The Earliest Cosmologies

THE UNIVERSE AS PICTURED IN THOUGHT BY THE ANCIENT HEBREWS, BABYLONIANS, EGYPTIANS, GREEKS, IRANIANS, AND INDO-ARYANS

A GUIDEBOOK FOR BEGINNERS IN THE STUDY OF ANCIENT LITERATURES AND RELIGIONS

BY

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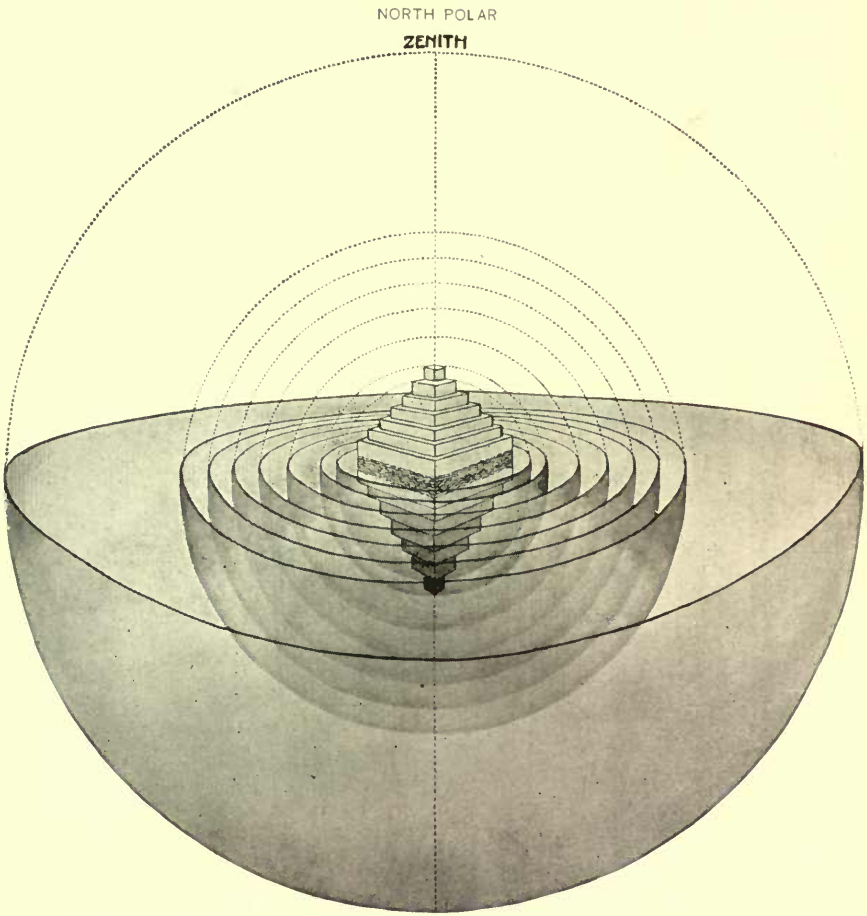

THE BABYLONIAN UNIVERSE

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The upright central line is the polar axis of the heavens and earth. The two seven-staged pyramids represent the earth, the upper being the abode of living men, the under one the abode of the dead. The separating waters are the four seas. The seven inner homocentric globes are respectively the domains and special abodes of Sin, Shamash, Nabu, Ishtar, Nergal, Marduk, and Ninib, each being a "world-ruler" in his own planetary sphere. The outermost of the spheres, that of Anu and Ea, is the heaven of the fixed stars. The axis from center to zenith marks "the Way of Anu"; the axis from center to nadir "the Way of Ea." See *Journal of the American Oriental Society*, vol. xxii, pp. 138–144; xxiii, opposite p. 388; and xxvi, pp. 84–92.

RESPECTFULLY DEDICATED
WITH FRIENDLY PERMISSION
TO
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ENGLAND

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The diagrams by Whitehouse, Schiaparelli, and Maspero, reproduced in the following pages, are used with the kind permission of their publishers.

PREFACE

In the judgment of those who have seen it the following treatise sheds a new light on not a few important questions. It ought to prove helpful to all students of ancient thought, pre-eminently to all teachers of ancient literatures. It deals with a theme fundamental beyond all others. Back of every religion, and of every philosophy or science worthy of the name, lies a "world-view"—a concept in which are included all localities and all beings supposed in that religion or philosophy or science to exist. In proportion to its clearness and completeness, it in every case groups and mentally pictures these localities and beings in certain relations to each other, and thus also in their total unity as a universe. The science which critically investigates and expounds the world-view of any people, or of any system of doctrine, is called Cosmology; the branch which does this for a group or class of world-concepts is known as Comparative Cosmology. The present work may be regarded as an introduction to this fascinating study.

For more than three decades it has been the duty and the delight of the writer to inquire

into the world-concepts of the most ancient peoples of the earth, and to interpret these concepts as clearly as possible to successive classes of eager-minded students. Almost at the very beginning of this comparative study there began to be reached results noticeably divergent from current teachings in various fields of scholarship; results so illuminative and mutually self-supporting, however, that in the year 1881 I was led to publish a paper entitled The True Key to Ancient Cosmology and Mythical Geography. Eminent scholars, not only in this country but also in Great Britain and on the continent of Europe, welcomed the essay with generous interest and appreciation. In 1885, in a work on The Cradle of the Human Race, further studies in the ancient cosmologies were published on both sides of the Atlantic. A few years later, in the Journal of the American Oriental Society for 1901, I set forth the view of the Babylonian heavens and earth opened to me by the "True Key"; illustrating it more fully in the same Journal for the year 1902, and for the year 1905. Though this new view (pictured in the frontispiece of the present volume) differed *toto cælo* (and *tota terra*) from all previously presented, it at once received attentive consideration from some of the most authoritative of Assyriological scholars. Three such, all university professors of international reputation, representing respectively Paris, Ox-

ford, and Munich, eagerly expressed their partial or full indorsement. One of them wrote: "Your paper is full of light. I believe you have discovered what was really the orthodox cosmological system of the Babylonians, and at the same time the origin of the Pythagorean system." So self-evidencing has the new interpretation proved that, in the eight years since it was proposed as a substitute for the various older teachings, not one writer has to my knowledge questioned its complete agreement with ancient Babylonian thought.

In this recovered Euphratean world-view my recent pupils have found such assistance toward a ready understanding of the biblical and other ancient cosmologies that they have repeatedly urged me to print more of the comparative studies that have proved helpful to them. So immense, however, is the field, and so fragmentary must be the contribution which any one man can hope to make, that I have hesitated to issue what I have prepared. Almost daily new light is reaching the investigator of prehistoric times and peoples, so that any new archæological deduction is liable to need for its best statement some modification before it can be carried through the press and through the judgment day that awaits every book sufficiently comprehensive to be of interest to many and diverse specialists. In the world of scholars, as elsewhere, however, obligations are mutual,

and owing, as I do, to other pioneers all that I myself have come to see, I cannot refuse to make such return as I may be able. The book has been forty years, I suppose, in the making, but no doubt I could spend forty more upon it and still find each new touch suggesting and demanding yet another.

The ten chapters of the work cover all the nations from whose literary remains we can hope for any important light on the world-concepts of generations yet earlier. The Chinese are not included, for the reason that as yet the Sinologues have found in Chinese literature no system of cosmology clearly distinguishable from the Buddhistic and manifestly antedating it. Following the lead of my lamented friend, Mr. Terrien de la Couperie, an increasing number of scholars are coming to ascribe the beginnings of Chinese civilization to a prehistoric colony of immigrants from the basin of the Euphrates. If this view shall ultimately find general acceptance, it will, of course, be easy to believe that the pre-Buddhistic world-view of this ancient nation, like that of so many others, was identical with that of the Babylonians. (See Richthofen, China, Bd. i, 404ff.)

In an Appendix I have given certain miscellaneous papers pertinent to the general theme. But the most helpful supplement to the discussions presented in the ten chapters will be

found in the work already mentioned, The Cradle of the Human Race (usually cited by its short title, Paradise Found), of which a new and enlarged edition (the twelfth) is nearly ready for the press.

I cannot close this foreword without grateful mention of some of the colleagues and friends to whom I am indebted for valued private assistance in the preparation of the pages that follow—assistance kindly given in personal conference, or in correspondence, or oftenest of all in both interviews and letters. It must be understood, of course, that the mention commits no one of the named to any of the inferences I have drawn from the information courteously communicated. To obviate the embarrassment of attempting to arrange the list according to the measure of my debt, the alphabetical order is adopted:

Professor Philippe Berger, Collège de France, Paris; Ernest A. Wallis Budge, Litt.D., F.S.A., British Museum, London; Rev. Professor R. H. Charles, D.D., Trinity College, Dublin; Professor Judson B. Coit, Ph.D., Boston University; Professor T. W. Rhys Davids, Ph.D., LL.D., London University; Professor Fritz Hommel, Ph.D., S.T.D., University, Munich; Professor E. Washburn Hopkins, Ph.D., LL.D., Yale University; Professor Herbert A. Howe, A.M., Sc.D., University Park, Colorado; Professor A. V. W. Jackson, L.H.D., LL.D., Columbia University,

New York City; Professor Morris Jastrow, Jr., Ph.D., University of Pennsylvania; Rev. C. H. W. Johns, M.A., Fellow Queens' College, Cambridge, England; Professor E. Kuhn, Ph.D., University, Munich; Professor Charles Rockwell Lanman, Ph.D., LL.D., Harvard University; Professor Ernst Leumann, Ph.D., University, Strassburg; Professor Thomas Bond Lindsay, Ph.D., Boston University; Professor David Gordon Lyon, Ph.D., D.D., Harvard University; Professor A. A. Macdonell, Ph.D., Director India Institute, Oxford; Professor G. C. C. Maspero, D.C.L., Collège de France, Director of Excavations, Cairo, Egypt; Professor H. G. Mitchell, Ph.D., S.T.D., Boston; Professor W. Max Müller, D.D., Philadelphia, Pennsylvania; Professor Laurence H. Mills, M.A., D.D., University of Oxford; Directeur L. de Milloué, Musée Guimet, Paris; E. W. B. Nicholson, M.A., Librarian Bodleian Library, Oxford; Theophilus Goldridge Pinches, LL.D., London University; Professor Archibald H. Sayce, D.D., LL.D., Queen's College, Oxford; Rev. Jefferson E. Scott, Ph.D., S.T.D., Ajmere, India; Professor Wilhelm Spiegelberg, Ph.D., University, Strassburg; Professor E. B. Tylor, LL.D., F.R.S., University of Oxford; Rev. William Hayes Ward, D.D., LL.D., New York; Professor William Marshall Warren, Ph.D., Boston University; Mrs. Professor George Arthur Wilson, Ph.D., Syracuse University.

As I write these names I am painfully reminded of not a few others equally entitled to appreciative mention, whose honored bearers, no longer with us, have risen to loftier viewpoints in the universe than any we on earth can reach. Ever sacredly cherished shall be their memory.

Postscript.—Since the foregoing was written Dr. C. H. W. Johns has laid me under new and deeper obligation by carefully reading the entire manuscript of the work and kindly expressing his unqualified approval of its fundamental positions.

Boston University. W. F. W.

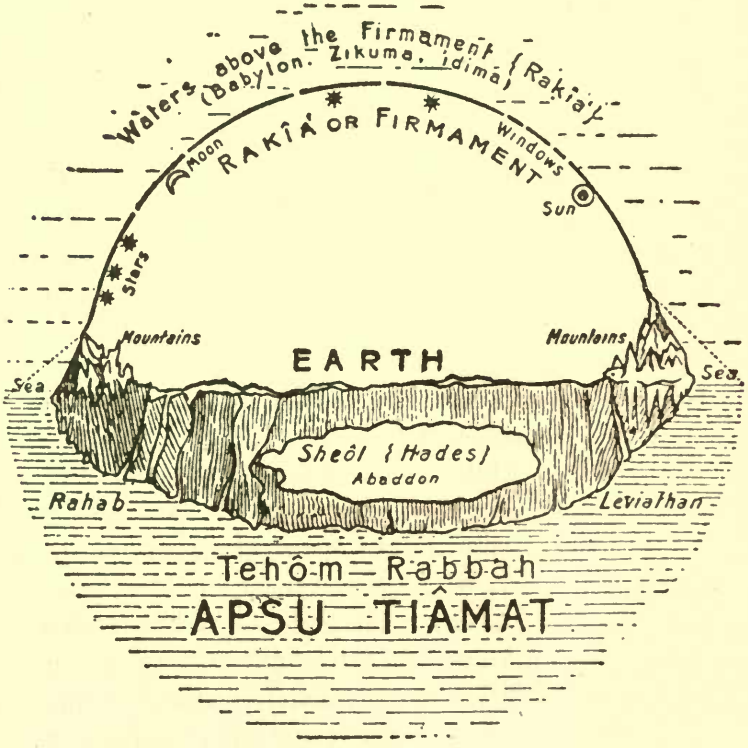
CHAPTER I

THE HEBREW UNIVERSE AS COMMONLY PICTURED

UNDER the word "Cosmogony," in the excellent new Dictionary of the Bible edited in five volumes by Dr. James Hastings, may be found a good representation of the Hebrew conception of the universe as ordinarily interpreted. The article is from the pen of Principal O. C. Whitehouse, and it is illustrated by the diagram here reproduced.

Let us examine this picture. In the center of a sea that is limitless in every direction, we are shown a thick circular disk to represent the Earth. Between its upper and lower surfaces there is an hermetically closed cavern to represent Sheol, the general abode of the dead. Around the disk's edge on the upper surface there is a ring of very lofty mountains. To this ring there is fitted, all the way round, and by a water-tight joint, a huge metallic vault, hemispherical in form; this represents the sky. Heaven and Earth do not include the universe, it will be noticed; for below the earth-disk, and above the sky-vault, in every direction, however far thought may go, there are waters infinite. To aid our comprehension of the deluge-narrative certain sluiceways are

represented as extending upward through the earth-disk, special pains being taken, as of course was necessary, to avoid flooding the Sheol-cavity. In the sky-vault certain orifices



THE UNIVERSE OF THE HEBREWS
According to Whitehouse

are placed and carefully marked "Windows." Just under the vault on one side there is a ringed dot, marked "Sun," opposite to which are three asterisks denominated "Stars." Just

above these, and, like the others, hugging the vault, is a new (or old) "Moon," which, with some unexplained perversity, turns her illuminated side away from the sun. All these nocturnal rôle-players may well account themselves superfluous, for to the blazing sun there has been given no discoverable retreat to which he may retire when disposed to leave the field and the hour to his lesser colleagues.

What now is the evidence upon which this representation is put before us as a true account of the Hebrew and older Babylonian heavens and earth? Simply a few manifest metaphors torn from their context in the language of the Old Testament poets. Let us hear our interpreter: "The Hebrews thought of the world as a disk (*Chug,* cf. Isa. 40. 22); and to this earthly disk corresponded the heavenly disk (also called *Chug,* cf. Job 22. 14; Prov. 8. 27)." In this statement he seems inconsistent with himself, for if the earth is a disk, and heaven a disk, it is plain that the latter cannot be (as his diagram represents it) a hemispherical "vault, or arched dome." Putting the case in another way, we must insist that if, in the passage relating to heaven, he makes "Chug" mean something spherical or hemispherical, he must—to be consistent—make "Chug" also mean something spherical or hemispherical when applied to the earth.

A little earlier in his article Dr. Whitehouse

argues as follows: "Numerous passages may be cited to prove that the Hebrew Semite regarded the sky as a solid vault, or arched dome. In Job 37. 18 it is compared to a firm molten mirror, the hue of which in Exod. 24. 10 is described as resembling sapphire, while from Amos 9. 6; Job 26. 10, 11; Prov. 8. 27, 28, we gather the additional details that this solid compacted vault, or arched dome, was supported on the loftiest mountains as pillars (Job 26. 11). It was also provided with windows and gates (Gen. 7. 11; 28. 17; 2 Kings 7. 2, 19; Psa. 78. 23). Above this solid *rākia* ('firmament') flowed the upper or heavenly waters (Gen. 1. 7), which descended in rain through these openings (Psa. 104. 3; 148. 4; 2 Kings 7. 19)."

These precious "details," and this precious textual proof of their correctness, seem to have been handed down from editor to editor, with faithful repetition, from the date of the first Bible Dictionary ever issued. And, not without countenance from the same predecessors, the author assures us that his picture of the Hebrew universe accurately represents the Babylonian as well.

For the sake of a change, if nothing more, let us hope that the next writer on this subject will begin with the question of antecedent probability. Nature knows nothing of disks, hardly anything of discoids. A disk is a product

of measurably advanced art. On the other hand, primeval men saw spheres and spheroids on every hand. The sun and moon are visible globes. The sand grain and the bowlder, the hailstone and the dewdrop, the seeds of grass, the fruit of trees, the egg of bird and beast and fish, the sky which incloses all, and the eye which discerns all, are spheres or spheroids. What so natural as to think the earth a sphere? What so unlikely as the supposition that the artless ancestors of any ancient people ascribed to the earth the form of the mathematical solid bounded by two parallel circular planes in horizontal position, and the segment of a hollow cylinder in position perpendicular? American Indians at the time of their discovery were found possessed of the idea that the earth is a ball[1]—why should we not freely ascribe so natural a concept to the ancient Hebrews? It was found even among the savage Battaks of Borneo.[2]

But the fair and sufficient criticism to be passed upon all our accepted expounders of Hebrew cosmology is that they fail in thoroughness. By a slightly more extended and thoroughgoing application of their exegetical method they could further show, and with equal cogency, that among the Hebrews the heavens were

[1] H. H. Bancroft, *Native Races of the Pacific States*, vol. iii, p. 536.
[2] L. Frobenius, *Die Weltanschauung der Naturvölker*, Weimar, 1898, p. 124.

thought to contain a supply of wax, or of some similar substance, with which at appropriate times the Almighty "sealeth up" the stars (Job 9. 7); also, that the earth was believed to possess at least one ear (Isa. 1. 2: "Give ear, O earth!"). One would think it time to have done with such wooden literalism as that which we are criticising; but, unfortunately, even our very latest Encyclopædia Biblica, that edited by Professor Cheyne, brings us in the cosmographic portions no relief. Our young people are entitled to some better guidance in this field of study. Pending its arrival, the present writer avails himself of the opportunity to renew his profession of faith that both Babylonian and Hebrew thought were adjusted to an earth utterly un-disklike in form, and to a system of heavens above heavens whose composition was as far removed from earthly metals as it was from the silk or the goat's hair of Psa. 104. 2, and Isa. 40. 22. Despite all that the rehearsers of traditional cosmology say, or rather because of what they say, and because of the inconsistencies in which they continually involve themselves, one long-interested student believes that their attempted reconstruction of the Hebrew and earlier Semitic universe is pitiably mistaken, and that the eminent American astronomer, Newcomb, is far nearer the truth when he pens this deliberate public statement: "Not enough credit has been

given to the ancient astronomers. There is no time within the scope of history when it was not known that the earth is a sphere, and that the direction *down*, at all points, is toward the same point at the earth's center." If after the word "sphere" he had written, "or other unsupported solid," he would have stated the exact truth.

Soon after the foregoing was written, a distinguished Italian astronomer published a new and improved representation of the Hebrew world, and to a consideration of this we will pass in our next chapter.

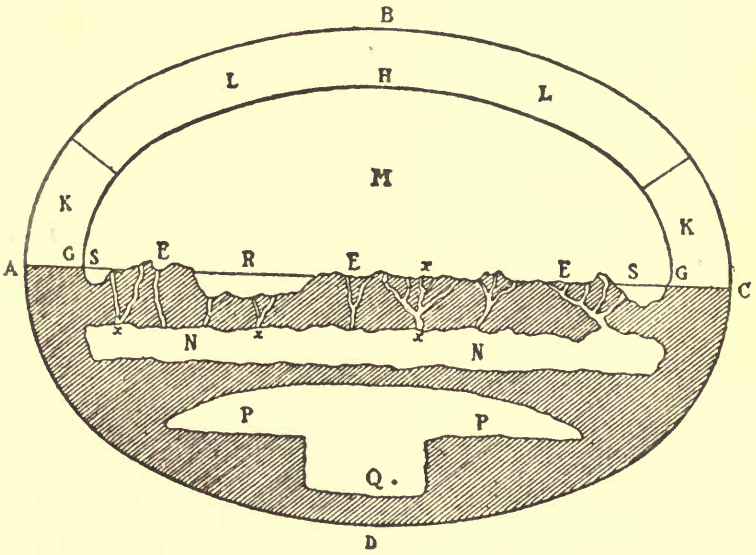
CHAPTER II

THE HEBREW UNIVERSE AS PICTURED BY SCHIAPARELLI

In the year 1903, Dr. G. Schiaparelli, director of the Brera Observatory in Milan, published in Italian a work entitled Astronomy in the Old Testament. The following year a German translation with certain emendations was issued at Giessen. A year later there appeared at Oxford an "Authorized English Translation, with many Corrections and Additions by the Author." In this book of 184 pages we have at the time of this writing the latest published attempt to portray the world-concept of the ancient Hebrews.

In most respects the work well deserves the warm international welcome so promptly accorded it. It would be exceedingly difficult, I think impossible, to find another astronomer as skilled in Old Testament studies, or an Old Testament scholar by profession equally distinguished in astronomy. The only really weak chapter in the book is the second, the one relating to the Old Testament cosmos as a whole, and even here there are some improvements on the corresponding points in the interpretations criticised in our opening chapter.

The author's cut representing the Hebrew universe, with his accompanying explanations, is here reproduced.



HEAVEN, THE EARTH, AND THE ABYSSES
According to the writers of the Old Testament.—Schiaparelli

Explanatory Key:

ABC = the upper heaven; ADC = the curve of the abyss; AEC = the plane of the earth and seas; SRS = various parts of the sea; EEE = various parts of the earth; GHG = the profile of the firmament or lower heaven; KK = the storehouses of the winds; LL = the storehouses of the upper waters, of snow, and of hail; M = the space occupied by the air, within which the clouds move; NN = the waters of the great abyss; xxx = the fountains of the great abyss; PP = Sheol or limbo; Q = the lower part of the same, the inferno properly so called.

On this illustrative picture it must be remarked in the way of friendly criticism that while, on page 38, the author speaks of it as representing the total universe as conceived of by the Old Testament writers, it in reality

omits all the heavenly bodies. It is therefore simply a picture of the earth and its immediate belongings. On another page the author himself incidentally refers to it as representing "the central and immovable part of the universe." A part is never the whole. Where is the moon which was made to rule the night? And where the sun, which our author describes as "the most magnificent work of the Almighty"? Where are "Arcturus and his sons," the "bands of Orion," the Pleiades with their "sweet influences"? Where are the innumerable stars which God showed to Abraham, promising him that like them his seed should be innumerable? Did no Hebrew ever notice the Milky Way and account it a part of the universe of God? We really cannot consent to think of Job and David and Isaiah as having been lifelong prisoners under a "firmament" which, as described in all seriousness by an American divine as late as in 1899, "was like a brass dome, or cover, beaten out, and shut down around the edge of the earth like the cover of a dinner platter."

Schiaparelli by no means denies to the ancient Hebrews a knowledge of the heavenly bodies, but his diagram, though professedly including "Heaven," contains no hint of them. His "firmament" is some improvement on the brass one just referred to, for he is careful to state that it is "transparent, allowing the light of

the stars to pass through." But it is still "a vault of great solidity." It still has in all literalness "flood-gates, or portcullises," and rain can fall only when these are opened. In fact, he states that "the main duty" of this solid firmament "is to support the upper waters, holding them suspended on high, above the earth, and separated from the lower waters of the continents and seas and abysses." Moreover, as he well adds, "considering the spherical and convex shape of the firmament, the upper waters could not remain above without a second wall to hold them in at the sides and at the top. So a second vault above the vault of the firmament closes in, together with the firmament, a space"—the space marked LL in his diagram. Instead, therefore, of Dr. Whitehouse's celestial ocean upheld by the firmament *above* the sun, moon, and stars, our present interpreter gives us a celestial tank, situated somewhat below the sun, moon, and stars, but bottomed by the firmamental "vault of great solidity," and topped by a "second vault" of like character.

For one I strongly suspect that King Solomon would have betrayed some disturbance of mental serenity had a wise man from the West appeared at his court and presented this diagram of the cosmical water-system, intimating, no matter how politely, that it represented the cosmology taught in the schools of Jeru-

salem and believed in by her reigning king. If not too impatient, he very likely would have asked some embarrassing questions. For example: "How is it that this firmament of yours is pervious to the winds stored up in KK, but impervious to the waters stored up in LL? Again, if these upper waters require for their support a vault of great solidity, how is it that they do not immediately rush down to GG, causing the air confined in KK to rise and gather in the space between B and H? If such a downrush of the waters is prevented by a metallic partition welded water-tight to each of the two vaults all the way round at the base of the supported waters, in what one of our Hebrew authors, O wise man of the West, did you find it mentioned? And what name was given to so important a part of the world's structure?" Lucky would such a wise man from the West have been if the incensed king had courteously forborne to apply to him one or more of the mordant remarks ascribed to the royal pen in the book of Proverbs. But, surmises apart, who does not find it exceedingly difficult to understand how our author can quote, as he does, such Old Testament passages as the following: "When the clouds are full, they spread rain over the earth" (his own translation of Eccl. 11. 3); "The clouds drop water" (Judg. 5. 4); "He draweth up the drops of water which distill

in rain . . . and drop upon men abundantly" (Job 36. 27); and still give us this traditional overhead water-tank notion as a just representation of Old Testament ideas on the subject of rain-production?[1]

That our author should have found a firmament of great solidity necessary as a support for the "upper waters," and a second firmament above that needed to keep the waters from flowing off the convexity of the first, is the more remarkable, since in two cases, discussed in the very same chapter, he ascribes to the Hebrews a naïve acceptance of an original divine decree or a continuous exercise of God's omnipotent will as an all-sufficient explanation for that which would seem to be a more striking violation of this same law of gravitation. The first is the case of the supposed feeding of mountain springs from the sea, which Schiaparelli insists was considered as occurring through subterranean channels only. Respecting this he says: "That the lower waters should overcome the laws of natural gravity, and rise again from subterranean depths to the surface, was considered as a result of the omnipotence of God (Amos 5. 8)." This is on

[1] Hebrew scholars do not all agree that by "the waters above the firmament" (Gen. 1. 7) rain-water is meant. Keerl, for example, argues through more than thirty pages that in the mind and meaning of the sacred writer the "upper waters" were the primordial substrate out of which the sun, moon, and other planets were formed (*Die Schöpfungsgeschichte*, Basel, 1861, pp. 352–388). This uncertainty as to the meaning of the very term under discussion is overlooked by most interpreters.

page 29. On page 27 we have the second case, that of the earth, which he says, "has no need of a base or support outside of itself," for although "all the mass of the earth, including the lower waters, is suspended in space and rests upon nothing," its remaining so suspended was to the Hebrew mind sufficiently accounted for by the one thought that the whole mundane system was "simply fixed unalterably by the divine will." One cannot help wondering how our author would explain why the divine will was considered so much more efficacious below the earth than above it, and why, if the lower waters had no need of support, the upper ones could be kept up in their place only by a material arch of great solidity. May we not also ask him, and the whole array of traditional cosmologists, how they know that the Hebrews did not think of the waters under the earth as vaporous, and as usually vaporized to the point of invisibility like the corresponding waters above the earth? Even in the days when Exod. 20. 4 was written human thought had some degree of self-consistency.

CHAPTER III

THE BABYLONIAN UNIVERSE NEWLY INTERPRETED[1]

FEW studies in ancient cosmology can more entertain or instruct the investigator of to-day than a careful comparison of the seven diagrams published as correct pictures of the Babylonian universe in the works named below.[2] No two of the seven agree. Moreover, the first represents the Zodiac as at a vast distance above the sphere of the fixed stars —a proceeding which at the start disarranges all ordinary astronomic ideas. Equally unpicturable in my imagination is the seventh of the series, the world sketched by Radau. Again and again have I tried to construct it in thought, but every time have failed. Even Jensen in his great work gives us for "the place of the Convocation of the Gods" (*Du-azag*)

[1] This chapter was printed in the *Journal of the Royal Asiatic Society* for October, 1908, and by courteous consent of the Council of that body is here reproduced.

[2] The reader is earnestly requested to turn to these diagrams and to note their striking divergences:

1. Isaac Myer, *Qabalah*, Phil., 1888, p. 448.
2. Hommel, *Babylonischer Ursprung der Aegyptischen Cultur*, 1892, p. 8.
3. Hommel, *Aufsätze und Abhandlungen*, 1901, Th. iii, 347.
4. Jensen, *Kosmologie der Babylonier*, 1890, Appendix.
5. Maspero, *Dawn of Civilization*, 1892, p. 543.
6. Whitehouse, article "Cosmogony," Hastings, *Dictionary of the Bible*.
7. Hugo Radau, *The Creation-Story of Genesis*, 1902, p. 56.

Professor Hommel's second is a marked improvement on his first. In connection with it he prints a generous reference to the present writer.

only a pitch-dark cavern in the thin crust of his sea-filled hemispherical earth, and has no place for Hades but another cavern located in the same thin crust and oddly enough far *above* the cave of the gods![1] Surely there is a call for new attempts to think the thoughts of these ancient Semites after them.

For the reconstruction of the Babylonian universe we have no less than twelve most valuable data derived from the study of ancient Babylonian texts. These will now be enumerated, and that the enumeration may command the greater confidence I shall connect with each of them one or more references to equivalent statements by experts of high authority in this field. Here follow the data:

1. In the Babylonian conception of the universe the earth occupied the central place. Winckler expressly calls the earth "the accepted center" of the planetary system of this people.[2]

2. The northern half of the earth was viewed as the upper, the southern as the under. The former was associated with light and life, the latter with darkness and death. Winckler remarks: "The South and the Underworld are identical."[3]

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[1] Jensen's diagram, Anglicized in terminology and much enlarged, may be seen in Worcester's *Genesis in the Light of Modern Knowledge*, opposite page 109.

[2] *Himmels- und Weltenbild der Babylonier als Grundlage der Weltanschauung und Mythologie aller Völker*, von Dr. Hugo Winckler, Leipzig, 1901, p. 34.

[3] "Identisch ist also Süden und Unterwelt auch hier wie bei unserer kosmischen Ausrichtung der Erdachse."—P. 24.

3. The upper or northern half of the earth was regarded as consisting of seven stages (*tupukati*), ranged one above another in the form of a staged pyramid. Speaking of the staged temple of Nippur, Sayce observes: "It was a model of the earth, which those who built it believed to be similarly shaped, and to have the form of a mountain whose peak penetrated the clouds."[1]

4. In like manner the antarctic or under half of the earth was supposed to consist of seven stages corresponding to those of the upper half. As Jensen expresses it: "The seven *tupukati* of the underworld are a facsimile of the seven *tupukati* of the overworld."[2]

5. Like the quadrilateral temples modeled

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[1] *Gifford Lectures*, London, 1903, p. 374. See also Boscawen, in the *Oriental and Biblical Journal*, Chicago, 1884, p. 118. For interesting parallels see W. R. Letherby, *Architecture, Mysticism, and Myth*, London, 1892. The existence in Egypt of a type of pyramid with *sloping stages*, and the clear traces in India of a conception of the earth as spheroidal in figure despite a series of rising zones or retreating mountain-terraces upon its surface, suggest that the stages of the Babylonian earth should not be mentally pictured as necessarily implying their possession of the sharply angular outline presented by a staged temple, or by the figure in our diagram. It is quite possible that in Babylonian thought the quadrangularity of the earth was largely a conscious and deliberate emphasizing of the cardinal points of the heavens and earth, and that its pyramidal form in architecture was as conscious and deliberate a deviation from supposed reality as are with us the parallel meridians and flat zones of a Mercator's Chart of the World. Moreover, as the celestial spheres are of a substance so crystalline as to be absolutely invisible to men, so the rising stages of the earth are to be viewed as less and less grossly material, until at length all appearance of materiality vanishes, leaving the highest as invisible (save in the case of a divinely sent trance, Gen. 28. 12) as are the heavens in which they are lost.

[2] *Die Kosmologie der Babylonier*, Strassburg, 1890, p. 175.

after it, the earth of the Babylonians was four-cornered. In this particular it agreed with the conception ascribed to the ancient Egyptians, Hebrews, Chinese, and to the Indo-Aryans of the Rig-Veda period.[1]

6. In Babylonian thought, Winckler says, "there were seven heavens and seven hells."[2] This belief is one of untraceable antiquity. Writing on this subject, Hommel remarks: "The idea of the seven heavens seems to go back to the beginnings of Semitic culture."[3]

7. Above the seventh heaven was another, the "highest heaven," that of the fixed stars; called by the Babylonians the "heaven of Anu," after the name of the oldest and highest of their gods.[4]

8. This eighth heaven was divided by the Zodiac into two corresponding portions, an upper, or Arctic, and an under, or Antarctic. At the pole of the former Anu had his palace and throne.[5]

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[1] Sayce, *loc. cit.* Also, *Encyclopædia Biblica*, ii, col. 1148. C. Puini, in *Rivista Geograf. Ital.*, 1895, p. 12. H. W. Wallis, *The Cosmology of the Rig-veda*, London, 1887, p. 112. F. L. Pullé, *Cartografia dell' India*, 1901, p. 18.

[2] "Was die obere Welt hat, hat auch die untere. Es giebt demnach sieben Himmel und sieben Höllen oder Höllenstufen."—*Op. cit.*, p. 34. Also, E. Bischoff, *Babylonisch-Astrales im Weltbild*, etc., Leip., 1907, pp. 28, 29, 34, 36, 40, 104, 156, 161.

[3] *Die Astronomie der alten Chaldäer.* In *Ausland*, 1891, p. 381.

[4] Winckler, p. 34. Also, A. Jeremias, *Das Alte Testament im Lichte des alten Orients*, Leipzig, 1904, p. 10.

[5] Winckler, p. 36. Jensen, p. 24. A. Jeremias, p. 27: "Der Sitz Anu's ist der nördlich vom Tierkreis gelegene Himmel mit dem Nordpol des Himmels als Mittelpunkt. Dort ist sein Thron."

9. In Babylonian thought the north pole of the heavens was the true zenith of the cosmic system, and the axis of the system upright; consequently, as among the ancient Egyptians and Indo-Aryans, the diurnal movements of the sun and moon were regarded as occurring *in a horizontal plane.* Speaking of the Babylonians, Maspero says: "The general resemblance of their theory of the universe to the Egyptian theory leads me to believe that they, no less than the Egyptians, for a long time believed that the sun and moon revolved round the earth in a horizontal plane."[1]

10. Proceeding outward from the central earth, the order of the seven known planets was as follows: Moon, Sun, Mercury, Venus, Mars, Jupiter, Saturn.[2] That their respective distances from the earth were not uniform was already known. Such at least seems to be the opinion of Winckler, and certainly is that of Hommel.[3]

11. In order to pass from the upper half of the earth to its under half, that is, from the abode of living men to the abode of the dead, it was necessary to cross a body of water which on every side separated the two abodes.

[1] *Dawn of Civilization*, p. 544. Cf. Robert Spence Hardy, *Legends and Theories of the Buddhists*, London, 1866, pp. 85–89; L. A. Waddell, *The Buddhism of Thibet*, 1895, p. 78.

