or the wide end of a probe ; to this he objects on account of the pain and inflammation caused by it. If the placenta is still in the uterus, then two ligatures are to be made on the umbilical cord, and the cord cut between them, so that in this way hæmorrhage on the part of the mother as well as of the child is prevented.

With Soranus we have for the first time a rational method of separating the umbilical cord, although naturally affected by all the faults of that period when thorough physiological understanding was lacking.

He prescribes that immediately after the birth of the child, omphalotomy, *i.e.*, the cutting of the navel cord, be carried out. In this the cord is to be cut four fingers from the abdomen with a sharp instrument and not with blunt ones so as to prevent any "contusion" (dragging, *περιθλώμενον*). The coagulated blood is to be pressed out of the remaining part of the cord,

and because of the risk of hæmorrhage it is to be tied tightly with wool. The part left hanging on the child is to be wrapped in oiled wool, laid on the middle of the body, and after three or four days, when it has dropped off, the ulcer which it has formed on the abdomen is to be healed. Most women at that time used for this purpose burnt and powdered snails, or turnips, or the ankle bones of pigs; others applied a cooling mass of lead so that the ulcer should form a scar and, owing to the weight of the lead, a fine hollow navel be formed.

Arab medical science in general follows this method. According to the advice of Avicenna, the tying of the umbilical cord is to be done 4 in. from the umbilical ring and by means of a ligature of cleansed wood (*lana munda, quae bene et subtiliter sit retorta, ne doleat*). We learn from the writings of Abulcasis that, at his time in Spain, the midwives, instead of tying the divided umbilical cord, burnt it with a red-hot iron to prevent hæmorrhage. Hence, as C. v. Siebold remarks, both methods, tying and burning, were prevalent at that time.

8. LIGATURE AND DIVISION OF THE UMBILICAL CORD IN EUROPE

Our old German text-books for midwives were, as is well known, prepared after the pattern of the writers of an earlier period. Thus Rösslin, Rueff and others kept to models from Roman times, and this holds good also as regards separating the umbilical cord. Thus, according to Rösslin, the umbilical cord was ligatured four or even three fingers' breadth from the child's abdomen and then divided; according to Rueff, the ligature was made with double thread and, "near the child, at most four fingers' breadth from it . . . the nearer to the child's body the better it is, for it gives a nice narrowly-formed navel."

Muralt says to his midwives that it is stupid to believe that when the navel cord hangs long on the child it has a long breath, for to such superstitious nonsense you must not listen, since, as soon as the child is born, it no longer has any communion with its mother but breathes of itself through its own lungs, and no longer through the root of the navel as the life-giving air was previously communicated with the arterial blood.

French doctors of that period did not ligature and divide the umbilical cord until after the expulsion of the placenta; at least Ambroise Paré taught that this was to be done.

Then there sprang up a dispute among obstetricians as to whether the separation of the umbilical cord should be made immediately after birth or whether the child should be left for some time longer connected with the pulsating cord, so that it might continue to receive blood from the placenta through it. Levret supported the latter view: he recommended that "the cord be not divided before the child cried," especially if it is pale, so that it may continue to benefit by the mother's help.

In the year 1733, in a pamphlet written in Halle (Dehmel (Resp.) and Joh. H. Schulze as Præses), the necessity for the ligature of the umbilical cord was disputed; in spite of this, however, he recommended that it be not omitted. Ziermann went still further; he published in the second decade of last century a paper in which the ligature of the umbilical cord is designated as "the original cause of the most frequent and dangerous diseases of the human race." C. C. Wolfart wrote the preface to it.

In the preface to the translation of Holberg's comedy: "The Lying-in Room," which appeared in the year 1822, the Danish poet Oehlenschläger mentions this medical controversy: he says:

"The doctors are now quarrelling about whether the navel cord is to be cut before or after the birth, which must be even more annoying to the wretched patient than listening to doctors' Latin and the quack Maître Boniface."

Until a short time ago, according to information from Professor Hildebrandt, of Königsberg, it was a rule among the Memel midwives of the lower classes that they did not ligature the umbilical cord, but merely put loose bindings round it, and took care that the child did not bleed to death; it is popularly said: "It is better like this so that all the poisonous matter may escape from the body."

We have a report from Alksnis about the procedure among the Letts:

"The separation of the umbilical cord is done with a sharp instrument; the end of the cord on the child is tied with a thread. On the other hand, if the child was 'quite blue,' it was left lying for a few moments longer between its mother's thighs till it revived. Dr. Blau writes that some women do not separate the cord until the placenta is expelled."

Among the White Russians, the umbilical cord is divided with a knife and ligatured with a linen thread and the mother's hair. The wound is frequently moistened with mother's milk so that it may heal properly (see Paul Bartels¹²).

9. SURVEY OF THE METHODS OF LIGATURE AND DIVISION OF THE UMBILICAL CORD

If we cast a backward glance over the series of statements just made we have to admit that a regular and gradual progress in obstetric development in this matter can by no means be traced. Rather we see displayed diverse measures in closely related peoples and at equally low stages of civilisation. Some separate the umbilical cord before the placenta has left the mother's body; others, again, wait for this to take place before they divide the cord. But these latter, too, do not proceed quite uniformly. Some of them separate the cord immediately after the expulsion of the placenta; others again first subject the new-born child, and sometimes the placenta as well, to certain anointings and washings in which, of course, a fair amount of time must always be spent, so that the child is then left joined to the placenta proportionately longer.

Among many even barbarous peoples we find in use special methods to prevent hæmorrhage of the umbilical cord after division. Regular ligatures are made with vegetable fibres or thread; by others, a knot is tied in the umbilical cord itself, or the child is turned round the placenta in a certain direction several times, which causes a firm twisting together of the umbilical blood vessels. All this, however, seems to other peoples not safe enough; they treat the stump of the cord with special styptic medicaments, or they char it in a flame, or even with red-hot utensils. It is, of course, quite evident that all these customs later recognised as "hygienic" or "æsthetic" had originally other "religious" or superstitious grounds, just like tattooing, ornamental scars, the piercing of ears, nose and lips, or circumcision. It is nonsense to talk of a hygienic origin of circumcision just as it is absurd to speak of an "æsthetic impulse" as the origin of tattooing, etc. It was only later that people realised the hygienic value and became accustomed to the "beauty" of tattooing (see v. Reitzenstein in the *Handwörterbuch der Sexualwissenschaft* (Bonn, 1926), pp. 634, etc.).

At first sight it is surprising to find that there are yet so many peoples who still simply separate the umbilical cord without making any ligature which aims at preventing hæmorrhage. But if we look somewhat more closely into their manner and method of separating the umbilical cord we find that they, of course, quite unconsciously, have found in the way chosen a means to separate the cord and

to arrest hæmorrhage. If arteries are lacerated or crushed apart then their innermost layer draws together like the tied-up mouth of a tobacco pouch, and the hole made in the artery is so completely closed that no blood can pass. Now such laceration and crushing are involved among those peoples where the umbilical cord is separated without previous ligature. We have already seen that they tear it apart, or pinch it through with their nails, or bite it with their teeth, or knock it in two with stones, or divide it with stone knives, shells or bits of wood. All these are more or less blunt, crushing or lacerating instruments. And thus Mallat's statement about the Negrito of the Philippines becomes quite comprehensible. He says that in their manner of dividing the umbilical cord with a sharp piece of bamboo cane, an oyster shell or a stone, the ensuing laceration of the skin and vessels arrests hæmorrhage with greater certainty than the application of any kind of ligature.

Only when men learnt to use sharp cutting objects for this purpose were they obliged to resort to measures for arresting hæmorrhage, and as such, apart from ligatures, we have got to knotting the cord, charring the stump with the direct flame or with red hot objects and the sprinkling of the cut surface with styptics. Likewise, the kneading of the stump must be added, because by this means a drying-up is rapidly brought about.

CHAPTER XXXVIII

THE THIRD STAGE OF LABOUR

1. THE EXPULSION OF THE PLACENTA

FOR reasons of convenience, a special chapter was devoted to the ligation and division of the umbilical cord, although, strictly speaking, this rarely belongs to the obstetric manipulations which have to be carried out in the so-called third stage of labour. Now we have only the expulsion of the placenta to discuss. It is not particularly surprising that in many savage tribes they do not bother particularly about this since, as we have seen, they do not concern themselves much even about the actual delivery, but the after-birth does have a certain significance because it is regarded with the eyes of superstition. In the one process, as in the other, the effective activity of the physiological forces of expulsion is substantially relied on.

Travellers rarely report cases of hæmorrhage in the third stage of labour arising from the retention of the placenta, and only a few cases of the retention of the membranes in newly delivered women among savages, or of septic infections therein. It may be imagined that in the case of uncivilised peoples an anatomy which hinders spontaneous expulsion is extremely rare. That must also lead to the question how far it is considered necessary to shorten the third stage of labour by helpful manipulations among primitive peoples.

Vogler, in Weilburg, who published his experiences in the year 1797, recommended a purely expectant method, and in the majority of cases he left the expulsion of the after-birth to nature.

In later times Schröder also has given the information :

“ That the separation of the placenta and its expulsion from the cavity of the uterus is achieved naturally and with greater safety and in not too long a time (5-15 minutes), but that the placenta may remain a long time in the vagina if the patient keeps quite still.”

Little hæmorrhage occurs in this process. Raising the patient, a soft pressure on the abdomen, or a slight pull on the navel cord is usually sufficient to bring the placenta to light.

It is not surprising if the importance of the third stage of labour is often underestimated. After the birth of the child, it seems to the mother and the people around her that the main thing has been overcome. They are busy with the child and pay little attention to the dangers which may ensue. Ignorant of such dangers they wait patiently. Yet the umbilical cord hanging from the genitals must show the most inexperienced that all is not yet over, and this leads to all sorts of manipulations to free the young mother as soon as possible from what seems to be superfluous.

Even the midwifery of last century prescribed various rules and methods for removing the placenta quickly and safely, but this is not the place to examine these more closely. That must be left to the obstetric text-books. We have, however, to investigate the procedure of savages in regard to this.

2. PROCEDURE AMONG SAVAGE PEOPLES

In the question which occupies us here it is those peoples among whom the women are left entirely to themselves during childbirth that can give the most interesting solutions. Unfortunately, since they are delivered without witnesses we are, as may be understood, without detailed records of these very cases. As we have seen earlier, however, not in all tribes of low civilisation are the women without the help of friends during childbirth; and hence some information has penetrated to us also about the expulsion of the placenta.

Among the negroes in Old Calabar, when the child is born they leave it lying quietly between the mother's legs, and then wait patiently till the after-birth comes, even if it should make them wait a long time (see Hewan. p. 223).

With the natives in the former German South-West Africa, if the after-birth takes more than an hour to appear, all kinds of attempts are made to bring about its expulsion. First they give the mother *páaib* or *homab* tea to drink (Lübbert).

Likewise among the Abyssinians, the placenta is not removed artificially. The woman gives birth to her child in the knee-elbow position, and she waits in the same position till the after-birth is expelled (H. Blanc).

Also among the Wakamba and the neighbouring tribes, the placenta is not removed by artificial means.

According to J. M. Hildebrandt, the Somali women drink warm sheep tallow after delivery. Owing to the purgative effect of this the expulsion of the placenta is promoted.

Among the negress slaves in Surinam, according to Hille, the placenta usually follows the child very quickly; special methods to help to expel it seem not to be necessary with them.

With the American Indian women the expulsion of the placenta seems, in general, to be quick and easy; otherwise, of course, it would not be possible for the women to hasten after the tribe on the march immediately after delivery and again to join it. Such cases, however, have been repeatedly reported and in credible evidence. However, if retardations in the expulsion of the after-birth do occur in exceptional cases they try quick and energetic manipulations. A few tribes only, like the Menomeni and the Crow Indians, and also the Indians in Mexico, according to the reports of Engelmann,² do not let this make them uneasy, but wait patiently till the placenta is decayed. This sometimes leads, though, we are told, rarely, to pyemic infection to which the women succumb.

In Australia, as was stated by Collins, after the birth of the child the mother sits in a little hole prepared for the purpose and waits there till the after-birth is expelled; according to the description, her position in this, as in defæcation, is in public. This is certainly a very practical procedure, since, in this position of the body, the abdominal pressure can act with special force.

In New Caledonia, according to Vinson, the women assistants separate the umbilical cord before the expulsion of the placenta, and then fasten the part attached to the placenta to the big toe of the mother, leaving the expulsion from the womb to nature. Among the inhabitants of the island of Nufor near New Guinea, as soon as the child is born it is left lying till the after-birth follows, and then the female assistants divide the umbilical cord with a sharp bamboo knife. The child often dies of cold in this position when it has to wait too long for the placenta. van Hasselt reports that once in a young woman, after days of suffering, the after-birth appeared in pieces after all kinds of expedients had been used to promote its expulsion.

Among the Orang-Benua in Malacca, the woman places herself over a fire to expel the after-birth (Newbold, II., p. 407).

Schwarz² made a woman from Sumatra, who was in his charge in Fulda, behave exactly as is the custom in childbirth in her home : after the birth of the child she had her abdomen rubbed with some oil, then made a long bearing-down effort, and with this the placenta was at once expelled.

Likewise, the Tartars in Astrakhan, according to Meyerson's statement, leave the expulsion of the after-birth to nature ; the umbilical cord, however, is separated at once.

3. RETENTION OF THE PLACENTA

The observation may now be made that too long a wait for the expulsion of the placenta can bring certain dangers with it even among those peoples who are at a low stage in regard to obstetrics. Then, when they resort to remedies, it is in the course of nature that the simple ones are tried first. They make the mother assume a different position ; they try to increase the strength of the abdominal pressure ; they shake the patient, etc. Such expedients are no doubt also combined to be more certain of achieving the effect. Manipulations which cause vomiting, and others which cause sneezing, are often employed. They also make the patient perform violent expirations of other kinds.

Many Indian tribes make the mother assume a change in her position so that the placenta may be expelled. The Crow and the Creek Indian women are delivered lying on the abdomen but, immediately after the birth of the child, they jump up and lean on a walking-stick, in which position they have their legs wide apart (see Fig. 775). This is done to make the blood flow away freely and to make the expulsion of the placenta quicker and easier. Also, the women of the Cattaraugus rise from their kneeling position after the birth of the child and stand up on their feet because they think that by this means the expulsion of the after-birth is promoted. More such examples can be brought forward.

On the Hawaii Islands the mother who is delivered in a sitting posture is made to assume a crouching position, for, since the umbilical cord is not divided till the placenta has appeared, the child has to be held by the midwife meanwhile. There, also, however, they make the mother stand on her feet to make the expulsion of the placenta easier. To help this method, however, they also try to increase the activity of the abdominal muscular pressure by inducing sickness and vomiting. The woman puts her finger in her throat, or the midwife pulls her tongue hard out of her mouth till she eructates or vomits.

In South India, also, according to Shortt, in retarded expulsion of the placenta, the patient is directed by the midwife to chew a lock of her hair, by which means sickness or vomiting is caused. With the Burmese, according to Mantegazza,⁵ a similar procedure is customary.

Among the Gilyaks on Sakhalin, in order to get rid of the placenta as quickly as possible, chips of a kind of wood (*Sambucus racemosa*) are put in the mother's mouth ; the bitter, nauseating taste causes vomiting, and the after-birth is expelled. If they do not succeed in expelling the placenta in this way it is usually death for the woman, which although certainly occurring, seldom happens (see Pilsudski).

The Ainu on Sakhalin put a narrow strip of silk ribbon round the patient's abdomen, and she herself puts her finger well down her throat to induce vomiting, which usually causes expulsion of the after-birth (Pilsudski).

People also still use more unappetising things for the same purpose: *e.g.*, in Argentina, the end of a switch, which has been soiled with the sweat of a horse, is placed in the patient's mouth. Mantegazza⁵ saw, in Bolivia, a woman handed water in a night chamber in which she had seen dirty stockings washed.

Immediately after the birth of the child, the Mexican woman usually gets a decoction of corn groats. But purgative and nauseating specifics for promoting the expulsion of the placenta are also known there. The Indian women have to eat a quart of raw beans immediately after delivery; these are supposed to swell and thus to force the placenta to come out.

In South Tunisia, to hasten the expulsion of the placenta, the patient is advised to bite at her right arm and to blow violently or to recite very loudly the names of Islamic saints, like Mohammed, Gjibrail, Abubekr, Ali Hassin, etc. (see Narbeshuber).

Also the reflex action of sneezing is brought into use as a very effective expedient.

In retention of the placenta the Gros Ventre Indians, in order to produce sneezing, use an irritant powder the effect of which on the contraction of the muscles rarely fails. The Mandan use for this the cones of the cedar, castoreum or the knob on the tail of the rattlesnake, with which they give castoreum in nauseating quantities. The Pawnee (Fig. 776) do the same.

Among the Kirghiz of the territory of Semipalatinsk, for example, when the placenta will not come, very wide leather trousers are put on the patient, which cover the whole dress. She is then put on a horse with a Kirghiz, and he rides with her a long way up hill and down dale accompanied by the noisy and shouting inhabitants. "But what is the use of that?" asked the lady who was told this. "Now sometimes it helps, sometimes the woman dies," calmly returned the woman who told the story. If the woman returns alive from this wild ride, she is at best unconscious; the *baksa* (a doctor like the shaman) rubs her brow, pulls out her tongue and gives her a blow on the ear. If this does not arouse her from her deep faint, a blacksmith is brought in who has to hammer red-hot iron vigorously on his anvil so that sparks fly on all sides. It is even brought close to the patient's face, and meanwhile the *baksa* urges her to say, "Thank you, sir." Finally, the tormented woman comes to herself and stammers, "Thank you, sir." The blacksmith then puts an iron file in her mouth to hold between her teeth, and then at last the poor woman is left in peace (Globus, 1881, 39, 140).

Among the modern Greeks, too, immediately after the birth of the child the mother is raised up several times by the women helper and then let fall again violently on the parturition chair. This is continued until the after-birth appears, as it no doubt does. J. L. Moreau adds: "This procedure is common and not injurious" (II., 198).

The Indian women in Mexico, as well as the women of the lower classes, are delivered, as Engelmann records, in a squatting or kneeling position. With the Indian women the after-birth follows quickly; the Mexican women, however, have generally to wait longer for the expulsion of the placenta, and just so long also they have to stay in their uncomfortable position. Sometimes it takes half an hour; sometimes even a whole hour. But if the placenta still delays then one of the women helping takes the young mother by the arms and shakes her violently up and down.

Among the Indian women of the Mesqually Reservation in the rare cases where retention of the placenta occurs they use a vapour bath. A hollow is made in the ground and filled with hot stones which are covered with pine needles. Then water is poured over this, and the woman sits over this vapour bath for a few minutes. This simple procedure rarely fails.

4. SUPERNATURAL AND SYMPATHETIC EXPEDIENTS FOR HASTENING THE EXPULSION OF THE PLACENTA

It is not surprising that supernatural and sympathetic expedients play their very important part in the third stage of labour, and it is easy to understand how the expectation and strain caused by the belief in their efficacy lead to unconscious muscular contractions, and how in this way the desired result really comes to pass.

The fact that people in many tribes ascribe the retention of the after-birth to the evil influence of demons is comprehensible, and what Vámbéry cites regarding the Turks of Central Asia, in particular the Kara-Kirghiz, certainly involves these anxious circumstances, as we can gather from the summary. He writes that when the woman is delivered the following is done :

(a) "A horse with big bright eyes is brought from the stable and the patient's breast touched with its muzzle, by which means the evil spirit is banished."

(b) "An owl is taken into the tent and forced to cry out in the belief that this will frighten away the evil spirit. A great amount of mysterious power is ascribed to this bird, hence the child's cap is also furnished with its feathers as a talisman."

(c) "For similar reasons, some kind of bird of prey is set on the breast of the patient."

(d) "Gooseberries are thrown over the patient that the evil spirit will stick fast to them ; or people set fire to them supposing that the nasty smell of the smoke will have a frightening effect."

(e) "Near the patient's pillow a sword is put in the ground with its sheath upwards in the hope that the sight of it will scare away the evil spirits."

(f) "A *bachschi* (singer) is summoned who rushes into the tent and throws himself upon the patient in order to chase away the tormenting spirit by means of light blows with his stick. Finally, if all this should prove useless, but not till then, the placenta is pulled out."

Incantations to cause the expulsion of the after-birth were used by the ancient Hindu physicians. Stenzler¹ has recorded this (II., 30).

In Entre Rios, in the Argentine, according to Mantegazza,⁵ the skull of a horse is put under the lying-in-bed in such a way that the muzzle is turned towards the foot of the bed. This is supposed to effect the speedy expulsion of the after-birth. Also to achieve this purpose pieces of silver coins and fragments of tiles are boiled together and the liquid drunk.

In Germany, too, such magic potions and sympathetic specifics are known. In Swabia, the young mother has to drink a decoction of three crayfish pounded while alive, if the after-birth has not appeared within the expected time (Buck, p. 346). In the Rhine Palatinate they make the patient stand up, take a stick in her hand, put on her husband's hat and then lie down again (see *Landes u. Volksk. d. bayr. Rheinpfalz*, p. 346). We see how, at the back of this sympathetic treatment there is an effective expedient, namely, the change from the prone to the upright position, the successful effect of which we have already discussed. This, however, is now secondary. The spirits obstructing the expulsion of the placenta are deceived by the man's hat.

In order to promote the expulsion of the placenta the midwife in Upper Austria and in Salzburg says, as she divides the umbilical cord : "My child, I now cut wit and sense in the name of God the Father, the Son and the Holy Ghost." The patient says : "Amen," and has to bite into a raw onion three times and be raised up in bed three times during which she draws in her thumbs and blows once into each fist (Pachinger). So we have, in this case, a combination of various really effective expedients.

The Saxons in Transylvania fumigate the patient in cases of retention of the placenta with a piece of hare skin ; or they rub her abdomen with olive oil, and while doing so, utter this incantation :

“ Womb, thou art empty,
Womb, get thee hence,
Go to the black mountain,
Go to the cold mountain,
Go to the hot mountain !
Womb, get thee hence ! ” (v. Wislocki.⁵)

In this case, too, massage and fumigation of the abdomen take place in support of the incantation.

We learn from Bartsch that in Mecklenburg when the after-birth will not appear, the husband has to shave off his beard and give it, with some of the lather, to his wife to eat ; we again have to recognise an emetic specific which, probably, is not the real reason, but was originally another deception.

In Japan, during parturition a bamboo broom (*hoki*) is held fast by the patient and a woman helper. This is supposed to help towards a favourable progress of the after-birth. H. ten Kate, who records this, conjectures a connection between *yo* = bamboo and *yo* = age, generation or with *yona* = placenta ; then it would be a consonance of the names which had caused the use of a kind of sympathetic expedient.

Among the Hindus of the Punjab (according to Rose⁴) it is a common custom to say to women just delivered, “ she has given birth to a girl ” when it is a boy, or “ to a star ” when it is a girl ; otherwise the after-birth does not come.

5. THE USE OF THE UMBILICAL CORD FOR THE WITHDRAWAL OF THE AFTER-BIRTH

It is certainly very natural for a child of nature to regard the umbilical cord hanging from the genitals as the natural means for a strong pull to expedite the removal of the after-birth. This is a procedure which, in fact, we come across in quite a number of peoples (*cf.* Fig. 775).

Thus Engelmann states of the Ainu that when the umbilical cord is divided, the woman remains still in her bed until the placenta appears. Usually this takes place quickly. But, if it is delayed then the old woman acting as midwife pulls it out by the end of the umbilical cord. This procedure often results in very dangerous hæmorrhage.

With the Chinese, too, according to J. J. Kerr, the midwives pull the placenta out by force, and this results in the death of many women.

In the Persian Province of Gilan, according to Häntzsche, the after-birth is withdrawn by a pull at the navel cord.

In Unyoro (Central Africa), many women die during and after parturition of hæmorrhage caused, Emin Pasha³ supposes, by tugging at the placenta.

According to Krebel, the removal of the placenta in parts of Russia also is effected in accordance with popular custom by drawing it out by force, “ owing to which inversions and prolapse are often produced ” ; also people there make the patient drink warm water to promote the expulsion. In France, in 1863, as Puéjac found in small provincial towns, there prevailed among the midwives the very common

custom of pulling out the after-birth immediately after the birth of the child, although Baudelocque and Madame La Chapelle had already condemned this procedure strongly.

From Jerusalem, Dr. G. Rosen reported in a letter to Ploss :

“ If the after-birth does not quickly follow the birth, the midwife dips her finger in olive oil and puts her hand at the vaginal orifice to take hold of the after-birth with her fingers if it descends into the vagina. If the placenta does not come near the vaginal orifice, the midwife ties the umbilical cord with a string, the other end of which is tied to the patient's foot ; the child is then wrapped in a linen towel till the placenta appears.”

Among the Turkish women in Constantinople, if the placenta is retained, they pierce the umbilical cord, according to Stern,² draw a thread through the hole thus made and tie the cord fast to the patient's ankles. Then they give her fish oil or brandy with pepper to drink, or simply put a finger well down her throat so as to make her vomit.

Among the Cheyenne and Arapaho Indians, whose wives retain the dorsal position also in the third stage of labour, they never wait for the placenta to be expelled by the force of the uterus. Rather, they try to get it out immediately by a hard pull on the umbilical cord. With this rough treatment the unfortunate woman is often the victim of profuse hæmorrhage.

Likewise, among the Dakota Indians, the umbilical cord is pulled forcibly, and this often has serious consequences (Engelmann,² p. 166).

The Mexican Indians and the uneducated white population of Mexico, according to the records of Engelmann² and C. M. Harrison, have also the stupid practice of pulling the umbilical cord hard. Many women are said to die there because they could not get rid of the placenta (p. 166).

When we read these records it surprises us that these primitive midwives did not see for themselves the great danger of this procedure. Probably the reason lay in the fact that very often the placenta had already been separated and expelled from the uterus, but still remained in the vagina. Then if it is pulled out by the umbilical cord it is, of course, quite a harmless matter. This pulling is disastrous only in the more rare cases where the placenta is still attached to the wall of the uterus.

That the danger of this last method has not remained unknown even among many primitive tribes, we learn through Engelmann.² In some North American Indian tribes such pulling at the umbilical cord does take place ; nevertheless, this is done everywhere with extraordinary care, and they make use of it only in rare cases. Thus, for example, among the Crow and the Creek Indians, this pulling is always done with very little force. If they find any resistance they prefer to leave the placenta behind till it is expelled by decay. Cases of pyemic infection from this are said to be very rare.

Steady and not too hard pulling at the umbilical cord is also done by the Papago Indians. With them Dr. C. Smart had an opportunity of seeing a case in which the placenta was retained for three or four days :

He found the women helping the patient very uneasy. The latter lay on one side with her knees drawn up, the doctor made her lie outstretched and examined her with his hand ; a buckskin thong about the length of a whip cord was fastened to the severed end of the umbilical cord, whilst the other end of the thong was tied to the patient's *big toe* so that when she stretched her leg, a tug at the placenta took place. The doctor found no adhesions, and by introducing his hand into the uterus, he was easily able to withdraw the placenta.

Among the expedients to which the women helping at child-birth in former German South-West Africa resort in retention of the placenta, Lübbert mentions :

“They also tie a stone to the umbilical cord and make the woman walk about.”

6. THE EXPRESSION OF THE PLACENTA

It would have seemed amazing if it had not occurred to the human mind to have recourse to external pressure as an aid in the expulsion of the placenta. For, in the first place, it is very probable that among the various peoples the idea occurred spontaneously, as it were, of squeezing out the after-birth still retained in the uterus by pressing the abdomen. In the second place, however, it must be emphasised that in the medical science of very many half-civilised nations, the process of kneading is greatly relied upon, so that people resort to it in many disturbances and ills. This kneading, which we call massage, is practised all over Asia, by the Arabs, Indians and Persians, as well as by the Japanese and the Chinese, both for healing and strengthening. The Japanese have introduced *ambuk* into their midwifery for external version in transverse presentations. On the Hawaii Islands the kneading of tired limbs is called *lome-lome*, and, according to Dr. Buchner's report, is practised scientifically, mostly by the hands of native girls as part of the hospitality customary in the country. Now it is natural to assume that in many parts of the world it was observed what good results kneading, rubbing, pressing and stroking—in short, massage—had on the swelling still perceptible in the abdomen, and on the uterus which still contained the placenta ; for the person doing the massage must very soon have perceived how quickly under their hands the placenta can be brought forth by comparatively slight pressure.

Among the Australian natives on Finke Creek, if the placenta does not come away of itself, the abdomen of the mother, still lying in a horizontal position, is kneaded with the hands in the region of the uterus and this place pressed downwards (Kempe).

With the Loango negroes, among whom the woman in labour holds a sloping pole, the patient lies on her back on the ground if the removal of the placenta is delayed, and has her abdomen kneaded by a woman kneeling at her side (Felkin¹). On the other hand, in Unyoro when the course of the after-birth is slow, the woman herself presses her abdomen on the wide end of a prop, which she rests on the ground, and by bending her body rhythmically backwards and forwards she effects a varying pressure on the fundus uteri in order to expel the placenta in this manner.

Among the Wanika in East Africa they first pour water on the abdomen from a certain height ; then, if the placenta does not appear, the patient must resort to the knee-elbow position ; a towel is now wrapped round her through which a stick is put and by twisting this first one way then the other, an intermittent pressure is exerted on the abdomen.

A similar procedure is followed in Darfur. Here the patient lies flat on her back. A long wide cloth lies over the abdomen, enclosing it entirely. At each side of the patient sits a woman holding one end of the cloth, and to achieve a due compression of the uterus, puts a foot on the cloth close to the patient, at the same time pulling as hard as possible.

Bonnar had an opportunity of seeing how a South African native woman was freed from the after-birth. He states that the midwife took the patient by the shoulders, dragged her into the middle of the hut where the latter had to sit half

erect, her legs outstretched and well separated. The midwife now got behind her, shut her fists, put her arms round the patient and worked on her abdomen with her fists, kneading the uterus from the fundus towards the symphysis. After repeating the kneading three times the placenta emerged. Neither hæmorrhage set in nor any other disturbance.

According to Wossidlo, "Kaffir" women, after the birth of the child, tie a cloth so tightly round the abdomen that the patient can scarcely breathe, and then expedite the expulsion of the after-birth without tying and dividing the umbilical cord beforehand.

Lübbert says that the woman helpers in former German South-West Africa try to achieve the expression of the after-birth by uniform claspings of the uterus with the palms of the hands.

In Jaffa, according to Tobler,¹ a glass of brandy is given to the mother after the birth of the child, and then the placenta is expressed by the midwives by energetic pressure on the navel.

In Cochin China among the Annamites the midwife removes the after-birth by holding fast to a rafter with her hands and treading the patient's abdomen in the region of the navel with her feet in order to press the uterus and express the after-birth from it. She repeats this process, placing her feet gradually nearer and nearer the symphysis so that by the ever-advancing pressure the placenta is gradually pressed out. Then the midwife comes down and tries to remove with her hands any remains which may be present in the vagina; but she repeats the pressure with her feet so long as she thinks it of use and guesses that there are still remains in the uterus. Mondière, who records this (p. 41) adds:

"Ces pressions faites avec le pied m'ont paru excessivement pénibles pour la femme."

Among the Burmese women a similar procedure is followed in difficult cases. But first an attempt is made to attain their object by striking the abdomen.

On Savage Island the midwife tries to hasten the retarded expulsion of the after-birth by treading on the abdomen of the patient (Thomson⁵).

Pressing and kneading the abdomen is also customary with many Indian tribes, as for example, the Hunkpapa, Yanktonai and Blackfoot Indians (Sioux). When the continual pressure from above does not attain the desired object the abdomen is manipulated with the closed fists. Likewise, among the Kutenai Indians the abdomen of the young mother is kneaded to bring about the expulsion of the after-birth. Among the Brulé, Waglukhe, Oglala, Wazhazha and several other Sioux tribes the expulsion of the placenta is often promoted immediately after the birth of the child by gradually tightening a wide leathern girdle, which is put round the abdomen as soon as the child has appeared. D. D. Taylor records of a Sioux woman delivered by him:

"Hardly had I divided the umbilical cord when she got upright on her feet, put a leather girdle 5 in. wide round her hips and abdomen and drew it together with all her strength; meanwhile bleeding was very profuse; yet after a short time the placenta fell to the ground, the hæmorrhage ceased, the uterus was firmly contracted and the woman sat down quietly as if nothing unusual had happened. The girdle was not taken off till the following morning" (see Engelmann,² p. 164).