[2] Winckler, p. 35. Hommel calls it "die uralte feste Anordnung." *Aufsätze und Abhandlungen*, iii, 375–383.

[3] See Winckler, p. 34. "In immer grösserem Abstand von der Erde" is the language of Hommel in his *Insel der Seligen*, p. 38.

This explains the language of Dr. A. Jeremias where he says: "When one sails out upon the ocean, one finally comes down into the Underworld."[1]

12. According to Diodorus Siculus (ii, 31), the Babylonians considered that twelve designated stars south of the Zodiac stood in the same relation to the dead as do the twelve corresponding stars north of the Zodiac to men still in the land of the living. This representation clearly makes the living and the dead the residents respectively of antipodal surfaces of one and the same heaven-inclosed earth. In like manner, in the Creation Tablets (V, line eight), Anu and Ea are antipodally located gods, the former having his palace and throne at the north pole of the heavens, the latter his palace and throne at the south pole.[2]

Such, then, according to latest scholarship, are the fundamental features of the ancient Babylonian world-concept. The task of combining them is simple. One can but wonder that there should have been such mistakes and such delay in effecting the due adjustment. In the diagram prefixed as a frontispiece to this volume each requirement of the twelve

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[1] *Op. cit.*, p. 10. Also, his "Hölle und Paradies bei den Babylonier" (*Der alte Orient*, Jahrg. 1, Heft 3), S. 14ff. Also, F. Jeremias, in Chantepie de la Saussaye's *Lehrbuch der Religionsgeschichte*, 2d ed., 1905, Bd. i, 275. Tiele, *Histoire Comparée des Anciennes Religions*, p. 177.

[2] Winckler, *Altorientalische Forschungen*, Leipzig, 1902, p. 201.

enumerated propositions is fully met. The upright central line represents the polar axis of the heavens and earth in perpendicular position. The two central seven-staged pyramids represent respectively the upper and lower halves of E-KUR, the earth. The seven dotted half-circles above the earth represent the "seven heavens" of the planets; the corresponding hemispheres below the earth the "seven hells." The outermost sphere — the upper half cut away, as were the seven heavens, to show the interior of the system—is of course the all-including starry sphere, the sphere girdled by the many-mansioned Zodiac,[1] and made scintillant by the appointed astral Watchers who keep their patient vigils one half above the living, one half above the antipodal dead.

How wonderful a world-view was this! How perfect the symmetries of the system! Its duplex center lived on in Pythagorean thought as "Earth and Counter-earth."[2] Doubtless it influenced Plato when in the Timæus he said, "To Earth, then, let us assign the form of a cube." It still lives on in the four-cornered earth of the New Testament, and in that of the Mohammedan teaching. Its heavens

[1] The "lunar mansions" of astrology are all within the Zodiac.

[2] The often misunderstood *χθών* and *ἀντίχθων*. O. F. Gruppe, *Die kosmische Systeme der Griechen*, Berlin, 1851, p. 82. Correctly understood by Cicero, *Tusc. Disp.*, i, 28, 68. The "*double earth*" of ancient Egyptian cosmography is another parallel.

lived on in the "homocentric" "crystalline spheres" of the Greek astronomers, and through the influence of Ptolemy's Almagest shaped the thinking of all savants, philosophers, and poets till the days of Copernicus. Dante's heavens are those of Ptolemy, and Ptolemy's are those of the ancient worshipers of Anu and Sin. Their music is still audible, their form still visible, in Milton's Ode to the Nativity.

But while the presence of this highly mathematical world-concept is thus traceable through millenniums, its origin was among a people antedating the Babylonians. A truer name, therefore, for the system would be the Pre-Babylonian. The East Semites received it from their predecessors in the possession of the Euphratean valley, the Akkado-Sumerians. At least, such is the opinion and the teaching of our highest experts.[1] Did the system originate among these non-Semitic predecessors in the valley? This has been assumed, but no man can pretend to know.

[1] H. Zimmern, *Die Keilinschriften und das Alte Testament*, 3. Aufl., 1902, S. 349.

CHAPTER IV

THE BIBLICAL, RABBINICAL, AND KORANIC UNIVERSE IN THE LIGHT OF THE BABYLONIAN

In the opening chapters of this book we saw good reason to challenge the correctness of the commonly accepted representation of the Hebrew heavens and earth. May not the now recovered Babylonian world-view help us to a better understanding of the conception which underlies the thought and language of the Old and New Testament writers?

To my mind the strongest argument in favor of the current representation, and therefore the strongest assignable reason for denying that the biblical universe was substantially identical with the Babylonian, is found in those biblical passages in which, as in the account of Korah and his company (Num. 16. 31, 32), the earth is represented as opening her mouth and engulfing living men, who then are declared to have "gone down alive into Sheol." Such language harmonizes so well with the idea that Sheol is an underground cavern, to be reached only through a rift in the overarching earth-crust, that Whitehouse and Schiaparelli and the rest seem for the moment justified in their depictions. As an

argument, however, such passages have little weight.

In the first place, it is plain that a rift through the solid earth of the Babylonians would as effectually carry engulfed men into the underworld as would a somewhat shorter rift through the upper half of the hollow disklike earth presented us by Whitehouse and Schiaparelli.

In the second place, if Sheol was really believed to be an enormous cavern in the bowels of the earth, reached in Korah's case by an extemporized entrance, where was the ordinary and normal entrance for Korah's countrymen in general? Barbarians have been known to point out cave-mouths supposed by them to lead to an underworld, but no biblical writer has a hint respecting any such earth-piercing path divinely provided for all ghosts descending to Sheol. Granting the existence of such a path, where was its upper end, its entrance-gate? In the territory of which tribe was the uncanny rift, the rendezvous of all the newly dead? If it was beyond the bounds of the Holy Land, to what unhallowed heathen land were the pious and unpious ghosts of Israel compelled to journey in search of the tunnel-mouth through which they could hope to reach their long home and be gathered to their fathers? Such questions need no answer; they belong to a world utterly foreign to Hebrew thought.

Possibly some one will deny the need of any such tunnel in the case of ghosts, and claim that according to Hebrew belief the disembodied spirit in the moment of its disembodiment received power to penetrate the soil and the unrifted rock overarching the Sheol cavity. But this is to go quite beyond the evidence. Nowhere do the biblical writers claim or imply that solid material barriers impose no limitations upon the free movements of a disembodied human spirit. Furthermore, in case the soil and every part of the solid earth were as freely traversable by disembodied human spirits as the present supposition implies, the need of any *cavern* for the assembled and assembling spirits in the heart of the earth would be quite done away. Matter-filled space would be as available as any other.

In the third place, the most ancient known pictures of a human soul after separation from the body represent it as winged, and birdlike.[1] Illustrations in Egyptian art are numberless. Babylonian texts imply the same representation. In perfect accord with this idea are the words found in the psalm traditionally considered the oldest and most impressive in the Bible, the ninetieth, wherein we read that our fleeting life is soon cut off, but as soon as it is

[1] See G. Weicker, *Der Seelenvogel in der alten Literatur und Kunst. Eine mythologisch-archäologische Untersuchung. Mit* 103 *Abbildungen im Texte.* Leipzig, 1907.

cut off "we fly away." Verily, wings were a strange equipment for penetrating the geologic strata beneath our feet!

Finally, if we may trust the exegesis of the apostle Paul, his countrymen, like the Babylonians, considered a passage across the ocean the same thing as a descent to the deep abodes of the dead. A comparison of Deut. 30. 11–13, with Rom. 10. 6–8, shows that he interprets the one transit as the perfect equivalent of the other.[1]

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[1] A word may be expected touching *rākia*, the term translated, or as many have already said, mistranslated, in Gen. 1, by the term "firmament." It would require a book many times larger than the entire Pentateuch to contain all that biblical scholars have written in attempted explanation of the word. Did it really mean to the writer the visible sky conceived of as a solid material vault constructed to "support," or to "keep back the waters of the heavenly ocean"? Most have said, yes; but many, no. Schiaparelli, as we have seen, pictures the structure as double, so also does Radau; but while Schiaparelli makes both vaults celestial in location, Radau makes one celestial, but the other its subterrestrial counterpart (*The Creation-Story of Genesis*, pp. 51ff.). Most interpreters have described the *rākia* as a solid; some, however, have claimed that it should be conceived of as a "fluid." Some, like Basil, seem to describe it as of a substance altogether impalpable and supersensible. O. M. Mitchel translates it "vacuity," and understands it to mean the vacuity resulting from the separation of the parts of the nebula out of which the solar system was formed and their aggregation around the different planetary centers and their common center (*The Astronomy of the Bible*, pp. 190f.). A German contemporary of his, Professor J. H. Kurtz, of Dorpat, created much discussion by arguing at length, in his book on *Bibel und Astronomie* (1853), in favor of identifying *rākia* with the atmospheric air enveloping our planet. Long before him, however, an English physician, Dr. Samuel Pye, in his *Mosaic Theory of the Solar or Planetary System* (1766), had gone yet farther in this direction, and had paraphrased Gen. 1. 6, 7 as follows: "And God said, Let there be a firmament, *an expanse, an atmosphere, in the midst of the waters, that are upon the surface of the earth, and of every primary planet, and the waters that by means of these atmospheres will be raised and suspended above the waters on their surfaces;* and let it, *on each of them*, divide the waters from the waters. And God made

Passing now from negative considerations to the question, What view of the universe was held by the writers of the Old and New Testament? six points of fundamental import should be noted:

First. Inasmuch as the Hebrews were younger kinsmen of the East Semites and their tribal territories in Canaan long under earlier Babylonian influence, and inasmuch as their earliest calendrical terms and adjustments, such as the

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a firmament, *or expanse, an atmosphere, to the earth, to every other planet, and comet; and (as exhalations proceed from the surface of its body) to the sun itself;* and divided the waters (*or fluid matter*) which were under the firmament, from the waters, *or fluid matter*, which were above the firmament, *on each of them*, and it was so" (pp. 12, 13). Besides the above interpretations, I have seen it described as a "line," a "circle," a "plate," a world-wide surface "without thickness," a "region," the "first," the "third," or again the "eighth" of the Ptolemaic spheres, and so on. In 1904, Dr. A. Jeremias, in *Das alte Testament im Lichte des alten Orients*, p. 78, identified the *rākia* with the Zodiac (*Tierkreis*), but in his second edition (1906) he inclines to favor Winckler's lately published view (*Forschungen*, iii, 387), according to which the total Earthrealm (*Erdreich*) is, or rather was, before the Priestly Writer forgot himself and got his "ideas mixed," the *rākia* separating the upper and the under waters. This somewhat resembles Radau's view. From a reference in Jeremias, I infer that something analogous is to be found in J. Lepsius, *Das Reich Christi*, pp. 227f. (1903), a work which I have not seen. If any reader is unable to content himself with a free choice from among the foregoing interpretations, he has still an alternative remaining, for in three differently edited editions of the article in Smith's *Dictionary of the Bible, sub voce*, it is solemnly stated that the *rākia* is a species of *power*, and (despite Gen. 1. 8) one which should be carefully distinguished from *the heavens*, "the former being *the upheaving power*, the latter *the upheaved body.*" In the same article, strange to say, the same writer describes this identical *rākia* as that "in which they"—the sun, moon, and stars—"are fixed as nails, and from which consequently they might be said to drop off (Isa. 14. 12)." A fast-setting sun, "fixed as a nail" in "the upheaving power" of the heavens, would certainly be an interesting object for contemplation! The advent of E. W. Maunder's *Astronomy of the Bible* (1908) permits us to hope that a new and better day is dawning.

names of the months, the beginning of the year, etc., were of Euphratean origin, there is a strong antecedent probability that their astronomic and cosmologic ideas also were directly or indirectly derived from the Babylonians (or from the ancestors of both peoples), and corresponded to the Euphratean.[1]

Second. The Hebrew use of a plural term for the heavens, sometimes intensified to "the heaven of heavens," precisely corresponds with the immemorial Babylonian usage, and implies in the thought of the Hebrew writers a plurality of heavens. Professor Salmond, after a recent reëxamination of the whole question, wrote: "In view of the evidence, the most reasonable conclusion is that the conception of the heavens which pervades the Old Testament and the New (not excepting the Pauline writings, though Saint Paul mentions only the third heaven and Paradise) is that of *a series of seven heavens.*"[2]

Third. The biblical references to the "four corners (γωνίαι) of the earth," and cognate expressions, imply a conception of the earth corresponding in this particular to the Baby-

[1] For an excellent estimate of the influence of Babylonia on Israel, see Robert William Rogers, *The Religion of Babylonia and Assyria*, New York, 1908, pp. 92ff., 140ff., *et passim*.

[2] Hastings, *Dictionary of the Bible*, ii, 334. Writing of "Paradise," the same author says: "There is abundant evidence that the belief in a plurality of heavens prevailed among the Jews. But it is doubtful whether it was a belief in a *threefold* heaven. The evidence is rather to the effect that the prevailing, if not the only, conception among the Jews of our Lord's time was that of a *sevenfold* heaven."—Hastings, iii, 671.

lonian as above interpreted. Even the "New Earth" in the Apocalypse is in the form of a foursquare terraced city, whose length and breadth *and height* are equal (Rev. 21. 16).

Fourth. The Old and New Testament passages that contrast the depth of Sheol or Hades with the height of the heavens, and those which speak of "The Kingdom of the Heavens," or of Christ as having "passed through the heavens," or of him as being "made higher than the heavens"—not to speak of others—acquire a new interest and a new pertinency the moment they are interpreted in harmony with the cosmological views first discoverable among the ancient Babylonians, but later—with only trifling modifications—current in the teachings of all the historically known Hellenic astronomers.[1]

Fifth. The already noticed equation of an over-sea voyage (Deut. 30. 11–13) and a *descensus ad inferos* (Rom. 10. 6–8) is no slight indication that in Hebrew thought the relation of the upper to the under world was precisely the same as in the Babylonian. So in Job 38. 16, 17, the uninterrupted passage of the poet's thought from "the recesses of the sea" to the

[1] On the essentially Babylonian "homocentric spheres" of Pythagoras, Parmenides, Eudoxus, Kallippus, Plato, Aristotle, and the rest, see J. L. E. Dreyer, *History of Planetary Systems from Thales to Kepler*, Camb., 1906, pp. 21, 36, 87, 178, 188, 257, 259, 279, 289, 298ff. S. Oppenheim, *Das astronomische Weltbild im Wandel der Zeit*, Leip., 1906. Troels-Lund, *Himmelsbild und Weltanschauung im Wandel der Zeit*, 2te Aufl., Leip., 1906.

"gates of death" may well be another indication of this habitual association of the two realms—just as in Homeric thought the realm of Aïdes ever borders upon that of Poseidon.[1]

Sixth. Philo of Alexandria, the most distinguished contemporary of Jesus among Jewish teachers (born B.C. 20), regarded the universe as made up of the seven concentric planetary spheres, together with the all-including eighth sphere, and the central earth around which all revolved.[2]

On the whole, then, there are excellent reasons for believing that the universe of the Old and New Testament writers, like that of the earliest traceable Semites, was not of the "dish-and-cover" pattern, but rather of the old upright-axled and poly-uranian type. Professor Salmond goes so far as to say, "The evidence is all in favor of the affirmative"—that is, in favor of the opinion that the conception of a series of heavens is found in the Scriptures. Then he adds: "But the evidence which bears out the existence of the idea of a plurality of heavens also favors the idea of a *sevenfold* series of heavens."[3] A study of the apocryphal literature only reinforces the evidence. Take for an example the Slavonian "Book of the Secrets of Enoch." Robert Henry Charles,

[1] See also Job 26. 5; Psa. 69. 15; and Jonah 2. 2, 6.

[2] See James Drummond's article on "Philo" in Hastings, *Dictionary of the Bible*, Extra Volume, p. 200.

[3] Hastings, *Dictionary of the Bible*, ii, pp. 321, 322.

everywhere recognized as the foremost authority on this newly discovered work, remarks: "The detailed account of the seven heavens in this book has served to explain difficulties in Old Testament conceptions of the heavens, and has shown beyond the reach of controversy that the sevenfold division of the heavens was accepted by Saint Paul, and by the author of the Epistle to the Hebrews, and probably in the book of Revelation."[1] The ancient apocryphal treatise known as The Ascension of Isaiah describes each of the seven heavens with no less particularity.

Passing to authentic Rabbinical literature we find the counterpart to all this; that is to say, a clear recognition of the sevenfold division of the space below the earth. And, as in the Babylonian conception, so also in the Rabbinical, each underworld as one descends is vaster than the last. And as in the Indo-Aryan conception the south-polar demons spend half the year in darkness and half in the blaze of the sun,[2] so in the Rabbinical the occupants of the lowest hell have as torments alternating heat and cold, *each six months in duration.* This, of course, helps to identify the location of the Rabbinical Inferno as at one of the terrestrial poles. In all descriptions of such

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[1] In Hastings, *Dictionary of the Bible*, I, 711. See also, Charles, *The Book of the Secrets of Enoch*, pp. xxx–xlvii.

[2] *The Cradle of the Human Race*, p. 199.

regions we are apt to meet with details and amplifications more or less fantastic, and in the present case they are not lacking. The Jalkut Rubeni, for example, gives the following: "The seven abodes of Sheol are very spacious; and in each there are seven rivers of fire and seven rivers of hail.[1] The uppermost abode is sixty times less than the second, and thus the second is sixty times larger than the first, and every abode is sixty times larger than that which precedes it. In each abode are seven thousand caverns, and in each cavern seven thousand clefts, and in each cleft seven thousand scorpions; each scorpion hath seven limbs, and on each limb are one thousand barrels of gall. There are likewise seven rivers of rankest poison, which when a man toucheth he bursteth; and the destroying angels judge him and scourge him every moment, half the year in the fire, and half the year in the hail and snow. And the cold is more intolerable than the fire."[2]

It hardly need be added that the heavens of Rabbinical tradition were seven;[3] and that "in the Rabbinical point of view, the superb

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[1] Gehenna, as well as Sheol, has "seven departments, one *beneath* the other." *The Jewish Encyclopædia*, vol. v, 217. But in *The Chronicles of Jerahmeel* Sheol is the highest and "Gehinnom" the lowest of the seven divisions of the one underworld. Gaster's translation, London, 1899, p. 38.

[2] Eisenmenger, *Entdecktes Judenthum*, vol. ii, p. 345 (English translation, vol. ii, p. 52).

[3] Eisenmenger, *op. cit.*, i, 460. See also notes of Wetstein, Adam Clarke, or Stanley on 2 Cor. 12. 2. *American Journal of Theology*, January, 1908, p. 99.

throne of King Solomon, with the six steps leading up to it, was a symbol of the highest heaven with the throne of the Eternal above the six inferior heavens (1 Kings 10. 18–20)."[1]

In the Rabbinical descriptions of the heavens and hells one striking feature has often caused remark. The two regions are said to "adjoin or touch each other" (Jewish Encyclopædia, ix, 517). But if the abode of God is almost infinitely above our earth, and the abode of the lost as far below, how can the two be said to "join"? In this many writers have found only contradiction and absurdity. A glance at our diagram of the Pre-Babylonian Universe removes every difficulty and reveals entire consistency of thought. By showing that the heavens and hells are simply the upper and nether halves of the earth-inclosing spheres of the universe, the diagram gives optical demonstration that each heaven and each corresponding hell must be in mutual contact at every point of their equatorial junction.[2]

[1] McClintock and Strong, *Cyclopædia*, vol. iv, p. 122.

[2] One other feature in Rabbinical cosmography has much perplexed modern investigators. Many writers have referred to it; among others just lately Dr. A. Jeremias in his *ATAO*, 2d ed., p. 557n. From Baba Bathra, ii, 25b, he quotes the following, but has no explanation to offer: "The sky surrounds the earth like Aksadra (encircling three sides, but not the north side); and people explain this by saying, On that side there is no sky; i.e., it is open, the sky *has a hole in it.*" So long as we conceive of the four cardinal points of the compass as lying in the plane of our own level horizon, a statement of this kind is, of course, an insoluble enigma. On the other hand, the moment we adjust north and south to the zenith and nadir of the heavens, as did the ancient Semites, the reason is perfectly clear why in the sky visible to the Hebrews an

Should any reader desire further light upon this particular world-view, he is recommended to turn to the article entitled "Hebrew Visions of Hell and Paradise," printed in the Journal of the Royal Asiatic Society of Great Britain, in the volume for the year 1893. Therein the author, M. Gaster, Ph.D., translates for the first time into English a number of ancient texts in some of which Moses is represented as by God's permission and help making a tour of inspection through the seven heavens, the hells, and Paradise. Wonderful regions are found and beings of incredible dimensions.[1]

Closely related to the Rabbinical world-concept is that of the Koran and of the accepted expounders of the Koran. This can occasion no surprise to anyone who considers the extent to which the Koran is a rifacimento of Rabbinical ideas and traditions. The hells are

orifice should be said to be in the north and nowhere else. There only could an opening afford a permanent passage from earth to the heavenly regions.

[1] A. Wünsche gives a still more recent demonstration of our thesis in *Ex Oriente Lux*, ii, 1906, pp. 113–168. Just after the above was written Dr. Erich Bischoff published his admirable treatise, *Babylonisch-Astrales im Weltbilde des Thalmud und Midrasch*, Leipzig, 1907. Therein, pp. 39, 40, he refers to the close neighborhood of heaven and hell in the Rabbinical teaching and explains it precisely as I have suggested above. Had he represented the upper and lower halves of the earth as antipodal counterparts—as he does the two heaven-halves—he would have escaped his difficulty in harmonizing the "telluric" hell with the "cosmic" one (confessed on p. 39). Moreover, had Orelli, in his criticism of Bischoff (*Theol. Literaturzeitung*, 1905, Nr. 24), understood and explained the terraced form of the sky-piercing Babylonian earth, he might much more easily have come to an agreement with him as to the unreasonableness of tracing so remarkable a Semitic conception to India, and to seven "*Vegetationsstufen des Himalaya*" (p. 156n).

seven; and their names, with references to Koranic passages, may be seen in Professor Palmer's Introduction to his translation of the Koran (p. lxx), or in Hughes's Dictionary of Islam, article "Hell."[1] The heavens are also seven; and if they had been a series of seven visible platforms connected by marble stairways, the lowest of the platforms resting on the summit of Mount Sinai and the highest standing high above the highest clouds, they could hardly have been pictured more realistically in the thought of the faithful. How perfectly acquainted with the supernal regions the naïve believer felt himself to be, is well seen in the accepted account of Mohammed's ascent to the seventh, and of his repeated passages up and down between the sixth and seventh.[2] In the Mishkatu 'l-Masbih the story is told as follows:

Whilst I was sleeping upon my side, Gabriel came to me, and cut me open from my breast to below my navel, and took out my heart, and washed the cavity with Zamzam water, and then filled my heart with faith and science. After this, a white animal was brought for me to ride upon. Its size was between that of a mule and an ass, and it stretched as far as the eye could see. The name of the animal was Boraq. Then I mounted the animal, and ascended until we arrived at the lowest

[1] Hughes adds: "For most of these circumstances relating to hell and the state of the damned, Mohammed was in all probability indebted to the Jews and, in part, to the Magians, both of whom agree in making seven distinct apartments in hell."

[2] See Hughes, *s. v.* "Mi'rāj," p. 251.

heaven, and Gabriel demanded that the door should be opened. And it was asked, "Who is it?" and he said, "I am Gabriel." And they then said, "Who is with you?" and he answered, "It is Mohammed." They said, "Has Mohammed been called to the office of a prophet?" He said, "Yes." They said, "Welcome Mohammed; his coming is well." Then the door was opened; and when I arrived in the first heaven, behold, I saw Adam. And Gabriel said to me, "This is your father Adam; salute him." Then I saluted Adam, and he answered it and said, "You are welcome, O good son and good Prophet!" After that Gabriel took me above, and we reached the second heaven; and he asked the door to be opened, and it was said, "Who is it?" He said, "I am Gabriel." It was said, "Who is with you?" He said, "Mohammed." It was said, "Was he called?" He said, "Yes." It was said, "Welcome Mohammed; his coming is well." Then the door was opened; and when I arrived in the second region, behold, I saw John and Jesus (sisters' sons). And Gabriel said, "This is John, and this is Jesus; salute both of them." Then I saluted them, and they returned it. After that they said, "Welcome, good brother and Prophet." After that we went up to the third heaven, and asked the door to be opened; and it was said, "Who is it?" Gabriel said, "I am Gabriel." They said, "Who is with you?" He said, "Mohammed." They said, "Was he called?" Gabriel said, "Yes." They said, "Welcome Mohammed; his coming is well." Then the door was opened; and when I entered the third heaven, behold, I saw Joseph. And Gabriel said, "This is Joseph; salute him." Then I did so, and he answered it and said, "Welcome, good brother and good Prophet." After that Gabriel took me to the fourth heaven, and asked the door to be opened; and it was said, "Who is that?" He said, "I am Gabriel." It was said, "Who is with you?" He said, "Mohammed." It was said, "Was he called?"

He said, "Yes." They said, "Welcome Mohammed; his coming is well." And the door was opened; and when I entered the fourth heaven, behold, I saw Enoch. And Gabriel said, "This is Enoch; salute him." And I did so, and he answered it and said, "Welcome, good brother and Prophet." After that Gabriel took me to the fifth heaven, and asked the door to be opened; and it was said, "Who is there?" He said, "I am Gabriel." It was said, "Who is with you?" He said, "Mohammed." They said, "Was he called?" He said, "Yes." They said, "Welcome Mohammed; his coming is well." Then the door was opened; and when I arrived in the fifth region, behold, I saw Aaron. And Gabriel said, "This is Aaron; salute him." And I did so, and he returned it and said, "Welcome, good brother and Prophet." After that Gabriel took me to the sixth heaven, and asked the door to be opened, and they said, "Who is there?" He said, "I am Gabriel." They said, "And who is with you?" He said, "Mohammed." They said, "Is he called?" He said, "Yes." They said, "Welcome Mohammed; his coming is well." Then the door was opened; and when I entered the sixth heaven, behold, I saw Moses. And Gabriel said, "This is Moses; salute him." And I did so; and he returned it and said, "Welcome, good brother and Prophet." And when I passed him, he wept. And I said to him, "What makes you weep?" He said, "Because one is sent after me, of whose people more will enter Paradise than of mine." After that Gabriel took me up to the seventh heaven, and asked the door to be opened; and it was said, "Who is it?" He said, "I am Gabriel." And it was said, "Who is with you?" He said, "Mohammed." They said, "Was he called?" He said, "Yes." They said, "Welcome Mohammed; his coming is well." Then I entered the seventh heaven, and, behold, I saw Abraham. And Gabriel said, "This is Abraham, your father; salute him." Which I did, and he returned it

and said, "Welcome, good son and good Prophet." After that I was taken up to the tree called Sidratu 'l-Muntaha; and behold its fruits were like waterpots, and its leaves like elephant's ears. And Gabriel said, "This is Sidratu 'l-Muntaha." And I saw four rivers there; two of them hidden and two manifest. I said to Gabriel, "What are these?" He said, "These two concealed rivers are in Paradise; and the two manifest are the Nile and the Euphrates." After that, I was shown the Baitu 'l-M'amur. After that a vessel full of wine, another full of milk, and another of honey, were brought to me; and I took the milk and drank it. And Gabriel said, "Milk is religion; you and your people will be of it." After that the divine orders for prayers were fifty every day. Then I returned, and passed by Moses; and he said, "What have you been ordered?" I said, "Fifty prayers every day." Then Moses said, "Verily, your people will not be able to perform fifty prayers every day; and verily, I swear by God, I tried men before you; I applied a remedy to the sons of Israel, but it had not the desired effect. Return, then, to your Lord, and ask your people to be released from that." And I returned; and ten prayers were taken off. Then I went to Moses, and he said as before; and I returned to God's court and ten prayers more were curtailed. Then I returned to Moses, and he said as before; then I returned to God's court, and ten more were taken off. And I went to Moses, and he said as before; then I returned to God, and ten more were lessened. Then I went to Moses, and he said as before; then I went to God's court, and was ordered five prayers every day. Then I went to Moses, and he said, "How many have you been ordered?" I said, "Five prayers every day." He said, "Verily, your people will not be able to perform five prayers every day; for, verily, I tried men before you, and applied the severest remedy to the sons of Israel. Then return

to your Lord, and ask them to be lightened." I said, "I have asked him till I am quite ashamed; I cannot return to him again. But I am satisfied, and resign the work of my people to God." Then, when I passed from that place a crier called out "I have My divine commandments, and have made them easy to My servants."

CHAPTER V

THE EGYPTIAN UNIVERSE

In the year 1888 an eminent Egyptologist published in France and in America his conception of the world-view of the ancient dwellers upon the Nile. Finding it clearer and more confidently set forth than any I had previously seen, I immediately made it, and the criticisms to which at the time I considered it open, the subject-matter of a lecture. This was given before a class of graduate students in Boston University early in 1889. In the "Outline" sheets distributed to the auditors illustrative diagrams were inserted. From the outline then used the following paragraphs are a verbatim extract:

The cosmology of the Egyptians has received almost no attention at the hands of professed Egyptologists. No treatise on the subject has yet been published. In a number of articles on other subjects Maspero has incidentally set forth the opinion that the Egyptians considered the form of the earth to be that of a flat oblong quadrangular slab with Egypt in its center. At each of the four corners there was an incredibly high post, forked at the top; these four pillars supported an immense "slab of iron" which constituted the firmament of heaven. Above this was a celestial ocean, the source of rain. The setting sun in returning to the east was not supposed to pass under the earth-slab nor

yet over the heaven-slab, but to slip through a hole in the mountain of the sunset; and embarking on a horizontal river to float between two parallel semi-circular mountain ranges which extend on the same general level as the earth-slab from the west point of the horizon round beyond the north point to the east point. This nocturnal voyage required twelve hours, during which time the sun was neither above nor beneath either heaven or earth, but in *Douaout*,[1] a region of darkness to the north of both.

Here follows a ground plan of the Egyptian earth according to Maspero (Fig. A):

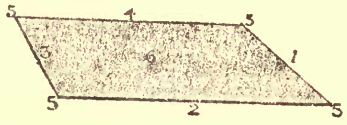

FIGURE A

Adding now the pillars for the heaven-slab, we have the following (Fig. B):

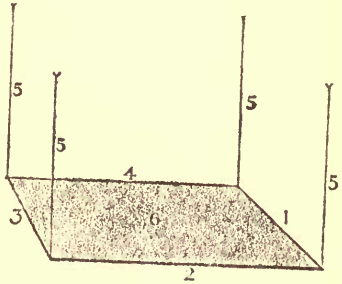

FIGURE B

Adding now the slab and the Douaout, as Maspero conceives it, we have the following (Fig. C):

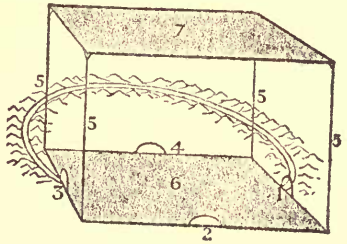

FIGURE C

(1) Bakhu, "Mountain of the Sunrise." (2) Appitto. (3) Mountain of sunset. (4) Unnamed. (5) Supports of heaven. (6) Egypt at center of earth-slab. (7) Iron heaven.

[1] Commonly spelled *Duat*, or *Tuat*.

To find the fullest exposition, see Revue de l'Histoire des Religions, Nov. and Dec., 1888, pp. 266–270. For a less satisfactory exposition, in English, see his article entitled "Egyptian Souls and their Worlds," in the New Princeton Review, July, 1888, pp. 23–36.[1]

This interpretation we cannot accept. It is not a critical construction of the data of Egyptian cosmology as furnished by the texts. . . . It is sufficiently refuted by the following considerations:

I. The natural sky is so manifestly concave that no people has ever yet been found to believe it to be a flat slab, of iron or of any other matter.

II. The Egyptians had certain designations for heaven which expressed its curved form. See Brugsch, pp. 199, 200.

III. A people as intelligent as the ancient Egyptians in earliest historic ages cannot possibly have believed in the literal existence of four wooden or iron sky-props taller than the highest course of sun or star, and strong enough to sustain an iron slab as wide and long as the visible heavens, with an equally extended ocean above it.

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[1] "Earth was not to the Egyptians what it is to us, a globe carried safely through space by the laws of gravitation; everybody in Egypt knew that it was a flat, oblong, quadrangular slab, more like the upper board of a table than anything they could imagine. It was surmounted by a flat iron roof stretching at some distance from it and supported by four strong pillars which prevented it from falling and crushing what was underneath. Thus the world was like a two-storied house, the various parts of which might be connected, as they are in our houses, by a staircase, or ladder. The Egyptians supposed that there was somewhere in the West a tall ladder which went up straight from earth to heaven. . . . Nobody was allowed to climb it unless he knew the password, and, even after giving it, those poor souls were in danger of never reaching the top who were not helped by the hand of some piteous divinity. Once on the solid floor of the firmament, they traveled northward until they came to the brink of the Boreal Ocean; there they found the ferryboat or the ibis of Thot, the judge Osiris and his assessors, the Islands of the Happy, where they settled forever and ever amongst the indestructible stars, as indestructible as any of them."—From the above cited article in the *New Princeton Review*.

IV. The four heaven-pillars of the Egyptian mythology are never located by the Egyptian texts, as according to Maspero they would have to be, in four opposite directions from Egypt, but always in the remotest north. See Paradise Found, p. 74, and Brugsch's statement that I have there quoted. This fact alone is fatal to Maspero's entire interpretation.

V. In all Egyptian pictures where Shu is represented as supporting heaven upon his upstretched hands, he is placed directly under its middle or center. This in Maspero's interpretation would make middle Egypt his proper mythological standing ground. His proper station, however, according to all mythological texts, is in the highest north—in fact, at the terrestrial pole. See Brugsch, pp. 208–210. Compare the chapters in Paradise Found which treat of the "Navel of the Earth" and "Navel of the Heavens," and of the "Pillars of Atlas."

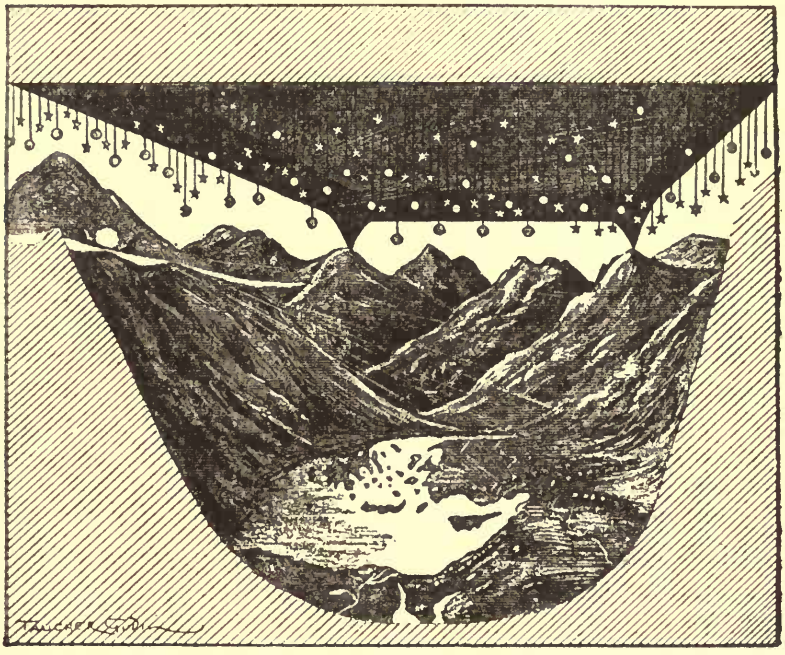
VI. Nearly every eminent Egyptologist except Maspero holds that the ancient Egyptians were acquainted with the true figure of the earth, and that they had all the astronomical knowledge necessary to enable them to orient pyramids and temples to a hair's breadth, and to harmonize the solar and lunar years. Brugsch, Chabas, Lieblein, and Lefébure are of this opinion. Lieblein, in fact, confidently maintains that the texts show that the ancient Egyptians already understood and believed the heliocentric theory of the universe. See also Rawlinson's Herodotus (Am. ed.), vol. ii, pp. 278, 279.