In the Uintah Valley Reservation, as soon as the child is born in the kneeling position usual there, the mother gets on her feet and puts a folded towel on her abdomen; then she leans over a thick stick and presses her body against it; thus

she exerts considerable pressure on the lower abdominal region, and by this method effects, without any assistance, the expulsion of the placenta (see Fig. 775).

The Makah women are delivered without help in the sitting position. But when the child is born an old woman appears who has had experience, and she tries to bring about the expulsion of the placenta by pressing and kneading the abdomen.

The Brulé and the Warm Spring Indians also stay in the upright position in which they were delivered. The woman helper standing behind them, helps to remove the after-birth, pressing the *fundus uteri* from the outside with her hands and combining this pressure with a kind of shaking movement. The Chippewa Indians also make use of such external manipulations.

The Indian women in Laguna Pueblo obtain the required pressure on the



FIG. 775.—The usual method of expelling the placenta in Uintahtale.
(After Engelmann.)

abdomen which is to expel the after-birth by packing hot stones on it. Hot towels are also put on, and the woman has to drink an infusion of cornflowers. Besides this, however, the abdomen is also rubbed with the hands.

The Paiute, the Navaho and the Apache Indians perform the rubbing of the abdomen not as actual kneading, but more in the form of anointing. For this they use certain fats and special decoctions of herbs.

We find repeatedly also that women combine pulling at the umbilical cord with massage of the abdomen. Among the Pacific Indian women the medicine man who assists pulls gently but fairly firmly at the umbilical cord with one hand and presses the body of the patient with the other. At the same time, if it is thought necessary, a woman assistant presses the abdomen gently by putting both hands over it with fingers outspread.

Likewise, among the Indians of the Skokomish Reservation pressure is exerted

on the region of the uterus, and a gentle pull is given to the umbilical cord in order to accelerate the expulsion of the placenta.

The Gros Ventre and Mandan Indian women are delivered in a kneeling position, in which the placenta is also expelled, but, if it does not appear quickly, the accoucheur pulls gently and constantly at the umbilical cord while at the same time he gently and softly rubs the abdomen with hands smeared with tortoise fat.

The Cattaraugus women get on their feet immediately after the birth of the child. Then, if the placenta does not immediately come away the umbilical cord is pulled, and at the same time pressure is exerted on the abdomen from above, while the patient retains her upright position.

The Comanche try in a simple manner to remove the placenta by slight pulling at the umbilical cord, and at the same time exerting pressure on the abdomen from above downwards; but they also make efforts to reach the placenta with the hand, in which efforts both the patient and the woman assistant take part.



FIG. 776.—A labour scene among the Pawnee Indians. (After Engelmann.)

The Cheyenne only take to massage of the abdomen if the pull at the umbilical cord is unsuccessful. The Chippewa Indians reverse the procedure: they pull the placenta out if their external manipulations have not had the desired effect.

7. INTERNAL MANIPULATIONS FOR PLACENTAL DELIVERY

We have at hand some reports which show that among savage peoples in certain circumstances internal manipulations are performed in order to remove the retained placenta from the uterus. And though these reports are few, they have for us an importance not to be undervalued.

Thus the Papago Indians appeared to remove the placenta by inserting the hand if it were not expelled quickly enough by the forces of nature.

The Kutenai woman kneels while being delivered, and the women helpers meanwhile knead her abdomen downwards and continue this after the expulsion of the child in order to express the placenta. But if it is not removed by this means, then they insert the hand into the vagina and thus remove the placenta. They give the

patients an unknown root to stop the hæmorrhage. This, in their opinion, however, should not at once stop entirely ; therefore, they regulate the dose of the specific in such a way that after half an hour a second dose has to be taken by the patient. Likewise, among the lower classes in Mexico there are people who, in case of need, remove the placenta by inserting the hand.

The midwives in India are said even to resort to the help of instruments, and to try to get out the after-birth in certain circumstances with a sickle.

In Ceylon, according to P. P. King, the midwives remove the after-birth immediately after the child is born, and it is reported of the non-Mohammedans in Celebes that the placenta is removed by a priestess. But as to whether this is done by inserting the hand or with instruments, or in some other way, we have no precise information.

We have to thank Blyth for the following report about the Fiji islanders. The umbilical cord is not separated till after the placenta is expelled, which generally takes place along with the child or soon after. In retention of the placenta, the umbilical cord is put on the patient's ankle so that it may not slip back up into the abdomen. Then the midwife introduces her hand into the vulva in order to remove the placenta. If she experiences any difficulty in this, however, she declares that there is an adhesion and administers an infusion of the *ndanindnani*, which grows commonly in Fiji. This is said to help in a few minutes, and now the midwife again introduces her hand into the vulva and removes the after-birth. Blyth continues :

“ There is no question here of a forcible separation of the after-birth with the hand, and there is no doubt that what the Fiji midwives call adhesion is simply a case of retention or of retarded separation from the uterine wall.”

Lübbert makes an astonishing report of the treatment of the after-birth by the natives of former German South-West Africa. When the expedients stated earlier do not help them, “ finally the finger nails are carefully cut and then the hand, washed and greased, is introduced into the uterus to separate the after-birth. All this is done with a certain professional knowledge and a careful examination of the placenta is made. At any rate, they go on seeking until the placenta is assembled and also all the membranes as far as possible are in place. The rupture in the membrane is thoroughly examined and the whole sac reconstructed as far as possible.”

Among the Swahili, on the other hand, according to H. Krauss,² the midwife must refrain from any internal manipulation ; if the placenta does not come to light of itself, the woman is left to die without help.

8. THE EXPULSION OF THE PLACENTA AMONG THE JAPANESE

The Japanese certainly deserve that we should consider their procedure in ridding the mother of the after-birth in a special section.

The Japanese woman, as was already recorded on page 698, is usually delivered in a kneeling position, while her back is supported by mattresses. When the child is born the midwife puts two loops on the umbilical cord and knots them. Between the two knots she cuts the cord and awaits the expulsion of the placenta. If this is long delayed, she exerts pressure on the abdomen and while doing so, pulls at the cord.

The obstetrician Kangawa observes with regard to the placenta that if it is retained in the uterus for two or three days it passes off when decayed. Previous

to this there was little danger ; but if this trouble appears, then the after-birth must be extracted by appropriate manipulation. If the patient should now get giddy the chances that she will die are about even. The giddiness must first be cured before trying to remove the placenta. If the giddiness lasts for four hours then the fatal issue is unavoidable.

Now Kangawa gives the following instructions :

“ To remove the placenta, the doctor must knead the back as well as the abdomen, for in kneading the abdomen the placenta contracts and can make such strong contractions that the severed end of the umbilical cord may go back into the uterus. The reason the placenta is retained in the uterus is that it occupies the highest place and therefore people must not knead uselessly or it may not be got out at all. The ordinary doctor says that the placenta increases the influx of the blood and by this its expulsion may be hindered. This, however, is false ; for the placenta, on the contrary, contracts in the uterus and has not reason for increasing ; the disturbance comes rather from the abdominal binder being too tight ; therefore, the abdominal binder should be forbidden after the birth of the child. Another reason the placenta is not expelled for two or three days may be that the woman was weak beforehand and weakness has been further increased by parturition ; in such a case, if the placenta is extracted carelessly, the woman dies. On the contrary, she should be left lying still on her back on high pillows and the doctor should feel below the navel for the pulsation of the vessels ; if this is weak, then the extraction of the placenta should not be attempted, but the patient should be given *Pupalia geniculata* or *Aconitum variegatum* ; then after two hours the pulsation will be stronger and the extraction can be attempted. In the same way, after an artificial birth, one should wait a little before extracting the placenta, otherwise the maternal vapour will be ruined (*i.e.*, the mother's strength will be too much exhausted). Great care must be taken in the removal of nasty liquid [the lochia] otherwise great harm might ensue.”

We learn through Kangawa also what causes he thinks produce a retention of the placenta :

“ There are two cases in which the placenta is expelled with difficulty : (1) If the woman is very weak, her strength is exhausted in labour and does not revive again to expel the placenta ; (2) When the woman has previously been healthy but her strength is exhausted by a difficult artificial birth. If the doctor is called in to such a case, he has to feel the pulse ; if it is weak and slight, the after-birth must not be extracted at once ; *Panax Ginseng* or aconite must first be administered and not till the pulse has become stronger should the placenta be extracted, otherwise the patient will certainly be lost.”

It is to be regretted that Kangawa maintains that the method which he uses is so difficult that he is unable to describe it either orally or in writing. He is extremely sorry, as not less than 40 % or 50 % of women die from retention of the placenta. He will, however, show his pupils how he does the manipulation, and he urges them not to forget his manipulations.

It may be supposed that Kangawa acts so secretly with well-calculated purpose. Probably he wanted to hand down his secret only to the little circle of his sons and pupils in order to ensure them greater receipts.

In what way Japanese doctors separate the placenta is illustrated in the twelve-volume work of Mitzuhara ; this book was printed in the year 1849, and Scheube reports that it states that after the expulsion of the child the abdomen is rubbed to promote the expulsion of the placenta ; if the midwife is not successful in this, then the obstetrician, who till now, if one has been present at all, has played the part of mere spectator, comes into action and rubs the abdomen with one hand while he pulls at the umbilical cord with the other. If the placenta still does not appear, then it is extracted with a special forceps or with a fish-bone fillet (see Fig. 737A).

9. THE EXPULSION AND REMOVAL OF THE PLACENTA AMONG THE GREEKS AND ROMANS

We shall now turn to the peoples of ancient civilisations to see how they, with an already well-developed science of obstetrics, proceeded in the third stage of labour. We find with them, too, many measures were in use which would not be approved by us nowadays.

Hippocrates and his successors thought it necessary to use various expedients in cases of retention of the placenta ; but their indications for treatment are quite different from those discussed in the foregoing sections. They did not separate the umbilical cord until the placenta was expelled spontaneously or with artificial aid ; therefore they preferred the use of expedients which would give rise to its early expulsion, so that the division of the cord could be effected as quickly as possible. Probably in this there was far more consideration for the new-born babe than for the young mother. Thus from early times the custom of extracting the after-birth very quickly was adopted. Hippocrates, in doing this, had the mother sit on the *lasanum*, or, if she could not do this, on a *sella recubitoria perforata*, that is, on a parturition chair with sloping back and a section cut out of the chair for the genitals. Only when the weakness of the patient forbade sitting did he recommend a bed raised very high at the head.

In retarded expulsions he used an errhine, *i.e.*, a *sternutament* (*Aphor.*, V., 49) or he hung a weight on the navel cord, gave irritant drugs like cantharides, applied *pessi emmenagogi*, administered the powder from a withered placenta, the testicles of a horse, the urine of the patient's own husband, asses' hoofs, the tongue of a chameleon, the head of a cock, etc. Also Lybian *sylphium*, that famous and mysterious remedy and spice of the ancients, was recommended as a specific for promoting the expulsion of the after-birth ; a decoction of the seeds half a date in quantity was boiled in wine and drunk. For the same purpose was used the sap of which a quantity the size of a bean was dissolved in water. Further, in the book "on the diseases of girls" (*De his qua: ad virgines spectant*), is recommended for the expulsion of the after-birth, seed of the yellow violet and of purslane (*ἀνδράχνη*) ground and mixed with wine. He also recommends quite a special specific for the gentle and gradual removal of the after-birth. The child is to be laid in front of the mother on skin bags filled with water, and these are to be punctured. Now, while they are becoming empty and sink with the child, the after-birth will be drawn out by the weight of the child still connected by the umbilical cord (*De superfoet.*, III.). Hippocrates, however, was often obliged to let the after-birth stay when its expulsion was too long delayed, for he speaks of its being separated by decay and passing away in the sixth or seventh day (*De morb. mul.*, Lib. I.)

We learn from Soranus that many expedients for promoting the expulsion of the after-birth were advised by many writers on obstetrics.

Eurypho recommended diuretics (dittany, sage) *pessi haemagogi* of soapwort, *Iris Illyrica* and cantharides as well as shaking the body. Others use fomentations of tar, human hair, deer horn, galbanum, artemisia ; Strato had a mixture of nard, cassia, horehound, artemisia, dittany, lilies, roses, etc., heated in a vessel, and the vapours from this directed through a tube to the genitals. Mantias left the child lying between its mother's thighs and by its weight and movements the placenta was drawn out of the womb (*cf.* Soranus, I., 22, 71).

It was a rule with the Romans not to divide the umbilical cord immediately after the birth of the child, but only after the extraction of the after-birth. Celsus (Lib. VII., 29) directed the doctor to pull the cord gently and with the right hand advance along it to its source in the placenta and now while pulling the outer end,

he separates all the vessels and membranes from the uterus with the hand and thus extracts it altogether.

Soranus (*cf.* Pinoff, p. 98), on the other hand, prescribes that the child be held with one hand while the other, by gently pulling at the navel cord, separates the placenta. If the removal of the placenta is not achieved in this way the cord is to be divided, then the hand, smeared with oil, is to be introduced into the *orificium uteri* and the placenta extracted in this way. If there is adhesion then, without using force, the hand introduced is to turn gradually now this way now that, and then separate the placenta by a strong pull. The placenta must not be directly pulled out in order to prevent a prolapse of the uterus. If the orifice is found to be closed, then injections, when necessary, also warm poultices and inunctions, in difficult cases, of snuff and pepper, also fumigations with cassia, nard, artemisia, iris, savin, dittany, etc., are used. But if these specifics are unsuccessful, the after-birth must be left till it separates by decay.

Almost the same procedure is to be found in Aëtius and Moschion.

The Arab Avicenna (*Lib. can.*, 16) considers that the same procedure is not appropriate in all cases. According to circumstances, the placenta is sometimes to be removed at once, sometimes its expulsion is to be left to nature ; also the separation of the placenta is to be attempted by means of injections.

The medical Talmudists, according to Israels,¹ either knew nothing about the separation of the placenta or they objected to any artificial interference. However, they tell of cases where the placenta was retained for 10 and even 20 days after the birth of the child. Kotelmann¹ (p. 43), on the other hand, is of opinion that the removal of the placenta was effected by manual aid, as expressions for this are used in the Talmud which indicate a "drawing forth." He also concluded from it that the placenta is called the "after-birth which comes forth between the thighs," because the Jews divided the umbilical cord before the expulsion of the after-birth.

10. THE EXPULSION AND REMOVAL OF THE PLACENTA IN MODERN CIVILISATION

To bring our observations to a conclusion we must consider the civilised nations of the present day and to see through what phases of development modern views have had to pass.

As specifics for promoting the expulsion of the after-birth, Albertus Magnus in the thirteenth century recommended garlic soaked in wine to be rubbed on the abdomen and a steam bath of hens' feathers for the genitals ; arnica root with wine and powdered carline thistle in rain-water were given internally ; also yellow violets boiled in water, cinnamon bark in water, the juice of the plaintain and powdered agate were greatly esteemed as drinks, and pennyroyal with food.

Eucharius Rösslin states that, as a rule, the afterbirth is expelled without specially skilled help. The sixth chapter says how the placenta is to be brought out of a woman if it will not come of itself with the birth of the child. He states : " At times comes the after-birth with the child, also at times it remains behind." The latter is the case, according to him, when the mother is ill or too weak to be able to press out the after-birth or when the after-birth " is joined and fixed fast to the womb " ; also when the water has flowed out of the uterus or the outlet from it " is narrow and swollen because of the pains." In these cases the midwife must remove the after-birth or else the mother will fall ill, because if it is retained it rots quickly. Later certainly Rösslin advises when the methods used by him are of no avail not to worry much

about its retention, "for in a few days it dissolves and goes away." In retention of the after-birth due to uterine occlusion, oil and dripping are to be rubbed in internally; in narrowing of the uterus, they are to drink juniper berries and galbanum in wine; in adhesion of the after-birth, fumigations are to be done with various balsamic aromatic or nasty-smelling substances, *e.g.*, with asafetida, castoreum, human hair, donkey's hoofs; then the patient must also hold her breath and take sternutaments of hellebore root and pepper. Then Rösslin also gives instructions for the manipulations for extracting the after-birth: "The midwife shall pull gently round about it that it does not break off. And if she is afraid that it will break, the midwife, when she has firm hold of it, will tie it up on the woman's leg not too tight and not too loose so that it does not break or slip. . . . And if it is fixed fast in the womb, in which there is great pain to the woman she shall not pull it hard so that the womb does not come down. But she shall pull it sideways or pull it from one side to the other, now a little this way, then a little that, till it is well separated."