At the time the foregoing demurrer was written and placed in "manifolded" copies in the hands of my students, no man was esteemed a higher authority in the peculiar cosmography of Egypt than Maspero. It would be difficult to name a higher to-day. His exposition of

the Egyptian universe in the writings above named, and in his Études, remained unchallenged by any professor of Egyptological studies. It is not surprising, therefore, that as recent and reliable a cosmologist as J. L. E. Dreyer, in his History of Planetary Systems, still describes the world of the Egyptians as "a large box," and their stars as "suspended by cords." In the year 1895, however, in his work entitled The Dawn of Civilization, Maspero himself introduced into his earlier teachings some modifications, and presented a picture of his own devising to illustrate his riper view of the Egyptian cosmos. This picture we here reproduce for the study of the reader.

His description in this revised form reads as follows: "They imagined the whole universe to be a large box, nearly rectangular in form, whose greatest diameter was from south to north, and its least from east to west. The earth, with its alternate continents and seas, formed the bottom of the box; it was a narrow, oblong, and slightly concave floor, with Egypt in its center. The sky stretched over it like an iron ceiling, flat according to some, vaulted according to others. Its earthward face was capriciously sprinkled with lamps hung from strong cables. Since this ceiling could not remain in mid-air without support, they invented four columns, or rather four forked trunks of trees, to uphold it, similar to those which main-

tained the primitive house. But it was doubtless feared lest some tempest should overturn them, for they were superseded by four lofty peaks rising at the four cardinal points and connected by a continuous chain of moun-



THE EGYPTIAN UNIVERSE

(According to Maspero.) Section taken from Hermopolis. To the left, the barque of the sun on the celestial river.

tains. . . . These were not supposed to form the actual boundary of the universe; a great river, analogous to the Ocean-stream of the Greeks, lay between them and its utmost limits. This river circulated upon a kind of ledge

projecting along the sides of the box a little below the continuous mountain chain upon which the starry heavens were sustained. On the north of the ellipse, the river was bordered by a steep and abrupt bank which soon rose high enough to form a screen between the river and the earth."

The modifications here introduced are slight and of doubtful merit. The sun is made to set, not at a horizon level with the Sahara, but at one only "a little below" the level of the suspended stars in the zenith of the observer. Who can believe that the builders of the pyramids, watching a sunset, saw any such non-existent mountain heights to the west of them? And who can believe that any people capable of identifying to-day's sun with the sun of yesterday, and capable of inventing a real boat and a hidden world-river for the purpose of accounting for his reappearance in the east after his disappearance in the west, would be ignorant of the fact that the moon and stars also travel across the sky to their setting, and that consequently they cannot possibly be cabled or chained to an immovable sky-canopy of iron? It is hard to be patient with an author who can soberly ascribe such incredible crudities to the finders and the users of the Sothic year.[1]

[1] It seems quite time that some qualified expert should give us a thorough study on "The Nile of Heaven." How utterly unlike the

The latest writers on Egyptian science and religion—Breasted, Budge, Petrie, Erman, Steindorff, Von Strauss-und-Torney, Wiedemann, Spiegelberg, Schack-Schackenburg, Naville, and the rest—give us no noticeable improvement on Maspero's world-picture.[1] The cosmology which they express, or more commonly content themselves with implying, is in most cases simply inconstruable in thought. And since all our translators of the original Egyptian texts are men who neither expect nor search for any intelligible world-concept in those texts, it is not to be anticipated that other investigators, unable to decipher technical terms and to test conjectures, will soon be able to help our baffled minds. However, now that we have discovered some unsuspected unity and rationality in the cosmological thought of the ancient Babylonians and their predecessors, may we not hope that at an early date some young and uncommitted Egyptologist will feel impelled to investigate the question whether the Baby-

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celestial Nile of Maspero's picture is the Nile of heaven in the following text given in Erman's *Religion of the Egyptians*, p. 68: "Thou didst create the Nile in the depth and dost lead him hither at thy pleasure to give nourishment to men. Thou didst create the life-nourishment of all distant lands and didst set a Nile in heaven that it may flow down to them; he forms waves upon the mountains like an ocean and moistens their fields. How beautiful are thy decrees, thou Lord of Eternity. The Nile of heaven didst thou give over to the strange peoples and the animals of the desert, but the Nile from the depth comes for Egypt."

[1] Wiedemann ascribes to the Egyptians a belief in three Sheols: one above the earth, one on the earth, and one under the earth. *Die Toten und ihre Reiche im Glauben der alten Ægypter*, Leipzig, 1900, S. 19.

lonian world-idea may not prove something of a clue to the Egyptian?

Light is already coming, and as of old from the east. The fact that Lepsius found what seemed to him evidence of a plurality of heavens in Egyptian thought is encouraging. Many things in Brugsch favor the supposition that the Egyptian cosmos resembled the prehistoric Euphratean. For example, he finds that the stars are over the heads of the inhabitants of Hades,[1] and this precisely answers the last of the twelve requirements in Babylonian cosmology. If, as the Assyriologists unanimously assert, a cosmological symbolism underlay the pyramidal structures of Babylonia, why not also those of Egypt? And if, as Sayce says, it was the four-cornered and pyramidal earth which was intentionally imaged in sanctuaries in the valley of the Euphrates, why not also in those others in the valley of the Nile?[2] Winckler affirms that the culture of Babylonia and that of Egypt are no more to be regarded as distinct than are the civilizations of two modern civilized states.[3] In the same passage

[1] *Religion und Mythologie der alten Ægypter*, p. 204.

[2] O. D. Miller, "The Pyramidal Temple," in the *Oriental and Biblical Journal*, Chicago, vol. i, pp. 169–178. Also, Boscawen, in the same, 1884, p. 118. Also other references in *Cradle of the Human Race*, p. 228ff. Flinders Petrie does not fail to remind us that under its sloped casing the Great Pyramid of Cheops is a seven-staged one. See *The Academy*, London, April 18, 1891.

[3] *Himmels- und Weltenbild*, S. 30, 31. For a fuller and more technical treatment of these matters, see "Astronomisch-Mythologisches," in his *Altorientalischen Forschungen*, Bd. ii. Also, Hommel, *Grundriss der*

he shows that their astronomic divisions of world-time were identical. Even Maspero, as we have seen, notices the singular agreement found in the most ancient thought of the two peoples with respect to the *horizontal* motion of the sun. Each people applied to its under-earth—that far-off original of Dante's pendent Purgatorio Mount—terms strikingly descriptive of the inverted pyramid of our diagram. Among the terms applied to the Egyptian Amenti are, "mountain," "pyramid," "hidden mountain," "*inverted precinct.*" Nor should it be forgotten that, corresponding to the Semitic expression "heaven of heavens," Naville has found in a Litany of Ra the counterpart expression, "The Hades of Hades."[1] Furthermore, as in Mithraism, and in that survival of Babylonian lore which scholars call Sabeanism, so in the oldest Egyptian teaching, the "Ladder of heaven," according to St. Clair, had just seven steps.[2] Corresponding hereto, in the Book of the Dead, chapter 144, we read of "seven halls" in the

Geographie und Geschichte des alten Orients, 2d. Aufl., 1904, S. 113ff. Alfred Jeremias, *Der alte Orient und die ägyptische Religion*, in the scientific supplement of *Leipziger Zeitung*, No. 91, 1905; new ed., Leip., 1907.

[1] The Amenti of Amenti.

[2] George St. Clair, in *Biblia*, Meriden, March, 1905, p. 371. When the Mithraic ladder had eight rounds, reference was expressly made to the heaven of the fixed stars as answering to the eighth. Franz Cumont, *Mystères de Mithra*, Brux., 1899, i, 117. On the Egyptian Heaven-ladder, see Budge, *The Gods of the Egyptians*, i, 167f., 490; ii, 92, 241. As it afforded room for three abreast, a remarkable parallel may be found described and pictured in Sir Monier-Williams, *Buddhism*, pp. 414–419.

underworld. The latest published studies by English as well as by Continental experts reconfirm the traditional view of the derivation of the Egyptian culture from the valley of the Euphrates.[1]

It is the opinion of the present writer that in the end it will be found that, whatever the crudities and confusions of the magic texts and popular conjurations, the astronomy and cosmology of the learned priests in Egypt through all traceable ages corresponded in every essential with the astronomy and cosmology taught in the Euphratean valley. When that time of insight shall come, let due honor be paid to Professor Eduard Roth, who in the face of an unbelieving generation of Egyptologists boldly affirmed that the doctrine of an eightfold series of heavens, seven of them planetary and one sidereal, all concentric and geocentric, was the genuine Old-Egyptian doctrine.[2] Even he was anticipated by Guigniaut, a French savant whose learning entitled him to rank with the best cosmologists of his age.[3]

Since writing the foregoing I have been gratified to notice that in his recent course of lectures in this country Professor Steindorff, of Leipsic, has all unconsciously set forth in a single sentence what I am representing as hav-

[1] *Egypt and Western Asia in the Light of Recent Discoveries*, by L. W. King and R. H. Hall, London, 1907, pp. 32–44.

[2] *Geschichte unserer abendlandischen Philosophie*, Bd. i, 167, 199; ii, 88.

[3] Creuzer-Guigniaut, *Religions de l'Antiquité*, vol. i, 488n.

ing been in all likelihood the true original world-view of the Egyptians. In reporting what seems to him a chaos of discordant conceptions of the cosmos, he incidentally remarks that according to some texts, "*Under the earth is supposed to lie a counter-earth, which is made exactly like the earth and the heavens*"—our earth and heavens he means of course—"*and which is peopled by the dead.*"[1] Let us hope that the worthy successor of Ebers may soon find in this conception of an underworld which is the perfect *antipodal* counterpart of our overworld the solution of many a problem.[2]

[1] *Religion of the Ancient Egyptians*, 1905, p. 35.

[2] Long ago Pierret translated an oft-occurring Egyptian expression: "*la double terre.*" *Mythologie égyptienne*, Paris, 1879, p. 74. On this Gerald Massey remarks: "It has been assumed by some Egyptologists that the 'two earths,' or 'the double earth,' were limited to the division of space into south and north by the passage of the sun from east to west. But in the making of Amenti *the one earth* was divided into *upper and lower*, with *a firmament or sky to each*, and thus the earth was duplicated." *Ancient Egypt*, London, 1907, p. 411. (Italics mine.) Here the true conception seems clearly expressed, but he just misses the true relation of the two earths as *antipodal*, for on page 410 he places the lower and its firmament "*within* the earth"; a mistake which appears again on page 413, in his criticism of Maspero's description of the universe. On page 347 he even misses the true relation of the celestial hemispheres in passages where they are clearly pictured by reversed signs as upper and lower, and where their right relation has been suggested by Renouf and others.

CHAPTER VI

THE HOMERIC UNIVERSE

It is not greatly to the credit of Western scholarship that from the time of the Revival of Learning in Europe until well into the last quarter of the nineteenth century, no interpreter of Homer suggested as a permissible conjecture the idea that the earth of the Iliad and Odyssey is an unsupported sphere or spheroid in the center of the starry sphere. When, in the year 1881, this idea was presented, first in the New York Independent, and a little later in the Boston University Year Book, volume ix, Dr. L. R. Packard, professor of the Greek language and literature in Yale University, wrote: "If it is true, all our books and maps are wrong, and we must admit that all scholars have been mistaken in their understanding of the ancient records." The general incredulity showed that fuller proof was needed. Accordingly, in 1885, in my work on The Cradle of the Human Race, I gave a more extended exposition of the entire subject, an exposition based upon a critical examination of every cosmographical datum found in the Homeric poems, and upon a study of all explanations which previous interpreters of repute had pub-

lished—the whole constituting a treatise of more than fifty octavo pages. In this it was shown that if the cosmographical statements and implications in Homer are to have any harmonious interpretation, the interpreter will have to proceed upon the theory that the earth of the poems is a sphere. So convincing was the demonstration that many eminent scholars on both sides of the Atlantic at once accepted the new doctrine.[1] Indeed, since its publication, the writer has not seen one attempt to answer his arguments or to reëstablish by fresh evidence the former teaching that the Homeric earth is a "flat disk," having within it, or to the west of it on a level with its central plane, a cavern-like realm of Hades.

Of course, an interpreter may say, with Professor William Cranston Lawton, "Dr. Warren's hypothesis accounts for the statements of Homer more clearly than any other," and still decline to find in the hypothesis indubitable proof that the Greeks in Homeric times, or even that one of their bards, held the conception of a spherical earth. Professor Lawton himself, with characteristic frankness, remarks: "In my own mind I vacillate between accepting it and incredulity as to Homer's having any clear geometrical ideas and theories at all."[2]

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[1] See "Reception Accorded to the True Key to Ancient Cosmology," in the Appendix to *The Cradle of the Human Race*, pp. 450–457.

[2] *Art and Humanity in Homer*, New York, 1896, p. 183.

Of course, also an interpreter may say, as many have, We are not concerned to find an interpretation that harmonizes all the cosmological statements of the poems, and for the reason that any discrepancies discoverable in those statements are welcome evidence in support of our thesis that the poems are composite productions, written by many different authors, and reflecting the cosmological views of different epochs. The author of our latest and best American handbook of Homeric antiquities, Professor Seymour, does not join this company. While admitting the poet's use of earlier material, he says: "These poems have such unity as cannot easily be explained if they are the work of several poets." And he refers his readers to my interpretation as affording a way in which Homer may not only be harmonized with himself, but also harmonized with Pindar.[1]

To reproduce in this place my Homeric studies of 1885 would give to our present chapter a disproportionate length and significance. Suffice it, therefore, to say that they presented from the Iliad and Odyssey what is to many convincing evidence, not only of a

[1] *Life in the Homeric Age*, by Professor Thomas Day Seymour, New York, 1907. Professor Seymour not only commends Friedrich Blass's admirable defense of the unity of the Homeric poems, but also adds: "The stamp of a great personality seems to lie upon each. But during recent years scholars have been so busy in searching for proofs of the different authorship of different parts of the poems that they have overlooked indications of unity of purpose, of spirit, and of execution" (p. 15).

spherical earth, but also of a plurality of heavens.[1] Furthermore, a clear reference to the upright axis of the heavens and earth was found in the pillar of Atlas.[2] A unitary cosmical water-system closely corresponding to that of the Indo-Iranians was brought to view.[3] New light was thrown upon the nightly journey of the sun from west to east.[4] Finally, Hades was identified as an inverted country, beneath our earth yet not within it.[5]

In compensation for the brevity of this summary, one of the discussions referred to is reproduced in the Appendix to the present volume. Also a paper on "Homer's Abode of the Living," printed in the Boston University Year Book of 1885.

Comparing now the Homeric universe with the far-off Babylonian, we discover in the

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[1] *The Cradle of the Human Race*, pp. 338–350.

[2] Pp. 350–358. On page 191f. reference was also made to the thoroughly Babylonian doctrine of Anaxagoras, Anaximenes, and other Ionic philosophers, as to the primeval coincidence of the terrestrial zenith with the celestial pole, and the horizontal motion of the sun in its daily circuits around the perpendicular axis of the universe. This feature of early Greek teaching is well brought out in the article on "Astronomy" in Daremberg and Saglio, *Dictionnaire des Antiquités Grecques et Romaines*, Paris, 1875.

[3] Pp. 254–256, 333–335.

[4] Pp. 336–338.

[5] Pp. 467–487. That this Homeric conception of the underworld, as identical with the southern hemisphere of the earth, was still current centuries after the age of Homer, is evident from a remarkably clear cosmographic passage in the pseudo-Platonic Dialogue of *Axiochus* (371A). See comments in J. A. Stewart, *The Myths of Plato*, London, 1905, p. 110. Unwarrantable interpolations by the translator render the version of the passage by George Burges (in Bohn's *Plato*, vi, 53) quite worthless.

former no mention of "seven" (or eight) as the number of the heavens, nor is there mention of the earth as four-cornered. On the other hand, however, we do find, in both systems, (1) the geocentric feature, (2) the plural heavens feature,[1] (3) the perpendicular world-axis, (4) the earth-encompassing Ocean-stream, and (5) the *outre mer* Hades, under yet not within the earth. Taken together, the five correspondences are certainly striking evidence of a common origin of the two world-views.

The most noticeable point of disagreement is perhaps this, that while in Babylonian thought the earth terminates in the second heaven, and furnishes a palace floor for Shamash in his own particular sphere, it seems in the Odyssey to terminate in Kalypso's isle, at the "navel of the sea." Curiously enough, however, the seeming disagreement includes a very remarkable common feature; for, like as the Babylonian symbol of Shamash shows the four-faced world-fountain from which all waters proceed, so in Kalypso's isle the same supernatural fount pours its fourfold flood toward four opposing points of the horizon.

Possibly another obscure point in Homer's cosmos may yet receive at least a partial illumination from the Babylonian. Interpreters

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[1] Tilak goes yet farther and says: "The Greek mythology speaks of the seven layers of heaven over one another."—*The Arctic Home in the Vedas*, 1903, p. 291.

have never quite known what to make of Homer's two world-thresholds, the one above and the other underneath his earth. These cannot be dismissed as the momentary fancy of a single poet, for they figure in Hesiod as well. How would they fit into the Babylonian world-view?

Perfectly. In our diagram we have seen that the great world-highway for gods traveling through the celestial spheres was called "The Way of Anu." Corresponding to this, beneath the earth, was "The Way of En-ki, or Ea." Along this latter were the seven world-gates successively passed by Ishtar in her descent to visit the Queen of the Nether World. In the Journal of the American Oriental Society, in my first article on the Babylonian and pre-Babylonian cosmology, I suggested that the *Olam*-doors of Psalm 24 were the celestial counterparts of those passed by Ishtar; and this suggestion was unhesitatingly indorsed by Professor Sayce. But if such were the two series of world-doors, the one high above the earth, and the other as deep beneath it, the upper and under "thresholds" mentioned by Homer and Hesiod would perfectly fit the first or the last of the doors in each direction.[1]

Originally, other agreements between the Homeric and the Babylonian world-view may

[1] The upper series of these world-doors is clearly and correctly conceived of by J. A. Stewart in his *Myths of Plato*, p. 351.

well have existed; agreements which, at a later period, were gradually lost in the successive editings of the poems by redactors schooled in the later systems of Greek astronomy and cosmology. In any case, it is reasonable to conjecture that, long anterior to the Homeric age, the Greeks received their cosmology, as they did their alphabet, from Asiatic neighbors, who represented, and in their commercial and political intercourse diffused, the ideas and the teachings of the earlier Babylonian and pre-Babylonian culture. The Father of History, himself a Greek, did not hesitate to say that his countrymen "received from the Babylonians" even their division of the day into twelve hours and their instruments for accurately measuring them.[1]

Scarcely had I laid down my pen after writing the foregoing sentence when a new monthly issue of the Edinburgh Review of Theology and Philosophy came to hand. In it, fresh from the pen of the well-known translator of the Code of Hammurabi, Dr. C. H. W. Johns, of Cambridge University, stood the following: "What evolutionary process lay behind the

[1] Herodotus, ii, 109. That is a testimony of antiquity; here is one of to-day: "When Thales, the Ionic philosopher, astounded the Ionic-Greek world by foretelling a solar eclipse, he borrowed his wisdom from the Babylonians, as Pythagoras drew his philosophy, with its symbolism of numbers, from the same Semitic source." Professor J. A. Craig, in Winckler's *History of Babylonia*, New York, 1907, p. 143. On the far-reaching influence of the Babylonians over Greek culture see Müller's *Handbuch der klassischen Alterthumswissenschaft*, vi, 453–457.

Babylonian religious thought is lost for us in the mists of prehistoric time. We may indeed amuse ourselves by speculating as to its progressive development, but we shall find it more useful to estimate exactly its nature and potentialities as the finished product, which alone we can know, and can now know so fully. It spread throughout the world, with local variations; Egypt and early Arabia, Elam and Iran, Persia, India, China, the Mycenæan culture, Etruscan and early American, prehistoric Europe, North Africa, Spain, and Crete show such marked traces of it that it may fairly be regarded as common to mankind. The only excuse for calling it Babylonian is that in Babylonia we find its oldest presentation, and that the clearest and fullest; while astronomy is so fundamentally its ground-stuff that the home of astronomy must have the credit of its production. It is a philosophy of the cosmos—a religion . . . written on the sky itself, like the revelation Hume demanded."[1]

In such language something of the enthusiasm of a cuneiform decipherer is doubtless to be seen, but where to find a really scholarly present-day estimate of the influence of Babylonian and pre-Babylonian ideas upon human thought and human history expressed in terms more sober, I scarcely know. Certainly the

[1] *Review of Theology and Philosophy*, Edinburgh, vol. iii, p. 78.

latest estimates presented by German scholars are often less moderate rather than more.[1]

[1] F. Delitzsch, *Babel und Bibel.* Winckler, *Die Babylonische Kultur in ihren Beziehungen zur unsrigen.* A. Jeremias und H. Winckler, *Im Kampfe um den Alten Orient; Wehr- und Streitschriften,* Leip., 1907. C. Fries, "Babylonische und griechische Mythologie," in *Neue Jahrb. für das klassische Altertum,* ix, 689ff.; "Untersuchungen," in *Beiträge zu alten Geschichte,* iv, 227ff.; and "*Appell,*" in the *Nationalzeitung,* Beilage of Oct. 5, 1906.

CHAPTER VII

THE INDO-IRANIAN UNIVERSE

In any attempt to determine the earliest world-view of the East Aryans the safest method is doubtless to begin with the oldest conception of the universe definitely set forth in Hindu or in Old Persian literature, and from this to work backward and upward in the interpretation of any cosmographical data presented only incidentally and fragmentarily in sources of an earlier date. Pursuing this course, one must first give attention to the world-concept set forth in the Sūrya-Siddhānta, a Sanskrit treatise mentioned with other astronomical works at least fourteen hundred years ago.

In this work the earth is described in express terms as "a globe," unsupported in empty space, central in its relation to all heavenly bodies, and with its polar axis—like the Babylonian—perpendicular in position. At its upper or northern pole an extremely lofty mountain lifts itself high into the heavens, while at the southern or under pole a corresponding mountain projects downward an equal distance. The former is represented as the mountain of the gods (*sura*), the latter as the mountain of the demons (*asura*). The two are the opposite

ends of one stupendous material mass which, as a kind of core, extends directly through the earth from highest to lowest point.[1] A girdle of oceanic waters surrounds the globe at the equator, separating the upper from the lower hemisphere. On or near the equator, equidistant from each other, are four notable cities which belong respectively to four large divisions of the upper hemisphere called "varshas." In consequence of the perpendicular position of the polar axis, the plane of the movements of the sun and moon around the earth is necessarily horizontal. North is synonymous with up, and south with down; yet the author fully understands that "up" and "down" are wholly relative terms; and he expressly states that "Everywhere upon the globe, men think their own place to be uppermost."[2]

Here, then, a thousand years before the days of Columbus, we have a perfectly clear-cut presentation of the earth as spherical, or rather spheroidal, in figure. Considering the age and country in which it appears, one must pro-

[1] The name here given to this earth-core is Meru, but in other Sanskrit writings this name is almost invariably restricted to the upper end, that is, to the "Mountain of the gods," otherwise known as Su-Meru, that is, Meru the Beautiful. On the great antiquity of the word Meru, see *Cradle of the Human Race*, p. 183; also p. 236.

[2] See *Sūrya Siddhānta*, tr. by Ebenezer Burgess, with notes by W. D. Whitney, New Haven, U. S. A., 1860. Also the translation by Pundit Bāpū Deva Sāstri, Calcutta, 1861.—Śloka 53, chapter xii, reads as follows: "Everywhere upon the globe of the earth men think their own place to be uppermost; but since it is a globe in the ether, where should there be an upper, or where an under side of it?"

nounce the concept of great interest. Though strictly Indian, it cannot essentially misrepresent the Iranian conception, for in this also we find, with other correspondences, an upright world-axis, and the two antipodal polar mountains: Sacred Harā-Berezaiti in the North, and Arezūr, dark mount of demons, in the South.

The Sūrya Siddhānta, as we have seen, incidentally alludes to four of the mythological "varshas" into which the surface of the upper hemisphere was supposed to be divided. This leads to the inquiry: How many such divisions were supposed to exist, and what were their names? This double question is fully answered in Sanskrit and Iranian documents of unknown antiquity; and as the number given in the Iranian tradition, seven, is the same as in the Indian, the evidence is strong that a *sevenfold* division of the northern or upper hemisphere was held and taught at a time prior to the separation of the primitive Indo-Iranian stock into its later Hindu and Persian branches. The further fact that in the two gradually differentiated languages the names of the individual divisions bear no resemblance to each other seems good evidence, so far as it goes, that neither people, in some period subsequent to their separation, borrowed its scheme from the other.

The Iranians called their geographical divisions "keshvares." The names and respective

locations of the seven are given in well-known Avestan texts; also their relation to the Holy Mount. Like the varshas, the keshvares were supposed to be separated from each other by stupendous mountain ranges impassable by man. In both systems, the Persian and the Hindu, the highest and divinest division was the one out of whose center rose the heaven-piercing Mountain of the Gods. The productions and scenery of this region were little short of heavenly. Its form in both systems was that of a perfect square. The Iranians called it Kvanīras, the Indians Ilāvrita. In studies published in the year 1885,[1] the present writer gave diagrams showing the agreements and disagreements of the two mythological maps. These diagrams were the first ever attempted on a polocentric projection. After examining them and the accompanying exposition, Professor F. Spiegel, foremost of Iranists then living, wrote as follows: "So far as the argument moves within the circle of my studies, I can assure you of my perfect agreement. Your exhibition of the arrangement of the Indian dvīpas and Iranian keshvares has essentially corrected my own unclear ideas on this subject. Also of the correctness of your opinion respecting the cosmical water system of the prehistoric Indians and Iranians I am perfectly convinced."

Thus far we have occupied ourselves with

[1] *The Cradle of the Human Race*, pp. 152, 159.

the earth's upper hemisphere merely; how now was the under hemisphere pictured in Indo-Iranian thought?

Notice, first of all, the perfect symmetry of the two halves of the upper hemisphere whichever way we may imagine it divided by a vertical plane passing through its axis. Imagine the face of a mariner's compass painted on the horizontal top of holy Harā-Berezaiti, or of Su-Meru, and then let the division by the vertical plane be on the line marked north and south, and each half of the divided hemisphere would be a perfect counterpart of the other. Let it be on the line marked east and west, and again each half would be a perfect counterpart of the other. Even on a line connecting the northeast and southwest, or the northwest and southeast angles of the mountain, the result would be the same. This fact suggests that, in a world so symmetrically constructed as this, we should antecedently expect to find that a plane halving the globe on the line of the equator would in like manner show the southern half to be a perfect counterpart of the northern. The fact that in the Sūrya-Siddhānta the two polar mountains are described as opposite and perfectly similar ends of one and the same outcropping earth-core, suggests the same idea of geographic correspondence throughout the two hemispheres. This antecedent expectation is further strength-

ened when it is noticed that in the same treatise the parallelism is carried so far that a south-polar star is placed as far below the south-polar mount as the north-polar star is above the Mountain of the Gods. The full confirmation of the expectation seems to come when we discover that, at least in Indian thought, the divisions of the under hemisphere were in number precisely the same as the varshas of the upper hemisphere, namely seven; and that while these underworld divisions were called pātālas, nothing in the etymology of the name, or in the extant descriptions of the regions, is in the least inconsistent with the requirements of the law of perfect symmetry elsewhere found prevailing throughout the system. But if this law holds, the seven pātālas, in form and collocation, must be exact counterparts of the varshas; only, like the polar mountain about which they are grouped, *inverted in position*. In no case is it permissible to picture them as dark caverns in the heart of the earth, as so many writers have done. The Vishnu Purana (bk. ii, ch. v) and the Mahābhārata (Udyoga Parva, sect. xcviii) describe them as "excellent regions," as surpassingly beautiful, and as illuminated by our circling sun and moon. In the Story of Suparaga[1] we read of a voyage which a merchant ship made to one of the pātālas. Upon the surface of the earth,

[1] Speyer, *The Jatakamala*, pp. 126, 127.

therefore, and not within it, they must have been located.

Passing now from the earth to the regions above and below it, we find named and described in the sacred books of the Indians seven heavens, including Brahma's, above and adjacent to the central earth. Corresponding to these we also find seven subcelestial hells. It is true that the Code of Manu speaks of twenty-one hells, but as Professor Hopkins, of Yale, well remarks: "The oldest Purana, the Mārkandeya, has but seven, a conception older than Manu's, or the later lists of thousands. The Padma Purana has also seven hells."[1] The same number of heavens and hells is traceable in the Avestan literature,[2] and we may therefore safely infer that the untraceably ancient conception of seven concentric planetary spheres revolving about an upright axis of earth and heaven was an essential part of the prehistoric Indo-Iranian world-idea.

The "dvīpas" now demand our attention. In the cosmography of the Puranas we are given elaborate accounts of seven parts of the

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[1] *The Religions of India*, p. 443, cf. 478. Already "in the Rig-Veda the heavens, the earth, and the lower regions are all conceived as divided sevenfold."—Bāl Gangādhar Tilak.

[2] "Parsi mythology knows also of seven heavens," remarks Darmesteter in his Introduction to the Vendidâd, *Sacred Books of the East*, vol. iv, p. lx. In the Bundahish, ch. xxviii, the abodes of the demons are so correlated with the seven planets as to show that they are of the same number (*S. B. E.*, vol. v, 114). Even in the literature of the Jains we find the seven-staged heaven. (*S. B. E.*, vol. xlv, p. 222.)

universe denominated dvīpas.[1] What and where were these? The word has been explained by Sanskrit etymologists as signifying "between waters." Accordingly, Indianists have usually translated it "island." Every island is certainly "between waters." The question arises, then, Where, and what, are these seven islands of the Indo-Aryan world?

Light begins to dawn when we discover that they are all concentric and geocentric. Remarkable islands![2] But are they flat concentric rings like those surrounding the planet Saturn? So say most modern scholars. Indeed, I know of no dissentient authority. Books have been issued with the picture of a target-board consisting of a bull's eye and six or seven surrounding rings, as a true diagram of the Hindu universe. Even Thibaut in his right scholarly treatise gives us nothing better.[3] Can this be correct? Are the surfaces of the seven islands, like the rings of the target-board, in a common plane? In other words, are the

[1] Their names are: Jambu, Plaksha, Salmalī, Kūsa, Krauncha, Sāka, and Pushkara. The Vishnu Purana adds: "They are surrounded severally by seven great seas—the sea of salt water (Lavana), of sugar-cane juice (Ikshu), of wine (Surā), of clarified butter (Sarpis), of curds (Dadhi), of milk (Dugdha), and of fresh water (Jala). Jambu-dvīpa is the center of all these; and in the center of this is the golden mountain Meru."

[2] Dr. Whitehouse might easily claim that dvīpa should be translated firmament, for in his view of Gen. 1. 6 the one function of a firmament is to serve as a separating barrier "between waters" above and below. This would at once give us seven firmaments as a feature of the Indo-Aryan world.

[3] See *Grundriss der Indo-Arischen Philologie und Alterthumskunde*, 1889, p. 21.

islands of a common height? The Puranic writers say, No. On the contrary, their respective heights, measured from the horizontal plane of the earth's center, seem to follow some law of progression, arithmetic or geometric. How, then, are we to view them in their relation to each other?

In a prize essay, written by Babu Shome, a native Hindu, and printed in the Asiatic Researches as long ago as 1849, is found a statement which may prove to be the key to the total Indo-Iranian system. It presents a conception of the cosmos fascinating in interest—one far more complex and highly developed than Western scholars have ever credited to the Hindu of any age. At the same time it is very reassuring to remember that the author of the essay was not seeking to gain credit for his countrymen, or for their prehistoric ancestors. On the contrary, the title he gave to his essay was, "Physical Errors of Hinduism." He had become a Christian, had become acquainted with the astronomic and geographic science of the Western nations—in fact, had become a teacher in a Christian college—and the whole aim of his treatise was to expose the utter untenableness and irrationality of the orthodox Hindu teachings in the realm of science. Furthermore, his representation of the Hindu teaching of his time is the more trustworthy from the fact that he bases it,

not on literary products of distant times, but on the authentic teaching of the leading pundits then living in Calcutta.

The universe-conception set forth by Shome as fit only for scornful repudiation is one which, if it had been found in a dialogue of Plato, would long ago have been world-famous as a supreme creation of poetic or mythopœic imagination. It would also have been hailed by all competent commentators as a vastly more convincing proof of the influence of Pythagorean teachings upon Plato than any we now find and prize in the Dialogues that have reached us. The task of presenting the conception in words is far from easy.

First of all, one must recall to mind the Indo-Aryan earth (Jambu-dvīpa), with its upright polar axis, its upper and under polar mountains, its seven symmetrically arranged varshas in the upper hemisphere, all separated by boundary ranges of mountains of cosmic proportions; its seven symmetrically arranged pātālas in the under hemisphere, all also separated by boundary ranges of cosmic proportions: each hemisphere in these respects the exact counterpart of the other. Next, one must conceive of Plaksha as a yet larger globe, also upright as to its polar axis, but including in the center of its capacious interior Jambu-dvīpa with all its varied populations. This new globe must, furthermore, in its divisions

everywhere correspond to Jambu-dvīpa—hemisphere to hemisphere, varsha to varsha, pātāla to pātāla, boundary range to boundary range. In it the inhabitants must be taller than those of Jambu, their lives longer, their powers more godlike.

Then at double the distance of Plaksha from Jambu one must think of a vastly greater globe including in the center of its capacious interior both the others, and answering to them in its divisions—hemisphere to hemisphere, varsha to varsha, pātāla to pātāla, boundary range to boundary range throughout. This is Sālmali, the third of this wonderful series. Its inhabitants must notably outshine and outlive the inhabitants of Plaksha.

Again, far out beyond, above and beneath Sālmali must be imaged Kuśa, and as before the number, shape, and mutual relations of its varshas and pātālas must precisely correspond to those of the inner dvīpas respectively. To this in like manner the remaining fifth, sixth, and seventh must one by one be added, each following the same law of subdivision, each removed from the last by twice the distance of the last preceding; each filled with suitable mythologic populations; until with the seventh, the all-including Pushkara, the series is complete. With this the mental picture of the world-whole lacks but one final feature, the almost infinitely remoter *loka-loka*, the star-

studded shell of Brahma's primal universe-egg. In such a universe a mathematic mind would find its paradise. In it a right line in any direction from the center point of Jambu-dvīpa, if sufficiently produced, would pass through an identically shaped and bounded varsha, or pātāla, in each of the seven concentric spheres. Conversely, to close our description as Babu Shome closes his: "The seven divisions in each of the continents (dvīpas) are separated by seven chains of mountains and seven rivers, lying breadthwise, and placed at such inclinations in respect to one another that if a straight line be drawn through any chain of mountains or rivers and its corresponding mountains or rivers on the other continents, and produced toward the central island (Jambu-dvīpa), it would meet the center of the earth."[1]

This incomparably complete world-concept the just quoted author contemptuously dismisses as "a monstrous picture of geographic nonsense." Might it not more fittingly be styled the consummate flower of all mythological world-making, ancient or modern?

What can have been its origin, what its history?

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[1] *Asiatic Researches*, vol. xi, p. 411. In the following expression of the doctrine of celestial and terrestrial correspondences we seem to find a late Persian survival of the older cosmological idea: "Whatever is on earth is the resemblance and shadow of something that is in the [celestial] sphere. While that resplendent thing (the prototype that is in the sphere) remaineth in good condition, it is well also with its shadow."—*Desatir, The Book of Shet*, quoted in Upham's *History and Doctrine of Buddhism*, p. 21.

Before this question every science dealing with the past is silent. That such a conception of the universe cannot have been a modern or a mediæval product of Indian musing is absolutely certain. It shimmers through the ancient Vedas, wherein we read of the seven heaven fortresses cleft asunder by Indra, and of the "seven-bottomed ocean" below.[1] That it antedated the rise of Buddhism and Jainism seems clear from the differing conceptions and misconceptions of it found in the earliest extant documents relating to these largely illiterate sects.[2] That its essential features antedated the separation of the East Aryans into Iranians and Indians is well-nigh demonstrated

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[1] Bergaigne, *La Religion Védique*, ii, 140. In the Vedic texts the idea that the earth is a flat disk "nowhere occurs."—Zimmer, *Altindisches Leben* (Prize Essay), Berlin, 1879, p. 359.

[2] It is surely not strange that a cosmos so complex as this should have been misconceived by mendicant monks. No map can correctly picture it. With only his staff for a pencil, and the level ground for a drawing board, the best an ancient teacher could do was to mark out seven concentric circles as an equatorial section of the dvīpas, and require his pupil to learn their names and the names of the beings that peopled them. Or perhaps he sometimes would fill his seven concentric tracings with water and let these rings represent the sea-like spaces between the dvīpas so that the intervening earth-rings might represent the more solid dvīpas themselves. Even without such a prompting to misunderstanding, it would not be strange if the uninstructed or half-instructed should often have come to conceive of the dvīpa-world as a series of seven islands, ringlike in shape, concentric, each (except the innermost) flat, and in a single horizontal plane. Such seems to have been a common imagination among the Buddhist monks. Through these it was gradually spread over a large part of southeastern Asia, though here and there traces of something more adequate to the original thought are discoverable. Unfortunately, this "target-board" picture of Indian cosmography was early communicated to the European public, and is still accepted as the original and orthodox system of Hindu teaching.

by the number and character of the correspondences traceable between the cosmologies of the two peoples. In both we find the seven heavens with their respective regents, the Zodiac of twelve signs, the sevenfold division of the earth, the antipodal mountains at the two poles, and a unitary cosmic water-system in each case starting from and returning to a point directly above the sacred Mountain of the North. The seven concentric spheres certainly carry us back to ancient Babylon, as do also the names of the Iranian months.[1] Furthermore, the correspondences in Indian thought of sphere to sphere, and of all to the terrestrial center-sphere, are but a fuller and more luxuriant development of the parallels found and often remarked upon in the Babylonian thought of heavenly and earthly regions.[2]

In a paper in the Appendix to this volume

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[1] "From the most powerful nation of the ancient Semitic world, not from kindred India, came the system of terminology of the Zoroastrian months."—Louis H. Gray, "Origin of the Names of the Avesta Months," in *American Journal of Semitic Language and Literature*, 1904, p. 201.

[2] "Grundlegend für das Verständniss altbabylonischer Himmels- und Weltkunde ist die Erkenntniss, dass jeder Begriff, jeder Untertheil in den verschiedensten Welttheilen wieder ein entsprechendes Spiegelbild haben muss. Luft-, Erd- und Wasserreich der unteren Welt—unsere Erde—haben ihre Gegenstücke in den oberen, am Himmel, und innerhalb dieser finden sich wieder dieselben Untertheile, so dass wie im Maass und Gewicht die kleinen Theile immer die grossen wiederholen. Jeder Theil bildet wieder einen Mikrokosmos für sich."—Hugo Winckler, *Altorientalische Forschungen*, Bd. iii, 1, S. 179. Winckler, however, like the Indo-Iranian scholars, has failed to see that the marked correspondences between the Upperworld and the Underworld are to be pictured in thought as resulting simply from *the antipodal location* of the upper and under halves of the cosmic whole.

I have noted twenty striking agreements between the Indo-Iranian and the prehistoric Euphratean world-pictures. A stronger confirmation of Hermann Oldenberg's conjecture that the Indo-Iranians prehistorically borrowed from the Babylonians, or Akkadians, seven deities, representing the sun, the moon, and the five remaining planets, could hardly be desired.[1]

As a not inappropriate close of the present chapter I will here give an illustration of the help which I venture to hope our new interpretation of the Babylonian world-view may yet afford in the interpretation of certain dark and difficult passages in Sanskrit and Avestan texts. In the Jaiminiya-Upanishad-Brahmana occurs a most puzzling statement touching the mutual local relations of Jambu-dvīpa and Plaksha. Years ago it seemed to me utterly unintelligible. It reads: "The Navel of the Earth lies one span"—I am following Thibaut's translation—"one span to the north of Plaksha." Thibaut speaks of the strangeness and interest of the passage, but can give no explanation. No Indianist to my knowledge has ever attempted to give one. No interpreter accepting the prevailing view of the Indian cosmos can hope to find a rational meaning in the statement. Proceeding according to the "target-board" world-map, the farther one proceeds "to

[1] *Die Religion des Veda*, Berlin, 1894, pp. 192–195.

the north of Plaksha" the farther one is from the Navel of the Earth, and indeed from the earth as a whole. But the moment one looks at our diagram of the Babylonian world the puzzling text is no longer puzzling. In The Cradle of the Human Race it was shown that in the ancient literatures the term "the Navel of the Earth" ordinarily signifies the northern terrestrial pole. This, however, in the prehistoric world-view, is at the level of the north pole of the second heaven, and therefore one interval, or span, *to the north* of the north pole of the first heaven, which latter belongs to Plaksha. The baffling statement is now as luminous as the heavens to which it takes us.

CHAPTER VIII

THE BUDDHISTIC UNIVERSE

BUDDHISM, as everybody knows, is a special outgrowth of antecedent Brahmanical thought and teaching among the Hindus. Naturally, therefore, its cosmology is but a modification of that of the Hindu teachers before and at the time of Gautama, the Buddha.[1] Of its deviations from the parent system the following are the most worthy of notice: First, its extravagant multiplication of heavens beyond the sixth; second, its substitution of eight for seven as the standard number for the Narakas (hells); third, its transformation of the four equatorial varshas of the Puranic earth into fantastically shaped islands located at four respectively opposite points in the seventh or outer sea; fourth, its gradual ignoring of the four sacred World-rivers prominent in the earlier Hindu teaching and its resulting final loss of the cosmic water-system of the Puranas.

As to the first, the parent system in its

[1] The Hindu cosmology which in Buddha's time was considered orthodox went into new and fantastic developments of its own; so that even in the Puranas, our chief sources of information, there are many confused and contradictory teachings. So great is this confusion that we cannot now identify with certainty any but the most fundamental features, and affirm that they beyond question had a place in the Hindu world-concept at a date as early as that of the rise of Buddhism.

enumeration of the heavens was accustomed to stop with the seventh, that of Brahma, the highest of Hindu gods. In the books of the Buddhists, however, we now find in place of the one heaven of Brahma "sixteen of formed Brahmas and four of formless Brahmas," making with the original six below the Brahma-loka, twenty-six heavens in all. Moreover, of the countless world-units (sakwalas) in the countless aggregate which fills all space, every one has this precise series of six and twenty heavens.

The second of the enumerated points of divergence is noted by Professor Hopkins in his work on The Religions of India (p. 443), but neither he nor any other writer known to me has suggested what seems the most probable explanation of the disparity. The eighth hell (Avichi) is given such exceptional dimensions, and is placed at such an exceptional distance from the world-center, and is otherwise so differentiated from the nearer seven, that it seems spatially related to the others precisely as the eighth nether hemisphere is to the other seven in the Babylonian world-concept. It is not improbable, therefore, that the difference in the two enumerations results from the Buddhists including in their count an underworld which, as a sacred appanage of the perfect world of Brahma, seemed to the Brahmanists too holy to be here included.

As to the third point, I know of no non-

Buddhistic Indian document in which anything is said of the four great islands, or "island-continents," in the outermost of the seven concentric seas.[1] In Buddhist cosmography, however, these are exceedingly important portions of the universe. One of them, Jambu-dvīpa, is the home of the present human race. The one on the side of Meru opposite to us bears the name "Uttarakuru"; which name shows that the island is merely a transformed and translocated varsha of the older system. The triangular shape of our own island suggests, if it does not show, that it is in like manner a transformed and translocated "Bhārata" (India); to which has now been transferred the name (Jambu-dvīpa) formerly applied to the total body made up of the seven varshas.

The fourth of the enumerated deviations is easier to explain than any of the others. The central teachings of the Buddha rendered it impossible for his followers to ascribe saving efficacy to baths in the heaven-descended Gunga (the Ganges). Very early, therefore, in Buddhist circles the traditional belief in the sanctity of these divine waters must have been left behind. But with the passing of that belief must also have passed the traditionary belief in that elaborate water-system of the world in which,

[1] In one passage in the Mahābhārata (Roy, vi, 10, p. 20) the four equatorial varshas are, it is true, called islands, but they are still left close "beside Meru." The passage is further interesting from the fact that it expressly equates Bhārata and Jambu-dvīpa.

according to the Puranas, all waters start from and return to the quadrifrontal headspring of the sacred Ganges, conceived of as high in the heavens. In the end, the indifference of the Buddhist peoples to burial in sacred rivers became so marked that Sir Monier-Williams mentions it as one of the observed contrasts between Hindu and Buddhist communities.

But noteworthy as are the divergences of Buddhistic cosmology from the parent system, the features common to both are still more significant. The following are some of these points of agreement: First. In each system the axis of Great Meru is the axis of the world. Second. In each the north-polar top of this indescribably glorious world-mountain lifts itself to the level of the second heaven, that of Sakra (Indra). Third. In each the heaven of Yama is the third. Fourth. In the parent system the heaven of Brahma is the seventh and last, in the Buddhistic his are the seventh and all the superadded. Fifth. In each system are found the seven concentric seas, and the seven concentric lands. Sixth. In each the revolutions of the sun and moon about the earth are in a horizontal plane.[1] Seventh. In each, every heaven and hell and intermediate

[1] "It is not permitted to deviate the breadth of a hair from what the great Buddha, in his *bana*, has revealed; and especially not from his system that . . . the sun has its horizontal course over our heads."—Karetotte, High Priest of Ceylon, in Dr. Edward Upham's *Buddhism in Ceylon*, London, 1829, p. 85.

region has a mythologic population appropriate to its biologic and other conditions, and in that population every individual is capable of reaching by processes of reincarnation any and every other place in the universe. Eighth. In the Buddhistic world-view the relation of the Patalas to the Narakas appears to be identical with that which we found in the Puranic teaching. Finally, in each system the respective abodes of the gods and demons are antipodal, the one being at the north-polar summit of Meru, the other at its south-polar counterpart.[1]

Other points of agreement and divergence will doubtless occur to professional Indianists. I could myself mention others; but I think of none as important as these. The two world-pictures have never been compared and contrasted with adequate care. Many years ago I conversed and corresponded with Professor Max Müller, of Oxford, on the desirableness and the promise of such a comparative study, and at one time he hoped to see it undertaken by one of his gifted pupils. Unfortunately, to this date, the desideratum remains unsupplied. Indeed, I have never seen in any tongue a bare enumeration of the agreements and differences

[1] "The Asuras or Daityas dwell under the foundations of Mount Meru, as far underneath the surface of the earth as their great enemy Indra is above it. In short, if he may be supposed to live at the zenith, they live at the nadir, and their battlefield is on the slopes of Meru."—Sir Monier-Williams, *Buddhism in its Connexion with Brahmanism and Hinduism*, London, 2d ed., 1890, p. 219.

as extended as the utterly inadequate one above. May some master of Sanskrit and Pali soon give us the light and guidance needed!

As to graphic representations of the Buddhist universe, two perhaps are worthy of the reader's attention—chiefly, however, because of their unlikeness not only to each other, but also to the prehistoric world-picture of the ancient Babylonians. The one is found on the cover of Beal's Catena of Buddhist Scriptures (London, 1871), the other in Giorgi's Alphabetum Tibetanum (Rome, 1762, p. 472).[1] The unlikeness of the two is very striking. In the one, for example, the dvīpas are represented as concentric circles, in the other as concentric squares. One cannot easily see how the one concept could ever have grown out of the other; on the other hand, however, it is perfectly easy to understand how both can well be variations of the one older prehistoric world-view, variations evolved in centuries of transmission.

In the Appendix to the present volume a paper, entitled "The Mandala Oblation," presents a description of the Buddhist universe in some of its more fantastic details. The contrast between the baselessness of these details and the profound significance of the Oblation is one of the most striking things to be found in any of the ritual observances of mankind.

[1] This latter picture is reproduced in Waddell's *Buddhism in Tibet*, London, 1895, p. 79, and in Adolf Bastian's *Ideale Welten*, Berlin, 1893.

CHAPTER IX

RECOVERED TRACE OF TWO LOST SPHERES

If the Babylonian, or, better, the pre-Babylonian, world-view as here understood lies back of all our oldest mythologies, it is evident that the scholars of the future have before them many and most fascinating tasks. One of these relates to the earth's nearest neighbor-world, the moon.

All modern interpreters of ancient references to the moon have gone upon the assumption that by the words "the lunar sphere," or "the lunar world," an ancient writer or singer always meant the moon which we see waxing and waning in the nocturnal sky. But if now, in addition to our visible moon, there was in ancient thought an invisible one, a lunar sphere a thousand times vaster, inclosing in itself the whole earth and all the clouds above and below the earth, it becomes for the interpreter of ancient literatures a most important problem to determine in every instance to which of the two lunar spheres his author in any particular expression may be referring. And, inasmuch as in this same all-antedating world-view the solar sphere is immensely vaster than the sun that rises in the east and sets in the west, a parallel

necessity arises for discriminating between these two bodies whenever we find an ancient writer making reference to the movements or domains of a solar god.[1]

No student need be told that to make the proposed discriminations, and especially to demonstrate their correctness in every instance, is not likely to prove easy. The interpretation of myths, as competent judges know, is about the most difficult and baffling of all the duties that face the investigator of antiquity. Rarely can a large group of scholars agree even as to the nature of myths in general, or as to the principles to be considered as regulative in their interpretation. The published expositions of a single myth are often so discrepant and contradictory that one feels almost ready to unite with those who pronounce all scholarly effort in this field a simple waste of time and labor. Particularly difficult is the interpretation of topographical and cosmographical myths. They reach us in forms and in mutual relations far removed from the primordial. As to possible unities of such myths, it is natural to expect to find the most elaborate and complete mythological world-pictures where the mythical world-rulers and world-tenants are most numer-

[1] A learned correspondent obligingly calls my attention to a passage in Plutarch, where in two consecutive sentences there is mention of the invisible earth-inclosing "lunar sphere," and of the visible earth-attending "moon." The passage is in the explanation of the sistrum, in *Isis and Osiris*, 63.

ous—that is, in systems and among peoples in which polytheism has found its completest expression. Facts justify this antecedent expectation. But as all the greatest polytheisms of antiquity seem to have included ideas and cults originally local, the world-picture of each composite empire or people is at a very early time itself a composite one, a syncretistic product with indetectable variations in detail, and with indetectable blurrings in the mass. Then it is to be remembered that all the great polytheisms of the early ages were later and in some cases repeatedly subjected to the influence of profoundly pantheistic thought and teaching and, in this way, to further modification of details and to further blurring of the resulting total. That the product of such a process maintained through millenniums, as in the case of the Egyptians, should at last defy analysis as effectually as the dream of a hasheesh smoker, ought not to occasion surprise.

Despite these considerations, however, there is a possibility that our proposed discriminations between the lunar sphere and the visible moon, and between the solar sphere and the visible sun, may prove to be of service. In any case the students of early human thought should give them a fair trial. Even in the most confused and baffling of all fields, that of the Egyptian mythology, I should be glad to see the method of attempting such discriminations

put on trial. I am encouraged by the outcome of my first experiment, an attempt to deal with the problem of the location of Tuat.

Among Egyptologists this problem is often characterized as peculiarly difficult.[1] As the name of some region of the world, the word Tuat is found in the very oldest of Egyptian texts. As Budge correctly states, it is ordinarily translated "Underworld." Opposing this view, H. O. Lange says that Tuat was "a dark space above the stars." Renouf, on the contrary, expressly states that it was "below the earth." Steindorff says, "underneath the earth." Maspero, Budge, Mallet, and others assure us that in reality it was neither beneath the earth nor above it. It was an imaginary extramundane region, north of the earth and on the level of the Egyptian horizon, but no part either of heaven or of the earth. No wonder that many have frankly pronounced the question insoluble, and that Budge and Steindorff express the belief that the Egyptians of the historic period had themselves lost the original meaning of the term.

In their descriptions of the region our highest living authorities are equally conflicting. Budge, of London, writes: "Through the valley of the Tuat runs a river, which is the counterpart of the Nile in Egypt and of the celestial Nile in

[1] *"Es ist sehr schwierig, sich eine richtige Vorstellung von der Duat zu machen."*—H. O. Lange, in Chantepie de la Saussaye's *Religionsgeschichte*, Bd. i, S. 222.

heaven, and on each bank of this river lived a vast number of monstrous beasts, and devils, and fiends of every imaginable kind and size, and among them were large numbers of evil spirits which were hostile to any being that invaded the valley." For such a region we would naturally look in one of the lowest of the hells.[1] But if before beginning our search in that quarter we turn to Erman, of Berlin, we find this same Tuat described in these words: "A kingdom of light, the dwelling-place of the gods, who traveled with the happy dead, 'on those beautiful ways where the glorified travel.'" For such a region we would naturally look in one of the highest of the heavens. One eminent Hibbert lecturer, alluding to the Tuat water on which the sun-god voyages the twelve hours, calls it "the heavenly river," yet on the self-same page, and only fourteen lines further on, with no apparent consciousness of the incongruity, styles it "the infernal river." Reviewing all that has been written on this topic, the student is inclined to exclaim with Shakespeare,

"Confusion now hath made his masterpiece!"

Despite all the conflicting opinions, however, there are several important points on which nearly all recent investigators now seem to agree. They may be summed up under eight

[1] Budge elsewhere calls it "the blackest hell."—*The Egyptian Soudan*, ii, 17.

heads, as follows: First. The nightly journey of the sun from the place of his setting to the place of his rising is neither above nor beneath the earth, yet lies in this elusive land of Tuat. Second. This twelve-hours' journey is conceived of as in every part horizontal. Third. It is furthermore semicircular. Fourth. The movement of a barque sailing a semicircular course over water represents the Egyptian idea of this solar journey. Fifth. The waterway passed over by the barque is pictured in thought as lying between two parallel mountain ranges which like semicircular walls hold the waters in their place. (See Fig. C, on page 59, above.) Sixth. During the voyage the sun-god has the Egyptian earth lying some distance away on his right hand, but beyond and distinct from the more southerly of the two mountain walls which bound the waterway over which he is sailing. Seventh. The sun-god does not enter the land of Tuat proper immediately on sinking below the horizon of Egypt, but only after making one hour's journey and passing through the nearer of the two parallel semicircular mountain ranges.[1] In like manner the twelfth hour of the voyage is not in Tuat proper, but is spent in passing from Tuat proper to the eastern horizon of Egypt.[2] Eighth. During the voyage

[1] Maspero gives the technical name of the opening in the mountain and translates it "the Slit." Elsewhere he calls it "the Mouth of the Cleft."

[2] This passage from Tuat to Bakhau is represented as serpentine in a very peculiar sense. "Twelve gods tow the boat, not over a river, or

in Tuat proper the sun-god has personal intercourse with both gods and demons.

Eureka! The Tuat problem is solved! The solution must already be clear to every careful reader. Turn to the diagram of the Babylonian or pre-Babylonian world-view. In it the nocturnal path of the sun answers to every requirement: 1. It is neither under the earth, nor yet above it. 2. It is in every part horizontal. 3. It is semicircular. 4. Movement on it is like that of a barque sailing a semicircular course over water. 5. The concentric solar and lunar spheres, or rather the portions from the west-point around northward to the east-point, give us the two parallel mountain ranges of the Egyptian picture. 6. As during the voyage Ra has the Egyptian, so Shamash has the Babylonian earth lying at some distance away on the right hand, but beyond and distinct from the more southerly of the two mountain walls which bound the waterway over which he is sailing. 7. Observing daily that the sun-god's day-journey was in a wholly different plane from that of the supposed night-journey, the Egyptians seem not unnaturally to have imagined that he required an hour after sinking below the western hills to get back into Tuat, and again an hour in the morning to make his

over a serpent or serpents, but completely *through* a serpent."—Budge, i, 257. See Lanzone, *Dizionario*, tav. vii. E. Amélineau agrees with Budge that the passage is through the serpent and not along his back. *Revue de l'Histoire des Religions*, tome lii, pp. 26, 27.

way from beyond the lunar sphere to the eastern horizon of the dwellers upon the Nile. 8. Finally, Tuat being originally the space between the invisible lunar and solar spheres, and the nightly journey of the sun-god being in the equatorial or approximately equatorial plane which divides all the heavens from all the hells, the student should expect to find precisely what we do find, namely, that on the journey the solar god personally communicates as freely with gods as with demons, and with demons as with gods.[1]

Lost Tuat, or at least the best known part thereof, is certainly found. With it we recover, in the semicircular mountain ranges, the indubitable trace of two lost spheres. Would we see them as figured at one period upon the monuments, we have only to turn to the oft-reproduced cut given on page 211 of Brugsch's Religion und Mythologie der alten Aegypter.

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[1] The Egyptian pictures of the nocturnal voyage of their sun-god, Ra, recall to the memory of every reader of the classics the corresponding Greek myth of the "cup," or coracle, in which Helios was represented as each night making the same semicircular passage on the surface of the Ocean-stream. See Rapp, in Roscher's *Lexikon*, i, 2, Sp. 2014. Very likely the sun-boat in this case was called a "cup" because those among whom the myth originated were familiar with the *Kufa*, or ordinary small river-boat of the Tigris and Euphrates, which was in the form of a bowl. (See cut in Rawlinson's *Herodotus*, i, 260.) Referring to Bergk (*Jahrb. für Philologie*, 1860, p. 389) and Kuhn (in his *Zeitschrift*, i, 536), Rapp correctly remarks: "Der Okeanos in welchem der Sonnenbecher dahinschwimmt, ist ursprünglich der Wolkenhimmel; die Einschränkung seiner Fahrt auf die Nachtzeit nur die Folge des Anschlusses an die irdische Localisirung des Okeanos und der Einfügung dieses alten Mythus in die anderen, schon entwickelteren Vorstellungen."

CHAPTER X

POINTS AND PROBLEMS FOR FUTURE STUDY

In the foregoing chapters we have seen not a little evidence that in countries widely separated the earliest traceable teachers held and taught what was essentially one and the same world-concept. This included appropriate local abodes for gods and demons, for living men and for dead. It grouped these several abodes into one all-inclusive geocentric, upright-axled, poly-uranian cosmos. In the land in which we can study the system to the best advantage, it presents two earths adjusted base to base: the upper the abode of living men; the under, its inverted counterpart, the abode of the dead. To the seven planetary divinities it gives seven distinct concentric spheres, to Anu and Ea an eighth, outermost in position, all-including, the sidereal sphere. When the upper half of the thus constituted universe is compared with the under, the symmetry of all the included parts and dimensions is seen to be as complete and admirable as it is striking.

Now, minds capable of originating, or even of handing down from generation to generation, a mental world-picture of such remarkable unity, complexity, and balance as this cannot

have failed to go farther—cannot have failed to inquire how the constituent parts of this stupendous system were related to each other in effecting, or in regulating, the orderly ongoings of the whole. The diurnal movements of the sun, moon, and stars would of necessity call out at least crude attempts at explanation. So also the rising mists and falling rain. So also the alternate growth and decay of the earth's verdure, the birth and death of human beings. If night and day are seen to be ever chasing each other, the parts of the universe alternately darkened and illuminated must be so adjusted in the observer's thought as at least to render possible such incessant alternations. If mists rise and rains fall, cloudland and the land rained upon must be set in some relation by every perceiver of the facts. No proof is needed for the statement that if any man's universe includes distinct abodes for the living and the dead, it will also include some idea of the way in which the no longer living make their passage from the one abode to the other.

To a thoughtful person few things can be more impressive than the ways in which prehistoric men attempted to represent, and to render rationally coherent, the ongoings of the universe. These attempts reach us chiefly, of course, in the form of myths. In any form they are exceedingly precious; for they give us our only knowledge of the earliest efforts of our

race to construct what we moderns call a philosophy of nature.[1] To call them mythical in no wise invalidates their claim to attentive study. The Nebular Hypothesis of Kant will become essentially a myth if, as an interesting and almost poetic speculation, it shall come to be handed down long generations after a more adequate view of the origin of the solar system has been discovered. Every such hypothesis for the explanation of a natural phenomenon is primarily an exercise of the imagination at the instigation of reason, and in the mythopœic stage of culture is sure to take on a mythologic form in its expression.[2]

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[1] "The assumptions of the *Savant* are hypotheses, those of the savage are called myths."—Frank B. Jevons, *An Introduction to the History of Religion*, p. 32. Wilhelm Bender, *Die Entstehung der Weltanschauungen im griechischen Altertum*, Stuttgart, 1899, p. 56.

[2] Even as sober and severely scientific a writer as Professor E. B. Tylor emphasizes this relation between mythic form and scientific content in nature-tales told among peoples of meager culture. In one place he says: "The savage names and stories of the stars and constellations may seem at first but childish and purposeless fancies; but it always happens, in the study of the lower races, that the more means we have of understanding their thoughts, the more sense and reason do we find in them. The aborigines of Australia say that Yurree and Wanjel, who are the stars we call Castor and Pollux, pursue Purra the Kangaroo (our Capella), and kill him at the beginning of the great heat, and the mirage is the smoke of the fire they roast him by. They say also that Marpean-Kurrk and Neilloan (Arcturus and Lyra) were the discoverers of the ant-pupas and the eggs of the loan-bird, and taught the aborigines to find them for food. Translated into the language of fact, these simple myths record the summer place of the stars in question, and the seasons of ant-pupas and loan-eggs, which seasons are marked by the stars who are called their discoverers."—*Primitive Culture*, i, 357. As the aborigines of Australia are commonly referred to as the very lowest specimens of our race, this evidence of their habitual recognition of individual stars by name, and this illustration of their ability to determine the seasons by astronomic changes occurring in the progress of the

and gastronomic

We call these prehistoric myths fanciful and hard to understand. So they are. But in the infancy of language every originator of a new thought had also to invent terms for its expression. How can we wonder if in multitudes of cases the terms seized upon were symbolic, pictographic, or even poetically suggestive merely? The time for matching mental concepts with polytechnically accurate and adequate expressions had not yet come. Can we say that it has yet come?

Again, we are told that these prehistoric myths are inconsistent with each other. They are. But our latest scientists rarely present us pictures of complex wholes without seeming equally inconsistent. Here are three elaborately colored drawings, representing obviously a human body. They are from a new up-to-date atlas for students of human anatomy. One and the same face appears in each of the three pictures, but in all other parts they are utterly unlike. A child, or a Zulu, might imagine them to represent what men of three different races, or world-periods, believed to be the contents of the human frame. So thinking, he might well wonder at the utter lack of agreement. Very likely he would infer from the contrariety of the representations that all were alike worth-

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year, are certainly very interesting. Too few ethnologists write as if they had discovered what Tylor says "always happens in the study of the lower races."

less. The deficiency would lie in the interpreter. In reality, there is no contrariety whatever in the three chromographs. The first represents the muscular, the second the vascular, and the third the nervous system of the human body. Precisely so, three myth-pictures of one and the same part or process of the universe may seem to us confused and inconsistent, when in reality all the confusion or inconsistency arises from our own failure to keep distinct such easily distinguishable world-concepts as the mechanical, the biological, and the personal. For example: In the mechanical, the axis of the universe may be pictured, as Plato pictures it, as "the Spindle of Necessity," the lifeless support of the whirling "whorls" of the heavens. In the biologic world-picture, however, the same world-axis is no longer lifeless, it is an ever-living oak-trunk, equipped with wings for self-rotation, the vital support of world-filling branches, the whole covered and adorned with "the starry peplos of Harmonia." Finally, in the picture in which the universe is considered mainly significant because a universe of persons, the oaken tree-trunk of the biologic world-view becomes the "columnar bridge" on which, as described in the vision of Er, the souls of the redeemed escape from our realms of sin and death, and gain the imperishable abode of the God of gods. All these conceptions of the axial line of the heavens and earth lay in Plato's

mind with as little of contrariety or mutual inconsistency as lie the three anatomical chromographs in the mind of the teacher who drew them.

A lifetime could be spent in the one task of investigating the symbolic and poetic forms in which early peoples, and peoples of a later date, have expressed and reëxpressed this fundamental idea of the world-axis. Though not a mythologist by calling, I many years ago printed a study in which the World-tree symbol of the universe was traced through twelve mythologies. The idea was found to be pre-Babylonian. The study further showed that sometimes, in place of the "Spindle of Necessity," we have a "lance," or an "arrow," or a "spear," on which the heavens revolve. In the Vedas, it is an "imperishable axle," on which without intermission celestial and terrestrial wheels are forever turning. Again, as in several mythologies, the columnar "bridge" is pictured as a "ladder," with seven, or eight, significant step-supports. In Burmese thought and imagery it is the "Umbrella Staff of Universe Sovereignty." The variety of the symbols is apparently without limit. In a work of amazing erudition, filling more than a thousand closely printed octavo pages, the late John O'Neill has claimed, and in the opinion of not a few has shown, that every known mythology is full of symbols and stories of this all-sustaining, all-

unifying universe-axis, and of the rotary world-movements centering about it.[1]

Another lifetime could be spent in investigating in ancient mythologies what we may call the vascular, or circulatory, system of the universe. That all waters, celestial, terrestrial, and subterrestrial, belong to one system of flowing and reflowing streams is taught in every ancient mythology. That all these streams proceed from, and return to, one and the same celestial head-spring is asserted or implied in so many that the investigator may safely consider this idea to have constituted a feature of whatever world-view antedated the ancient cosmologies that have reached us. In a study on this subject, printed in the year 1885, evidences pointing to this peculiar feature were brought together from Vedic and Avestan sources—evidences so clear as to satisfy Professor Spiegel that both the Indian and Iranian Aryans prehistorically held and taught it. In the same paper clues were given going to show that the same idea was shared by the Northmen, by mediæval Christian teachers, by the Finns, the Sabeans, the Greeks, the Egyptians, the Babylonians, and even by the pre-Babylonian

[1] The work is entitled *The Night of the Gods: An Inquiry into Cosmic and Cosmogonic Mythology and Symbolism* (London, vol. i, 1893; vol. ii, 1897). In the last two or three years of his life I received from this too early lost friend many letters, in one of which he was kind enough to say that but for my published researches the work above named would never have been written.

Akkado-Sumerians. In the Rig-Veda and in Homer, in the Puranas of India and the Suttas of China, the head-spring itself is a *Fons Quadrifrons*, that is to say, a Four-faced World-Fount, whose waters simultaneously pour forth eastwardly, westwardly, northwardly, southwardly, for the watering of the whole earth.[1]

But in any universe as complete and balanced as seems to have existed in the minds of prehistoric men, there must have been not only room and adjustments for the distribution of light and the circulation of the waters, but also recognized ways in which on proper occasions the tenanting intelligences could have intercourse with each other. Gods in widely separated domiciles and jurisdictions must have had appropriate highways for their chariots when paying visits of ceremony one to another, or when summoned to attend one of those stated pan-uranian parliaments or consultation assemblies for which every polytheism provides. Moreover, gods and men being children of a common Sire, and the latter children dependent upon the former, no gulf between them must be impassable. We read of a fabled eagle bearing an Etana, or a Ganymede, from earth

[1] "Von der Richtigkeit Ihrer Ansicht über das altindische und alteranische Wassersystem bin ich vollkommen überzeugt."—F. Spiegel, in a letter to the author. In one of the apocryphal gospels the quadrifrontal World-Fount is located in the fourth heaven, and its four streams are milk and honey, oil and wine. The same idea is expressed in the Slavonic Book of Enoch.

to heaven; but from instances so avowedly exceptional as these we get no light upon provisions conceived of as originally and permanently included in the cosmic structure itself and thought of as expressly designed to facilitate intercourse between terranean and subterranean beings, or between the celestial and counter-celestial. What in the oldest cosmological thought were the permanent structural provisions of this kind, if such existed? The answering of this question must be left to the scholars of the future.[1]

My own studies on this point have not been extensive, but so far as they have gone they have resulted in a strong conviction that the main highway from heaven to heaven and from underworld to underworld was along the central axis-line of the total universe. Precisely there we should expect to find it. There alone could it stretch through the mundane immensities forever unaffected by the whirling spheres. There alone could it enter and pass through the throne-city of every world and directly link all to each and each to all. So conceived, its

[1] A decidedly hopeful prospect of new progress in these studies is opened up by the establishment at Berlin of the new "Gesellschaft für vergleichende Mythologie," and the starting of its "*Mythologische Bibliotek*" (Leip., 1907). Also by the recent issue of works more or less cosmological from the pens of Georg Siecke, H. Lessmann, G. Hüsing, Bruno Baentsch, C. Fries, A. Döhring, Ditlef Nielsen, F. X. Kugler, F. K. Ginzel, and Johann Lepsius—all of whom give evidence of a wholesome dissatisfaction with the principles of interpretation long dominant in this field.

upper section, the "Path of the Devas," is identical with the pre-Babylonian "Way of Anu." To reach it from the abodes of living men, beings possessing weight must needs have a support for their ascending feet. Hence columnar bridges like the Chinvat of the Persians; heaven-ladders like the Egyptian; terraced mountains like those of the Euphratean peoples. On the other hand, beings at the top of the heavenly Way, having no weight, were not thought to need any such solid supports in making a descent. Hence, in Platonic, Neo-Platonic, Gnostic, and Sabean thought, souls, descending from the highest sphere for incarnation through human birth, have need of nothing more than obstructionless polar openings in the crystalline planetary spheres to enable them to pass the seven, and to reach the earth.