The method according to which Madame Bourgeois gives instructions for the after-birth to be removed is as follows:

"After the child is born, it is to be well wrapped up and laid down (thus the umbilical cord is *not* to be ligatured and divided); then the abdomen of the mother is to be felt and thus to be determined on which side the after-birth lies; on this side, one must hold a hand or order an experienced woman to put her hand there; now if as usually happens, the after-birth should be set fast in the side, then it is to be gently guided and pushed by the hand to the middle of the abdomen whilst the cord is held in the other hand." To help the expulsion of the placenta, Bourgeois makes the patient blow into her hand, or she puts her finger down the woman's throat to induce vomiting, or she orders the woman to press down as though she were going to stool. Should all this not soon have the desired effect, then she gives the patient a raw egg to eat to cause vomiting. If this is no use, then the woman must get a tincture of elder flowers and breathe in vapour of asafetida, or castoreum burnt on coal. With such expedients, she has attained her object with more than 2000 women and has only in two cases been obliged to extract the after-birth by the introduction of the hand."

Whilst in olden times, in retention of the placenta, waiting was advised, a procedure followed even by the doctors up to the sixteenth century, Ambroise Paré, Rodericus a Castro and Scipione Mercurio recommended the extraction of the placenta before the division of the umbilical cord. Also, in the seventeenth century, Mauriceau, Deventer, and others continued with the last procedure. When they did not attain their object with a pull at the cord, then they inserted their hand. In very firm adhesion, however, the Parisian doctor Mauriceau, who practised from 1660-1709, preferred leaving behind a piece of placenta.

A fresh stage in the history of obstetrics began with the theory propounded by the worthy Dutch anatomist Ruysch. He believed he had discovered a special muscle in the uterine fundus the function of which was to expel the placenta after the birth of the child. To this he added the teaching that the placenta should never be removed artificially, as by such manipulation, prolapse and inversion of the uterus tended to arise.

From the beginning of the eighteenth century to the beginning of the nineteenth there existed two parties: one wanted an active, the other a waiting procedure.

De la Motte, the elder Fried, Giffard, Smellie, Mursinna, and others, if the placenta did not follow the pull at the umbilical cord, at once introduced the hand, sometimes before the division of the cord.

Others, like Ruysch, Pasta, Crantz, Plenck, Aepli, Osborne, Saxtorph, on the other hand, kept passive. It was due to these last that the drawbacks of a forcible procedure were placed in the right light, that the causes of retention were traced,

and that the physiological process in cases of very much retarded expulsion of the after-birth was described.

At the beginning of the nineteenth century opinion was still very much divided. Boer, v. Siebold, Froriep tried, like Wiegand, to avoid as much as possible extraction by hand. Osiander, Kilian, Hohl, Boivin, Dubois, as well as the Obstetric Society of Berlin, fixed the period of indication of extraction at one to three hours. The methods now in use need not be gone into here ; they belong to the technical literature of medicine, not to that of anthropology.

11. THE REMOVAL OF THE PLACENTA IN POPULAR MIDWIFERY IN EUROPE

It would be making a great mistake to assume that the methods established by scientific experience as regards the removal of the placenta have already gained a firm footing in all classes in modern civilised nations. Even in Germany many methods of removing the after-birth may be encountered which differ little or not at all from those among uncivilised peoples about which we have heard in the foregoing sections. We shall cite a few examples here.

In Styria, when the placenta does not emerge quickly enough, the midwife rubs the abdomen with alcohol. Of course, contractions of the uterus are set up in this way. If this procedure does not act quickly enough the midwife, according to Fossel, feels called upon to put her hand into the vagina and separate the after-birth herself. In doing so she often leaves fragments of the placenta behind, and these then cause acute inflammatory processes which endanger the lives of the patients.

In the Palatinate if the placenta is too slow in coming many midwives make the patient cough or breathe into the hand ; others, on the other hand, merely rub the abdomen gently after first having sprinkled a kind of balm on it (Pauli, p. 100). To make the expulsion of the after-birth easier the mother in Saxon Transylvania is made to blow as hard as she can into a glass, or she has to press her left side, or the midwife rubs the patient's abdomen with a brush (Hillner).

From Greece, Damian Georg reports that there the midwives of the rural population remove the after-birth by pressure on the abdomen. If this pressure is not successful they try to induce retching by putting a finger or the patient's own pigtail of hair into her mouth. They also make her blow into an empty bottle to produce by this means intra-abdominal pressure, as a result of the contractions of the diaphragm. According to Stern,² "the newly delivered mother is raised high up several times and then let fall again with violence."

In Serbia the patient gets a wineglassful of oil to drink immediately after the birth of the child ; this is supposed to accelerate the separation of the after-birth (Petrowitsch).

Of the Mohammedan women in Bosnia and Herzegovina, Glück reports :

"When the child is at last born, the umbilical cord divided and the child washed and the placenta is not at once expelled, the mother is given a bowl of oil to drink, or she is made to blow into a bottle : if that is of no use, then the abdomen is massaged or the patient is bathed."

In the Province of Perm the patient, as Demič states, when the after-birth is delayed, is given an infusion of *Juncus filiformis* L. to drink ; in Little Russia they apply poultices of *Asara Bacca* (*Asarum Europaeum* Linn.). In the Province of Tomsk they use as internal specific the ground seed of *Lithospermium arvense* Linn

and *officinale* Linn. In another district two small glasses of freshly pressed-out horse dung are given to the patient to drink. So here, again, we have the treatment by producing nausea. In other districts, according to Demič, they try warm baths and injections. The extraction of the after-birth with the hand is carried out only in the rarest cases and along with it the uterus is massaged through the abdominal wall.

In other parts of Russia they tie all kinds of objects to the end of the umbilical cord hanging from the placenta : a spoon, a shoe or even a brick, and make the mother walk about with it. The after-birth is supposed to be drawn out by the weight of these things.

Alksnis reports of the Letts that in order that " the placenta may separate more quickly, they make the patient blow into an empty bottle, they make her cough, or they press slightly on the fundus uteri. Besides these methods, the navel cord is often pulled. In these cases where the placenta does not separate quickly, it is also separated by untrained midwives who insert the hand into the uterus. How often infection is caused by this operation is another question. There may be very serious consequences to the woman (said his informant) if a piece of the placenta is left attached to the uterus. Yet cases have also been observed where the placenta has been left so long in the uterus that it had begun to decay."

In the Caucasus, in retention of the placenta, one of the women present sits down on the mother's abdomen and by bobbing up and down exerts a strong pressure on the abdomen and uterus, and thus tries to press out the placenta.

CHAPTER XXXIX

THE PLACENTA IN ETHNOGRAPHY

1. CONCEPTION OF THE AFTER-BIRTH

WE must now call to mind a conception common all over the world. This is the idea that the placenta, when it has left the uterus, but is not yet completely expelled, can of itself slip back or ascend into the uterine cavity (*cf.* I., 387, etc.). Allied to this is the fact so often reported that when the umbilical cord is divided the placental end has to be fastened to the patient's thigh. Thus Rösslin gives the advice :

“ And now if the placenta is delayed and not expelled, you must not stretch or pull, but tie it up on one leg so that it does not go up again.”

In Herlicius there is similar advice :

“ Then when by the grace of God, the child is born, the midwife shall separate the umbilical cord, tie the placental end of the cord three fingers' breadth from the abdomen to the woman's thigh so that it may not go back of itself and then stay in the woman which, because of the corruption and decay, the woman would naturally like to bring out, inasmuch as a very bad smell results from this which is offensive to the head and heart.”

The procedure of Welsch is analogous. He also advises that the placental end of the cord be tied to the patient's leg or held by one of the women, helping “ so that the after-birth may not slip into the womb.”

Although Mauriceau did not believe in this slipping back into the uterus, he could not get quite away from the traditional method. He gives the advice :

“ And fasten the other end with a string to the Woman's thigh, not so much for fear that the string should enter again into the Womb, as to prevent the inconvenience it may cause to the Woman by hanging between her Thighs ” (H. Chamberlen's translation, pp. 188 ff.)

Ideas like these, which used to prevail in Europe, we find again also among other peoples. Mimazunza says of the Japanese that the cord, after separation, is tied by a ribbon to the patient's hips so that the placenta may not go back, while the woman is being given a little rest. According to Kangawa this was the custom in Japan until his time, “ that the old woman who was helping at the confinement divided the umbilical cord after the birth of the child and left it hanging for some time weighted with some object so that it could not go back.”

Kangawa, however, says in his book *San-ron*, that this is not necessary, for, since the umbilical cord has no reason for going up, there is no need to prevent it.

Among the Flathead, Kutenai, Crow and Creek Indians in North America, immediately after the separation of the umbilical cord the mother grasps the placental end of the cord in her hand and carefully holds it fast so that it may not slip back into the uterus.

The Clatsop put a bandage round the patient's abdomen immediately after the birth of the child “ to prevent the placenta from going back into the body.”

Also, among the Fiji Island women we have seen from a report by Blyth that their midwives, after the separation of the umbilical cord has taken place, tie part of the cord hanging down from the mother's body to her thigh for fear that it might slip back into the uterus.

It may also be mentioned that the Karo-Battak in Sumatra seem to imagine the *liquor amnii* a living being (*cf.* I., 386, etc.). According to Neumann it is called *Sudara*, and he records: "The *Sudara* always walks behind the human being."

The Maori in New Zealand regard the meconium as the remains of the food consumed by the mother; sometimes, however, the presence of much meconium is explained in another "natural" way; they then doubt the mother's virtue (Goldie).

2. DIVISION AND LIGATURE OF THE UMBILICAL CORD IN POPULAR BELIEF

The organic formations by which the new-born child was connected with the maternal organism and which on its complete development to an independent individual are no longer necessary to the continuance of its life have, in popular belief, a mystic significance for the whole of the rest of the child's life. They are regarded as symbols for the guarantee of a lasting good fortune, as well as a protective talisman in danger, and in this connection they are highly esteemed and valued. The most striking thing here is that superstition in regard to this is diffused over almost the whole world. It appears nearly everywhere and here and there assumes a special form which, however, is merely a variation of one and the same theme. Ploss has already given a survey of this interesting branch of superstition in his book: "Das Kind in Brauch und Sitte der Völker."

Mystical ideas sometimes appear even in the separation of the umbilical cord, when we see that this must only be done in a certain prescribed way, or that it is the representatives of the godhead, priests or priestesses who have to divide the umbilical cord. Thus Moerenhout reports from Tahiti:

"After the woman is delivered and with her child has taken a bath as hot as possible and then cooled down in a cold bath, she betakes herself with her child to the *Maræ* (sacred place) where, after a sacrifice, the priest cuts off the umbilical cord to about 10 in. from the child and the cord is then buried in the *Maræ*."

Also among the non-Mohammedans on Celebes, according to Dietrich the ligature and division of the umbilical cord is done by a priest.

From the standpoint of national psychology it is of outstanding interest that among many peoples we can give evidence of special rules as to the kind of instruments with which alone the division of the umbilical cord and the separation of the new-born child from the after-birth must be done. If the material from which these cutting tools are made does not correspond with the stage of civilisation which we find among the people in question, then we shall probably not be mistaken if we try to recognise in this a survival from primitive conditions.

We have already seen, for example, what a prominent part the knife made from bamboo cane played in the separation of the umbilical cord in the whole Indian Archipelago, and yet many of the tribes among whom we find this bamboo knife were quite in a position to use cutting tools made of metal for this purpose. Also among the curly-haired dwarf tribe, the Kanikar, in the forests of Southern India, Jagor⁶ (p. 78) found the bamboo knife used for this purpose. In this tribe

the umbilical cord is never divided with any other instrument than one of these cane knives, and, on the other hand, these knives are never used for any other purpose. These are reproduced in Fig. 777 from the examples to be found in the Ethnological Museum in Berlin. Here must be borne in mind what Stevens reports above of the uncivilised tribes of Malacca.

In Achin the separation of the umbilical cord is likewise done with a splinter of bamboo. If the parents want the young one to have a fine voice later, then this splinter of bamboo must be cut from a bamboo flute (Jacobs ²).

In this connection a statement of Schomburgk ² (I., 166) about the Macusi Indians in British Guiana is very interesting. Here the business of dividing the umbilical cord devolves upon the mother or sister of the woman in childbed, and there is a difference in the instruments used according as the new-born babe is a boy or a girl. If it is a boy a piece of sharp-cut bamboo cane is taken for the division of the cord ; if, however, a girl is born the cord must be divided with a piece of *Gynerium saccharoides*, Humb. and Bonpl. (2). In both cases the ligature is then made afterwards with a cotton thread.

According to the statements of the Japanese Mimazumza, people in his native country do not use iron to divide the umbilical cord because it is popularly supposed to have a harmful effect on the wounds. They use sharp objects of bamboo, spines of the orange tree and bits of porcelain ; among the upper classes, however, knives of gold and silver are used ; only the obstetricians use the ordinary knife.

It has already been mentioned that the Japanese do not speak of "cutting," but euphemistically "joining" the umbilical cord, as otherwise it brings the child ill-luck.

In Herzegovina and among the Bosnians, as Glück reports, the umbilical cord is never cut with scissors, because they fear that otherwise the following child will be a girl. To avoid this evil a knife or sickle is used.

Among the New Zealanders the dividing of the umbilical cord, as Hooker and others bear witness, has deeper associations. Bastian ⁵ gave details of the same thing in Oceania. For instance, if this process took place on a stone, then it signified that the future man as a fighter was to have a heart of stone ; if it was done on a club it signified courage in warfare ; at this ceremony the priest held the umbilical cord in his hand and said the invocation over it. On the other hand, in Samoa, the umbilical cord of a girl was divided on a cloth support.

Armenian women put a piece of bread or a coin under the cord when it is being divided ; certain Kurdish women, on the other hand, put a piece of dried cow-dung. This is done so that the child may all its life be accompanied by good fortune. (Oganisjanz).

On the Islands of Leti, Moa and Lakor, when the umbilical cord is divided, the grandfather or grandmother must whisper a name. Then if the navel wound does not bleed this name is chosen for the child, but if hæmorrhage sets in, it must be given another name (Riedel ⁷).

Among the Sulanese, according to Riedel, immediately before the dividing of the umbilical cord, the midwife asks the new-born babe the question : " Willst thou be called so ? " giving a male or female name according to the sex of the child.

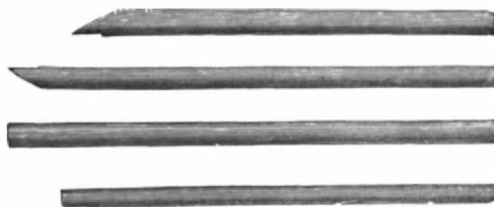


FIG. 777.—Bamboo knives used by the Kanikar (S. India) only for dividing the umbilical cord. (Photo : M. Bartels.)

Then if the child makes a sound that is taken as agreement and the child keeps this name ; but if it keeps quiet then another name is sought.

We must, too, presuppose the existence of mystical ideas when we hear of the following method of treating the umbilical cord customary on the Aru Islands. Here the young mother has to let fall a few drops of milk on the wound every day.

Among the Agar the umbilical cord is divided with seven sharp blades of straw, and then a few drops of the blood which flows are sprinkled on the mother's tongue so that in case the mother should in quarrels use wicked words to her child these may be intercepted by its own blood ; the father, on the other hand, may curse the children in anger ; his words, in the opinion of these people, have no power (Emin Pasha ⁴). Here we find the umbilical cord brought into a mystical connection in quarrels between mother and child ; later, among Asiatic peoples, as well as in Europe, we meet with an association of the remains of the umbilical cords with legal disputes.

The material used for tying the umbilical cord also is sometimes subjected to ritual rules.

In Jerusalem, as Ploss learnt from the Prussian Consul Rosen, the midwives do not ligature the umbilical cord till after the placenta has appeared. They leave three fingers' breadth of the cord on the child, wrap the end in cotton wool and tie a thread round it. It must not be without cotton ; they take for this purpose a cotton and a yarn thread together and tie both round the wadding which is wrapped round the cord ; then the cord is cut and burnt with a candle to prevent hæmorrhage (*cf.* II., 766).

Certain positions of the umbilical cord have likewise their important mystic signification. Thus it is considered ominous if the cord has got round the neck, the buttocks or one of the extremities of the child like a sling. Among the Igorrotes (in Luzon, Philippines) a new-born child with the cord slung round it is buried at once as the belief prevails that such a being would, in later years, make an attempt on the parents' lives (H. Meyer ²). In the chapters dealing with pregnancy we have already learnt of all kinds of measures for protecting the embryo from this danger.

In the Frankenwald the superstition is still prevalent that many knots in the umbilical cord signify many children and that it must not be cut off too short, but long enough so that women may not be stiff-necked or short of breath (Flügel).

It was mentioned on p. 799 that the bamboo knives with which the Kanikar in South India separate the umbilical cord must never be used for any other purpose. In the district of Kroë in Sumatra, according to Helfrich, the bamboo knife involved is packed up with the placenta and cleared away with it, as we shall see later.

Among the Sulanese, when the midwife has buried the after-birth and bathed the patient she then declares who the father of the child is. He or one of his male kin must then fasten the bamboo cane with which the umbilical cord was divided on a bamboo spear as is usual for spearing the shark. This spear the man sticks in a kalapa, darian or sago tree, and by this ceremony the child is recognised by the father in the presence of his fellow villagers. The tree remains the property of the child (Riedel ¹⁰).

3. THE UMBILICAL CORD AND THE STUMP IN FOLKLORE

Very special interest is attached to the stump of the umbilical cord, *i.e.*, to that piece of the cord which is left behind on the child's body, soon shrivels and withers there and generally falls off of itself about the fifth day. It is then, in most cases,

wrapped up in a special way and most carefully preserved. It is an effective amulet in war and on journeys ; it preserves life, wards off diseases and when administered as a medicine in powdered form, cures them. It ensures a favourable issue in legal disputes and strengthens the brain. Only with a few natives are these reliquiæ of the womb regarded with such indifference that they are simply thrown away.

On Leti, Moa and Lakor only in the case of boys is the stump of the cord preserved ; that of the girls is thrown away.

The inhabitants of Cape King William (Mandated New Guinea) twist the withered stump into the edge of the net in which the new-born child lies. If the child is of the male sex it is removed from the net when the child begins to walk and shot at a tree with an arrow ; by this means the child is made capable of climbing trees ; if this is not done then the man will merely be a " dweller on the ground " because his inside becomes too heavy (the missionary Stolz in Neuhaus²).

Among the Sulanese the withered stump of the umbilical cord is kept in a basket to be worn by the boy on his neck or belly when he is grown up ; that of girls is buried at once.

In Achin it is hung up in the kitchen to dry and if the child should fall ill, usually the first thing done is to soften the stump in water and give this water to the child as a medicine. It is also used as an eye-wash and for fomentations in wounds and ulcers. Afterwards the stump is dried again. Some also have the child wear it as an amulet, but in general little value is put on this (Jacobs²).

On Seru they bury it on the hearth.

It is intentionally destroyed by the Bafioté negresses of the Loango Coast ; they throw it into the fire to burn it, for " if the rats devour it the child will grow up a very bad man " (Pechuel-Loesche,¹ p. 30).

In Liberia, according to Büttikofer, the withered stump of the umbilical cord is often wrapped in a piece of linen to be hung on the child's neck as a talisman.

The Swahili bury the stump of the umbilical cord and with it some of the child's hair (H. Krauss²).

In Uganda (Central Africa), the stump of the navel cord is carefully kept till the ceremonial name giving, which often does not take place for two years. It is used at this ceremony and, besides, serves as a kind of ordeal ; that is to say, it is put into a vessel containing a mixture of milk, beer and water ; if it floats the child is considered legitimate ; should it unfortunately sink then the child is regarded as the result of an act of adultery and the guilty mother is beaten. When the giving of the name is over the stump is handed to the mother and she now keeps it in the house or in the garden in a way which varies according to the sex of the child (Roscoe²).

Likewise among the Letts, according to Alksnis, the stump of the umbilical cord is carefully preserved, and if it is lost this is an unlucky omen for the child.

On the other hand, Scheube⁴ (p. 20) reports : " The withered stump of the umbilical cord is, among the Ainu, worn by the mother in a little bag on her breast all her life, and she takes it with her to the grave."

Landes writes of the Annamites :

" Quand le cordon ombilical tombe, on le conserve avec soin. Il sert à composer un remède contre la fièvre qui attendrait l'enfant dans ses premières années."

Among the Orang-Jakûn in Malacca, as Stevens was able to ascertain, the stump of the umbilical cord was fastened to one of the father's stone projectiles with which an enemy had once been killed. This was done, however, only when the

new-born child was a boy. Then the cord was soaked in sea-water and washed and then hung in the smoke to dry. When it was dry it was carefully kept with the stone till the boy was grown up. At his marriage it was handed over to him ; then he kept it carefully, for such a stone never misses its aim.

According to Grgjič-Bjelokosči, in many parts of Herzegovina the stump of the umbilical cord is put into the grave with a dead child.

The White Russians put the stump of the umbilical cord into the knot hole of an oak, saying : " Be strong like the oak and live as long as the oak tree stands."

Stern² records : " The umbilical cord occupies a great place in the superstition of the Oriental peoples. Among the Grecian Walachs the withered cord *afalos* (the ancient Greek *omphalos*) is carefully kept by the mother, especially protected from damp, as otherwise the child would suffer from colic. After a few years it is brought out and shown to the child so that everything it undertakes may succeed. People say of the very busy man : " He has seen his *afalos*." The mother, however, is careful not to show her child's *afalos* to other children. The mid-wives in Syria are careful not to cut the umbilical cord too close to the new-born child ; this caution ensures the child a beautiful voice. The stump of the cord must be salted ; they say, finally, if this is not done the child will have an unpleasant smell from its mouth.

Among the inhabitants of Doreh Bay, the stump of the umbilical cord used to be tied to a tree when the father was expected back from a long journey. If he found the stump on a shrivelled branch he knew that his child had died (v. Hasselt²). After the birth of the child in Kiriwina (South East New Guinea) the mother wears a grass mantle. Perhaps the placenta is carried in the basket on her head (Fig. 778).

FIG. 778.—Grass garment worn in Kiriwina (S.E. New Guinea) by mothers after the birth of children. (After Parkinson.)

With some peoples the umbilical cord is separated from the placenta and treated in a special way : Engelmann² (p. 49) writes that in Japan the cord is separated from the placenta, then wrapped in several sheets of white paper and finally in a sheet of paper which contains the full names of the parents. Packed like this it is put in the family archives. If a child dies the cord is buried with it ; if it attains maturity it wears the cord constantly and is finally buried with it. These conditions affecting the child rather than the mother cannot be gone into further here. However, a statement by Schiller about the ceremony of the ligature and division of the umbilical cord may be quoted :



“ Two little barrels called *oshioke* or *enaoke*, made of cedar wood with a diameter of 6, 7, 9 or 11 sun, decorated with cranes, turtles, pine and bamboo symbols signifying unalloyed happiness, and 12 bamboo knives are placed near the bed of the new-born child. The pieces of cord cut off are first put on three unglazed clay jars placed one on top of the other and then divided among the twelve little barrels and buried with rice, money, hemp and straw in the courtyard of the house in direction ‘*Jeni*.’ (The compass card is also divided into twelve parts and named according to the twelve signs of the zodiac.) ‘*Jeni*’ is N.N.W. The umbilical cord of the ruling emperor, of course, lies buried in the N.N.E. of the imperial palace at Kyoto in the park of the Shimogamo Temple under a grave stone.”

Among the Chinese, according to Katscher, the midwife lays the umbilical cord in an urn containing charcoal, which is carefully sealed and kept for ten years, then to be thrown away; yet it sometimes happens that the urn is kept for the whole life of the person concerned, and then goes into the grave with him. Should the child die soon after birth people are accustomed to set up the urn in a graveyard or on a hill in the neighbourhood. In many cases the umbilical cord is not put into an urn but baked and administered to the child as a powder for small-pox. A short time ago a doctor living in Sechuen wrote a treatise recommending this use of the umbilical cord.

In New Zealand, according to Goldie, people used to bury the umbilical cord in a sacred place; over it a young shoot was planted (*Myoporum laetum* Forst. f., *Corynocarpus laevigata* Forst., *Podocarpus dacrydioides* A. Rich.), the good growth of which indicated the prosperity of the children. The umbilical cord of the son of a chief was often buried under a boundary stone in order to maintain the ascendancy of the tribe to the boundaries. The cord is often placed in a tree; the place is then later called the *iho* of so and so. Since *iho* is used only for the part of the cord which is not attached either to the child or the placenta, M. Bartels concludes that in this case, therefore, the stump of the cord cannot be meant, but that obviously the umbilical cord is separated also from the placenta, and has separate treatment.

The women of Iceland can tell by the umbilical cord how many more children the woman will have. This is seen from the knots and, to be precise, the black knots indicate boys, the white knots girls (Max Bartels¹²).

According to Goldie, the Maori in New Zealand believe that many knots in the middle part of the cord signify that the next child will be a boy.

Among the Saxons in Transylvania the child, in order to be clever, must often look through the umbilical cord. To make this possible the midwife, when she has divided the cord, draws it over a bobbin and lets it dry on this. Powdered umbilical cord in water cures the child if it is ill (v. Wlislöcki⁵).

The gipsies have a belief that the witches make a long tube of umbilical cords which they roll up with a ball of thread and then throw it from a great distance on to sleeping people whose blood they suck through this tube.

The Jews in Hungary set traps with the umbilical cord of Christian children. It is said that they mix part of it, powdered, together with some of their own blood; this mixture is then blessed by the Rabbi and added to the food of Christian married couples in order to cause quarrelling and dissension between husband and wife and cause them to separate.

This belief reappears in a song of the South Hungarian gipsies :

“ My wife, God bless her
 Quarrels and rages day after day !
 To the Jews’ great joy—
 May no piece of navel cord
 Make us quarrel day after day !” (v. Wlislöcki⁴).

The Roumanians of Transylvania believe that the goddesses of fate weave a rope of fortune from umbilical cords. In a nursery rhyme it runs :

“ Hurrah ! Ye dear ones !
 We ride to our land
 Have a golden rope in our hands !
 Two women have made this
 Have woven it over night,
 From the navel cord soft and small
 They wove the rope so golden and fine, etc.” (v. Wislocki.⁵)

That the umbilical cord is also eaten for superstitious reasons we saw on p. 300. In Kamchatka women in childbed who wish to become pregnant again soon are said to eat of the umbilical cord of their new-born child (Krascheninnikow).

We must also recall a peculiarity to be found among the Bugi and Macassar in the south of Celebes. Here, in certain circumstances an artificial umbilical cord is made. It is three-quarters of a metre long and the thickness of a big thumb, and is made of a blue, a red and a white cord twisted together after the manner of a pigtail. From the middle hangs a little red canopy hung with gold spangles. An example of this is in the possession of the Ethnological Museum in Berlin.

In Macassar the people who wish to come under the influence of spirits sit under this canopy. This is the way they can become *Bissu*, i.e., witch priests or priestesses. This umbilical cord then plays a great part later in the feasts of the witch-priests : it is the symbol of the beginning of life. Among the *Bissu* of the Bugi it is hung on the bed at a particular place, which is called “ the bedchamber of the spirits.”

4. THE PLACENTA IN FOLKLORE

By means of what we have seen in earlier chapters, we have penetrated far enough into the ideas and feelings of the lower ranks of the population to be able to anticipate with certainty that a number of varied and strange customs will be attached also to the after-birth which has been expelled from the womb and separated from the body of the child. Also that the delays in the issue of the after-birth are among many peoples attributed to the influences of evil spirits and demons will seem to us easily explicable.

Thus, Demič reports of the Kirghiz that when the after-birth is too long delayed, they make efforts to banish the evil spirit which hinders its expulsion. For this purpose, they lead into the *kibitka* a horse with light eyes and touch the mother's breast with its muzzle, or they bring an owl in and make it utter a cry, as they think that the cry of this bird frightens away evil spirits ; or they cover the naked abdomen of the patient with a prickly bush to drive out the evil spirits by means of the pricks. If this procedure is unsuccessful, they fetch the *baksa* (magician) ; he rushes raging at the patient and strikes her with a stick to chase the evil spirits out of her. Only in the most extreme cases do they remove the after-birth with the hand.

Kropf says of the women in labour among the Ama-Xosa :

“ But woe betide the poor woman if the placenta did not appear at once with the child. She would immediately be looked upon as bewitched and left without help and would perish miserably.”

In Mandailing in the Dutch East Indies, after mother and child have been cleaned, the after-birth is also washed and then buried under the house or put into an earthenware pot, which is well closed and thrown into the river. “ By doing this,

they hope to avert the unfavourable effect of the after-birth on the child, so that it gets too cold hands and feet" (Schmidt⁹).

The after-birth is also used for special magic and curative purposes. We shall learn its power with the women of Java, who take it internally to produce fertility; and with Italian women, who take it to aid the flow of milk and to prevent after-pains. In Peking, Professor Grube learnt that many Chinese try to steal a placenta because they use it to compound a medicine which serves to "restore the vital energy." This medicine, as we saw, is administered to pregnant women shortly before confinement.

The placenta of a girl who, however, must be born alive, is, as Frh. v. d. Goltz reports, used according to the prescriptions of the Chinese book of magic, *Wan-fa kuei-tsung*, for a magic effect, *i.e.*, for changing oneself into a young girl.

This book of magic, entitled "Collection of 10,000 Feats of Magic" was banned by the Chinese Government. It is said to come from the seventh century in our reckoning of time and it is still highly esteemed.

For the magic feat in question is needed, besides the female placenta already mentioned, a still-born boy. "Both are washed, purified in the fire (burnt to ashes?) mixed with clay and two female figures made from this. The figures are clothed. During these proceedings, as well as after them, as in all magic tricks, incantations are to be uttered, paper and magic signs to be burnt, sacrifices made, mystic signs of the fingers to be made, and the feet to be placed on paper covered with certain signs."

In the Russian Province of Orenburg, the placenta is also paid special honour. It is carefully buried in the ground. If it is dug up and the umbilical cord is turned downwards, then the woman in childbirth will have no more children. If the after-birth is turned round later, the magic can be made ineffective again. The midwife also turns the after-birth round if the parents want a child of different sex.

According to Most, in Styria, from time immemorial the blood of the fresh placenta and umbilical cord have been regarded as a cure for birthmarks and burn scars, and the powder of a shrivelled or pounded placenta is supposed to be effective as a medicine in epilepsy, convulsions and St. Vitus' Dance.

In many parts of Italy, there exists a similar belief that the application of the placenta can effect the cure of swollen glands and cause the disappearance of birth marks (Bellucci³). In Perugia, according to the same authority, it is put warm on the abdomen of the patient to affect the flow of lochia favourably.

More than 100 years ago, the dried placenta of a first-born child was dispensed in the chemists' shops. Hennig, in 1884, related that in Saxony a few years previously, a person had secretly devoured a fresh placenta under the scaffold of a criminal to cure himself of epilepsy (Engelmann² p. 173.).

In the Province of Obelensk, the people believe "that certain diseases called by the collective name *rodimec* (convulsions) are innate in new-born children; to rid them of convulsions, people lay the after-birth on the head of new-born children and wash them with the mother's urine (Demič).

The South Hungarian gipsies rub the abdomen with the blood of the after-birth. This blood is always kept by old gipsy women. While rubbing, they have to say these words:

" Let the good thou bringest
Here in the world stay!
Let the bad thou bringest
To the devil belong.
Of the good, give me some
In the name of God!"

The blood clots clinging to the after-birth were used by the gipsy women as a cure for children's diseases. Anyone who eats some of the blood of the after-birth is said to be insensible to cold. Hence, the Transylvanian gipsies say to anyone who complains of cold: Eat placenta! (v. Wlislöcki⁴). A certain prognostication is attributed to the placenta. For example, in many parts of Germany it is believed that if the after-birth is big the mother will have milk in abundance, while a small placenta foretells a lack of milk.

How wonderful and mysterious the after-birth seems to many peoples can be seen from the way they are accustomed to get rid of it.

There are not wanting in these peoples persons who, certainly not because they are more enlightened but merely from laziness, throw the placenta away without more ado. But when, as Engelmann² records, some North American Indians like the Comanche put away the placenta secretly, there is certainly hidden in this the germ of mystical associations.

Thus, among the Bombé, a Niam-Niam tribe, Buchta told Ploss that the priest had to catch the placenta and get rid of it secretly.

In the following sections, we shall learn what customs prevail among the various peoples in regard to getting rid of the after-birth.