But while this axial highway from world to world was incomparably the most important in the universe, movements and paths on the surface of each of the spheres were, of course, conceivable. In mythologies built upon or including the idea of transmigration, one of these conceivable paths is particularly interesting since it provides a way by which a return from the land of the dead to the land of the living is possible, and this without retracing the path by which the ghost descended to the land of the dead. In Indian mythology, for example,

the descent, twelve days in duration,[1] is supposed to be along the surface of the earth, southward, and across the ocean, into the transoceanic underworld. It is conceivable that a return is supposed possible by a path up the interior surface of the earth-inclosing lunar sphere. If this thought underlay the confused and confusing Upanishad passages referred to below, there may easily have been connected with it the further idea that the perpetually reascending souls which again and ever again are "rained down" from the zenith of the earth-inclosing lunar sphere are thus doomed to successive rebirths because as yet imperfectly purified, and that only by passing the Hadean gate that gives access to the *exterior* surface of the first of the heavenly spheres, this lunar one, and by ascending a path upon its exterior, one can successfully reach the "door" that leads to the higher heavens.[2]

One other structural feature in this most ancient world-concept will surely challenge and receive the attention of future students of the prehistoric past. I allude to the Zodiac, the most precious if not the oldest scientific heirloom of the human race.[3] The axial world-

[1] Léon Feer, *Revue de l'Histoire des Religions*, xviii, 302.

[2] Kaushitaki-Upanishad, i, 2–6 (*Sacred Books of the East*, vol. i, pp. 273–279). See also the reference to the "Path of the Devas" and the "Path of the Pitris" in the Khandogya-Upanishad, iv, 15, 5 (in same volume, p. 80, and note on pp. 82, 83).

[3] Treating of the origin of the Zodiac in a recent article, Edward Walter Maunder, F.R.A.S., superintendent of the Solar Department, Royal

pillar idea, associated in our minds with the name of Atlas, is no doubt of equal antiquity, possibly of greater; but it cannot compare in significance with the twelve-signed Zodiac. As soon as a man can mentally picture a circle he has the idea of a center; and as soon as the revolving sky suggests to his mind a sphere he has the idea of an axis. But to create the Zodiac required a far higher power of thought, and a vastly greater attainment in the knowledge of the stars and in mathematics. It is a perfect instrument for the measurement of astronomic ages. No modern has ever suggested a substitute for it, or made any improvement in it. But had it as yet never been thought of, few persons now living in any one of our most civilized nations would be likely to invent it. How many would feel any need for such an æonian timepiece? How many, feeling the need, would be likely to hit upon this simple yet unimprovably perfect answer to the need? What learned and ingenious reader of this sentence believes that, if uninformed as to any previous effort in this line on the part of earlier

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Observatory at Greenwich, expresses admiration of the "giant among men" who first recognized that the visible sun is daily moving among the invisible stars. He says: "This, perhaps, was the most difficult discovery which up to the present date has been made in astronomy. . . . It was the first great incursion of physical research into the invisible, the first great triumph of induction, the first time that appearances were put aside in favor of thought."—Littell's *Living Age*, vol. 227, p. 618. Writing of this triumph of mind, Newcomb says: "It may be considered the birth of astronomic science."—*Popular Astronomy*, p. 16.

men, he himself would have been the first to chart out the ecliptical zone of the heavens, defining within it the lunar mansions and the solar stations, backgrounding all with a sexagesimally divided and subdivided scale of twelve equal parts, on which the minutes of the progress of every planet, and the ages of the precession of the equinoxes, could be measured each with equal ease and both with absolute accuracy? Of the prehistoric man or men who really invented this ingenious chronometer nothing is known. No branch of the human family has a tradition determining even the millennium of its first introduction. As yet the savants who have busied themselves with the problem have given us no trustworthy result. As early as 1754, Neubronner, in Germany, raised the question.[1] Forty years later a distinguished French astronomer, Dupuis, working upon Egyptian data, convinced himself that the Zodiac was invented 15,000 years before his time. In 1872, however, an American astronomer, Professor John Brocklesby, assured us with great positiveness that "the Zodiac was constructed about 2,000 years ago." His exact date was 2,149 years before the time of his writing, which would give us the year 277 B.C. His argument was simply that, at the start, "the signs doubtless corresponded in position with their constellations," and that the

[1] In his dissertation *De Inventoribus Zodiaci*.

only time within the range of history when this occurred was between B.C. 200 and B.C. 300.[1] Three years, however, after this settlement of the case, a learned professor at Leyden, Holland, employing Chinese data, announced that the Zodiac had been in use in China as early as B.C. 18716.[2] Only one year after this an American scholar gave as his solution, "12,500 years ago."[3] Within the next twelve months the English astronomer, Richard A Proctor, published a paper favoring B.C. 2170 as the desired date. Amid such disagreements, the prospect is not encouraging.[4] One thing only seems growing more and more certain, and that is that if Brocklesby's fundamental proposition is correct, and if accordingly, at the start, "the signs corresponded in position with their respective constellations, we must go back of his date about 26,000 years; for, according to what is now known of Babylonian astronomy, the Zodiac was certainly in use many centuries before the correspondence of signs and constellations in the third pre-Christian century.[5]

[1] *Elements of Astronomy*, New York, 1872.

[2] G. Schlegel, *Uranographie Chinoise*, La Haye, 1875.

[3] O. D. Miller, *Har-Moad*, latest ed., North Adams, Mass., 1892.

[4] The most recent estimates I have noticed are those of E. W. Maunder (*op. cit.*, p. 619), and E. M. Plunket, *Ancient Calendars and Constellations* (London, 1903). According to the former, the Zodiac dates from circa 3000 B.C.; according to the latter, from circa 6000 B.C. J. F. Hewitt, however, in his *History and Chronology of the Myth-making Age*, London, 1902, gives as the true date, B.C. 14200.

[5] Referring to the astronomical researches of Epping and Strassmaier, Sayce, Oppert, Mayer, Mahler, Jensen, Lehmann, and others, a writer just referred to (Plunket) remarks: "Whatever else remains uncertain

Such oscillations in estimates of the date of the invention remind one of the æonian oscillations reported by astronomers in the angle of the inclination of the Zodiac to the celestial equator. The former, however, lack the determinability, the moderate limits, and the indescribable stateliness of the astronomic movement.[1]

A final inquiry. Few readers can have reached the present page without having repeatedly and earnestly asked themselves, Where was originated this unique, this widespread, almost ecumenical, pre-Babylonian conception of the universe? In what land can our "hairy arboreal ancestors"—as the current anthropology calls them—have so far lifted their thoughts from the gathering of nuts and edible roots for daily food as to feel an intellectual interest in the far-off astral world, and because of this

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and open to discussion, some facts are clearly established. We now know that the inhabitants of Babylonia, in a remote age (certainly as early as the fourth millennium B.C.), were acquainted with the twelve divisions of the Zodiac, and that these divisions were imagined under figures closely resembling in almost every instance those now depicted on our celestial globes." Similarly M. A. Quentin, in the *Revue de l'Histoire des Religions* (Mars-avril, 1895, pp. 169ff.), places the invention "more than 4000 B.C." The contributions of Professors Hommel and Winckler in the Babylonian field are very important. In the Greek field no work is perhaps more authoritative at this date than Professor Franz Boll's *Sphaera*. A worthy geographical counterpart is E. Hugo Berger's *Geschichte der wissenschaftlichen Erdkunde der Griechen*, 2 Aufl., Leipzig, 1903.

[1]According to Lagrange this angle was at its maximum (29° 30′) B.C. 29400. It then decreased to a minimum (21° 20′) B.C. 14400; then increased to a new maximum (23° 53′) in B.C. 2000. Its next minimum (22° 54′) will be A.D. 6600; its next maximum (25° 21′) in A.D. 19300. Many and great are the advantages of the astronomer over the archæologist; he can not only unveil the past, but also foretell the future

interest proceeded to distinguish the planets from the stars that never wander, and—most remarkable of all—to invent that Zodiacal chronometer whose months are double millenniums and whose year is more than 25,000 of our years? One of the most eminent of living astronomers, Maunder, of the Royal Observatory at Greenwich, following the same line of evidence as Proctor, and before him Schwartz, reaches the conclusion they reached, to wit, that the terrestrial standpoint of the astronomers who framed our constellations and mapped the Zodiac cannot have been in Babylonia, or in Egypt, or in Arabia, or in India. He further says that "probably" we are warranted in excluding from our search Greece, Italy, and Spain.[1] If not in any of these seats of ancient culture, where can that primeval standpoint have been? I believe the true answer to this question is now attainable.

The region I am about to suggest is equidistant from India, Babylonia, and Egypt. From each of these, however, it widely differs. It is

[1] E. Walter Maunder, in *Littell's Living Age*, vol. 227, pp. 614ff. The present writer was in the midst of an interesting correspondence with Mr. Proctor at the time of his sudden and widely lamented death. That the constellations associated by him with the Flood-tradition were outlined and named at the time and place supposed by him, and by Maunder, is far from incredible; but both the interest in astral worlds, and the proficiency in stellar studies manifested in the conception and construction of such a "Star-story of the Deluge," require for their rational explanation a liberal allowance of antecedent time and a place more signally adapted than Cappadocia, or any other part of Asia Minor, to "draw men's thoughts to heaven."

more favorable for astronomic observation and for astronomic experiment than any one of the three. Indeed, no other land was so fitted to become the birthplace of the science. It is a region in which the movements of the heavenly bodies can be watched through unusually protracted periods, without interruption, and under cosmical conditions more favorable than any that our modern astronomers have known. Especially does its center offer an astronomic viewpoint superior in several respects to any to be found on the banks of the Euphrates or in the basin of the Mediterranean. Men there domiciled would need no careful measurements or logarithmic calculations to determine solstice or equinox—each would be as visibly fixed and dated as are with us the noon and the sunset. At that center there is but one sunrise and one sunset in the whole long year. Strange as this arrangement would seem to us were we translocated to that latitude, our wonder would be increased on finding that by a short march of less than five miles we could reach a new camping ground distinguished from the first by having annually two sunrises and two sunsets. Nor would our wonder fail to grow on finding that with every farther march the same distance southward we would find camping grounds having an additional annual sunrise and sunset until, after more than three and a half hundred such marches, we reached a charmed circle be-

yond which, however far we journeyed, we could find but three hundred and sixty-five such annual apparitions and vanishings of the orb of day.

Now, it is on, and within, the charmed circle inclosing these ever increasing and decreasing dawns and nightfalls that the starry realms can be studied as nowhere else. On it, an observer whose zenith is 47° from the pole of the ecliptic soon finds his observatory obligingly wheeled into a position where zenith and pole are absolutely coincident. This pleasing transportation poleward or the reverse completes itself every twelve hours, and by no mechanism of the observatory, or effort of the observer. The parallaxes and sky-tiltings obtainable in these ever-recurring circuits can nowhere else be had. Then, farther within the circle, a heavenly body can be watched and studied months at a time. Star-paths which we at present can trace but a night, and through but a minute fraction of an unknown arc, can there be followed through their completed circuits, and this without one hour of interruption. There the problem of the identity or non-identity of the morning and evening star has never risen. There no commentator on ancient poets has ever had excuse for getting confused over the eastern and western palaces of the sun. There all stars along the celestial equator can be correlated to corresponding points on the terrestrial horizon of the observer, or at his pleasure tilted to a

different plane. There the sphericity of the earth, and the inclination of its axis, would be easily discoverable.[1] So also the dependence of the moon upon the sun for her illumination. So also the rationale of an eclipse. There more naturally than anywhere else could men come to think of the azure sky as an ever-moving, earth-encircling Ocean-stream, on whose level waters the sun and moon and stars were sailing.[2] There, and nowhere else, the observer is at the top of an earth that never rolls over, and under a zenith that never passes to its setting.[3] That country's center is the Arctic Pole, its boundaries the Arctic Circle. Years ago I called it the one natural astronomic observatory of the whole earth, and the more I have studied the astronomic attainments and world-views of prehistoric men, the more certain it has seemed to me that here, in this upright-axled country, was originated this upright-axled cosmology of the oldest culture-peoples.

The progress of a like conviction in the wide

[1] The changing aspects of the heavens during a simple walk in a straight line from any point a few miles distant from the pole to a point equidistant beyond the pole would suggest the true figure of the earth, and would well-nigh furnish an ocular demonstration of the ancient doctrine that the celestial sphere was centered about a fixed terrestrial one. Even the slow movement of the celestial pole around the unchanging pole of the ecliptic, and the consequent precession of the equinoxes (both known to the Babylonians), could have been first discovered in the Arctic regions far more easily, one would think, than in Babylonia.

[2] See Berger, *Mythische Kosmographie der Griechen*, 1904, p. 2.

[3] For this reason it is the only place where the heaven-ladders and columnar bridges of all mythologies can permanently and uninterruptedly connect our earth with the heavens above it. See *The Cradle of the Human Race*, pp. 144, 145, and passim.

world of scholarship may be slow, but it is remarkably steady.[1] Already in the eighteenth century Jean Sylvain Bailly, an astronomer of first rank, reached the well-reasoned conclusion that the genesis of his science was in the highest North. Buffon, a genius of the same generation, demonstrated that in the slow cooling of the earth in early ages the first portions of its surface to become habitable by men must have been at the poles. Two or three generations later biology independently reached the conviction that the dominant floral and faunal forms of the whole earth had their origin in the Paleo-Arctic zone.[2] About the same time ethnologists began to suggest or to assert the Arctic origin of the human family.[3] Even authors from whom such a doctrine was by no means looked for found reason for professing their belief that the human species originated in the polar world.[4] Comparative philology has

[1] See my paper on "The Cradle of the Human Race—Recent Literature," in the *Methodist Review*, New York, December, 1908.

[2] Kriz, *Mittheilungen der Wiener anthropologischen Gesellschaft*, N. F. xvii, 1, 1898. Eminent pioneers in this scientific advance were Asa Gray, Oswald Heer, A. Penck, Otto Kuntze, and Joseph Le Conte. See James Orton, *Comparative Zoology*, p. 384. Also, G. Hilton Scribner, *Where Did Life Begin?* New York, 2d ed., 1903.

[3] Quatrefages, *The Human Species*, New York, 1879, p. 178. Moritz Wagner, *Ursprung und Heimat des Urmenschen*, Basel, 1889. M. Le Marquis G. de Saporta, "How the Earth was Peopled," in *The Popular Science Monthly*, New York, 1884, translated from the *Revue des Deux Mondes*.

[4] Giulio Lazzarini, *Etnica Razionale*, Pavia, 1890. In June, 1884, and again in December, 1891, in the pages of *La Nuova Scienza*, Rome, the editor, Dr. Enrico Caporali, supported this view of the cradleland of the race.

increasingly turned its eyes in the same direction for light upon its problems.[1] Comparative mythology, through Indian investigators in the East,[2] and Keltic in the West,[3] and Teutonic in the center,[4] is more and more pointing with converging fingers toward a Proto-Aryan homeland within the Arctic Circle.[5] Anthropology, in the person of some of its most authoritative representatives, is to-day teaching, with a positiveness of conviction hitherto unequaled, that the real cradleland of the whole human family, and the center of its original dispersion, "must be sought in 'Arktogäa,' a north-polar country which no foot of man shall ever again tread, a land covered with everlasting ice, or submerged beneath the billows of the ocean."[6] Even the biblical theologians have come to see that the Eden story of Genesis, when rightly

[1] E. R. Burton, *Etyma Latina*, London, 1890.

[2] Bâl Gungâdhar Tilak, *The Arctic Home in the Vedas*, Bombay, 1903, 8vo, pp. xxiv, 504. This author is a native Sanskrit scholar who long resisted the view to which, as here shown, his maturer studies have led him.

[3] Principal John Rhys, Professor of Celtic in the University of Oxford, *Origin and Growth of Religion as Illustrated by Celtic Heathendom* (Hibbert Lectures), London, 1888. "In any case, the mythological indications to which your attention has been called, point, if I am not mistaken, to some spot within the Arctic Circle" (p. 636).

[4] Ernst Krause, *Tuiskoland: Der arischen Stämme und Götter Urheimat*, Glogau, 1891, 8vo, pp. over 600. Noticed by Rudolph Virchow in *Zeitschrift für Ethnologie*, Heft 3, 1891. Two years later Dr. Krause published a supplementary volume: *Die Trojaburgen Nordeuropas*, Glogau, 8vo, pp. xxxii, 300. His *Allgemeine Weltanschauung in ihrer historischen Entwicklung* (Stuttgart, 1889) I have not seen.

[5] J. D. Ludwig Wilser, *Herkunft und Urgeschichte der Arier*, 1899.

[6] Wilser, *Menschwerdung*, Stuttgart, 1907, pp. 11, 13, 15, 72, 107ff. Also the authors quoted by him in his *Tierwelt und Erdalter* (1908), and in his treatise, *Die Urheimat des Menschengeschlechtes*, Heidelberg, 1905.

interpreted, is the story of a Polar Paradise, the headspring of whose four rivers is in the upper heavens.[1] At no distant day, comparative cosmology, youngest of all these lines of scientific research, is certain to bring in her slowly and carefully gathered testimony; and we may rest assured that this testimony will be found to be in full accord with that of her tributary sciences.

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[1] Hermann Gunkel, *Genesis übersetzt und erklärt*, Göttingen, 1901, p. 33. T. K. Cheyne, *Traditions and Beliefs of Ancient Israel*, London, 1907, pp. 84, 455. Gunkel expressly equates "der Gottesgarten," "der Gottesberg," "Eden," and "der Nordpol des Himmels." See also Alfred Jeremias, *Das alte Testament im Lichte des alten Orients*, 2 Aufl., S. 188–202, for approximations to this view.

Since the foregoing was put in type Wilser, in an article entitled "Der Nordische Schöpfungsherd," printed in the *Zeitschrift für den Ausbau der Entwicklungslehre*, Heft V, 1909, has given an instructive summary of the entire literature of this anthropological doctrine, including even my article in the *Methodist Review* for November, 1908.

APPENDIX

SECTION I—THE MANDALA OBLATION

EVERY day in the year, in every Lamaist temple in Tibet, there is offered up by the officiating priest a notable oblation. Few, even among students of religion, have ever heard of it. I know of but two writers who give evidence of acquaintance with the details of the rite, and neither of these shows any adequate appreciation of its significance. To my mind the offering is the most interesting, and in some respects the most impressive, anywhere found in the whole history of human worship. It consists of thirty-eight little thumb-and-finger pinches of rice-grains on a tray. Why this simple offering should have such exceptional impressiveness and significance can never be understood without some understanding of Lamaism; and Lamaism can never be understood without a careful study of the earlier Indian Buddhism, of which it is a corrupt but more highly organized form. To this earlier system, then—to its view of the world and of human life—I must first invite your attention.

In the poem entitled The Daisy, Tennyson recounts some travels of his in Italy, and in so doing chances to recall his impressions of the Milan Cathedral. Immediately his own verse takes on a new elevation and he cries out:

> "O Milan, O the chanting quires,
> The giant windows' blazon'd fires,
> The height, the space, the gloom, the glory!"

That last line is apt to haunt me whenever I turn my thoughts in the direction they are now about to

take. With a good degree of continuity I have studied Brahmanic and Buddhistic teachings for more than twenty-five years, yet even now it often seems as if I were only mastering the alphabet of a strange new language. I even thought of writing for this very occasion a paper with this title: "Why I am resolved to abandon my studies of Buddhism." More than once I have suspended them, but the issue of the next new text-translation, or treatise thereon, has usually re-awakened my zeal. Still, as often as I return to the contemplation of the Buddhist conception of the world and of life I feel afresh,

"O the height, the space, the gloom, the glory!"

To get some impression of the altitude and spaciousness of this world-view I know of no better way than to start with the familiar world-view of the ancient Greeks, and thence to proceed to that described in the sacred books of the Buddhists.

Omitting, then, all debated questions, we may remind ourselves that the world of Homer and Hesiod consisted, first, of an earth for the abode of men living and dead; second, above this a starry heaven inhabited by the gods; and third, below the earth at an equal distance with the sky a Tartaros full of murky darkness, the abode of Titans and other dethroned enemies of the gods. Beyond this overarching heaven and underarching Tartaros naught existed or was imagined to exist. This one world-shell included the abodes of all beings and all beings themselves. No conception of the universe could well be clearer or more complete.

What, now, of its dimensions? How far was it supposed to be from highest heaven to lowest hell?

We cannot tell in furlongs or in miles. Homer,

however, tells us that Tartaros was as far below the earth as the heaven was above it, and Hesiod confirms this when he tells us that an anvil dropped from heaven would fall nine days before reaching the earth, and that if dropped from the earth it would likewise require nine days to reach the bottom of murky Tartaros. Such a measurement, however, would seem to be a little poetic and to have something of the exaggeration of poetry, for when the Father of Gods and men hurled Hephaistos over the battlements of heaven he alighted on Lemnos, according to his own testimony in the Iliad, at the close of one day's fall. Moreover, we must not forget that in the Odyssey we find the giants planning to scale the heights of heaven by simply piling Pelion upon Ossa and Ossa upon Olympos, so making the distance only the height of those three mountains. Indeed, Atlas was tall enough to stand upon the earth and support the heaven upon his upstretched hands. With these cosmological thought-measures of the Greeks in mind, let us now turn to the cosmos of the Buddhists, not forgetting that it was inherited in large part from the yet older Hindu teaching. The description I am about to give is based upon those of Spence-Hardy, Beal, and the more recent Oriental scholars.

First, let us take the Homeric world-shell and see what enlargement it may need to enable it to accommodate the Buddhist thought of the world's contents. In its center, laterally considered, we must locate the stupendous mountain Meru, or Su-meru, which means "Beautiful Meru." This is the upright axis of the earth conceived of as an enormous foursquare mountain. Around it revolve the sun and moon in horizontal orbits. It is glorious beyond description, being like burnished gold on one side, silver on another, sapphire

on another, ruby on another. From base to summit it is 1,680,000 miles. Its support underneath is the still larger Trikuta rock, whose three supporting peaks are each 40,000 miles in height. This tripod-like pedestal rests upon the Gal Polova, or World-stratum of Gold, which rocklike serves as a bottom to all the oceans. In vertical thickness this is 3,200,000 miles. Next underneath this is a Jala Polova, or World-stratum of Waters, 4,800,000 miles in thickness, and below this a World-stratum of Air, the Va Polova, and this is 9,600,000 miles in thickness. Below this, our world, or, as the Buddhist would say, our sakwala, does not extend.

One of the greatest of recent achievements of science is the liquefaction of atmospheric air. A few weeks after its first accomplishment the emperor and empress of Germany visited a laboratory of the university in Berlin to witness the performance of the wonder by a famous professor from Munich. At the close of the successful experiment the enthusiastic emperor, with his own hand, decorated the professor with an imperial order. Our next problem will be the *solidifying* of this liquefied air. Of this Science has not yet begun to dream. These Orientals, however, began to dream of it long ago. If the German Kaiser could visit this bottom stratum of the Buddhist world he would find that though it is a stratum of air, it is one perfectly solid and harder than a diamond.

Returning now from the bottom of things and ascending through the Air-stratum 9,600,000 miles, and through the Water-stratum 4,800,000 miles, and through the Gold-stratum 3,200,000 miles, and through the Earth-stratum 1,200,000 miles, we arrive at last at the level of Jambu-dvīpa, and the three other island-continents which constitute the abode of men and of the beings

with which men are most familiar. We have measured the depth of our world-shell—nearly 19,000,000 miles; it remains to explore its height.

But before we scale the heavens we must ascend on *terra firma* a stupendous series of terraces, seven in number, quadrangular in form,[1] and inclosing in their center Mount Meru, the axial line of our heavens and earth. These seven terraces dam in and hold in place seven intervening seas, also concentric, of course, with the square continents which separate and shore them. Now, as Jambu-dvīpa, our own particular abode, lies in the Great Sea, the outermost of all, a step in thought from our own island-continent to the nearest of the seven concentric square continents would be a step across the inner portion of the outermost sea up to the higher level of the seventh of the continents. Another thence to the sixth continent would take one across the seventh sea and up to the level of the sixth continent, and so on, until on crossing the first or innermost sea one would plant his feet on the lofty level of the visible base of Mount Meru. I say "lofty level" because the height of the seventh continent above the outermost sea is more than 6,000 miles, that of the sixth above the seventh more than 12,000, that of the fifth above the sixth more than 24,000, and so on each time in redoubled numbers, until the last or inmost step alone lifts us more than 400,000 miles toward the heavenly regions, although properly speaking we are still on *terra firma*. We are now at the level of Ilāvrita, the divinely beautiful country surrounding the visible base of Mount Meru. Far above us are the heavens to which we now turn our attention.

The first, or lowest, is called the heaven of the Maha-

[1] See picture on p. 79 of Waddell's *Buddhism of Tibet* (London, 1895).

Rajahs, that is, the heaven of the Four Great Kings. Ancient Hindu cosmography places at the four corners of this divinely beautiful country, Ilāvrita, four stupendous mountains, each 100,000 miles in height. These constitute what are called the four buttresses of the far loftier Meru, which stands in their center, and towers to an almost immeasurable distance above them. Now, the heaven which at the height of 400,000 miles overarches Ilāvrita and all the concentric quadrangular oceans and continents below is the heaven of the Four Great Kings. Each of these kings is sovereign over the quarter of the world in which his mountain is located, and each has subjects much resembling demigods. One of these mighty monarchs is white, another imperial purple, another imperial yellow, another imperial red. A part of their duty is to drive back any demon armies that may strive to reach the heavens of the gods by scaling Mount Meru. The normal lifetime of beings born into this lowest heaven—and man or beast, or god, or ghost, is liable to be born into it—is 9,000,000 years.

The second heaven is that of the Three and Thirty Gods, or, as it is often called from the name of its king, the heaven of Sakra. This overarches the heaven of the Four Great Kings. It must be at least 400,000 miles higher up, for it is on a level with the summit of Mount Meru. Right on that summit is the palace and the capital city of King Sakra. Of course, his dominions extend laterally far beyond this capital to almost unimaginable distances. The most moderate statement is 600,000 miles. The lifetime of anyone born into this heaven is 36,000,000 years. It almost gives one a brain paralysis to remember that in his various previous births before his last, Gautama, the founder of Buddhism, was born into this heaven no less than twenty times.

Accordingly, he spent in this one abode no less than 720,000,000 years. It is the heaven into which his mother was born on her decease seven days after she had given him birth. One can but feel an interest in learning what kind of a place it is. Here is a brief account from one of the Shasters summarized by Beal in his Catena of Buddhist Scriptures:

The central city is 100,000 miles in circuit. The towering gates are fifteen miles in height and there are one thousand of these gates. Each gate has five hundred blue-clad celestial watchmen fully armed. In its center is a kind of inner city called the Golden City of King Sakra. Here he has a pavilion 10,000 miles in circuit. Its floor is of pure gold inlaid with every kind of costly gem. This inner city has five hundred gates, and on each of its four sides are one hundred towers; in each tower one thousand and seven hundred chambers; in each chamber seven devis, and each devi is attended by seven handmaidens. All these devis are consorts of King Sakra, with whom he has intercourse in different forms and personations according to his pleasure. The total region of this heaven, like others, is surrounded by a sevenfold wall, a sevenfold ornamental railing, a sevenfold row of tinkling curtains, and beyond these are seven rows of Talas trees. All these encircle one another, and are of every color of the rainbow, being composed of every imaginable precious substance. So the description runs on and on.

This King Sakra is himself one of the most interesting of all imaginable gods. He has for a trumpet a remarkable conch-shell one hundred and twenty cubits in length, and when he has finished blowing a merry blast upon it, it continues to sound on and on four months before its wind is exhausted. Moreover, his

throne is a kind of moral thermopile, so that every now and then when some saint down in the human world is achieving some extraordinary merit—one so great that he is in danger of becoming more powerful than any god—this marble throne suddenly begins to grow hot, and Sakra is prompted to descend in haste to the world of men and look into the case. Usually he disguises himself as a man and tests the saint, and as the stories have been written by the saints, he is usually represented as overwhelmed with amazement at the wisdom and transcendent powers of the man he came to test. One could easily fill an hour with readings from his adventures of this kind as told in the Jatakamala and other sacred books. Of course we must not, for we have yet higher heavens to climb. Our earthly minutes and hours are not like those found in these heavenly places.

The third heaven is inhabited by beings called Yamas, and their king is Suyama. This is at an immense distance above the heaven of Sakra. As its inhabitants are far above all possible incursions from the demon armies they are called "Strife-less." They determine the time of day by the opening and shutting of the flowers. Their peaceful lifetime extends through the liberal allowance of 144,000,000 of our years.

The fourth heaven, far above this, is that of the Tushitas, or the Satisfied Ones. Their king is Santushita. This seems to be regarded as specially holy, as it is the last home of Budhisattvas, or future Buddhas —one by one—before their final birth as men. Maitreya, the fifth and last of our present world-cycle, is now in this heaven biding his time. We may have long to wait for him, for the life allowance here is 576,000,000 years.

Of the fifth heaven the sacred books have little to say. Its inhabitants are called "The Gods who Delight in Fashioning." With them life runs on to 2,304,000,000 years.

To indicate the progressive disappearance of the sensual in the heavenly beings as one ascends, the people are taught that in the first heaven the occupants propagate the species in the same way as human beings, in the second it is done by a mere clasping in the arms, in the third by a mere touch of hands, in the fourth by colloquy, or an interchange of speech, and in the fifth by a mere exchange of glances. Beyond this abode propagation is supposed to cease.[1]

The sixth is the heaven of King Mara, and he rules over millions of subjects, also called Maras. This King Mara, like Sakra, has great interest in men. He tests them so often and so mercilessly that he is often called the Buddhist Satan. If time would permit I should like to read the description of his temptation of Gautama when he was sitting under the Bo-tree. The elephant which Mara rode on that occasion was one hundred and fifty leagues in height. In many passages he is called "the Wicked One," but this cannot be taken in our strict monotheistic sense. He is a god ruling over gods, and their happy lives fill out 9,216,000,000 years. The garments of any one of these weigh only the one hundred and twenty-eighth part of a single ounce. It is the last heaven in which clothing of any kind is needed.

How many more heavens above these six rise from height to height unpicturable? Twenty.

It is manifestly impossible to proceed with such de-

[1] Pallas and Köppen, quoted in Menzel's *Vorchristliche Unsterblichkeitslehre*, i, 277.

tail as hitherto. We must group the whole twenty-six, as the Buddhist teachers themselves do. The first six are the heavens of sensuous gods—divinities—capable, like the Olympians, of marriage and propagation, yet so self-luminous with divine energies that none of these heavens have need of the light of a sun or of a moon, any more than did that celestial city described in the Apocalypse. On being born into any one of them a person takes the color of the celestial flower on which one's eyes may chance first to fall.

The twenty yet higher heavens are collectively styled the Brahma-loka, or heavens of Brahma. If a stone as big as a pagoda were dropped from the lowest of these it would fall 18,383 years before it could reach the earth, so we are assured in one of the Shasters. Poor Hesiod's anvil and its nine days' fall are as naught.

The seventh, eighth, and ninth heavens take us beyond all trace of sense high into the spirit realm. No being can ever reach any one of them until sublimated by long practice of meditation and mystic vision up to the ecstatic experience known as the first Dhyana, or spiritual trance. Over the third of this group, namely, the ninth in the total order, presides as sovereign Great Brahma, the supreme god of ancient Brahmanism.

The tenth, eleventh, and twelfth constitute another group of three attainable only by beings who have attained the powers and virtues of the second trance.

In like manner the thirteenth, fourteenth, and fifteenth are a yet higher group attainable only by those who have attained the powers and virtues of adepts in the third trance.

Next follows a group of seven, the sixteenth to the twenty-second inclusive; and these are attainable only by beings who have attained the transcendent powers

and virtues of adepts in the fourth and highest trance-condition. It is well that these so-called heavens of form extend no higher, for as we ascend through them the inhabitants are found to increase in stature in a geometrical progression, so that here in the twenty-second they are in height 160,000 of our miles.

Combining now all four of these groups of heavens reached by beings sublimated to the trance stages, we have what the Buddhist scriptures call the heavens of form, Rupa-loka. They are sixteen in number. Beyond and above this higher group, comes last of all, most ineffable of all, the four Arupa-loka, or heavens of formless entities. These are the twenty-third, the twenty-fourth, twenty-fifth, and twenty-sixth. The altitude of these no archangelic surveyor can ever measure, for they rise into a realm as impalpable as that of subjectless, objectless thought. The tenants of the twenty-sixth are called "beings who abide in neither consciousness nor unconsciousness."

Here, then, culminates the spheroidal sakwala in which we dwell. No opium-dream described by De Quincey ever grew to such unimaginable proportions or so moved us to exclaim,

"O the height, the space, the gloom, the glory!"

As yet, however, I have hardly more than made a beginning in Buddhist cosmology. I have simply taken you from the bottom of our enlarged Homeric world-shell to its summit. Had I time to make a horizontal journey from one side of this fairy world to the other and around the four sides of beautiful Meru, we should find spaces and groupings and distances quite as bewildering. We should find geometric continents, and satellite continents, and lakes and seas, all filled with

fantastic yet remarkably coherent creations, and all described with the greatest apparent accuracy of detail. We should find the seventh concentric sea common salt sea-water, but the sixth is pure fresh water, the fifth comparable only to spirits of wine, the fourth to sugar-cane juice, the third to butter, the second to fragrant curds, the highest and innermost, the first, to a milklike liquid of absolute whiteness, yielding to the gods an elixir of life. And the depth of this innermost and highest of the seven concentric quadrilateral seas, like its breadth, is 840,000 miles. Here we might see waves 400 miles in height, others 600, each variety with its own proper nautical name. Nor would these produce any sense of disproportion. In such vast expanses they would be the veriest ripplings of a summer sea. Take the outermost ocean, the one in which we live. The four island-continents therein are the outermost land, but beyond this last barrier of land the waste of waters extends out and out and out to the uttermost wall of the world, a distance of 2,798,000 miles. At that far-off outer shore we should find a circular wall of iron or of living metallic rock, like iron, 1,640,000 miles in height, one half above the water and one half below. The circumference of this circular wall, this solid equatorial girdle of the world, is no less than 36,103,500 miles.

Crossing such a world we should very likely be fortunate enough to see in one of these oceans a Timinda, a fish 2,000 miles in length, or perchance the Timingala, which is 3,000 miles long, or possibly even the Timira Pingala, which is 5,000 miles in length. With every motion of its right or left ear it agitates the waters 5,000 miles in all directions. This creature requires water more than a thousand miles deep to cover his

back. Do not regard this as an exaggerated or fanciful fish story, for these sacred writers tell us of four other finny monsters that sport in these mighty waters, and each of these is 10,000 miles in length.

In a world of such dimensions why wonder at the size of the Jambu tree? From root to highest tuft is 1,000 miles; the space covered by the outspreading branches is in circumference 3,000 miles; the trunk is 150 miles around, and from the root to the first branches it is 500 miles. Each of the four main branches is 500 miles in length, and wherever a fruit of the tree is dropped, plants of gold immediately spring up.

The adjustment of all the parts of this almost illimitable world is thoroughly thought out. The outer and inner dimensions of all the seven concentric square continents are exactly stated. So far as I have noticed, all of our European and American scholars have represented these continents as on one level—that of the outermost ocean. This is not correct. Counting outward from Mount Meru each lies at a vastly lower level than the one preceding, and these differences of level, as already stated, are arranged according to a strict arithmetical progression.