5. THE PLACENTA AS TWIN

[It is well known that among many peoples the idea is prevalent that the unborn child has been made, partly at least, from the menstrual blood which no longer flows after pregnancy has commenced. In certain cases also it was believed that the placenta itself was formed of the amount of blood not required, and, being attached to the child by the umbilical cord it came to be regarded as in intimate connection with the child itself, and indeed as a sort of twin. It has been claimed by some that the curious object seen on certain of the standards of ancient Egyptian processions was in fact a placenta and the streamers may have represented the umbilical cord. If such a conception be true then its enormous antiquity can be gauged from the fact that such a procession is portrayed upon Narmer's palette which has been dated at about 3000 B.C. The idea of the placenta as a twin which is found among modern uncivilised peoples may in its turn be connected with the idea of the totem which is found so widely diffused. (Cf. G. E. Smith,² pp. 308 ff., and G. E. Smith,¹ pp. 47, 73, etc.; and cf. *J. Egypt. Arch.*, 1916, 3, 199, 235.)

In the following paragraphs we shall see that this idea of the placenta being in close connection with the child, not only before birth but until much later, is held by a number of different peoples.] Thus we have already learnt that the Letts call the placenta "the other half." From this designation, we may conclude that by them the placenta is not regarded as a superfluous addition to the child, but as a thing of the same kind and "of equal birth," as a special, independent being. In this view, the Letts do not stand alone. The natives of the island of Bali also, according to Jacobs,¹ have a similar belief. They think that the after-birth is a brother or a sister of the new-born child, and they believe that when anyone dies the soul of his placenta comes half-way to meet him in order to show him the way to Indra's heaven.

Jacobs² also reports of the Achinese that they, like the people of Bali, have the idea that the after-birth of a girl is her sister, that of the boy is his brother. As we shall see, it is dried and buried, and if the child gets a distended stomach or

other physical discomfort, they are firmly convinced that the placenta in the grave has fallen ill. They then put remedies on the place where the placenta is buried. If that does not change the child's condition, then the Achinese believe that the placenta has not found a comfortable bed in its grave, or that it is either too moist or too dry where it is lying; then they dig it up again and bury it in a different place. Moreover, the opinion also prevails that the soul of the placenta leaves the grave in order to play with its twin; for instance, they think that this happens when the child laughs in its sleep.

According to Kohlbrugge,¹ the Tenggerese in Java also regard the after-birth as a twin of the child and, for this reason, they do not divide the umbilical cord before the placenta is expelled. They are afraid that if the cord were separated then the placenta in the mother would not follow its twin. If the placenta is retained, they leave the child lying for hours or days between its mother's legs, and then, of course, it dies. Kohlbrugge,¹ saw the umbilical cord divided before the expulsion of the placenta only in a few cases. When this is done, the cord has to be tied to a heavy body, partly to make the placenta believe that it is still unseparated from its twin brother; partly also because they fear that the umbilical cord may slip back into the mother's body.

Also in Sumatra, the after-birth (according to Maass³) is called *sudarō padja* (*r*) = "the brother of the child"; it is also called *sudarō* only, *i.e.*, "the brother."

On the island of Nias, the after-birth is called *Gá'anono* or *Awōnono*. Here there is an idea similar to that of the people of Bali and Achin, etc. *Gá'a* means brother or sister; *awo* means companion, and *nono* comes from *ono* = son. They consider the placenta to be alive, and with this is connected the treatment they allow to be given to the mother.

As soon as the head of the child appears in parturition, the patient must get on her knees and stay in this position not only until the child is born, but also until the placenta is expelled. If it is retarded, the umbilical cord is not divided, but the child is put between the mother's legs and she is not allowed to lean backwards. She is then given salt water and coconut oil to drink, and her abdomen is bound with a cloth or with bast.

6. THE BURIAL OF THE PLACENTA

Among the methods of putting the placenta out of the way, burying is decidedly the most common, and from the many ways of doing this we can see that quite definite mystical ideas are associated with it. We come across this among the Annamites in Cochin China. Here, when labour is ended, the midwife wraps the after-birth and the blood clots in rags cut from the clothes of the mother and the wadding soiled during parturition, and lays all together on a little sand near a stove standing at the foot of the bed. In the evening or at night, she takes this parcel and buries it in a place which, because of the risk of ills happening to the mother, must be known only to the midwife (Mondière, p. 42).

Likewise, among the negroes of the Loango Coast, the place where the mother or one of the relatives has buried the placenta is kept secret, although it is true that Pechuel-Loesche thinks this secrecy is due merely to a sense of propriety.

Among the dwellers on Doreh Bay, the placenta is put into a sack which is filled with earth and then buried. In this case, care must be taken that there are no big shells in the covering otherwise the woman would not have another child. Sometimes, years afterwards, the placenta is dug up again and they look for such a shell (van Hasselt²).

On the Tenimber and Timor Laut Islands, the placenta is packed in a little basket and put into a hole under the house which is closed up with a stone. First an offering of sirih-pinang is made. Here, however, other customs prevail as well and these we shall hear of further on. Also the Tenimber and Timor Laut Islanders bury the placenta in a little basket under a sago or kalapa tree which thus becomes the property of the child. In the same way, in Ceram the afterbirth is buried under a tree (Riedel¹).

The Watubela Island women put the placenta in an earthenware jar, where it is mixed with ashes from the kitchen and with the shells of those kalapa nuts, the contents of which were used for smearing over the new-born babe. This jar is closed with bark or calico and placed under a big fig tree or under a kalapa or mango tree.

On the Amboina group, the placenta is carefully washed, wrapped in white linen or bark and put into an earthenware jar or into a kalapa shell with three holes. Then it is buried and on this spot are placed three dammar torches which are lighted on seven consecutive nights, while the person who looks after the lighting strews flowers over the place.

The natives of the Sula Islands, after having wrapped the after-birth with ashes and pisang blossoms in a pisang leaf, put it into a kalapa nut, which is then tied fast with a *gomutu* rope. Then one of the women helpers, with covered head, carries it out and buries it close to the dwelling. On the way, she does not speak to or answer anybody, otherwise the child will be deceitful. On the place where the placenta is buried, a gaga tree is planted and dammar torches are lighted on four successive nights.

On Djailolo and Halmahera, the woman who has helped the mother buries the after-birth which was bathed somewhere with the child; the Mohammedans plant a tree over the place (Riedel). In other parts of the Dutch East Indies the after-birth is buried with all sorts of garnishings like tamarinds, vinegar, etc. The Karo-Battak in Sumatra, according to Neumann, bury the placenta under the house.

On Bali, according to Jacobs,¹ the placenta is buried right in front of the house. It is packed in a kalapa nut. On the place where it is buried, a *palita* is burnt, and food, *sirih* and water, are put down there for forty days.

In Central Sumatra, the after-birth is buried at the house pile called *tiangtuhā* ("the old pile"); it is always in the second row, the second on the right, according to Maass.³

The Achinese, as Jacobs² tells us, place the after-birth by the fireplace set up in the lying-in room in which the patient lies. For this purpose, the placenta is first washed with lukewarm water and well cleaned and placed in a stone jar. Ashes are strewn on it several times a day. This is continued till the forty-fourth day, and meanwhile it shrivels to a very small size. Then it is taken away from the fire, covered with pieces of pinang nut, gambir, sirih leaves, salt, lime and ashes, and buried near the house. If the new-born child is a boy, then the placenta is buried in front of the property, but if it is a girl, then the placenta is buried behind the stairs of the house. This is done because the activities of the boy will be outside the house, while the girl, on the contrary, will have her sphere of action in the house. Usually, a fire is kept up for seven nights; but this custom is not general.

Among the Lao in Siam, the custom exists of burying the placenta always at the foot of the steps leading to the door of the house.

With the Barolong (Bechuana) in South Africa, the floor of the hut is chosen for this, and it is afterwards smeared thickly with sheep's dung (Joest²).

About the after-birth among the Hottentots, Germann says: The after-birth was buried in a hole in the ground as well as "what of blood and other fluid comes during parturition; they collect this in an old *kross* (*kaross*, the dressed leathern mantle of the Hottentots) on which the patient lies, and she stays, and has to stay, on it so long as any blood continues to come from her. But, when it has stopped, and the patient may or can get up, then they roll up this *kross* together with the blood contained in it and bury it so that her bewitcher may not come after and do evil with it." The umbilical cord is tied with a piece of fibre till it falls off and then a wide leather strap is bound round the child as a support.

The Masai bury the after-birth under the place where the mother lies (J. M. Hildebrandt, p. 395). Merker, on the other hand, states that in some districts the after-birth is thrown by the midwife into the cattle enclosure; in others, it is buried there at night; with the Wandorobbo, according to the same authority, the after-birth is said to be buried in the hut. Also among the Wopogoro (Tanganyika), the after-birth is buried in the house (Fabry).

Among the Kalmucks, according to Klemm, the after-birth is buried deep in the ground in the *kibitka*. Also, in Little Russia, the placenta is buried under the floor in the hut where people sleep and they strew barley on it (Sumzow in Globus, 42, p. 349).

Among the White Russians (Prov. Smolensk), the placenta is buried by the *babka* (midwife) and generally in the *banja* (bath house) under the floor; meanwhile she bows to all the four points of the compass; she does not cross herself, however, but holds her hands on her back, for the bath-house is an unconsecrated place. It seems that the custom may be older than Christianity, and for this reason the making of the sign of the cross is omitted (Paul Bartels³).

Of other parts of Russia, Demič reports:

"The after-birth is carefully hidden, put in a special vessel, covered with earth and buried, otherwise the child would get a serious illness or suffer from ulcers. I myself saw in Radomysel in the Province of Kijewer, how a midwife once after delivery carried the placenta into the courtyard, dug a hole by the hedge, and buried it while murmuring something. I heard only the words: 'Perish, perish!' When I asked her, she explained that she 'was chasing it away,' obviously meaning the evil spirit."

Alksnis says of the Letts:

"Not infrequently, the placenta is buried in the dung in the stable, but often also in the ground in the garden, so that it will not be touched and dishonoured by cattle, pigs or human beings."

Kreutzwald makes a similar report of the Esthonians:

"The after-birth is nearly everywhere buried in the sheep pen under the dung, and by so doing, the sheep are supposed to thrive and to have more abundant wool at the shearing. For the same reason, the *liquor amnii* and any blood caught during parturition are carried out into the cowhouse and poured out there, and this is supposed to increase the cow's milk in quantity."

In Iceland, people used not to dare throw away the membranes (*barnsfylgja*) or the after-birth under the open sky, for then evil spirits might get it and thus cause injury to the child, or beasts of prey might devour it. Hence, it used to be customary to bury it under the threshold, where the mother had to pass over it everyday after she had got up out of bed. If the after-birth had been buried in this way, then the child had later, as grown man, a "man's after-birth," *fylgja* (*manns-fylgja*), in the

form of the animal which resembled him most in disposition and appearance, *e.g.*, in the form of a bear, an eagle, a wolf, an ox or wild boar. The *fylgja* of crafty and designing people and of wizards had the form of a fox or vixen; that of beautiful women, however, had the form of a swan. In all these forms, the *fylgjur* used to make themselves visible and announced the coming of the people to whom they belonged (Max Bartels¹²) (v. II., 862).

In Bosnia and Herzegovina, too, the afterbirth is in many cases buried (*cf.* Fig. 779). According to Glück, this had to be done so that no animal and especially no dog or cat could touch it, because this would bring ill luck to the mother or child.

In Dalmatia, according to v. Hovorka, the placenta is buried under a rose bush, so that the child may always have rosy cheeks.

In Upper Austria and in Salzburg, the placenta has to be buried under a green tree so that the woman may continue fruitful (Pachinger).

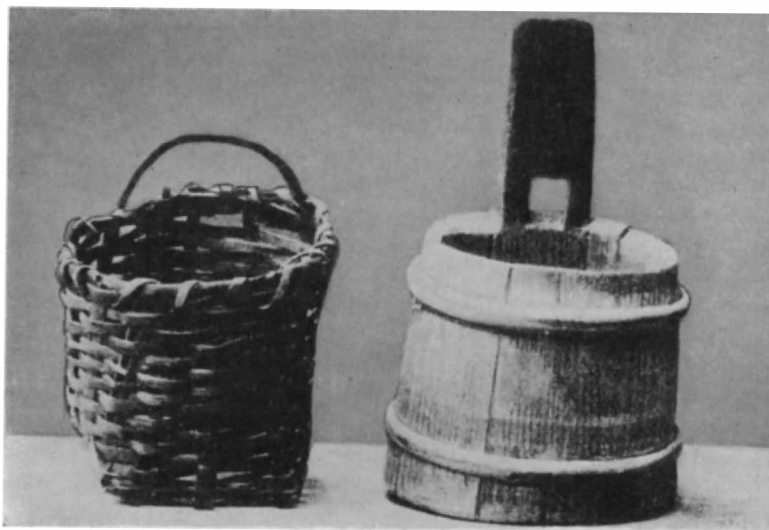


FIG. 779.—Basket and vessel used in Bosnia for holding the placenta.
(After F. S. Krauss.)

In Styria, according to Most, the after-birth is buried in the cellar of the house. Likewise in Zwiefalten in Swabia, they say: The after-birth must not be buried in the open air but under cover in the house or stable (Birlinger).

In Oldenburg, the burial of the after-birth is done in secret, and special sayings are uttered while it is being done.

Muralt instructs his midwives either to bury or burn the after-birth "so that no harm can happen through it." Thus, he appears to cherish the idea that harmful feats of magic may be done with it.

Among the Chinese in Peking, as Grube found, the burial of the placenta is a duty of the mother of the woman in childbed. But if she is no longer living, then the oldest sister-in-law of the patient has to undertake the function. It has to be done on the third day after the delivery. A grave is dug for it in the privy; in this the woman concerned puts the placenta, places a stone on it, and covers this with earth on which again another stone is placed. This is done so that the placenta may not be stolen by anyone going to the privy; for, as was mentioned above, it

is used as a medicine for restoring vital energy, but only if it comes from a boy. In South Shantung, the after-birth is also buried at once, but not in the closet, because people believe that then the child could later be given to railing and cursing (Stenz). The after-birth which comes from a male child is much sought after here too, by apothecaries, as it is regarded as a medicine.

[The virtues of the placenta are many. According to Ts 'ui Hing-kung, who died towards A.D. 670, and who wrote, states de Groot, a volume entitled "Medicament for Babies," the placenta should be stored safely away to ensure long life to the child. It can also be used as an ingredient for pills and as a remedy against numerous diseases (see J. J. M. de Groot, IV., 396, quoted by G. E. Smith,¹ p. 48).]

Some nations make a difference according to the sex in the burial of the placenta; the procedure varies according as the new-born child was a boy or a girl. We have already seen this in Achin.

In Japan, the after-birth is taken out of the room in a vessel of prescribed shape; if it belonged to a boy, then a stick of Indian ink and a writing brush are added, these being absent in the case of a girl. In each case the placenta is buried deep in the ground so that the dogs cannot scratch it up (Engelmann,² p. 49). This is supplemented by the statement of H. ten Kate, "that the placenta is buried under the floor of the house, at the place that has been indicated beforehand by a Shinto priest by means of the interpretation of signs. The placenta of a boy is buried with a writing brush (*fude*) and a piece of Indian ink, that of a girl with a needle and thread."

E. Schiller's statement about Japan may be also added here :

"The after-birth is buried in similar vessels (like those used for the removal of the umbilical cord, Fig. 780) at a depth of 7 ft. after the grave is cleansed with salt water."

Among the Orang Bèlenda in Malacca, when the mother has been washed and is lying in bed clean, then, as Stevens reports :

"The first assistant takes the after-birth, and if the child is a boy, she ties it in a cloth and hangs it up on a tree. But if it is a girl, then the after-birth is buried somewhere near the house without further ceremony. The reason for this difference is that the women must stay in the house whilst the men, on the other hand, go among the trees of the forest and cannot, like the women, stay in one place. No notice of the parcel on the tree is taken later."

In Unyoro (Central Africa), the placenta of a male child is buried on the left side of the door inside the hut. The placenta of living twins is kept in the courtyard for four days, and then removed in procession (Emin Pasha³). In Uganda, among the Madi negroes, the placenta is buried outside in front of the hut, on one side that of boys, on the other that of girls (Felkin¹).

The Kaffitscho (Abyssinia) also make this difference according to sex: the after-birth of a boy is buried on the right, that of a girl on the left of the door of the woman's house (F. J. Bieber).

Among the Hopi (in the north-east of Arizona), the after-birth is kept for



FIG. 780.—Cedarwood box for holding the placenta. Japan. (After Schiller.)

20 days till the day of the ceremonial naming of the child. Then it is buried. Solberg reports of this, referring to the description of the ablutions connected with the naming :

“ While the babe is being dried before the fire, the cleansing process is concluded with the removal of the after-birth which, till now, has been kept on a ‘ *tetsaia* ’ (a round flat basket woven from *mōhó* leaves), buried in earth and stones in a store-room of the house. The basket is now brought out, sprinkled with consecrated meal and an eagle’s feather, *nakvákvosi* (a consecrated feather hung on a short cotton cord), added. The old woman conducting the ceremony wraps everything in a cover, swings her burden this time over the head of the mother, and then takes it out to throw away or bury the basket and its contents.”

7. VARIED METHODS OF ELIMINATION AND BURIAL OF THE AFTER-BIRTH

Among many peoples, we come across the remarkable custom of annihilating and making the after-birth harmless : as mere burial which, of course, we have seen done for this purpose, no longer seems sufficient. Thus, among the Indians of the Copper River in North-Western America, it is publicly burnt immediately after the delivery (Jacobsen). Reed reports the same of the Negritos of Zambales in Luzon.

In Norway, the after-birth is pierced with a knife by the mother herself, and then burnt by the midwife. If this is not done, then the monster *Utbør*, who can make himself big or small, visible or invisible, and who screams horribly, sets traps for the mother in order to take her life (Liebrecht, p. 318).

In Iceland, the after-birth was buried in early times as we have seen. In South Iceland, this is now expressly forbidden, and on the island the burning of the after-birth is now usual. If this is done, then a light follows the person to whom it belonged ; if it is thrown in running water, a star follows him ; but if it is eaten by some animal, then this follows him. People who have the gift of second sight can recognise such *fylgja* animals. In early times, if the after-birth was burnt, people believed that the child would be *fylgja*-less, and that was considered as bad as having no shadow (Max Bartels ¹²).

Among the tent gipsies of Transylvania, too, the after-birth and also the meconium have to be burnt, so that they may not be taken away by wicked fairies, who then produce vampires from them which torment and torture the child (v. Wlislocki).

In Thüringia, the after-birth is burnt in the stove, and, especially in Upper Frankenwald, it is very often charred by putting it in an old pot and letting it stand by the fire for weeks till the shining black charred remains gradually disappear in smoke (Flügel).

A Mentawei Islander said to Maass ¹ that the father puts the ashes in a bamboo, puts in the after-birth, and lays it on the floor.

The bamboo with the after-birth, like the bamboo knife with which the cord is divided, is kept for a long time.

Montano reports of the natives of the Philippines :

“ Dès que l'accouchement est terminé, la mère court se plonger dans un ruisseau voisin avec l'enfant, pratique constante qui contribue pour une large part à la disparition de la race. En sortant de ce bain, la mère brûle la placenta, en recueille les cendres et les avale en les délayant dans un peu d'eau afin d'assurer une bonne santé à son enfant.”

In Laos, the after-birth is at once put into the ashes of the fire (Schmidt ⁹).

We saw above that Marcgravius (p. 281) reported that the Brazilian Indians eat up the after-birth. Also Engelmann ² (p. 173) relates :

“ The natives of Brazil eat the placenta in secret when possible. If they are observed, they burn it.”

In Java, the native women associate a strange superstition with the after-birth ; as soon as it is expelled, the women present gather in a circle and decide by lots which of them is to have the luck to get the after-birth ; the one who draws the prize, cooks and eats it, for by doing this she has the first expectation of having a child. v. Eckstedt who told Ploss this, maintains that he has seen this himself.

We have learnt on p. 805 through Hennig and Engelmann that the after-birth is eaten even in Germany (Saxony) (under the scaffold, fresh, as a remedy for epilepsy). We learnt the same of the gipsies there (v. Wlislöcki ⁴).

As a general inquiry by Bellucci ³ showed, the custom of consuming the newly expelled placenta is in Italy obviously very old, and has not even yet disappeared. Usually the mother, who, however, must not know anything about it, is given a broth made from a piece of the after-birth, or, more rarely, she is given in some other way a piece of the after-birth in her food. This promotes an abundant flow of milk, but also relieves the after-pains.

We find the custom of wrapping and packing up the after-birth very carefully before its removal very widespread, and by no means infrequently its removal is attended with great ceremony. It is then kept either in the house or in a very prominent place, or, as has already been discussed, is buried in a specially important place inside the house.

Among the Gilyaks in Sakhalin the placenta is wrapped in a cloth and hung on a tree in the wood not far from the house (Pilsudski).

With the Ainu on Sakhalin it is rolled up in a mat with all the other waste matter, and after sunset it is put down somewhere right outside within a short distance of the dwelling. If the birth takes place in the night, these remains cannot be removed till daybreak (Pilsudski).

The Aru Islanders pack the after-birth in the floral envelopes of the pinang and then keep it somewhere upstairs.

On the islands of Ceram Laut and Gorong, after the placenta has been washed, some neighbour's children are called into the house and entertained with a kalapa nut and dried sago. This hospitable act is called *tarlotu*. After the meal the father of the new-born child fetches some earth from a special place and the woman who helped at the confinement puts the after-birth into an earthenware jar and also adds the empty shell of the kalapa nut which has just been eaten. This jar she puts near the cooking-place ; there it stands for forty days, and is then hidden away somewhere for safe keeping (Riedel ¹).

The Wakamba women helpers in East Africa pack the after-birth in a bundle of grass and take it into the wood.

In Styria, as already mentioned, the placenta is buried or set aside in a dish in the loft to dry.

Alksnis says of the Letts :

“ Also the placenta must be kept in a certain place if the child is to thrive. It is hung up somewhere in a little basket, for example, in the stable. It happens that the mothers as soon as they are able to get up want to see the placenta ; but by that time it is mostly already swarming with worms.”

In Mecklenburg the placenta is thrown down at the root of a young tree, and in Pomerania it has, according to U. Jahn, to be buried at the root of a fruit tree : then the new-born child grows as quickly and as strong as the tree. We had similar examples (from Upper Austria and Dalmatia) in the previous section.

This peculiar association between the after-birth and trees we find among many other peoples, who show in this way that they do not put the placenta under but on certain trees. In Buru it is first wrapped in linen, and in Ceram mixed with kitchen ashes ; on Eetar, however, it is put unwashed into a little basket, and on all three islands it is put by one of the women helping on the branches of one of the highest trees in the neighbourhood. Among the Kei Islanders also, the after-birth is mixed with ashes and then packed into a jar which is placed on the tree, and this must be a *Wawu* tree (*Ficus altimeraloo* Roxb.). On Leti, Moa and Lakor the tree chosen for this purpose must be outside the village walls ; the placenta is put in a basket. Among the Serua Islanders a man attends to the hanging up. In the Sawu Archipelago (Dutch East Indies) after the birth the placenta is kept in a little basket or in an earthenware jar and hung on a tree by the husband or father (Riedel). On Keisar this must be only a high tree and on the west side of the house. The after-birth is first washed and mixed with ashes, then packed into a little basket. The Tenimber and Timor Laut Islanders, of some of whose customs we have already heard, sometimes simply put the placenta into a thicket. On the Luang and Sermata Islands, on the other hand, special rules are in force. Here the placenta, which is packed in hot linen, must not be fastened to the branches of the highest tree till the stump of the umbilical cord has fallen off. Till then it must be kept in the house.

The custom in the Babar Archipelago is worthy of notice. The placenta, as in some other places, is mixed with kitchen ashes and put into a little basket. Then, however, seven women, each armed with a *parang* must hang this up in a *Citrus hystrix* D.C. tree. These women are armed in order to frighten away the evil spirits, so that they cannot get at the placenta and make the child ill. In this the women on Dawaloor have to wear a vulva binder on the shoulder if the new-born child is a boy.

There remain to be mentioned those cases where the placenta is thrown into water.

Among the Bongo negroes, as soon as the birth is over, mother and child bathe ; a troop of friends accompanies them into the water ; the placenta meanwhile is carried by a woman dancing at the head of the procession and is thrown as far as possible into the river (Felkin ¹).

In Khartum (Sudan) the placenta with the vessel in which it was placed is thrown into the Nile, and every passer-by has to throw a stone at it.

In various parts of the Dutch East Indies it is customary to throw the placenta into the sea. On the Amboina group the woman who is in charge of this, in order to achieve the purpose properly, must look neither to the right nor to the left ; she has to walk on the right and must not speak with anyone. The fact that it is regarded as a proof of conjugal infidelity on the part of the woman if the after-birth floats on the water has already been stated. On the Aru Islands, when the ceremony of naming the child is over, the woman who has looked after the child for four days takes the placenta, gets into a boat and, after she has rowed a long way from the land, sinks the placenta in the sea. As reward for this she receives cymbals, some plates and copper bracelets (Riedel ¹).

According to van der Burg (p. 366), in the Dutch East Indies the after-birth is

put in a little bamboo raft, which, adorned with flowers and fruit and lighted with candles, floats down the river, an offering to the Kaimans, in whom are lodged the souls of the ancestors.

Helfrich relates that in the district of Kroe in Sumatra the after-birth, together with the knife with which the umbilical cord was divided, is wrapped in a little rush mat and then thrown into the river. This mat has to be woven by the mother during her pregnancy.

In Bosnia also the custom is known of throwing the after-birth into running water, but they also bury it as recorded above.

According to A. Schleicher, the after-birth is thrown into running water in the neighbourhood of Jena in Thuringia. Pachinger² also records that in Pinzgau, near Salzburg, the after-birth is thrown into running water from a bridge without looking where it falls.

In many cases the methods of disposing of the after-birth are so various that any systematised classification is impossible. Many peoples living side by side use different methods; on the other hand, with many the method is not of as much consequence as the disposal. Thus, Goldie reports of the Maori in New Zealand that they burn, bury or throw the after-birth into the sea; in any case, they eliminate it most carefully, as otherwise hostile magicians might work magic with it which would make mother and child ill.

How in Germany every possible way of getting rid of the after-birth may be in use side by side is shown by the collection of customs which Höhn¹ gives for Württemberg:

“The after-birth must be removed at once or the child will have a bad smell from its mouth; according to another view, it is to be kept for three days under the wooden bedstead of the mother, so that no evil may come to her (Oberamt Crailsheim). Mostly the placenta is buried under the eaves, or in some such place where neither sun nor moon shines, *e.g.*, in the cellar (Oberamt Geislingen, Urach, Reutlingen); also under a tree where it is in the shade (Oberamt Crailsheim). For this a new jar with a lid must be used (Oberamt Nagold, Crailsheim). It must be so buried that the lid lies downwards; also a paternoster must be said during the process (Oberamt Crailsheim). In Neuhausen (Tuttlingen) it must at least be buried in the grass garden, etc.”

In Italy also, as an enquiry by Bellucci³ showed, several ways of getting rid of the after-birth are to be found side by side. The after-birth is left under the mother's bed till the sun has set three times; it is buried either in the garden or under the kitchen (situated on level ground) or near the house; it is buried in damp places under a stone in a ditch, under a fig tree or just in the ground, but carefully so that the ants or other insects may not notice it; or in a wooden box under the eaves of the churchyard hall; or it is thrown into the sea, into running water, or it is shut up in an earthen jar and then thrown into running water.

The last procedure shown in a case observed by Bellucci is quite sufficiently remarkable to be retold here. Water from a well was sent to him to test whether it was fit for drinking; his opinion was that the water was not only not fit for drinking, but was putrid and that presumably there was a corpse lying on the bed of the well. A closer examination of the well which was now made showed that its bed was filled to a height of 1 metre with a number of earthenware jars, the contents of which were human placentas more or less decayed. It is worthy of note that the wooden waste trap which the well had was always being removed by an unknown hand. The purpose was, as it turned out, to keep the water of the well continually running.

Bellucci has shown that the Italian country people assume a connection between the placenta and a supply of milk : the slower the placenta is in decomposing, the more abundant is the young mother's supply of milk ; hence the frequent burial in wet places or the throwing into constantly running water, and the great care in the burial that animals may not be able to find and devour the placenta ; dogs and cats are specially feared because in such an unfortunate case their bad characteristics would be transmitted to the child. The preference for places in which the fig tree thrives, Bellucci thinks is to be traced to the mental connection with the milky juice of this plant. Sometimes the placenta is also baptised, and that by the midwife or the oldest relative present ; the religious formula is said while the placenta is sprinkled by means of an olive twig with water into which has been put a little bit of bread and dried leaves of the sacred olive tree (*palma di olive benedetta*).

8. THE FŒTAL MEMBRANES IN FOLKLORE

Although we have to regard the membranes as really belonging more to the child and less to the woman, and must refer here to the thorough discussion which this subject has had in the work of Ploss-Renz devoted to the child, yet, on the other hand, we do not intend to pass it over in absolute silence.

During its development in its mother's body, the child is not free in the cavity of the uterus, but is enclosed by five transparent membranes within which it lies floating in a watery fluid, the liquor amnii. In parturition, this bladder-like covering is usually expelled first from the uterus, and is generally ruptured in the process. The amniotic fluid then runs out and the child gradually slips from the membranes which are not expelled till later along with the placenta.

Sometimes, however, it happens that the membranes do not burst, or remain hanging on the child, which is born still enclosed in the membranes. People then say that it is born with a caul. This circumstance was and is regarded among the people even at the present day almost all over Europe as a sign of luck for the new-born child. The caul is carefully preserved in many places, even worn constantly round the neck as an amulet, and it had, at any rate, to be bestowed on the child at baptism, so that it was secretly baptised at the same time. It brings all kinds of luck and wards off all sorts of ill-luck, and, of course, most of all to those born with it. But its power is also transferred to others, wherefore it was often stolen by the midwives and given to their own children. Also a great trade was done with it, especially in England, where people even tried to buy one by public advertisement in *The Times*. In the year 1779 as much as 20 guineas was paid for a caul, while in the year 1848 the price had sunk to 6 guineas (see W. Henderson, p. 14). The connection of the caul with lawyers is very peculiar. Even among the ancient Romans (see Aelius Lampridius *Ant. Diad.*, 4) people ascribed to it the power to bestow successful eloquence on advocates, and it was so esteemed in Denmark in the seventeenth century and still is in England.

Besides its use for advocates, it also appears to give protection from drowning, as seems to me to emerge from the following passage in Dickens's well-known novel, "David Copperfield" (Chapter I.). The hero says of himself : " I was born with a caul which was advertised for sale in the newspapers at the low price of 15 guineas. Whether sea-going people were short of money about that time or were short of faith and preferred cork jackets, I don't know : all I know is that there was but one solitary bidding and that was from an attorney connected with the bill-broking business who offered two pounds in cash, and the balance in sherry, but declined

to be guaranteed from drowning on any higher bargain. Consequently, the advertisement was withdrawn at a dead loss . . . and ten years later, the caul was put up in a raffle down in our part of the country . . . I was present myself. . . ." Now, whether the novelist is describing here something he himself has experienced or is only commenting in jest on events which occur among the common people, at any rate, this passage shows how familiar these ideas must be to the Englishman. German readers will probably find this passage rather incomprehensible as this belief is not so common and well known with them.

People in Reykjavik believe that the child born in the caul, *sigurkufl* (*Kufl* = cowl, hood), becomes later *skygn*, clairvoyant, that it cannot be harmed by magic, and that when grown up, if it had the *sigurkufl* dried hard on it, it will always win in a dispute. Also the child to whom the *sigurkufl* is given as a plaything (and it is always kept ready for this purpose when the child is a little older and has acquired some sense), and who does not tear or harm it, will be specially fortunate (Max Bartels,¹² pp. 70 ff.). According to J. Grimm, the caul bears the name *fylga* among the Icelanders, and they believe that the child's guardian spirit or a part of its soul is situated in it; the midwives are careful not to harm it, and they bury it under the threshold over which the mother has to pass. Anyone who carelessly throws away or burns this membrane robs the child of its guardian angel. Such a guardian spirit is called *Fylgja* (because it follows the person), sometimes also *Forynja* (he who goes before him) (J. Grimm).

In the Province of Bari, too, the caul must be carefully dried and kept in a pouch. Then the child or its father or any other relative can carry it; it will always bring them luck (Karusio).