The four island-continents well deserve a passing glance. Situated in the outermost ocean, on opposite sides of Mount Meru, they all sustain a like relation to the circling sun and moon. Accordingly, when it is exactly noon in our far-southern continent, it is sunset in the eastern, sunrise in the western, and midnight in the northern. The four are differentiated by their shape as well as position. The one in the far East is shaped like a half-moon, the one in the far South like an equilateral triangle, the one in the far West a perfect circle, the one in the far North a perfect square. All

are inhabited by men, but by men of very different tribal characteristics. For example, the forms of their faces in every case correspond to those of their continents. As a consequence the men of the western continent have faces as round as a full moon; the faces of the men of the East, on the contrary, are simply semilunar—a state of things very embarrassing, one would think, to a person of that country desiring to be photographed in more than one position. As our continent is triangular, the ideal facial outline with us is triangular, that is, broad across the temples and descending gently to a point beneath the chin. I will only add that different complexions are found in all of the four continents except the Northern. There all the inhabitants are white. These also have keener senses than we, and their stature is from ten to fourteen feet. It is also said that they live without sickness to the ripe old age of one thousand years.

In the Buddhist conception of the place of man in the world and his possible power over the world, we everywhere find a characteristic impatience of anything like ordinary limitations.

To begin with origins, men were gods before they were men. The first men came down from the twelfth heaven and came into their present abodes by what is called the apparitional birth. At that time there was no difference of sex among them, and the glory radiating from their bodies was so great that there was no necessity for sun or moon. They could soar through the air at will, and their lives of peace and innocent happiness extended through a period of 100,000 years. With every renewal of the infinite series of world-cycles men came back to this pristine glory and power and longevity.

But even now, in this worst of the component ages

or the present world-cycle, it is hard to set any limit to human powers and possibilities. It is true that most men are ignorant, but if a man covets knowledge and will practise the right regimen, he can come to such insight that he can see back in his own history through a hundred thousand births and beyond, recalling every event that gave him pleasure or pain. Men seem to be of limited powers of locomotion, but by the right regimen, even here on earth, a man may gain the power to visit other worlds, even the worlds of the gods, at will. Men generally seem to have little power over the elements, but by the right use of the so-called *Kasinas* any man can pass through ramparts of stone, create winds and rains, walk on the water, and subdue fire by the superior intensity of the light proceeding from his own eyes. Men seem subject to death, but in reality even the weakest and lowest and vilest of men never dies: he simply passes the gateway of one more birth and with royal port proceeds with the further exploration of the world-house, in every part of which he is sure at one time or another to have his habitation.

It would be interesting, at this point, to visit other realms and races in our strange sakwala. Its hells are as interesting and as numerous as its heavens. Those beneath Jambu-dvīpa are as elaborately laid out and subdivided as Dante's Inferno. The durations of punishment are frightfully protracted. Thus in the Tapana-hell the period is 16,000 years, and of those infernal years each day and night is equal to 51,840,000,000 of our years.

Leaving the hells of fire and hells of frost, we might visit the contiguous regions occupied by the Pretas. These are the most multiform, the most ill-looking, ill-feeling, ill-smelling, and ill-acting ghouls that a

luxuriant Oriental imagination has ever been able to create. From that abode it would be a positive relief to betake ourselves to the submarine metropolis and royal city of the Nagas, or Dragons. Of these there are five orders or races, and their supreme kings are among the most powerful of beings. They have under the Great Sea palaces as splendid as that mentioned as in the heaven of King Sakra. Two of these Dragon Kings, Nanda and Upananda, are said to be the largest of all sentient beings, "being able to infold Mount Meru seven times round, their heads above the top of it and their tails in the deep sea." This would imply a length of at least two or three millions of miles.

This reminds me of a famous prehistoric event frequently alluded to in Hindu mythology. It seems that at the dawn of the history of our present world, one of these royal snakeships, Vasuki by name, was displaying his million-leagued length rather aggravatingly on Mount Meru, with a coil or two round the middle of the mountain just to hold on the better, when, suddenly, the mischievous gods came down on one side and the Asura demons came up on the other, and the one party seizing him by the head and the other by the tail, they began pulling, first this way, and then that, in rhythmic alternations, so that the mountain, big as it was, was made to spin round like an Oriental drill, first to the right, and then to the left, in a manner astonishing to behold. This certainly was colossal sport for the gods and demons. But the King of Snakes, enraged at the indignity, spat floods of venom over the demons, and though devils may be able to stand a good deal of venom, as a kind of native element, these at last got more than they could stand and were glad to desist. All, however, is well that ends well; and this

prank of the playful gods and demons ended in great good. You remember that the mountain stands in an ocean of the purest and richest imaginable milk. It came to pass, therefore, that these revolutions and counter-revolutions of the mountain in it had the same effect as the movement of a rotary churn, and the result was the milk-ocean was churned and churned to a charm. For out of the churning there came forth "Seven Precious Things," the seven highest treasures of the world. One of these was Lakshmi, the goddess of beauty, excelling all other beauties in the world. Another was the primordial Jewel, fairer than all others, mother of all others, in the world. Another was the Parijāta, or Tree of the Heavenly Paradise, antetype and paragon of all the trees that ever grew. And so on and on. As a consequence of this famous churning of the ocean and the production of these seven world-treasures, the universe has always been the richer for the practical joke played upon Vasuki by the sportive gods and demons.[1]

But while this system of cosmography and geography and natural history is wrought out to the minutest details, we must not suppose that the resulting cosmos is regarded as possessing a changeless and finished fixity. The world that now is had a beginning and will have an end. A world upon the same general plan preceded it, another after an almost immeasurable duration will follow. To the series no mind of man or god can discover a beginning, no mind an end. Moreover, while all that we have been exploring has been within the one enlarged Homeric world-shell with which

[1] A very remarkable picture of this churning of the ocean may be seen on page 245 of a rare old work, entitled *Denckwuerdige Gesandtschafften der Oost-Indischen an unterschiedliche Keyser von Japan*, von Arnold Montanus, folio, Amsterdam, 1669.

we began, we find that the authors of this cosmology have not been content with one such sakwala, but have broken through the very walls of what seemed to be the total universe, and found other worlds outside and beyond. And each of these is equipped with a Mount Meru and with these vast concentric oceans, and intervening continents, and with island-continents and heavens of sense, and heavens of form, and heavens of formlessness, like the one in which we live. And what is the number of these outer worlds? Ten thousand is a figure often met, but this is only the unit of a higher calculus. Ten thousand of these decachiliad world-groups constitute a higher unitary group; and again ten thousand of these inconceivable aggregations constitute the "authority-domain" of merely one of the innumerable Buddhas provided for in the beginningless and endless ongoing of the universe. Accordingly, in the Visuddhi-Magga we read that any Buddha has three domains; and that the first, or birth-domain, comprises ten thousand worlds; but the second, or his authority-domain, comprises one hundred thousand times ten million worlds; while his knowledge-domain is endless and boundless. In fact, the Buddhist conception appears to be that illimitable space is close packed, tier on tier, with infinite millions of sakwalas like that in which we have been making explorations, and that even the interlying spaces which these spheroidal worlds from the nature of their form cannot fill are utilized as hells of ineffable frigidness—hells far more unendurable than any of the infernos of fire and frost to be found under our earth and under the earth in each of the other sakwalas innumerable. Whether these infinite tiers of spheroidal worlds are so arranged that the human-end of each world is upward as we count upwardness, or

whether by inversion of position the heavens of the world immediately above our own are next our Brahma-heavens, bringing the twenty-sixth in each system into contiguity, I cannot say. Some things seem to favor the latter supposition. In other words, comparing the worlds to eggs, there is some evidence to show that in the egg-basket of illimitable space each tier of world-eggs is so packed that the pointed ends in one tier always adjoin the pointed ends in the tier below, and, vice versa, the same would hold of the broader ends. In either case, by including and utilizing as hells the spaces unoccupied by worlds, this system of thought—as if, like nature, abhorring a vacuum—makes universal space an absolute plenum. Though space may remain an infinite abysm, it at least is not empty and yawning and meaningless.

But am I not forgetting that remarkable oblation of which I was to speak? Not at all. Every word I have uttered has been needful for its full understanding. Indeed, even now so many more preliminaries are needful that I hesitate to proceed. The lapsing moments, however, warn me that I must.

Has it ever occurred to you that, at some time, somewhere, in some thoughtful soul, the question must have arisen, What is the greatest of all possible offerings that I can bring and lay upon the altar of my God? In lands and times in which religious offerings were brought by hundreds and thousands and tens of thousands, the difference between the costly and the commonplace—between the petty and the unprecedented—would be often noted and would inevitably suggest that question. Here is the monarch with his hecatomb of fattened beeves, the wealthy merchant with his five or ten unblemished bullocks, the youthful bridegroom

with his single lamb, the indigent mother with her two small pigeons—all equally appropriate because sincerely adjusted to ability. But what of their intrinsic value, and what gift of mortal would be worthiest of the god?

I know not when, or where, or in what mind, this question first found answer, but certain it seems that in some Lamaistic mind it found an answer sublimely beautiful. The answer was that no religious offering was worthy of the Highest that was less than the total universe of finite being with all the precious things therein. And having reached this insight the authors of the Lamaistic ritual provided that each day in the round year, in every temple, this supreme, this ideal offering should be offered up. The result is the Mandala Oblation of which this paper treats.

The solemn ceremony is singularly impressive. Let us watch, premising only that unlike the earliest Buddhists these Tibetan ones conceive of the Buddhas, not as extinct personalities, but rather as ineffable immortal intelligences who have extricated themselves from the total world-process, and now in supermundane glory and peace compassionate the beings still entangled in the round of endless transmigrations. In the presence of these ineffably exalted ones our priest appears. On great occasions and in the greater temples an elaborate series of ritual acts precedes the Mandala Oblation. This, however, is the culminating act of the entire service. At the proper time, after the tinkling of the altar-bell, the priest reverently wipes clean a consecrated tray and places it upon the altar before him. Then with his two hands he sprinkles some rice grains on the tray, saying that by this symbolic act he lays "the golden foundation of the universe." Then he sets upon the tray a large metallic ring which he reverently

names as "the iron girdle of the universe." Then with similar descriptive words he deposits in the center of the ring a pinch of rice to represent the king of mountains, Mount Meru. Next, near the rim of the cosmic ring, in the midst of the outermost of the concentric oceans, he deposits, first in the far East, next in the far South, next in the far West, and next in the far North, the four pinches which represent Jambu-dvīpa and the three other island-continents. With every pinch he gives the name of the continent intended, and we are told that throughout the entire ceremony "it is specially insisted on that the officiant must mentally conceive that he is actually bestowing all this wealth of continents, gods, etc., etc., upon his Lamaist deities who themselves are quite outside the system of the universe."

Next, to represent the island-world the priest deposits each side of each island-continent two other doles of rice representing the eight so-called satellite-continents, which he names in their order. Then as each of the four island-continents has a supreme treasure possessed of magical virtue—the East one a jewel-mountain, the South one a wish-granting tree, the West one a wish-granting cow, and the North one a wish-granting soil of magical fertility—the priest names each of these world-treasures and at each naming makes in its proper place a rice-deposit. This finishes what we may call the first story of the universe. To represent the second there is placed above the first ring a second, somewhat narrower, but of equal height. This is to include the symbols of the best and most precious things in the regions between us and the highest mundane heaven. First come the so-called "Seven Precious Things." Beginning once more at the East, and once more passing round by quarter circles, he names and indicates with

the rice-doles the first four. Then in the intervening spaces follow the symbols of the remaining three, and of the fourfold Vase of Great Treasure, which came into being the moment of the birth of Buddha. After these celestial treasures the inhabitants of these celestial regions must be represented. For this purpose eight maternal demigoddesses are selected. These are named in order, and beginning at the East, as before, the station of each is indicated by a rice-dole close to those of the Precious Things, a trifle closer to the center of the circle. With this the second story of the universe is finished.

Then is superimposed the third ring, narrower than the second but of greater height. Here must be symbolized the splendor and the sovereignty and the power and the life found only in the topmost mundane heavens. To mark this splendor the priest places a rice-dole in the East and names the sun, then one in the West and names the moon. A dole in the South represents the jeweled "World-umbrella of Universal Sovereignty," one in the North the "World-banner of Universal Victory." The life in these highest heavens alone remains thus far unsymbolized. Pausing a moment, the priest reverently deposits his thirty-eighth and final rice-dole on the holy center and summit of his whole oblation, declaring it the symbol of the most accomplished and the wealthiest beings of the universe, the living gods, the tenants of the highest heavens.

A pause ensues. Then, interspersed with other pauses and with prostrations and liftings-up of the hands, seven prayers are heard. And these are the prayers:

"I offer you all these constituent parts of the universe in their entirety, O noble, kind, and holy Lama, O tutelary gods of the round world and all the hosts of Buddhas and Bodhisats!"

"I beg you all to accept these offerings for the benefit of all animated beings!"

"I offer you, O Buddhas, on a foundation of incense and flowers the four continents, and Mount Meru adorned with sun and moon!"

"I offer you, O assembly of all the perfected supreme ones of the outside, inside, and hidden regions, the entire wealth and substance of all these ideal regions. I beg you all to grant us the best of all real gifts, and especially that real gift of spiritual insight, the 'great ultimate perfection'!"

"I offer up this fresh Mandala-oblation, through the virtue of which let no injury beset the path of purity, but let us have the grace of the Jinas of the three times, and let us, the innumerable animated beings, be delivered from this illusive world."

"I offer up salutations, offerings, confessions of sins, and repentance. Whatever virtue has been accumulated by myself and others, let it go to the attainment of our great end."

"With my whole heart and body I humbly prostrate myself three times to all who are worthy of worship. Let glory come!"

Here end the prayers in solemn silence, and with a thrice-repeated prostration of the worshiper, and with a priestly benediction, the congregation is dismissed.

Not soon, if ever, can I forget the moment when after blindly bringing together from diverse sources a mass of fragmentary facts on this act of worship my mind first caught sight of its sublime, all-interpreting inward significance. A moment I was filled with speechless admiration; the next I was abashed and humiliated. I straightway fell upon my knees and bowed myself low before the King Eternal, Immortal, Invisible, entreating forgiveness that in my narrowness of vision and weakness of faith I had never reached the level of my Lamaist brothers' conception of the scope, and dignity, and power, and privilege of human intercessorship.

Incited by his example, I asked to know more of the essential and indestructible priesthood of every true worshiper in behalf of all beings animate and inanimate.

Led on as never before, I then and there lifted up in my own priestly hands church after church, nation after nation, continent after continent, planet after planet, creature-order after creature-order, until upon my arms of faith I held upborne the total universe of finite beings. Then, as face to face with God, with emotions too deep for tears, I cried:

"A part of all, I speak for all—I pray for all—I offer all—I dedicate all to Thee. In all, by all, through all that Thy creative will hath caused to be, Thy will be done!"

I hardly need add that to one soul at least the "glory came."

From that memorable hour to this it has been easy for me to pray a larger prayer than ever before. And I love to think that in far-off Central Asia devout, wide-thoughted, mystic men—whatever their superstitions—are daily schooling and preparing millions for that promised day when all this universe shall be one temple, and all beings one congregation of united worshipers, and when at the name of Jesus every knee shall bow, of things in heaven, and things on earth, and things under the earth, and every tongue confess that Jesus Christ is Lord, to the glory of God the Father.

And I love to think that then shall come the long and strangely prefigured, the final and all-consummating Mandala Oblation. It will be in that same illimitable world-temple, in the presence of that same worshiping assembly, in the moment when the great High Priest and King of all that he has created shall in pierced hands uplift the total kingdom of perfected creaturehood and deliver it up to God, even the Father, that God may be all in all.

Even so, Lord Jesus, let this glory come!

SECTION II—HOMER'S ABODE OF THE DEAD

So herrscht gleich über den Ort wo die Unterwelt zu denken sei ein merkwürdiger Zwiespalt.—*Preller.*

Bei Homer ist eine doppelte Ansicht von der Lage des Todtenreiches zu erkennen, einmal unter der Erde, und dann wiederum auf der Oberfläche des Bodens in dem ewigen Dunkel jenseits des westlichen Ocean. Die Ansichten von den beiden Hades fliessen beständig durcheinander. So weit aber die mit jedem verbundenen Vorstellungen zu sondern und einzeln aufzufassen möglich ist, müssen wir sie darzulegen im Folgenden versuchen.—*Völcker.*

WHERE does Homer locate the realm of Hades?

In the whole broad field of Homeric scholarship it would be difficult to find a more fascinating question. Few have been more written upon. The literature of the subject is itself almost a library. No mythologist, no commentator upon the poet, no class-room interpreter even, can evade the question; and yet, in their answers, the Homeric authorities of all modern times, whatever their nationality, present only a pitiable spectacle of helpless bewilderment. Classifying these various interpreters according to the answers they respectively give to the question propounded, they stand as follows:

First, a class who content themselves with the general assertion that the earth of Homer was a "flat disk," and that his Hades, like that of the ancients generally, was undoubtedly conceived of as a dark recess or cavern in the bosom of this earth-disk. Anything in the Odyssey or elsewhere inconsistent with this view is simply a play of poetic fancy.

Second, a class—if class it be—who say with the genial Wilhelm Jordan, "Das Hadesreich der Odyssee

ist die von der Sonne abgekehrte Rückseite der Erdscheibe, die *ἀντίχθων*, Gegenerde, eines weit späteren Zeitalters. Von der *ζείδωρος ἄρουρα* und vom Götterhimmel aus betrachtet bleibt es allerdings Unterwelt, *ὑπὸ κεύθεσι γαίας*, aber nicht als Erdinneres, sondern als jenseitige Oberfläche."[1] Here the earth is still a flat disk; but Hades, instead of being within it, is simply its under or reverse side.

Third, a class who locate the shadowy realm on the same plane with the inhabited earth, but in the far West, just *inside* the Ocean-stream. This includes all commentators who, locating Hades above ground in the West, place Kirkè's isle in the same quarter, and hold that Odysseus did not cross over the Ocean-stream.

Fourth, a class who locate it in the far West, just *outside* the Ocean-stream. This includes all commentators who, locating Hades above ground in the West, place Kirkè's isle in the same quarter, but hold that Odysseus crossed the Ocean-stream.[2]

Fifth, a class who locate it in the far East, just inside the Ocean-stream. This class includes all who place Kirkè's isle in the East, and hold that Odysseus did

[1] Fleckeisen's *Jahrbücher*, 1872, vol. cv, pp. 1–8.

[2] Rinck, *Die Religion der Hellenen*, Th. ii, p. 459: "Bei Homer ist das Schattenreich noch keine Unterwelt, sondern jenes liegt ausser dem von der Sonne beschienenen Bereich der Erde, jenseits des Okeanos." Here, and in some other writers, along with a retention of the unity of the authorship of the *Iliad* and *Odyssey*, we find an intimation that the perplexing discrepancy in Greek representations of Hades is due to a gradual translocation of it from the far West to the interior of the earth, in consequence of advancing geographical knowledge. Perhaps a separate class should have been introduced, consisting of the representatives of this view. But had this been done, yet a fourteenth class would have been necessary to include those who, with Charles Francis Keary, exactly reverse the process, and make the oldest Greek Hades interterranean, and the trans-oceanic one at the West a later product. *The Mythology of the Eddas*, London, 1882, p. 14.

not cross the Ocean-stream in visiting the superterranean Hades.

Sixth, a class who locate it in the far East, just outside the Ocean-stream. This includes all who place Kirkè's isle in the East, and hold that Odysseus crossed the Ocean-stream in visiting the superterranean Hades.

Seventh, a class who try to harmonize the conflicting representations by making the one set of expressions relate to a Hades in the bosom of the flat earth, and the other set of expressions relate to "the entrance" of the passage leading down to it from the world of living men. This class is again subdivided into four subclasses, according as they maintain a *cis-oceanic* or *trans-oceanic* location of this mouth of Hades, and place it to the *East* or to the *West* of the poet.

Eighth, a class who hold that the difficulty is in the poet himself, he having got two incompatible mythologies mixed up together.

Ninth, a class who try to solve all discrepancies by assigning the different representations in the two poems, and in different parts of the same poem, to different ages and to different authors.

Tenth, a class who query whether or no it be not admissible to hold that Homer had two realms of Hades, —the one "subterranean," and the other "beyond the Ocean."

Eleventh, a class who, with Altenburg and Gerland, resolve the whole story of Odysseus's descent to Hades into an astronomical myth[1]; or with Cox see in it simply a mythologico-poetic expression for the prosaic fact that the Sun, the "lord of day," returning after his morn-

[1] "Odysseus in der Unterwelt," *Archiv für Philologie*, 1840, pp. 170–188. G. K. C. Gerland, *Altgriechische Märchen in der Odyssee*, Magdeburg, 1869, p. 50.

ing and noontide wanderings to his western home, sometimes finds it necessary to make his way behind dark clouds.[1]

Twelfth, a class who point out the manifest difficulties of the problem, but frankly profess their utter inability to present a solution.

Of the more important of the maps of "the world according to Homer," those of Bunbury, Völcker, and Forbiger are constructed according to the view of class fourth; that of Ukert, according to the view of that division of class seventh who locate the Hades portal in the far West, just inside the Ocean-stream; that of Gladstone,[2] according to the view of that division of class seventh who locate the Hades portal in the far East, just inside the Ocean-stream. Völcker, however, is inclined to believe in two Homeric Hades-realms—the one interterranean, the other at the West superterranean and trans-oceanic.

Such are the multifarious, contradictory, confused, and despairing answers given to our question by the most learned and eminent of Homeric scholars. It would be an easy task to fill a volume with citations illustrating these various positions, and the ingenious but mutually destructive arguments by which their respective advocates have sought to establish them. It will be more profitable to turn from such a Babel of ideas, over which the darkness of Hades itself seems to have fallen, and inquire what the poet himself has to say on the subject.

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[1] *Mythology of the Aryan Nations*, vol. ii, 171–180.

[2] Mr. Gladstone has more recently abandoned the flat-earth theory, and tentatively advocated *an interterranean Hades with its mouth downward.* See his *Primer*, London and New York, 1878, pp. 54–57; and *Homeric Synchronism*, London, 1876, p. 231. Perhaps this view also should have been included in the foregoing classification.

The region of the dead is represented in Homer as one of perpetual night. Its name is Erebos.[1] From the name of the divinity presiding in it, it is generally called the house or abode of Aïdes (Hades).[2] That it was conceived of as *underneath the earth* appears from the perpetually recurring expressions, both in the Iliad and in the Odyssey, relating the descent into and ascent out of it.[3] In certain passages it is, in fact, expressly spoken of as "under the earth"[4]; in others, as "under the recesses of the earth."[5] Hence Aïdes himself is styled *Ζεὺς καταχθόνιος*, "the Subterranean Zeus."[6]

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[1] "Dénomination assyrienne."—Félix Robiou, *Questions Homériques*, Paris, 1876, p. 13. The Semitic origin of this term is significant. It prepares us to find an agreement between the Homeric and the Assyrio-Babylonian ideas of the realm of the dead. Mr. Gladstone says, "Long before . . . I had been struck by the predominance of a foreign character and associations in the Homeric Underworld of the eleventh Odyssey."—*Homeric Synchronism*, London, 1876, p. 213. On the remarkably expressive cuneiform ideograph for *eribu*, see the explanation given by Robert Brown, Jun., in the *Proceedings of the Society of Biblical Archæology*, May 4, 1880.

[2] This term is also believed to be of Oriental origin, exactly corresponding to the *Bit Edi* of the Akkadians. See the translations of *The Descent of Istar*. "Talbot regards, and I think justly, the usual etymology of Hades—*quasi* Aïdes, *'invisible'*—as an afterthought."—Robert Brown, Jun., *The Myth of Kirkè*, p. 111n.

[3] *Iliad*, vi, 284; vii, 330; xiv, 457; xxii, 425. *Odyssey*, x, 174, 560; xi, 65, 164, 475, 624; xxiii, 252; xxiv, 10, etc. "Von einem besondern Eingang zu diesem unterirdischen Hades," remarks Völcker (*Homerische Geographie*, p. 141), "meldet der Dichter nichts; vielmehr gehen die Seelen, durch nichts gehindert, begraben und unbegraben überall unter die Erde." Granting this, there is no ground for his other assertion, "Dieser Hades ist nicht unter, sondern in der Erde." The immaterial shade can as easily pass through the whole globe to an opposite surface as through a thick crust to a central cavern. But see Mr. Gladstone's *Homeric Synchronism*, p. 222: "There is not in all Homer a single passage which imports the idea, or indicates the possibility, of our passing through the solid earth."

[4] *Iliad*, xxiii, 100; xviii, 333.

[5] *Odyssey*, xxiv, 204. Comp. *Iliad*, xxii, 482.

[6] *Iliad*, ix, 457. Comp. iii, 278; xix, 259; xx, 61. Comp. Herodotus, ii, 122.

In the Battle of the Gods there is a vivid picture of this underworld and of its trembling king:

> Thus the blessed gods inciting, both sides engaged, and among them made severe contention to break out. But dreadfully from above thundered the Father of gods and men, while beneath Poseidon shook the boundless earth and the lofty summits of the mountains. The roots and all the summits of many-rilled Ida were shaken, and the city of the Trojans and the ships of the Greeks. Aïdes himself, king of the nether world, trembled beneath, and leaped up from his throne terrified, and shouted aloud, lest earth-shaking Poseidon should cleave asunder the earth over him, and disclose to mortals and immortals his mansions, terrible, squalid, which even the gods loathe.[1]

But while the abode of Aïdes is thus clearly represented as under the earth, it is nevertheless represented as just across the Ocean-river, and capable of being reached by ship. In the eleventh and twelfth books of the Odyssey, the voyage of Odysseus to this region is described in the same apparently literal nautical terms as is the voyage to the Land of the Lotus-Eaters. And of his interview with the dead, Hayman says, "The whole scene is conceived by the poet as enacted on a geographical extension of the earth beyond the Ocean-stream."[2] There is no hint of any descent into the interior of the earth, no passage through or into subterranean caverns. The journey is as natural in all

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[1] *Iliad*, xx, 61ff. That there may be no question as to the impartiality of the translations given in this paper, the well-known and widely circulated version by Theodore Alois Buckley, of Christ Church, Oxford, is followed. A version giving more accurately the force of the verbs expressing upward and downward motion would in many passages be more favorable to the cosmological view here presented.

[2] Henry Hayman, D.D., *The Odyssey of Homer*, London, 1866, vol. ii, Appendix G 3, p. xvii.

its aspects as any voyage from one coast of the Atlantic to its opposite.[1] Thus opens the eleventh book:

But when we were come down to the ship and the sea, we first of all drew the ship into the divine sea, and we placed a mast and sails in the black ship. And taking the sheep we put them on board, and we ourselves also embarked grieving, shedding the warm tear. And fair-haired Kirkè (Circe)—an awful goddess, possessing human speech—sent behind our dark-blue-prowed ship a moist wind that filled the sails, an excellent companion. And we sat down, making use of each of the instruments in the ship, and the wind and the pilot directed it. And the sails of it passing over the sea were stretched out the whole day; and the sun set, and all the ways were overshadowed. And it reached the extreme boundaries of the deep-flowing Ocean,[2] where are the people and city of the Kimmerians covered with shadow and vapor, nor does the shining sun behold them with his beams, neither when he goes toward the starry heaven, nor when he turns back again from heaven to earth, but pernicious night is spread over hapless mortals. Having come there we drew up our ship, and we took out the sheep, and we ourselves went again to the stream of the Ocean, until we came to the place which Kirkè mentioned.

Here the hero performed the rites and held the consultation which Kirkè had previously prescribed in these terms:

"O noble son of Laertes, much-contriving Odysseus, do not remain any longer in my house against your will. But first you must perform another voyage, and come to the house of Aïdes and awful Persephonè, to consult the soul of Theban Tiresias, a blind prophet, whose mind is firm. To him, even when dead, Persephonè has given understanding, alone to be prudent, but the rest flit about as shades."

"Who, O Kirkè, will conduct me on this voyage? No one has yet come to Aïdes in a black ship."

[1] "Von einem Hinabsteigen findet sich keine Spur. Wer beweisen kann, Odysseus sei im Innern der Erde gewesen, der versuche es!"—Völcker, *Homerische Geographie*, p. 150.

[2] That is, the farther shore. See Völcker, p. 145.

"O noble son of Laertes, much-contriving Odysseus, let not the desire of a guide for thy ship be at all a care to thee; but having erected the mast, and spread out the white sails, sit down, and let the blast of the North wind carry it. But when thou shalt have passed through the Ocean in thy ship, where is the easy-dug[1] shore and the groves of Persephonè, and tall poplars, and fruit-destroying willows, there draw up thy ship in the deep-eddying Ocean, and do thou thyself go to the spacious house of Aïdes. Here indeed both Pyriphlegethon and Cocytus, which is a stream from the water of Styx, flow into Acheron; and there is a rock, and the meeting of two loud-sounding rivers. There then, O hero, approaching near as I command thee, dig a trench the width of a cubit each way; and pour around it libations to all the dead, first with mixed honey, then with sweet wine, and again the third time with water, and sprinkle white meal over it. And entreat much the powerless heads of the dead, promising that when thou comest to Ithaca thou wilt offer up in thy palace a barren heifer, whichsoever is the best, and wilt fill the pyre with excellent things, and that thou wilt sacrifice to Tiresias alone a black sheep, all black, which excels among thy sheep. But when thou shalt have entreated the illustrious nations of the dead with prayers, then sacrifice a male sheep and a black female, turning toward Erebos; and do thou thyself be turned away at a distance, going toward the streams of the river; but there many souls of those gone dead will come. Then immediately exhort thy companions and command them, having skinned the sheep which lie there slain with the unpitying brass, to burn them and to invoke the gods, both mighty Aïdes and dread Persephonè. And do thou, having drawn thy sharp sword from thy thigh, sit down, nor suffer the powerless heads of the dead to go near the blood before thou inquirest of Tiresias. Then the prophet will immediately come to thee, O leader of the people, who will tell to thee the voyage and the measures of the way and thy return, how thou mayest go over the fishy sea."[2]

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[1] Buckley well expresses dissatisfaction with this rendering. Völcker translates the term "ein *niedriges* Gestade." It is perhaps the low-down shore as contrasted with the upper or opposite one.

[2] *Odyssey*, x, 488–540.

In the following passage Odysseus narrates how, having arrived "at the place which Kirkè mentioned," he fulfilled her commission:

Then Perimedes and Eurylochos made sacred offerings; but I, drawing my sharp sword from my thigh, dug a trench the width of a cubit each way, and around it we poured libations to all the dead, first with mixed honey, then with sweet wine, again a third time with water, and I sprinkled white meal over it. And I much besought the unsubstantial heads of the dead, promising that when I came to Ithaca I would offer up in my palace a barren heifer, whichsoever is the best, and that I would sacrifice separately to Tiresias alone a sheep all black, which excels among our sheep. But when I had besought them, the nations of the dead, with vows and prayers, then taking the sheep, I cut off their heads into the trench, and the black blood flowed; and the souls of the perished dead were assembled forth from Erebos—betrothed girls and youths, and much-enduring old men, and tender virgins having a newly grieved mind, and many Mars-renowned men wounded with brass-tipped spears, possessing gore-besmeared arms, who in great numbers were wandering about the trench on different sides with a divine clamor; and pale fear seized upon me. Then at length exhorting my companions, I commanded them, having skinned the sheep which lay there, slain with the cruel brass, to burn them, and to invoke the gods, both Aïdes and Persephonè. But I, having drawn my sharp sword from my thigh, sat down; nor did I suffer the powerless heads of the dead to draw nigh the blood, before I inquired of Tiresias.

So far it might appear uncertain whether the hero were really in Hades, or only near it, at some point accessible alike to the living and to the dead. But the lines immediately following show that he was truly in "the house of Aïdes":

And first the soul of my companion Elpenor came, for he was not yet buried beneath the wide-wayed earth; for we left his body in the palace of Kirkè, unwept-for and unburied, since another toil then urged us. Beholding him I wept, and

pitied him in my mind; and, addressing him, spoke winged words: "O Elpenor, how didst thou come under the dark west? Thou hast come sooner on foot than I with a black ship."

Thus I spoke, but he groaning answered me in discourse: "O Zeus-born son of Laertes, much-contriving Odysseus, the evil destiny of the deity and the abundant wine hurt me. Lying down in the palace of Kirkè, I did not think to go down backward, having come to the long ladder; but I fell downward from the roof, and my neck was broken from the vertebræ, and my soul descended to Hades."

In line 69, Elpenor speaks of Odysseus "going *hence from the house of Aïdes*"; and in line 164, as elsewhere (x, 502; xi, 59, 158; xii, 21; xxiii, 324), the expressions leave no chance to doubt that Odysseus's voyage was a genuine *descensus ad inferos*.[1]

Here, then, are the two grand tests of every proposed solution of the problem of the location of the Homeric Hades:

I. *Its Hades must be underneath the earth;* and,

II. *It must be on the surface of the earth, beyond the Ocean.*

This strange and perplexing difference, not to say contradiction, in the Homeric representations did not escape the notice of the older commentators and writers on mythology. Especially has it called out the ingenuity of German scholars. F. A. Wolf recognized it, but did not profess to be able to give an explanation. J. H. Voss invented the method of solving the problem by placing Hades itself within the bosom of the earth-disk, but its "entrance" on the westernmost point of Europe on the inner shore of the ocean. Völcker rejected this solution,

[1] See Preller, *Mythologie*, vol. i, pp. 504, 505, where he says that the region visited was "die ganze und wirkliche Unterwelt, nicht etwas bloss ein Eingang in die Unterwelt." See also Völcker, *Homerische Geographie*, 76.

but, in the absence of a better, cautiously suggested—as we have seen—the possibility of Homer's having held to two kingdoms of the dead, one within the earth, and one in the dark trans-oceanic West.[1] Eggers[2] and Nitzsch[3] inclined to the support of the Vossian compromise; and in 1854 Preller could still speak of it as the one "at present chiefly prevalent."[4] Still, as Preller and others urged, nothing in the descriptions of the western Hades corresponds with the idea of a "portal" or "entrance" to a subterranean world extending so far eastward as to be situated under Greece and Asia Minor:[5] hence the latest interpreters have been as free as were the earlier to take their choice among the wild and contradictory conjectures classified at the beginning of this paper. The latest of these guesses is that of Jordan; and, though it comes within a hair's breadth of the truth, it has been the most ridiculed of all.[6]

As pointed out in earlier pages, the one false principle which has vitiated and confused all modern discussions of Homeric cosmology is the groundless notion that the earth of Homer is a flat disk. This mistaken presup-

[1] This, if allowed, would afford no relief; for, as Hentze says, "the subterranean character of even the Odyssean Hades can by no means be got rid of." Ameis, *Anhang.*, book x, 508.

[2] *De Orco Homerico*, Altona, 1836. But Eggers located the Hades entrance inside the Ocean-stream, Nitzsch outside.

[3] G.W. Nitzsch, *Erklärende Anmerkungen zu Homers Odyssee*, Hannover, 1840, Bd. iii, p. xxxv, 187.

[4] *Griechische Mythologie*, i, p. 505.

[5] See Preller, *Mythologie*, vol. i, p. 504. Eisenlohr, *Lage des Homerischen Todtenreichs*, 1872. Bunbury contents himself with the cool remark, "It is certainly not worth while to inquire what geographical idea the poet formed in his own mind of this visit to the regions of Hades." (!) *History of Ancient Geography*, vol. i, p. 58.