Among the Achinese, according to Jacobs,² people say of such a child that it is born in the *saroeng*. This is regarded by them also as a lucky sign, and they separate the membranes carefully from the placenta and dry them. Then, when the child is quite grown up, it carries the dried membranes on the hips as an amulet. It makes the man courageous and invulnerable in war, and to the girl it ensures happiness and a good marriage. The blood clots which the child sometimes brings with it in its closed hand have the same power. These, too, are carefully dried, and later worn as an amulet.

With the Serbians, the caul is named *koschillitza* = little shirt, and a child born with it they call *vidovit*. According to Krauss,² the Serbians call the caul *erstna košuljica*. Among the Southern Slavs, a girl born with this "little shirt" wears it dried as an amulet, and need only touch with it a young man who pleases her (and, to be precise, on a bare spot on his body) to make him madly in love with her (Krauss³).

Glück records of the Bosnians the following strange custom: "If a child is born with a caul, its skin is cut under the armpit, and the caul put on so that it grows there." The child is then safe from enchantment, and is bullet-proof.

In Poland, according to the same authority, they say of a man who succeeds in everything: "he was born with a caul."

The White Russians (Prov. Smolensk) also consider the caul a lucky omen; girls become good housewives, and boys good farmers with whom all cattle will thrive. If the father of the child takes the caul with him to the fields for the sowing of the crops, then there is a good harvest (Paul Bartels³).

The Herzegovinians and the Dalmatians on the islands of Brazza and Lesina differentiate between a white and a black caul in which the child can be born. The white caul is of good augury. In Herzegovina, according to Grgjič-Bjelokosič, it is washed and sewn into the child's clothes. Adults also carry it with them, and it is

believed that this makes them bullet-proof. On the above-mentioned islands of Dalmatia, as Carič reports, the white caul is carefully preserved and is put under the head of the possessor when on his death-bed, so that he may have an easy death without pangs. Children born with a black caul, *i.e.*, one covered with blood, later become witches and wizards. To prevent this evil issue, some woman must, in Herzegovina, take the blood-stained caul on the roof of the house in the night after the birth and cry out : " Hearken people ! A child in a blood-stained shirt has been born among us ! " On Brazza and Lesina, the new-born child is carried to the threshold immediately after it is born, and there she calls out three times :

" A witch (wizard) was to be born !
Yet it is not a witch (wizard),
But a real maiden (boy) ! "

A very peculiar and, it seems, practically isolated superstition is one reported by Ulrich Jahn from Pomerania. Here, when a child is born with a caul, the latter must be burnt to powder and given to the babe in its milk otherwise he will become a butcher bird.

As early as the seventeenth century, Muralt pointed out the absurdity of this caul superstition. He writes :

" People are so foolish and superstitious that they dry this caul and preserve it as a curiosity as if it were to bring the child luck in its life, which nonsense midwives should not believe."

However, in other ways, he also was still deeply enough steeped in superstition, as we shall see later.

The dwellers in Doreh Bay have no superstitious ideas connected with the caul, but simply throw it away (van Hasselt ²).

On the Luang and Sermata islands likewise, no importance is attached to the caul. Children born with one have no advantage over ordinary children, and the caul is rolled in white linen with the placenta, and when the stump of the umbilical cord has fallen off, it is put with this on the forks of the highest tree.

Among the Sulanese, on the contrary, children who are born with a caul are considered lucky ; the membranes are dried and kept and are believed to be a means of protection in war (Riedel ¹⁰).

Among the Topantunuasu in Celebes, the caul is also likened to a helmet. Here, too, it is carefully dried by the father ; and used as a protective amulet in war, and children born with it are desired by parents (Riedel ¹¹).

The Gilyaks on Sakhalin call the membranes *ehlan ok*, *i.e.*, the " clothing of the child." If a child is born with a caul, it brings luck to the whole family ; the caul is dried with care and kept with other household goods.

In the same way, the Maori (New Zealand) regard this as of good augury ; a child born with a caul will grow up happy and, if it is a boy, will become a famous warrior (Goldie).

9. ARTIFICIAL WOMBS AND ADULT REBIRTH

In the foregoing sections we have become acquainted with all kinds of customs which are associated with or directly attached to parturition. Now a very peculiar national custom recorded by W. Caland is to be mentioned here as an appendix. It can best be designated as the birth of adults. Now, since adults cannot return to their mother's womb, an artificial uterus is required for this process.

According to Caland, the matter stands as follows. The ancient Hindus had, as is well known, the custom of cremation. This was attended with all kinds of ceremonies, and was considered so absolutely necessary for the salvation of the souls of the dead that the relatives thought it essential to burn also those relatives who had died far from home, or those of whom they thought there could be no doubt that their end had come. Instead of the corpse decaying far away, a human figure was then made from 360 leaf stalks and this figure was burnt with the same ritual as if it had been the actual corpse.

Now it sometimes happened inconveniently that one who had been burnt in his absence had not died at all, but one fine day quite unexpectedly returned to his family. Meanwhile, as the ceremonies for the dead had been held for him, he was legally a dead man, and now, in order to be recognised as a living man again, he had to be born again. For this, fresh ritual acts were necessary to make the birth of an adult possible. A fire was kindled by friction and certain sacrifices were made in accordance with the rules for private sacrifice. To the west of this sacrificial fire, *i.e.*, behind it, was now placed either a golden barrel or, in place of this, a big earthenware jar. This vessel was then filled with water and melted butter, and now the father of the man wrongly believed dead recited over the vessel a passage from the Vedas which declared that the vessel was to act as the uterus. Then another prayer from the Vedas was said, and meanwhile he to whom life was to be restored got into the barrel, crouched up and clenched his fists, like a foetus, and stayed in the sacred fluid throughout the night without speaking a word. The following morning, the father, or his representative, returned and performed all the ceremonies prescribed for a pregnant woman. After this, the birth could take place. For this purpose, the pseudo-foetus left the barrel from behind. But now he had also to pass through childhood again. That is to say, all those ceremonies performed in the case of new-born children were performed with him. Then followed the ceremony of tonsure and initiation; and finally, he had to go through the ceremony of marriage with his wife for the second time. Thereupon, he rekindled his sacrificial fire, and now he was again reckoned among the living, was on an equal footing with his fellow men and could again sacrifice to the gods.

Zachariae ⁴ (p. 149) has pointed out the fact that these rites of the rebirth of a person supposed dead tally almost exactly with another Hindu rite—the Hiranyāgarbha rite which must also be understood as a regeneration rite. In its oldest form, it is contained in the *Pariśistas* (supplements) to the *Atharva-Veda* (No. 13). This is the ritual for a ceremony the purpose of which is the “union of the king with the Hiranyāgarbha, the golden embryo.” The king, amid prescribed ceremonies, has to take his place in a golden vessel (Sanskrit, *kunda* = tub, cask) and stay there for a time. In later Sanskrit writings, there is added to this that, whilst the person undergoing the rite sits in the vessel, the priests perform the so-called pregnancy ceremonies; and when the person has got up and come out of the vessel, the birth ceremonies are performed. Thus, there is no doubt that a rebirth is involved in this case also. In the same way two ambassadors who had been sent to England, as they were declared to be unclean and to have lost their caste, were “reborn” by having to crawl through a golden image of a *yonī* (vulva) in order to be purified.

However, this custom did not prevail only among the ancient Hindus; through Plutarch we have evidence of it among the ancient Greeks, a fact also pointed out by Caland. Plutarch says in the *Questiones Romanae* (IV.):

“Those for whom, because they were believed dead, the rites of the dead had taken place and a grave had been made, were regarded by the Greeks as unclean

and excluded from the temples and from sacrifices. Now the story goes that a certain Aristinos, a sacrifice to the superstition, sent to Delphi and entreated the god to show him a way of escape from the inconveniences which this custom caused him. Pythia answered :

“ ‘ All the things that are done in the bed of a pregnant woman, these shalt thou do again and then (thou mayest) sacrifice to the gods.’ ”

“ Aristinos is said to have understood this oracle and to have had himself washed, put in swaddling clothes and suckled by women like one who is born again. From then onwards, all *ὑστερόποτμοι* (*hysteropotmoi*) (those returned from the dead) are said to have proceeded in the same way. Some relate that even before Aristinos they used to act thus and that the custom comes from ancient times.”

A passage from Diodorus (IV., 39) where Hera imitates the process of birth in order to adopt Hercules, has been interpreted as a form of adoption. Bachofen (*cf.* pp. 254 ff.) has grouped other forms of adoption with more or less conscious imitation of the processes reminiscent of parturition : we cannot discuss all these in detail here, and refer readers to his book, as well as to the work of Post³ and Zachariae's⁴ essay on fictitious birth. The Turkish form of adoption by means of “ passing through a shirt ” which likewise represents a fictitious birth, we mention in Volume III., page 238, etc.

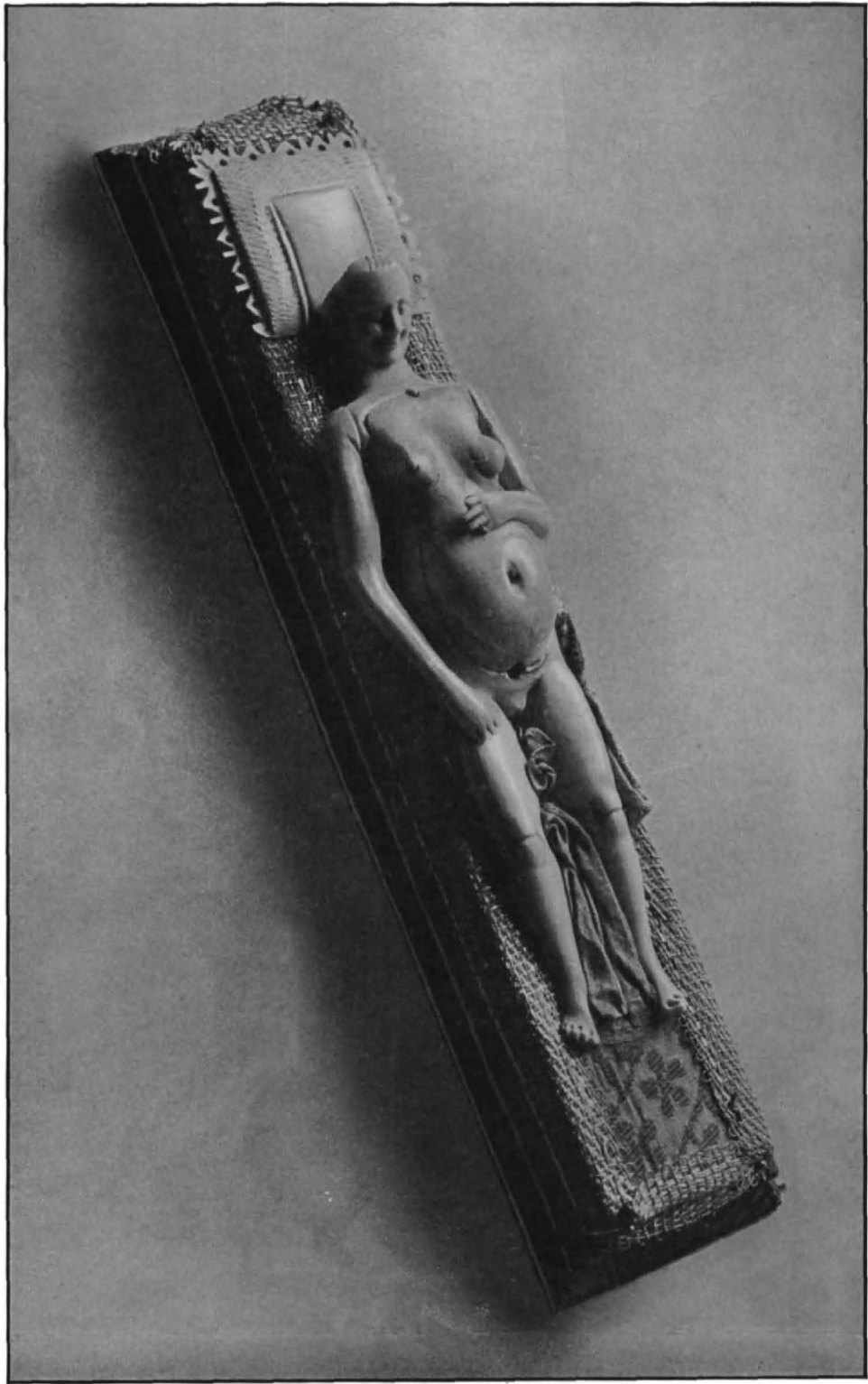


FIG. 780A.—The Nuremberg model of a pregnant woman.

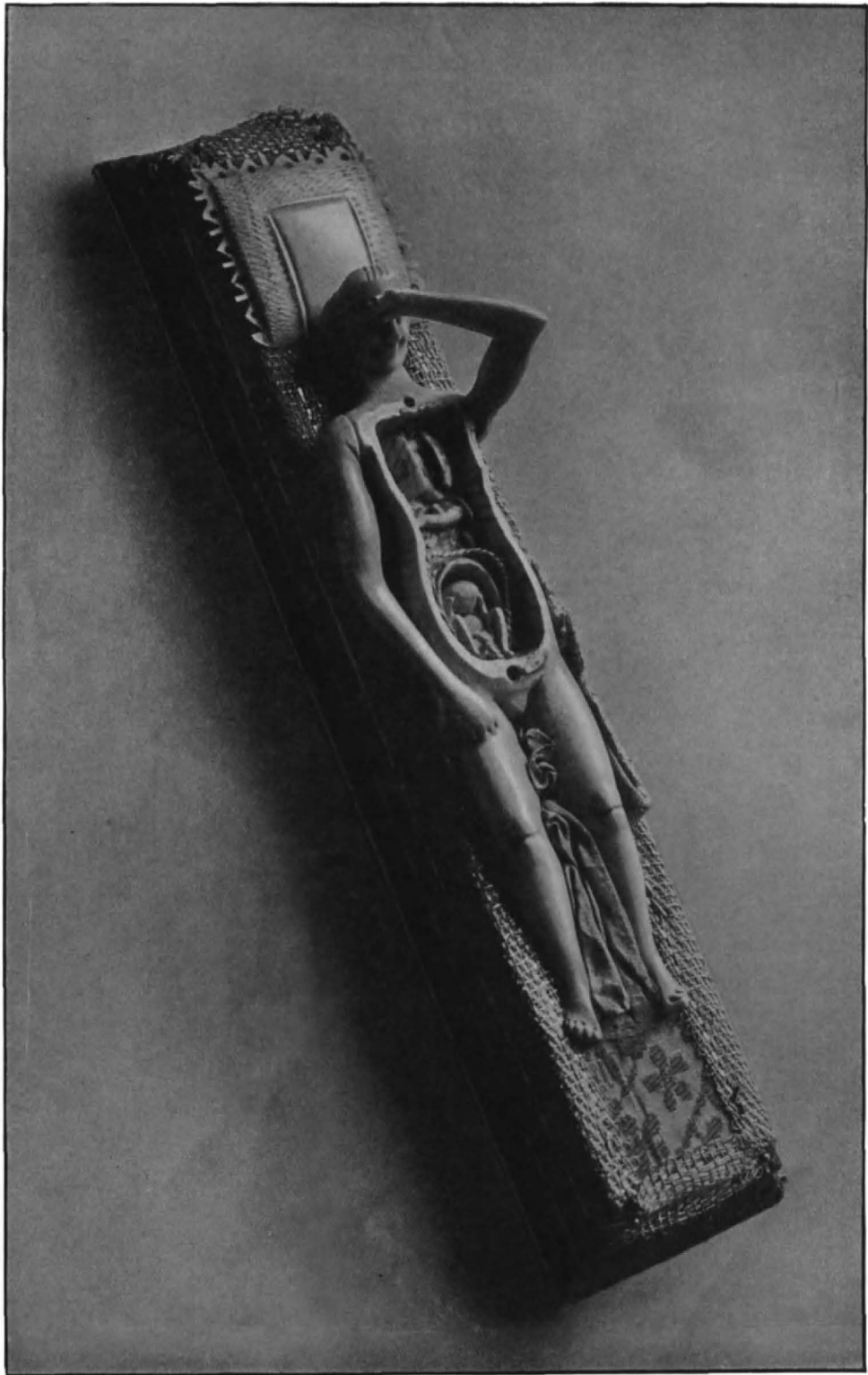


FIG. 780B.—The Nuremberg model of a pregnant woman, showing interior arrangement.