[6] See Kammer, *Einheit der Odyssee nach Widerlegung der Ansichten von Lachmann-Steinthal, Köchly, Hennings, und Kirchhoff*, Leipsic, 1873 pp. 486–490.

position is responsible for the failure of all hitherto attempted demonstrations of the true location of the poet's Hades. Once conceive of the Homeric Cosmos as represented in the accompanying cut of the "World of Homer," and the problem of the site of Hades is solved at a glance. It is the southern or under hemisphere of the upright spherical earth. In this conception, whatsoever is "trans-oceanic" is also and of necessity "subterranean." Now for the first time can it be understood how Leda and her noble-minded sons can be "on a geographical extension of the earth" on the farther shore of the Ocean, and at the same time *νέρθεν γῆς* (Odyssey, xi, 298). In this Cosmos, Hades cannot be beyond the Ocean without being also underneath the earth. On the traditional theory of a flat earth, the passage is and ever must be the palpable inconsistency which Völcker represents it. Even the theory of two or of twenty Homers does not reasonably explain it. Precisely so with the passages relating to Elpenor. His soul at death goes *κατὰ χθονός*, yet it is found with the other ghosts in the shadowy land just across the Ocean-river. So again with the passages relating to the shades of the slain Suitors. These reach the Underworld (xxiv, 106, 203); but it is by a route *along the surface of the ground* to the Ocean-stream, in full sight of the gates of the sun and of the stars of the Milky Way (xxiv, 9–12).[1] Illustrious scholars have accused the poet of *Widersprüche gröber und ärger* than usual in this account[2]; but the whole trouble has been, not in the poet, but in the poet's interpreters. With the spherical earth, all is consistent and precisely as it should be. In this

[1] Porphyrius, *De antro Nympharum*, 28, explains that stumbling-block of commentators, "the people of dreams."

[2] Völcker, *Homerische Geographie*, p. 152.

reconstructed Homeric Cosmos, every crosser of the Ocean-stream, whether it be Hermes, or Odysseus, or Herakles, reaches the groves of Persephonè and the house of Aïdes. Wherever Kirkè's isle is located, the "blast of the North wind" will drive the voyager thence toward the realms of the dead. In like manner it can now be understood how the stolen bride of Subterranean

OLYMPOS

TARTAROS

THE WORLD OF HOMER

For a convenient account of this reëstablished world-view of the ancients, for the use of schools, see *The True Key to Ancient Cosmology and Mythical Geography* (third edition, illustrated, Boston, Messrs. Ginn, Heath & Co., 1882), from which the cut is taken.

Zeus, while descending behind swift steeds to the Underworld, can yet for a considerable time behold the starry heaven, the earth, the sunlight, and the fishy sea.[1] Though the god has power to penetrate the solid sphere,[2] it is down no yawning chasm that his chariot disappears. As far as we can trace him and his victim, they are still at the surface, simply moving from the upper to the lower hemisphere.[3] In perfect accordance with the requirement formulated by Völcker, Odysseus and his companions descend (xi, 57, 476), while the ghosts ascend (xi, 38), to reach the meeting-place on the lower edge of the Ocean-stream. Beautifully exact and strikingly natural is now the poet's declaration that Tartaros is "as far below Hades as earth from heaven"—a declaration as fatal to many of the fifteen or more traditional explanations of Homer's Hades as it is to Flach's elaborate and ingenious diagram of the Hades of Hesiod.[4] With this inverted hemisphere for the kingdom of the dead, Voss need not longer trouble himself about the mention of "clouds" therein.[5] In fine, with the correct Homeric conception of the earth and of Hades, the

[1] *Homeric Hymn to Demeter*, 30–35. Foerster places the origin of this hymn early in the seventh century before Christ: *Der Raub und Rückkehr der Persephonè*, Stuttgart, 1874, pp. 33–39. See Sterrett, *Qua in Re Hymni Homerici quinque Majores inter se differant Antiquitate vel Homeritate*, Boston, 1881.

[2] Lines 16–18. Precisely so in the Indian epic, the *Ramayana:* one and the same point in Hades is reached, whether we accompany Ansumàn digging through the heart of the earth, or follow the goddess Gangâ along the surface of the earth and across the Ocean-bed. Book i, canto xl. Comp. *Odyssey*, xi, 57, 58.

[3] The much-debated Nysian field whence the goddess was stolen was in the land of the gods at the North Pole. Menzel, *Die vorchristliche Unsterblichkeitslehre*, Bd. i, 64–67; ii, 25, 87, 93, 100, 122, 148, 345.

[4] *Das System der Hesiodischen Kosmogonie*, Leipsic, 1874.

[5] *Odyssey*, xi, 591. Völcker, while locating *this* Hades above ground far to the West, is also embarrassed with these clouds, since his Homeric heaven does not extend over the trans-oceanic region, or even over the Ocean (p. 151).

manifold alleged contradictions of the poet instantaneously vanish. Better than that, the dual images of Hades, which have so long perplexed and blurred the vision of Homeric interpreters, suddenly resolve themselves into one perfectly focused stereoscopic picture of startling vividness and beauty.

One ground of misgiving and doubt may possibly still occur to cautious minds. "Is it credible," it may be asked, "that the early Homeric Greek, unschooled in the exercise of the scientific imagination, could picture to himself that pendant under-surface of the earth as habitable even by ghosts? Could he so long before 'Newton's day' have gained such knowledge of gravitation as to see how infernal rivers and infernal palaces could cling to an under-hemisphere? That Aristotle and the Greek philosophers of his age were able, we know from their writings[1]; but is it credible that the Greek of the Homeric age was equal to such a task? This proposed conception of Hades requires that we should think of a world where everything is upside down, exactly contrary and antipodal to our own. Can we believe that 'prehistoric men' could achieve such a prodigy of abstract thought?"

A pertinent and perhaps sufficient answer to these questions might be given by pointing to a most curious and instructive funeral-custom among the modern Karens of Burmah. This tribe is certainly not more highly gifted or more highly civilized than were the Greeks of the heroic age, yet they have precisely this Homeric conception of an antipodal Hades. A most competent authority gives us the following account:

[1] See Dr. H.W. Schäfer, *Entwickelung der Ansichten des Alterthums über die Gestalt und Grösse der Erde*, Leipsic, 1868, quarto.

"When the day of burial arrives, and the body is carried to the grave, four bamboo splints are taken, and one is thrown toward the West, saying, 'That is the East'; another is thrown to the East, saying, 'That is the West'; a third is thrown upward toward the top of the tree, saying, 'That is the foot of the tree'; and a fourth is thrown downward, saying, 'That is the top of the tree.' The sources of the stream are pointed to, saying, 'That is the mouth of the stream'; and the mouth of the stream is pointed to, saying, 'That is the head of the stream.' *This is done because in Hades everything is upside down in relation to the things of this world.*"[1]

Striking, however, as would be this answer to the questioner, a better can be given. The better one points out to him the foolishness of the assumption that either the Greeks or the Karens originated for themselves their conceptions of Hades. Both simply inherited from their fathers the old pre-Hellenic Asiatic idea of an antipodal Underworld. Ages ago the notion which underlies the Karen's rites was so prominent in the mind of the East Aryans that the sudden and inevitable reversal of the points of the compass, consequent upon entering the Underworld, became a poetic circumlocution to express the idea of dying; thus, "Before thou art carried away dead to the Ender by the royal command of Yama, . . . *before the four quarters of the sky whirl round*, . . . practice the most perfect

[1] Mason in *Journal of the Asiatic Society*, Bengal, xxxv, pt. ii, p. 28. Spencer, *Descriptive Sociology*, No. 5, p. 23. At least one tribe of our American Indians at the time of their discovery had a myth of creation in which the earth was conceived of as a ball. H. H. Bancroft, *Native Races of the Pacific States*, vol. iii, p. 536. That the same idea underlay the Hades-conception of the New Zealanders is plain from various indications.

contemplation."[1] Ages ago the notion which underlies the southward voyage of Odysseus led prehistoric Akkadians, in naming the cardinal points of the compass, to designate the South as "the *funereal* point"; and in locating the kingdom of the dead, to place it *opposite the stars of the south-polar sky*.[2] Through all the lifetime of Babylonia and Assyria, as through all the lifetime of ancient India, the mount of the gods was at the summit of the earth at the North Pole; its counterpart—the mount of the rulers of the dead—exactly opposite, beneath the earth, and at the South Pole.[3] Hence life and light proceeded from the North, darkness and death from the South.[4] In like manner

[1] *Mahābhārata*, xii, 12,080. Muir, *Metrical Translations from Sanskrit Writers*, London, 1879, p. 220. "To the gods this sphere of asterisms revolves toward the right; to the enemies of the gods, toward the left." —*Sūrya Siddhānta*, xii, ch. 55. Comp. Aristotle, *De Cœlo*, lib. ii, c. 2.

[2] Dupuis, *Origine de Tous les Cults*, tom. i, 624. Lenormant, *Chaldæan Magic* (English edition), pp. 168, 169. On the significance of the South in Hindu belief, see Colebrooke, *Essays*, vol. i, pp. 174, 176, 182, 187, vol. ii, pp. 390–392; Monier Williams, *Sanskrit Dictionary*, article "Yama"; Muir, *Sanskrit Texts*, vol. v, pp. 284–327; and Indian literature *passim*.

[3] Of the latter mount, Lenormant correctly says that, in ancient Chaldæan thought, it is "*située dans les parties basses de la terre*," but at times he incorrectly locates it in the West. In like manner the mountain of the gods—"*le point culminant de la convexité de la surface de la terre*"—he places not in the North (Isa. xiv, 14), but often in the East or Northeast. *Origines de l'Histoire*, Paris, 1882, tom. ii, 1, p. 134. See also Tiele, *Histoire Comparée des Anciennes Religions*, Paris, 1882, p. 177, where he speaks of the entrance to Hades as at the Southwest This is certainly a mistake, for the Akkadian expression *mer kurra*, "the cardinal point of THE MOUNTAIN," must, at least originally, have signified the North. And as to Lenormant's location of the antipodal mountain of Hades in the West or Southwest, our latest German writer upon the subject, Dr. Friedrich Delitzsch, an eminent Assyriologist, affirms that in the cuneiform literature thus far known he has discovered no trace of such a location. *Wo lag das Paradies?* Leipsic, 1881, p. 121.

[4] "Nach der pythagoräischen, orphischen und neuplatonischen Lehre brachte der Nordwind Leben der Südwind Tod, wohnten hinter dem Nordwind die Seligen und die Götter als Schöpfer und Erhalter der Welt, hinter dem Südwind aber die Verdammten und alle bösen zer-

the Egyptians had their heaven-touching mountain in the farthest North, and an antipodal counterpart in Amenti, or the abode of the dead.[1] As in ancient India's, so in ancient Egypt's, thought, this world of the dead was exactly the reverse or counterpart of the world of the living.[2] "The tall hill of Hades," like Ku-meru, is therefore a "pendent" one[3]—the southern or under terminus of the egg of the earth.[4] The asser-

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störenden Urmächte." W. Menzel, *Die vorchristliche Unsterblichkeitslehre*, vol. ii, p. 101; also pp. 36, 168, 345, and *passim*. Comp. A. Maury, *Histoire des Religions de la Grèce Antique*, Paris, 1869, tom. iii, 354.

[1] For the first, see Brugsch, *Geographische Inschriften altägyptischer Denkmäler*, Leipsic, 1858, Bd. ii, p. 57; for the second, *The Book of the Dead, passim*.

[2] See Tiele, *History of the Egyptian Religion* (English edition, 1882), p. 68, "the reversed world"; and the still more forcible expression in his *Histoire Comparée* (Paris, 1882), p. 47, *"le monde opposé au monde actuel."* Comp. *Book of the Dead* (Birch's version), where it is styled "the *inverted* precinct"; and Thompson's *Egyptian Doctrine of the Future State*, wherein Hades is described as "the *inverted* hemisphere of darkness," and where it is said to be "evident that the leading features of the Greek Hades were borrowed from Egypt." *Bibliotheca Sacra*, 1868, pp. 84, 86. Still more recently Reginald S. Poole has remarked, "Now that we recognize the Vedic source of a part of the Greek pantheon, and its generally Aryan character, we may fairly look elsewhere for that which is not Vedic. If embalming were derived from Egypt, why not the ideas which the Greek saw surrounding the custom—the pictures of the Underworld, with its judgment, its felicity, and its misery? The stories which Homer makes Odysseus tell, when he would disguise his identity, show the familiarity with Egypt of the Greeks of the poet's time."—*The Contemporary Review*, London, 1881, July, p. 61. It would be better to say that Homer's Hades, while agreeing with the Egyptian and Babylonian and Vedic, was not necessarily "borrowed" from either of these peoples, but more likely agreed with the Egyptian, Babylonian, and Vedic, simply because in each case there was a common inheritance —a survival of still more ancient ideas of prehistoric ancestors.

[3] *Records of the Past*, vol. x, p. 88.

[4] Tiele, *History of the Egyptian Religion*, p. 67: "The heaven (at night) rests upon the earth, like a goose brooding over her egg." Chabas, Lieblein, and Lefèbure have each maintained that the ancient Egyptians were acquainted with the spherical figure of the earth; while Maspero, despite his language in *Les Contes Populaires de l'Égypte Ancienne* (Paris, 1882, pp. lxi–lxiii), in a private letter of still more recent date admits the possibility that the Egyptians held to such a view as long

tion sometimes made, that the Egyptian Amenti was just over the hill to the west of Abydos,[1] is only worthy of such cosmologists as Popsey Middleton, or the still more illustrious author of the Zetetic Astronomy.

About a thousand years before Abraham went down into Egypt—at least, that is the date assigned by Egyptologists—a scribe engrossed upon a papyrus a fair copy of a tale of shipwreck. It is now one of the treasures of Saint Petersburg. At the Congress of Orientalists, held in Berlin in the year 1881, its existence was first made known to the modern world through the translation then submitted by M. Golénischeff. The tale proves to be a kind of anticipation of the voyage of Odysseus to the realm of Aïdes. As in the Odyssey, it is the ship-commander himself who narrates his adventures. There is no imaginative and poetic vagueness about the details. The ship was one hundred and fifty cubits long, forty broad. The crew consisted of one hundred and fifty men. Upon the Ocean he is wrecked, his crew lost; he himself, however, is driven upon an island in the neighborhood of the nether world of the dead. Indeed, the place itself was called "The Isle of the Double"; and it was, as Maspero believes, peopled

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ago as eighteen centuries before the Christian era. In this connection it may be useful to state that Professor Tiele informs the present writer that he has abandoned his conjecture touching *Cher-nuter*, expressed in his *Vergelijkende Geschiedenis van de Egyptische en Mesopotamische Godesdiensten*, Amsterdam, 1872, p. 94; French edition, 1882, p. 51; English edition, 1882, p. 72.

[1] As, for example, by Marius Fontane, *Histoire Universelle, Les Égyptes*, Paris, 1882, p. 154. The following is particularly timely: "While at Abydos I explored the mountain cliffs to the westward in the hope of finding early tombs in them. In this, however, I was disappointed, as I came across only a few tombs of the Roman period."—Professor A. H. Sayce in letter from Egypt in *The Academy*, London, Feb. 2, 1884, p. 84.

by Shades invisible to the voyager only because he was as yet in the body. The king of the island was a huge serpent, thirty cubits long, and possessed of a wonderful beard.[1]

In what direction lay this mysterious land?

Not in the West, where all our Egyptologists persist in locating Amenti, but *in the South.* Directly *up the Nile,* and out into the Ocean at its head-waters, lay the voyager's track. As in the case of Odysseus, so many centuries later, it was the blast of the North wind which bore him thither.[2]

In conclusion, if both the ancient Egyptians[3] and Chaldæans[4] believed that like as the stars of the northern hemisphere are set over the realm of the living, so *the stars of the southern hemisphere are set over the realm of*

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[1] *Les Contes Populaires de l'Égypte Ancienne,* pp. 145–147. On the conflicting views of Egyptologists as to the interpretation of terms designating the points of the compass, see *Zeitschrift für ägyptische Sprache,* 1865, 1877, etc.

[2] The universality of the ancient belief that disembodied souls must cross a body of water to reach their proper abode has attracted the attention of Mannhardt, and led him to remark, "Da auch die keltische, hellenische, iranische und indische Religion diese Vorstellung kennt, so ist es von vorn herein wahrscheinlich, dass dieselbe über die Zeit der Trennung hinausgeht."—*Germanische Mythen,* Berlin, 1858, p. 364. This is a far more reasonable explanation than the fanciful attempt of Keary in the work already cited, and in his paper before the Royal Society of Literature entitled "Earthly Paradise of European Myths."

[3] Creuzer-Guigniaut, *Religions de l'Antiquité,* tom. ii, p. 836. Compare the language of the recently discovered epitaph of Queen Isis em Kheb, mother-in-law of Shishak, King of Assyria (*circa* 1000 B.C.): "She is seated all beautiful in her place enthroned, among the gods *of the South* she is crowned with flowers."—*The Funeral Tent of an Egyptian Queen,* by Villiers Stuart, London, 1882, p. 34. Notwithstanding this, Mr. Stuart, a few pages later—so powerful is the influence of tradition—alludes to Amenti as located in the West (p. 49, also p. 27). But the inscription continues: "She is seated in her beauty in the arms of Khonsou her father, fulfilling his desires. He is in Amenti, the place of departed spirits." Comp. p. 33.

[4] Diodorus Siculus, ii, 31, 4. Lenormant, *The Beginnings of History,* New York, 1882, pp. 568, 569.

the dead, if in ancient Hindu thought "the gods in heaven are beheld by the inhabitants of hell *as they move with their heads inverted*,"[1] if in Roman thought—

> "Mundus, ut ad Scythiam Rhipæasque arduus arces
> Consurgit premitur Libyæ devexus in austros:
> Hic vertex nobis semper sublimis, *at illum*
> *Sub pedibus Styx atra videt, Manesque profundi*";[2]

if in Greek cosmology the tall Pillar of Atlas is, as Euripides makes it, simply the upright axis of earth and heaven[3]—then the earth of the ancients is incontestably A SPHERE, and Hades its under-surface. The "flat disk" notion is itself a myth, and a myth without foundation. In ancient thought, in a sense unrecognized even by the writer of the words, was it true—

> "The world of Life,
> The world of Death, are but opposing sides
> Of one great Orb."[4]

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[1] Garrett, *Classical Dictionary of India*, article "Naraka." See also Obry, *Le Berceau de l'Espèce humaine*, p. 184n.

[2] Vergil, *Georgics*, i, 240, ss.

[3] Peirithous, 597, 3–5, ed. Nauck. Comp. Aristotle, *De Anim. Motione*, c. 3. Samuel Beal, *Four Lectures on Buddhist Literature in China*, London, 1882, p. 147. Lüken on Atlas in *Traditionen des Menschengeschlechtes*, Münster, 2d ed., 1869. Also, *The True Key to Ancient Cosmology*, pp. 13–21.

[4] Morris, *The Epic of Hades*, 14th ed., London, 1882, p. 230.

SECTION III—HOMER'S ABODE OF THE LIVING

AN ELUCIDATION OF THE VOYAGES OF ODYSSEUS

In the pursuit of this inquiry we are traveling over ground more beaten perhaps than that of any other literary controversy.—*Herman Merivale.*

Voss und Ukert weisen die Versuche der Alten ab, dem Dichter die Kenntniss der Kugelgestalt der Erde geben zu wollen. . . . Von allen Zeiten her hat man probiret, die Irrfahrten des Odysseus zu erläutern und ist auf die allerverschiedensten Wege gekommen. . . . An planloses Umherirren wo eben ein Wunderland sich darbot, an Anbringen und Auskramen geographischer Kenntnisse von Seiten des Dichters, und Aehnliches, ist nicht zu denken.—*K. H. W. Völcker.*

As the heroes of the Iliad were as familiar to the Greek navigators as the saints of the Church calendar were to the Spanish and Portuguese discoverers of the New World, and as they were treated by them with the same sort of respect and veneration, there can be little doubt that they left the same sort of memorials of them [i.e., by naming localities and waters for them] wherever they made discoveries or piratical settlements; which memorials being afterward found among barbarous nations by succeeding navigators, when the discoverers were forgotten and the settlers vanished, they concluded that those heroes had actually been there. And as the works of the Greek poets, by the general diffusion of the Greek language after the Macedonian conquest, became universally known and admired, those nations themselves eagerly coöperated in the deception by ingrafting the Greek fables upon their own, and greedily catching at any links of affinity which might connect them with a people from whom all that was excellent in art, literature, and society seemed to be derived.—*R. P. Knight.*[1]

THREE years ago, in these pages,[2] a new interpretation of the cosmological ideas of Homer, and of the ancients generally, was presented, and, as far as space permitted, illustrated. Two years ago, in the paper entitled "Homer's Abode of the Dead," a further vindication of the new view was given in a form which seems to have carried conviction to all scholars thus far heard from in

[1] *The Classical Journal*, London, 1823, p. 69.

[2] *The Boston University Year Book.*

this country and in Europe. In the present paper it is proposed to show what light and beauty the new and true conception of Homer's Earth immediately brings into the chaos of surmises and guess-work which envelopes and for centuries has enveloped the problem of the Odyssean voyagings.

To enumerate all the conflicting opinions of the Homeric interpreters touching the direction of these voyages, and the location of the different lands visited, would require a special treatise. Even the ancient Greek writers were themselves far from agreed in respect to these questions, while modern scholars have carried their ingenious conjectures to what would seem to be the farthest bound of possibility. A fair idea of the indescribable confusion which still reigns in this field of Homeric teaching may be formed from the account given in Ukert's Geographie der Griechen und Römer, part first, subdivision second, pages 310–319, to which the interested reader is referred.[1]

No one can proceed far in these discussions without discovering that everything turns upon two points; to wit, the location of Aiaiè and the location of Ogygia. Could these once be fixed, the Homeric geographers and cartographers would have little trouble with the remaining details.

Where, then, is Aiaiè? Mr. Gladstone, in the map prefixed to his Juventus Mundi,[2] places it in the farthest known, if not indeed in the unknown, East. Mr.

[1] In view of these apparently insurmountable difficulties, many have been willing to lend an ear to those all-explaining champions of the Sun-myth, who with Dr. George Karl Cornelius Gerland assure us: "Die ganze Fable des heimkehrenden Odysseus beruht auf eine Personification der Sonne."—*Altgriechische Märchen in der Odyssee*, Magdeburg, 1869, p. 50. Comp. Cox, *Mythology of the Aryan Nations*, and *Comparative Mythology and Folklore*.

[2] London and Boston, 1868, p. 490.

Bunbury,[1] on the contrary, in the somewhat later sketch-chart inserted in his History of Ancient Geography, locates it in the farthest West. Each represents the opinion of a large number of interpreters, however widely these latter may dissent among themselves with respect to other questions. The partisans of the eastern location are accustomed to appeal to the explicit declaration of the poet that at Aiaiè "are the abodes and dance-grounds of Aurora, there the risings of the Sun" (Odyssey, xii, 3, 4): the other company declare that every indication given as to the direction of the voyagers on their way thither necessitates the supposition that the general course was west, or northwest or southwest from Greece.[2] Both classes are right; but instead of searching out in what way they can both be right, a great number of interpreters have taken the easier method of accusing the poet of arbitrariness, or of self-contradiction. Thus one of them says, "We cannot help fancying that our poet, in the plenitude of his authority, seized upon the Argonautic cycle, and transferred Aiétés and the Aiaian isle to the West from their proper place in the East; and he may have retained the description of that isle, which accords perfectly with its eastern position, but

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[1] E. H. Bunbury, *History of Ancient Geography among the Greeks and Romans*, London, 1879.

[2] To break the force of the argument from *Odyssey* xii, 3, 4, Mr. Merivale, like some of his predecessors, says, "The land of sunrise is the land over which the sun first appears to him who is making his backward journey from the West, the land of sunset and of death, across the Ocean-stream to the inhabited world, as the extreme west of Cornwall is the land of sunrise to the Scilly Islanders." Unfortunately for this ingenious explanation, its author, in interpreting the account of the land of the Læstrygonians, *Odyssey*, x, 81, *seq.*, is driven by his flat-earth assumption to a doctrine of sunrise, according to which the Scilly Islands become the sunrise land to the inhabitants of West Cornwall. "Three Theories of the Wanderings of Ulysses," in *The Fortnightly*, London, 1871, pp. 758, 759.

which requires a sleight of ingenuity like that just noticed, to make it suit the West."[1]

Mr. Bunbury observes, "Kirkè was the daughter of the Sun; and hence her island would naturally be associated, in the mind of the poet, with bright and sunny images, which he might well introduce in a passing notice without considering how far they were geographically appropriate."[2]

Heimreich formulates this charge of absent-mindedness or forgetfulness still more definitely as follows: "All the hanging-back and hand-wringing of the interpreters avail nothing. The abodes and dancing-places of the early-born Aurora, and the risings of the Sun, are in the East; and to transport them to an island in the far West is worse than absurd. I can explain it only as a thoughtlessness on the part of the poet, who had in memory similar verses taken from the poem of the Argonauts, of which he made use; and for the moment he forgot that, in consequence of his fiction that Odysseus also was come to Aiaiè, the adoption into his poem of this perhaps *formelhaften Wendung* had become impracticable."[3]

One of our latest mythographers first places the elusive islet in the East, as most in accord with Homeric traditions; but at length triumphantly explains all difficulties by identifying it with "the Moon," which, naturally enough, "is now in the East, and now in the West."[4]

How would the wise old poet smile at such semi-

[1] Keightley, *Mythology of Ancient Greece and Italy*, 4th ed., London, 1877, p. 238.

[2] *History of Ancient Geography*, vol. i, p. 79.

[3] Heimreich, *Die Telemachie und der jüngere Nostos*, Flensburg, 1871, p. 20.

[4] Robert Brown, Jun., *The Myth of Kirkè*, London, 1883, pp. 24, 27.

accusatory, semi-apologetic criticism! On the actual earth, the East *is* reached by sailing West; and if interpreters had only been willing to concede to the ancient sages a little of their own abounding knowledge of the natural world, they would have spared themselves many a mortifying mistake. They should have read, in Lanier's Psalm of the West, of that

> "Big, perilous theorem, hard for king and priest,—
> Pursue the West but long enough, 'tis East."[1]

So plain is Homer's language, that some readers still addicted to the traditional view have here and there seen its force, and only by a hair's breadth missed the true Homeric geography. Thus Mr. Gladstone, in his Juventus Mundi, before his abandonment of the flat-earth theory, observed, "He seems to connect the extreme East with the farthest West—sunset with sun-rise—as if he thought the earth's surface were wrapped (so to speak) round a cylinder."[2]

Our "True Key to Ancient Cosmology," with its spherical Homeric Earth, instantly solves these age-long contradictions. To recent writers, had they been attentive, Völcker's disposition of the problem of Aiaiè ought to have suggested the full-orbed truth. He found it necessary to assume the existence of two Aiaiès—one located in the far East and one in the far West.[3] Now,

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[1] *Poems of Sidney Lanier*, New York, 1884, p. 123.

[2] P. 531. Comp. p. 325: "The fact of the Sun's sporting with the oxen night and morning goes far to show that Homer did not think of the Earth as a plane, but round, perhaps as upon a cylinder, and believed that the West and East were in contact."

[3] To relieve the incredibleness of his theory, he philosophically remarks, "The poetic mind of the Greeks elaborated the conception of the Universe harmoniously, so that to the Sun-land in the East a similar one had to correspond in the West." (!)—*Hom. Geog.*, § 66. Comp. also his *Myth. Geog. der Griechen und Römer*, Leipsic, 1832, p. 79.

just as in the paper on "Homer's Abode of the Dead" we found that the true Homeric conception of the figure of the earth causes Völcker's two Hadean kingdoms to melt or merge at once into one, so here the same true conception of Homer's Earth merges the two world-widely separated Aiaiès into one *located on the opposite side of the northern hemisphere, equidistant from the poet eastward and westward.* It is there that to the poet the westering sun begins to *easter.*[1] Hence, though far to the West, it is at the same time far to the East—the place of which he says, "There are the abodes and dance-grounds of Aurora, there the risings of the Sun."[2]

How beautifully those mutually contradicting maps themselves confirm the truth when once the truth is found! Gladstone's, and others, place the mythic isle in the farthest East; Bunbury's, and others, in the farthest West; Völcker's, and others, fix it in both the farthest East and farthest West. All are thus as contradictory as is well possible, yet all are unwittingly witnesses to the exact truth. The moment we take them from the "flat disk" of ignorant assumption, and wrap them around the sphere of true Homeric science, that moment all become congruent and correct. All now yield a common result, and confirm in the most striking manner the location above defined.

This true solution of the position of Aiaiè furthermore explains all the difficulties which commentators have found in the strange expression of Odysseus, that at

[1] The ancient Germans had the same habit of considering the sun-setting as extending until twelve o'clock midnight. See the curious expressions in Grimm, *Deutsche Mythologie*, Theil ii, pp. 701, 705: "Desshalb fingen die Alten den Tag nicht vom Aufgang der Sonne, sondern schon von Mitternacht an, wie auch wir heute noch thun."—Wolfgang Menzel, *Die vorchristliche Unsterblichkeitslehre*, Leipsic, 1870, Theil i, p. 77.

[2] *Odyssey*, xii, 3, 4.

that point he knew not where was East, or where was West, where the sun rose, or where it went behind the Earth (Odyssey, x, 190–192). Of this, and the passage xii, 1–4, Mr. Bunbury says "it seems impossible to reconcile the two." Mr. Gladstone goes still farther, and suggests that Homer himself is embarrassingly involved in his own conceptions, and, under the fogginess of this blind statement, is seeking to escape.[1] In the mouth of Mr. Gladstone, the most reverent of Homeric elucidators, this language is peculiarly surprising. But let one once conceive of Aiaiè as we have placed it, and how perfectly natural the enigmatical expression! To the poet, Odysseus and his comrades are homeoscian antipodes; hence the setting sun *is* at the same moment the rising sun, West *is* one with East, sunset *is* lost in sunrise. The venerable paradox is only a new and perfect index to the exact location which scholars have so long and so vainly sought.

Such being the position of Aiaiè, the direction of Odysseus on his voyage to Hades and back is settled beyond a doubt.

In Gladstone's map the course of this voyage is laid down as first north, then east, then a long way south, rounding in at last a little to the west, and having the landing on the nearer shore of the Ocean-stream.[2] In

[1] "I have already shown that this island (Aiaiè) is absolutely fixed, according to the mind of Homer, in the East, as Aiolië is in the West. It cannot be in the remote North, because no fire is used. It is not very likely to lie to the south of East, because of the neighborhood of the Kimmerian fog. This is a difficulty for Homer, since his Dawn ought to be somewhat to the south of East. He tries (it may seem) to escape, like some of his Trojan heroes, *in a fog;* for he declares that, on arriving here, Odysseus could make out nothing about his position relatively to the Dark and the Dawn, the Sunset and the Sunrise. This difficulty cannot wholly be removed."—*Juventus Mundi*, p. 490.

[2] Later, in his *Primer* of Homer, p. 60, Mr. Gladstone transfers the entrance to Hades to the *outer* shore, "the farther bank of the Ocean-

Bunbury's map, on the contrary, the course is due west, and the landing on the farther shore of the Ocean. Two representations could hardly contradict each other more completely: neither is at all correct.

What are the requirements of the poem? First, it must be a voyage southward; for Kirkè states that it is to be by "the blast of Boreas" that they are to be borne forward.[1] Locating Hades and Aiaiè as we have, this is precisely the wind we need to take the ship down to and across the Ocean-river. In the second place, if one follows Völcker's interpretation—to which, for our part, we attach but slight importance—after reaching the Ocean-river, the voyagers are represented as sailing upstream for some distance before landing, and afterward returning downstream.[2] This part of the journey, then, on a spherically conceived Homeric Earth, would be along the lower shore of the Equatorial Ocean-stream, from the meridian of Aiaiè, in the direction of the meridian of Ithaca, in a course opposite to the apparent motion of the sun. In the third place, the point reached by the party in the realm of the dead is described by the term ὑπὸ ζόφῳ. If, now, this expression is intended to indicate a point of compass, as well as the gloominess of the place visited, it could not have been better chosen, since it describes the location precisely in accordance with all other indications, and fixes it as below the Ocean-stream, and in what was to the poet the Western Hemisphere, making the spot thus precisely "under the

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stream." He thinks, however, that, in this part of his work, the poet was in a "confused" and "bewildered state of mind," and that his "latitudes were thrown into something like purposed confusion" (p. 61).

[1] *Odyssey*, x, 507.

[2] *Odyssey*, book xi, 638; xii, 1, 2. Comp. Völcker, *Homerische Geographie*, sects. 61, 74. The current was conceived of as in the direction of the motion of the hands of a watch.

dark (West)," to use the very terms which various translators have employed in rendering the passage.[1]

So much for Aiaiè. But our hemispherical conception of Homer's Abode of Living Men equally clears up the long-standing mystery as to the location of Kalypso's isle, Ogygia.

On this subject, as a recent author says, "volumes have been written." Gladstone and others place the witching isle far to the north of Greece; Bunbury and others, far to the west; Ukert and others, far to the southwest; Völcker and others, in the highest northwest; Merivale and others, like Kallimachos of old, leave it in the center of the Mediterranean Sea, and identify it with "Malta or its neighbor Gozo"; and so on to the end of the list.

Mr. Gladstone apologetically remarks, "The poet's descriptions are very vague, especially as to the island of Kalypso. The fact seems to be that he was misled, not only by falsehood, but also by truth. When informants, speaking of the same region, described it as one of all but perpetual day, and also as one of night

[1] See "Homer's Abode of the Dead" (latest edition in *Paradise Found*, pp. 467–487). A few days ago (Feb. 11, 1885) the writer came, for the first time, upon a reference to the Odyssean Hades, which, though barely incidental, and apparently forming no part of a comprehensive interpretation of Homeric cosmology, curiously conforms to the doctrine set forth in *The True Key*. Speaking of the religious ideas of the Greeks, the writer, Mr. R. P. Knight, remarks: "The fate of the terrestrial soul, the regions to which it retired at the dissolution of the body, and the degree of sensibility which it continued to enjoy, are subjects of much obscurity. In the Odyssey it is allowed a mere, miserable existence in the darkness of THE POLAR REGIONS, without any reward for virtue or punishment for vice."—*The Classical Journal*, London, 1822, vol. xxvi, p. 41. Compare Dante's wonderfully graphic picture of Odysseus's final and unreturning *Descensus ad inferos*, in the "Inferno," canto xxvi, and the significance of the lines:

"Tutte la stelle già dello altro polo
Vedea la notte, e il nostro tanto basso
Che non surgea di for del marin suolo."

all but perpetual, although both of these statements were true, he had not the key to their truth, and thus could only seek refuge in vagueness from contradiction."[1]

Nearly two thousand years ago, the best geographers knew as little as now what to make of Homer's language. Here is Pliny's attempt to wrestle with it: "The island of Ogygia, so called by Homer, *is the habitable land in that whole hemisphere* which the ancients believed to be surrounded on all sides by the Ocean; for which reason it is called Navel Island, that is, the middle of the Ocean. There he places Kalypso, the daughter of Atlas, who knows the foundations of the Ocean, and supports upon immense pillars the weight of Heaven and Earth. *This is Nature herself*, such as she appears in that hemisphere, and Homer gives her the name of a woman then very well known, because there are many things in nature which she keeps concealed; the word καλύπτειν signifying to conceal."[2]

Perhaps the latest and most convenient method of disposing of the whole question is that adopted by Henry Hayman, according to whom the poet *did not intend* that we should have any idea whatever as to the

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[1] *Juventus Mundi*, p. 480.

[2] Compare the following: "It is hardly necessary to observe that the Homeric geography in regard to all these distant lands must be considered as altogether fabulous. We are wholly at a loss to account for the localities assigned by the Greeks in later days to the scenes of the Odyssey: it is certain that nothing can less accord with the data (such as they are) supplied by Homer than the identifications they adopted."—Edward H. Bunbury, in Smith's *Dictionary of Greek and Roman Geography*, article "Ogygia." Many years ago, after a personal inspection of Ithaca and Corcyra, Leucadia and Strongyle, Scylla and Charybdis, Taphros and the Hellespont, mythical Scherië and the land of the Lotophagoi, the present writer reached the conclusion that the shores and islands of the Mediterranean afford no key to these immortal Homeric voyages, and that the secret of many of the traditional identifications reported by scholiasts and geographers is substantially the one suggested in motto third prefixed to the present paper

real location, and hence deliberately and purposely "locked up his mystery" in a manner intended to be effectual. The passage in which he presents this view is curious enough to quote: "Homer does not say the 'wind and water' as elsewhere, but the 'gods,' brought him (πέλασαν) thither; i.e., the whole course is regarded as due to their interposition. By this contrivance the poet seems to intimate that no ordinary reckoning of distance or rate is applicable. He thus breaks away from the group of eastern localities which lie in connection with Aiaiè—viz., the Sirens, Thrinakiè, and Scylla—and lands us in a new region. The name, if meaning, as Mr. Paley on Æschylos (Eumen., 989) thinks, a dark gulf or chasm, suits well the idea suggested by that of Kalypso, 'the Concealer;' similarly Hesiod (Theogony, 803) applies it to the water of Styx. . . . Thus, by the very names Ogygia and Kalypso, the poet may mean to hint that their whereabouts is not to be retraced, and that this part of the hero's course is not to be squared with previous notes of time or place. The same idea suits the ὀμφαλὸς θαλάσσης, i.e., the center of the sea where it rose high, as land rises highest in some point far inland, and thus of unknown remoteness. So, from Ogygia reaching Scheriè in twenty days (vi, 170, vii, 268–297), he is from Scheriè brought back into known regions by a supernatural machinery—the magic galleys (viii, 558–563) which knew not human laws, and therefore baffle calculation. Thus the poet locks up his mystery; and all attempts to open it are idle in themselves, and are a violation of his idea."[1]

That there is no need for such a hewing asunder of the Gordian knot, the briefest glance at the true Homeric earth suffices to show. Nobody can fail to find the

[1] Hayman's *Odyssey*, vol. i, Appendix D, p. xlvii.

ὀμφαλός of a hemispherical shield; and nobody can have any greater difficulty in finding the ὀμφαλός of that terrestrial hemisphere which Homer makes his Abode of Living Men. It can be nothing else than the Pole. And as the sea was supposed to surround it (as it does), and as the known countries around the Mediterranean were conceived of as little more than large islands in a sea which covered the greater part of the northern hemisphere (see Strabo), it was the most natural thing in the world that the polar island should be called the ὀμφαλὸς θαλάσσης, "the navel of the sea."[1] As if to make it impossible to misunderstand his language, the poet calls the earth-picturing shield of Achilles not flat, but εὔκυκλος, "well-orbed"; and by placing the Ocean-stream around its rim makes it, as on the earth of ancient East-Aryan mythology, everywhere equidistant from its ὀμφαλός or Pole. In its application to the Pole of the heavens the same metaphorical term has often been employed among other peoples;[2] and if, as Dr. Hayman thinks, divine

[1] The term forcibly recalls the oft-recurring, not yet fully understood Avestan expression, *apâm napât*, "the Navel of the Waters." Without claiming an entire correspondence in its meaning, we may yet note with interest that, in the Middle Ages, the Parsees certainly associated this "Navel of the Waters" with their mythical north-polar world-mountain, and assigned to it somewhat of the divinity and sanctity of the latter; that Neriosengh, in translating the Yacna into the Sanskrit, understood and rendered it in the same way; and, finally, that such scholars as Spiegel and Burnouf have lent to the interpretation the authority of their great names, though the former, in his commentary, is inclined to change his opinion. See Bleeck's *Avesta*, pt. ii, pp. 30, 133, 137, 141; pt. iii, pp. 46, 91, 130, 145, 148, 149, 152, etc. Windischmann, *Zoroastrische Studien*, Yasht v, p. 177. Hovelacque, *L'Avesta Zoroastre et le Mazdéisme*, Paris, 1880, pp. 252–254.

[2] Extremely interesting is the Vedic use of the terms "navel of the heavens," "navel of the world," and "navel of the earth." See *Rig Veda*, i, 105, 110, i, 164, i, 185, x, 90, 14, *et passim*. Even Fontane, who finds the Vedic cosmology "*embryonaire*," is impressed by the scientific attainments disclosed in one of these umbilical hymns. *Inde Védique*, Paris, 1881, p. 200. The name of the celestial Pole with the

agency seems to supersede natural in its vicinity, it is entirely in keeping with the idea that about and above the Arctic Pole is peculiarly the home of the gods. So the fact that Kalypso is the daughter of Atlas becomes at once significant, when it is remembered, that, in the oldest Greek mythology, the proper location of Atlas is not at the west, in Libya, but in the extreme north, at the Pole.[1] The four-fold fount, "flowing in four opposite directions," further identifies the place with the mythical polar *Götterberg* of the Iranians, Hindus, and other peoples.[2] The same must be said of the beauty of the isle, which was so adorned with groves, and "soft meadows of violets," that the poet closes his description by asserting, that, "on beholding it, even an Immortal would be seized with wonder and delight."[3] Finally, as we should know in advance, it is apparently Notos which bears the voyager thither, and Boreas which brings him thence to the Phæacians. All evidences, therefore, conspire to fix the location of the long-adrift isle at the Arctic Pole. The "much-contriving" Odysseus crowns all his other achievements in the most fitting manner. Anticipating the belated Kanes and Franklins and Payers of our day, he snatches the supreme prize of Polar exploration!

In conclusion, then, the recovery of the true Homeric

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ancient Finns was *taivahan napanan*, "navel of the heavens." Castrèn, *Finnische Mythologie*, St. Petersburg, 1853, p. 32. Comp. Grimm, *Deutsche Mythologie*, pp. 766, 1225. See chapters on "The Eden Zenith," and "The Navel of the Earth," in *Paradise Found: The Cradle of the Human Race at the North Pole*, Boston, 1885.

[1] K. H. W. Völcker, *Mythische Geographie*, Leipsic, 1832, p. 133.

[2] See P. F. Keerl, *Die Schöpfungsgeschichte und Lehre vom Paradies*, Basel, 1861, pp. 796–799. Julius Grill, *Die Erzväter der Menschheit*, Leipsic, 1875, vol. i, pp. 223–279. W. Menzel, *Die vorchristliche Unsterblichkeitslehre*, vol. ii, pp. 11, 12. See chapter on "The Quadrifurcate River," in *Paradise Found*.

[3] *Odyssey*, v. 63–75. Comp. *Paradise Found*, pp. 235, 236.

conception of the Abode of Living Men pours a flood of light over the entire Odyssey, showing what we stated more than three years ago, namely, that the wanderings of Odysseus are a representation, in highly poetical form, of *an imaginary circumnavigation of the mythical Earth in its upper or northern hemisphere, including a trip to the under or southern hemisphere, and a visit to the North Pole.*

SECTION IV—THE GATES OF SUNRISE IN THE OLDEST MYTHOLOGIES

In a noteworthy contribution to Volume III of the American Journal of Archæology, Dr. William Hayes Ward, of New York, advances convincing considerations in favor of interpreting a certain representation often recurring in the ancient Babylonian cylinders, as referring to the Gates of Sunrise and to the coming forth of Shamash, the Sun-god, from them. No competent student of the subject can well doubt that the explanation is at once strikingly original and correct.

But where in ancient Babylonian thought were these Gates of Sunrise located? Not "above the Median mountains," to the East of Babylonia, as Dr. Ward inadvertently implies, and as any one unmindful of the peculiarities of ancient cosmology would inevitably suppose. Not on the eastern but *under* the *northern* horizon stood the twin mountains and the Sacred Gate.

The Egyptians had a similar Gate of their Sun-god Ra. As Maspero says: "La Porte Sacrée est représentée dans les vignettes du Livre des Morts, tantôt ouverte et laissant paraître entre ses deux montants le disque solaire ou le dieu Toumou à forme humaine, tantôt fermée et verrouillée."[1] And where was this Sacred Portal? Under the northern horizon of Egypt, reached by the sun six hours after his apparent setting, and left by him six hours before his apparent rising.[2] More precisely it was "au point où Shou soulève le ciel" (p. 274); consequently, though below the horizon of

[1] *Revue de l'Histoire des Religions*, Paris, 1887, p. 274n.
[2] *Ibid.*, p. 275.

Egypt, it was at the true summit of the Earth, the Northern Pole.[1]

The twin mountains represented in the Shamash cylinders are doubtless the twin (mâsi) mountains referred to in the second column of the ninth tablet of the Epic of Gisdhubar.[2] They appear to have been terminal peaks of "the mountain of the world," which, like the Harâ-berezaiti of the Iranians, was "the support and mother of all lesser mountains." Professor Sayce is quite right in making the Babylonian "mountain of sunrise" and "mountain of sunset" one and the same;[3] nor need he have hesitated as he seems to have done to identify that one with the "Mountain of the World."[4] In the bilingual hymn appended to Dr. Ward's article it is abundantly identified with "that great mountain," "the mountain of fate," "the place of destinies."[5]

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[1] See the six theses in Egyptian cosmology in *Boston University Year Book*, vol. x, p. 33, or in *Paradise Found*, p. 173.

[2] Sayce, *Hibbert Lectures*, p. 363n. If, as Brugsch has conjectured, the "Four Props of Heaven" in Egyptian mythology were terminal peaks of their polar *Weltberg*, answering to the four contreforts of Mount Meru in the four cardinal points, it is likely that the Babylonian Kharsag-kurkûra also had four such peaks, and that the two represented in the Shamash seals are those which in Puranic geography stand in the northeast and southeast corners of Ilâvrita. In starting upon his eastward journey it would be between those two that the Sun-god would naturally issue forth from the *"Sonnengarten am Nordpol."*

In this connection it should be noted that the Egyptian picture given by Brugsch and others, in which Nut is represented as supported at four extreme points by feet and hands, and at the "Navel" by Shu, is not, as usually understood, a picture of the sky above Egypt, but is a representation of the polar heaven of the gods. The hands and feet of the goddess are the "Four Props." Shu, at the "Navel of Heaven" (and "Navel of Earth"), is the prototype of Atlas and the Atlas pillar. The passage of the sun through her body represents, not the twelve hours of an equatorial night, but the briefer transit of the child of Nut through the heaven that overspans Ta-nuter.

[3] *Ibid.*, p. 361.

[4] *Paradise Found*, pp. 123–137.

[5] Ward, *Ibid.*, p. 56; Sayce, *Ibid.*, p. 515. On the expression "place of destinies" compare Lajard, *Le Culte et les Mystères de Mithra*, Paris, 1867, pp. 39, 133.

But, though to a person in the latitude of Babylonia or Egypt the mountain of the sunrise was below the local horizon, it was not properly in the underworld. In *its own latitude* it was the dazzling summit of the spherical earth, the only stairway to the abode of the gods. Hence, speaking with reference to the true heaven—the heaven of the gods—the poet could, with perfect consistency, sing of the sunrising as in a heavenly region, in "the Navel of Heaven," and allude to the Sun-gate as a gate of the Sky.[1] Failing to recognize the like sphericity of the old Egyptian earth, whose mountain of sunrise exactly corresponded to the Babylonian, Maspero involves himself in difficulty, and finds the sun at midnight at the gate of the abode of Osiris, but this gate at one and the same time beneath the Northern horizon, and yet high in the north or northeastern sky.[2]

In perfect accord with the real ideas of ancient Egypt and Babylonia, Plato locates Apollo, the god of light, at the North Pole, and Hesiod in his Theogony places in the same vicinity his Gate of Day. Naville has shown that in Egyptian thought the geographical On was only an earthly copy of a heavenly one, the heavenly sanctuary of Ra. This, like the Palace of Mithra in Avestan thought, and the Shrine of Agni in Vedic thought, was at the top of the polar mountain of the gods, a mountain based upon the whole earth, but piercing the first of the heavenly spheres. There also was the Dionysian Nysa, and what Wolfgang Menzel long ago described as

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[1] *West Asian Inscriptions*, iv, 17. Translated by Sayce in *Hibbert Lectures*, p. 171. On the "Navel of Heaven," see *Paradise Found*, pp. 202–224.

[2] Maspero, *Ut supra*, p. 275. Also his essay, "Egyptian Souls and their Worlds," in the *New Princeton Review*, July, 1888, pp. 23–36.

the "*Sonnengarten am Nordpol.*" The present writer has little doubt that the remarkable Stone Tablet of Abu-habba will eventually be recognized as a representation of Shamash, seated in state in his sanctuary, upon the summit of "the mountain of the world," precisely as Plato has represented Apollo; that the solitary *timeru* (column) will prove to be the Atlas-pillar, the Shu-support, of the world; that Siru, the over-arching serpent, will be recognized as the guardian constellation Draco; that the so-called "sun-wheel"[1] upon the altar will be found to be the Earth-navel with the sign of the Quadrifurcate Waters; and, finally, that the study of the inscription *Ina put apsi*, and the related expression *pi-i nahri* in the Epic, will at length teach the teachable that in this ancient language, as in more than one other, there are indications that originally in early poetic and mythologic expression the "*mouth*" of a river was in immediate connection with its "*head*," and was, in fact, but another name for the fountain from which it drew its nourishment.[2]

In the light of the foregoing the inference seems warranted that at the time when the far-off ancestors of the ancient Chaldeans and Egyptians first formed their sun-myths, they were living in the high North—in a latitude but just below the charmed line which bounds off the mysterious territory of the "Midnight Sun." In a land located in the neighborhood of 60° N. the diurnal movements of the sun would be exactly

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[1] There is high authority for considering an entirely different figure—the lozenge—the oldest sun-symbol in Babylonian art. See the *American Journal of Archæology*, vol. iii, p. 385.

[2] See for representations of the tablet the *Transactions of the Society of Biblical Archæology*, vol. viii, p. 164; Ménant, *Pierres Gravées*, tom. i, p. 243; Ward, Notes in the *American Journal of Archæology*, vol. iv, 341–343.

adapted to produce the remarkable myth-imagery preserved to us in the art and literature of ancient Chaldea and Egypt. In such unanticipated ways is every year augmenting and reinforcing the evidence of the Arctic origin of man.

SECTION V—THE HOMELAND OF THE GANDHARVAS

ANOTHER PROBLEM IN INDO-ARYAN COSMOLOGY

Every student of Indo-Aryan mythology must often have wished for greater light upon the mythologic region in which the Gandharvas were imagined to have their proper dwelling place. In the investigation of the nature and activities of mythical beings the habitat, if known, often aids the inquirer if only by ruling out conjectures which without this knowledge would seem wholly admissible and perhaps decidedly plausible. In the case of the Gandharvas so little is clear and unquestioned that any aid of this incidental variety is highly desirable. As to the true homeland of these beings no serious inquiry has to my knowledge as yet been made. Apart from Kuhn's passing allusion to the point in ZVS., i, 517, and Weber's, IS., ii, 224, 225, no reference to the question has attracted my attention.

Some time ago, while engaged in the cosmological studies already printed in the Journal of the Oriental Society, an idea occurred to me which seemed only too good to be true. I was considering the fact that all of the seven concentric planetary heavens of the Indian thinkers are conceived of as inhabited, and that the tenants of each of these heavens are supposed to differ in stature, powers, longevity, etc., from the tenants of the others above or below, so that, as in Dante's Paradiso, each heaven possesses inhabitants adapted by their nature to the nature of their mythological sphere. The thought then came that, as the first or lunar heaven is the proper home of the Pitris, so the perfectly fitting

inhabitants of the fourth, or heaven of Venus, could be none other than the Gandharvas. The more I dwelt upon the idea the more alluring it appeared. The congruity of tenant to world and of world to tenant became more and more evident the more the two were studied. Moreover, with so vast a region for their occupancy the vastness of their number (60,000,000) was no longer embarrassing.

In the Puranas somewhat later I came upon one lis of the celestial regions differing a little in terms from any I had ever previously noted. It began as usual with the "Pitri-loka" as the first in the series. This, of course, according to our "Key" (See JAOS, xxiii, 388; also xxvi, 81), is the north-polar half of the earth-inclosing "lunar sphere." Next followed, as was to be expected, the heaven of Indra, the north-polar half of the moon-inclosing globe of the sun (JAOS, xxii, 138). Next above this "Indra-loka" came the third heaven, assigned to the Maruts and called "Marut-loka." Next higher, according to the "Key," should come the globe of Venus inclosing in its capacious interior the earth and the three spheres of the moon, the sun, and Mercury, all four concentric. Its north-polar half would be the heaven of Venus. *In the new list it was styled the "Gandharva-loka."* The fifth in the enumeration was styled "Jana-loka," the sixth "Tapa-loka," the seventh, as all the congruities required, "Brahma-loka" (Wilson, Vishnu Purana, p. 48, footnote).

Such a list as this renders legitimate the inquiry, Where, when, and by what school of teachers, were the Gandharvas represented as natives of the fourth celestial region above the abode of men, the one corresponding in Pythagorean and oldest Babylonian thought to the heaven of Venus?

I may add, that I find it increasingly difficult to suppress the conviction that, in the earliest Greek thought, the mythological (non-human) *Mainades* were by nature tenants of the earth-inclosing lunar sphere, and the *Heliadai*, with their sisters, tenants of the solar. May the suggestion appeal to some competent mythologist, and result in an instructive monograph.

SECTION VI—THE WORLD-TREE OF THE TEUTONS

One of the least satisfactory portions of Professor De la Saussaye's valuable book on The Religion of the Teutons is that relating to the Askr Yggdrasil, or Tree of the World. His treatment of this myth is very brief and, at the end, he merely concurs in Müllenhoff's declaration that a perusal of the pertinent passages in our sources "can leave in the mind only the most incongruous ideas concerning the character of the world-tree."

In my judgment two things go far toward explaining the admitted failure of experts in Teutonic mythology to reconstruct this tree in a way to harmonize with the literary data. The first is their reluctance to ascribe to the prehistoric authors of this and similar myths that power of thought and expression which they must have possessed. The second is forgetfulness of the high-north viewpoint of the oldest Teutonic, Keltic, and Slavonic cosmological myths.

Once grant to the far-off authors of the Aryan mythologies a mental power adequate to conceive of their worlds celestial, terrestrial, and infernal, as all united in one organic unity, like the unity of a living tree, and we are entitled to look for something like rational fitness in their chosen symbol, however poetic or artistic it may be. So, too, the moment we take, as we ought to do, a high-north viewpoint in visualizing the heavens and earth, we immediately find the world's axis substantially upright in position, and therefore easily seeming a column for the support of the dome of stars which revolves, as on a pivot, at its head. This column, extending from

visible zenith to lowest nadir of the universe, furnishes the one bond needed to give unity to all regions celestial, terrestrial, and infernal. It is the sacred Irminsul, *quod latine dicitur universalis columna, quasi sustinens omnia.*[1] It is the trunk of all world-trees. Generations ago this was clearly seen, and W. Menzel well said: "Dieses Symbol entsteht ursprünglich aus der Vorstellung der Weltachse."

The only important difficulty in picturing Yggdrasil in harmony with the mythological data is found in the account given of the "roots." The Edda itself interprets the branches, saying that they "spread over the whole world and even reach above the sky." Of the "three roots," however, at least one seems to be represented as situated in a region naturally assigned to the branches. Among early interpreters, Ling evades the difficulty by suggesting that the Yggdrasil is merely a symbol of life, universal and human, and that the three roots symbolize the physical, the intellectual, and the moral principles respectively. Another attempted explanation has taken the three to mean "matter, organization, and spirit" (!). In Finn Magnusen's striking pictorial representation in his Eddalæren, Plate I, the first or lowest root is a root-system, the second a branch-system, and the third one knows not what. The picture is reproduced as frontispiece in Mallet's Northern Antiquities.

In a study of the cosmical tree in twelve mythologies, published in the year 1885,[2] I referred briefly to the Yggdrasil, and made "its midbranches inclose or overarch the abode of men." Not long after, however, on maturer consideration, I reached a somewhat modified

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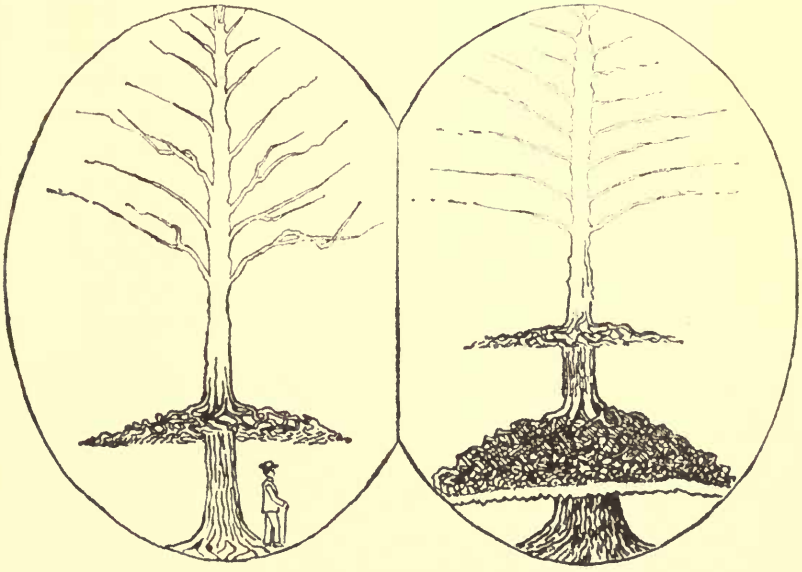
[1] Grimm, *Deutsche Mythologie*, p. 759.

[2] *Paradise Found: The Cradle of the Human Race at the North Pole*, Boston, U.S.A., 11th ed., 1904, pp. 262–278.

view, and one which still seems to me the true solution of the problem of the roots. As introductory to its presentation I would here first call attention to a noted *lusus naturæ* found in the chief cemetery of the city of Oldenburg. It is a tall and symmetrical tree with two systems of roots, one in the ground, and the other in the air. The upper one constitutes a kind of roof, about ten feet from the ground, and under it people walk about freely. A rude sketch of the tree is presented below. At the time of my visit to it I read the folklore tale which accounts for the prodigy by stating that once upon a time, when a falsely accused maiden was on her way to the place of her execution, she plucked up a small shrub and, giving it to the unmerciful mob of her persecutors, bade them plant it top downward in the earth, assuring them that God would confirm her protestations of innocence by making it to grow with its roots in the air. According to what is now folk-faith her prophecy was fulfilled, and what was at first the taproot of the plant has become the trunk and beautiful top of a tall and shapely tree. A huge ring of roots is certainly there, high in the air, with only here and there a feeble leafstem struggling for life. As a permanent inscription on the main portal to the cemetery one reads to this day the words which the maiden's wicked but afterward convicted and remorse-smitten accuser to his dying day repeated over and over: *"Die Ewigkeit ist lang! die Ewigkeit ist lang!"*

Now, rings of roots, similar to the two systems on the Oldenburg tree, are not so rare as may be supposed. They are very often found at the base of a stalk of Indian corn (maize). On a hemlock in the woods I once found a kind of aerial guy-root. It started out from the tree as a branch, more than a foot above the ground.

It then rooted itself close by in a high bank of earth, but after passing through this it again became a branch, and flourished as a low bough of the mother tree. Any tree whose branches radiate at certain nodes like the spokes of a wheel, one set of them above another, as in the case of the araucarian pines, would easily suggest to



THE OLDENBURG TREE
Showing a section of its aerial root system

THE YGGDRASIL
Triradically depicted

the imagination of a primitive people a continuation of the same system below the surface of the ground.

In the light of the foregoing it is plain that a new and simple solution of the problem of the rooting of the Teutonic World-Tree can be had by making the three "roots" signify *root-systems*, the first and lowest being in the depths of hell, the second constituting the floor of the region in which men have their abode, and the

third being situated just at the top of Cloudland, though still far below the starry abode of the immortal gods. This arrangement perfectly answers to the troublesome statement in the Grimnismal: "Hel dwells under one root, the frost-giants under the second, and the race of men under the third." See picture accompanying this paper.

Combining this new interpretation with that which I gave of Bifröst in pages 155–158 of the work before referred to, and which identifies the bridges of Chinvat, Sirat, Bifröst, etc., with the axis-pillar of the universe, all further objects mythologically associated with Yggdrasil, such as the doomstead of the gods, the two swans, the eagle, the squirrel Ratatösk, the headspring of all the world's waters, the four harts, Nidhögg and the infernal serpents—all take their appropriate places in the cosmos, and are found to have corresponding symbols in one or more of the world-trees of other mythologies. To the attention of interested scholars I confidently commend it, stipulating only that they first read the recent account of the world-tree myths given in pages 992–1018 of John O'Neill's Night of the Gods—a work of immense erudition and of path-breaking significance. See also Folkard's Plant Lore.

SECTION VII—PROBLEMS STILL UNSOLVED IN INDO-ARYAN COSMOLOGY

To a greater extent than has been generally acknowledged Babylonian cosmology is the key to an understanding of the Indo-Aryan. In proof of this statement the student is invited to spread out before him the diagram of the Babylonian cosmos printed in the twenty-third volume of the Journal of the American Oriental Society (opposite page 388), and to note the following remarkable correspondences:

1. Like the "Upper E-KUR" in that diagram, the Sumeru of the Indo-Aryans is a *mons montium*, a true "Weltberg."

2. In both cosmological systems this Weltberg is at the same time *par excellence* the possession of the gods, a Götterberg.

3. In both this Götterberg is not only divinely vast and beautiful, but also, in shape, quadrangular.

4. In both the axis of the heavens and of the earth is perpendicular in position, and consequently the top of the quadrangular Götterberg is the true summit of the earth.

5. In both this crowning summit of the earth has an antipodal counterpart in a corresponding inverted Weltberg underneath the earth. In Chaldea this peculiar conception seems to have been of pre-Semitic antiquity. One of the first of Western scholars to recognize the parallelism and something of its significance for Comparative Cosmology was Lenormant, who a generation ago wrote as follows: "Dans les conceptions de la cos-

mologie mythique des Indiens on oppose au Sou-Merou, 'le bon Merou' du nord, un Kou-Merou mauvais et funest, qui y fait exactement un pendant et en est l'antithèse. De même les Chaldéens opposaient à la divine et bienheureuse montagne de l'Orient (accadien *'garsag-babbarra* = assyrien *šad çit šamši*) une montagne funeste et ténébreuse (accadien *'garsag-gigga* = assyrien *šad erib šamši*), située dans les parties basses de la terre."—*Origines de l'Histoire*, tom. ii, 1, p. 134.

6. In the Babylonian cosmos the upper *hemi-gœa* has seven stages; in the Indo-Aryan it has seven varshas.

7. In the Babylonian system the lower or inverted *hemi-gœa* has seven stages; in the Indo-Aryan it has seven pātālas.

8. West of Babylonia is found the Hebrew conception of a quadrifurcate river of Paradise which flowed forth in opposite directions to water the four quarters of the pristine earth. East of Babylonia is found the Indo-Aryan conception of the Gaṅgā-stream which, descending from heaven to the top of Sumeru, there divides itself, according to the Vishnu Purana, into four world-rivers, and descending the several sides of the mountain from varsha to varsha, waters the whole earth. It is hardly possible to doubt that in both cases the conception was borrowed from the world-view of the people residing midway between the Hebrews on the one side and the Indo-Aryans on the other, or was at least common to the three.[1]

9. In the Indo-Aryan, as in the Babylonian world-view, the seven divisions of the lower or inverted *hemi-*

[1] T. G. Pinches, *The Old Testament in the Light of Historic Records*, etc., 2d ed., 1903, pp. 71–73. Alfred Jeremias, *Das Alte Testament im Lichte des alten Orients*, Leipsic, 1904, pp. 102–104. F. Hommel, *Aufsätze und Abhandlungen*, pp. 326ff.

gœa can be described (as they are in the Mahā-Bhārata) as *subterranean*, and yet, at the same time, as *capable of receiving light from the sun and moon*. Our diagram clearly shows both the possibility and the entire naturalness of this.

10. In the Babylonian conception the upper or northern planetary *hemi-ouranoi* were seven in number, and each of them, in receding order away from the Weltberg, was located at an increasing interval or distance; so is it also in the Indo-Aryan cosmos.

11. According to the Babylonians, the under or southern planetary *hemi-ouranoi* were also seven in number, and these, numbering from their center, were located at ever wider distances asunder; so is it also with the dvīpas in the Indo-Aryan cosmos.

12. In Babylonian thought each of the celestial spheres was assigned to the guardianship and government of a particular divine being; so was also each dvīpa in Indo-Aryan thought. (See Wilson's Vishnu Purana, p. 162.)

13. In the Babylonian cosmos the lower *hemi-ouranoi* are, as a group, below the seven stages of the lower *hemi-gœa*; in like manner in the Indo-Aryan, the Narakas are, as a group, below the Pātālas. (Wilson, *ibid.*, p. 207.)[1]

[1] We may be the more certain that in the Indo-Aryan cosmos the Narakas were the lower or infernal *hemi-ouranoi* from two striking facts: (1) The fact that in the downward direction the distances of the Narakas from each other increase in an arithmetical ratio just as do the distances of the heavens in the opposite direction. (2) The fact that the normal term of life in these successive infernal abodes grows longer and longer according to distance from the cosmic center precisely as is the case in the successive celestial abodes. I have never found any text that gave such a representation of the Pātālas. It may be added that the Rabbinical conception of two south-polar Gehennas (Eisenmenger, *Entdecktes Judenthum*, pp. 328f.), the one terrestrial and the other celestial (the two exactly answering to two north-polar Para-

14. At the same time, in the Babylonian system the regions included in the inverted *hemi-ouranoi* and those included in the inverted *hemi-gœa* slightly overlap. All the requirements of the system imply that the same was true in the Indo-Aryan. This feature also helps us to understand why the texts, and thus far their Occidental interpreters, present no clear and sharp distinction between the two groups as to nature or location. Possibly a similar slight overlapping may explain the failure of Egyptologists to make between *Tuat* and *Amentet* the distinction clearly implied in certain passages of the most ancient texts. (See Budge's Book of the Dead, 1901, chap. lxiv, vol. i, p. 211.)

15. In the Indo-Aryan as in the Babylonian system the lowest hells are antipodal to the highest heavens; hence the statement in the Vishnu Purana (Wilson, p. 209): "The gods in heaven are beheld by the inhabitants of hell as they move *with their heads inverted.*" In the Jain Sūtras also persons in hell are represented as moving about with their "heads downward." (SBE., xlv, p. 279.) Even in Plutarch the same ancient idea survives.[1]

16. In both systems the diurnal movement of the sun is in a horizontal instead of a vertical plane, and night's darkness is caused simply by the passage of the

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dises, one terrestrial and the other celestial), is clearly a survival of the ancient Babylonian idea. Brief citations may be seen in Budge, *The Gods of the Egyptians*, 1904, i, 273f. The terrestrial Gehenna perfectly corresponds to the Indian Pātālas as above interpreted, the celestial to the Narakas.

[1] "They [the virtuous] see the ghosts of people there turned upside down and as it were descending into the abyss."—*On the Face in the Orb of the Moon*, section 28. That the Greek astronomers derived their conception of the mutually antipodal *χθών* and *ἀντίχθων* from the ancient Babylonians has long been clear to me. The *Chthōn* was simply the Upper E-KUR, the *Anti-chthōn* the inverted Lower E-KUR.

sun around the farther side of the Weltberg. According to Maspero, the same apparent paradox as to the sun's motion was held and taught by the most ancient Egyptians as well as by the most ancient Chaldeans. (Dawn of Civilization, Eng. ed., p. 544.)

17. In both systems a cross-section of the cosmos in the plane of the equator would show seven solid horizontal world-rings, one within another, and all of them inclosing their common center. Here, possibly, was the origin of the "world-rings of rock" separated by seven intervening seas in the common description of the Buddhist world-view. It should be remembered, however, that in the Buddhist cosmography the tops of these world-rings are by no means in a common plane.

18. In both systems the order of the seven planets is not that of the matured Greek teaching of Ptolemy, but is conformed to the older Babylonian view, according to which both sun and moon are nearer to the earth than the nearest of the remaining five.

19. Precisely as in Babylonian thought the sphere of the fixed stars is far above, beneath, and beyond the seven concentric planetary globes, so in the Indo-Aryan is found, far above, beneath, and beyond the earth and all the Deva-lokas, the all-including shell of Brahma's cosmic egg.

20. Finally, as in the Babylonian, so in the Indo-Aryan cosmos, there is present and visible to every eye that most wonderful of all monuments of prehistoric astronomic science, the starry world-girdle of the twelve-signed Zodiac, attesting in both peoples a clear recognition of the great circles and the poles of the ecliptically defined celestial sphere.

In the beginning of European investigations into the astronomical and geographic ideas encountered in

Sanskrit literature one of the most important of questions was this: Was the cosmological system of the Indo-Aryans of indigenous origin, or was it in its fundamentals due to Babylonian influence? In view of the twenty correspondences above enumerated it may safely be affirmed that this question is now answered.[1] As is usual, however, in similar cases, the determination of the historic fact has immediately started a multitude of new questions relative to the time, manner, cause, and meaning of the fact. These constitute so many challenges to the young on-coming scholars of a new century.

Among the problems yet unsolved in this field, one of the most interesting and important is whether, *in the beginning*, the seven dvīpas were really supposed to be continental "rings," horizontal in position. In some late documents they appear to be so represented, and yet there seems also to be some evidence going to show that in a prehistoric period the authors of Indian cosmology on the East, like Pythagoras and succeeding astronomers of Greece on the West,[2] borrowed from the Babylonians the idea of seven concentric globes, "crystalline *spheres*," presided over respectively by the seven planetary divinities.

For example, such treatises as the Sārya-Siddhānta pronounce the first in the order of the dvīpas a globe. But if the dvīpa that in all enumerations is the first of all and the most central of all was a globe, it is a natural *a priori* expectation that the remaining six members of

[1] As long ago as in the year 1890 Professor Jensen could write of the origin of the cosmic system of the Indians as follows: "Dass diese Anschauung nicht aus Persien, sondern direct oder indirect aus Babylonien stammt, zeigt die weit grössere Gleichartigkeit der babylonischen und indischen als die der persischen und indischen Ideen."—*Kosmologie*, p. 184.

[2] "Pythagoras apud Chaldæos conversatus est."—Diogenes Laert., *De Vitis Philos.*, lib. viii, c. 1.

the class will be found to be, or once to have been, globes also.

Again, if in the beginning the Indo-Aryan series consisted of seven concentric spheres, like the Babylonian, the second of them, Plaksha, would correspond to the Babylonian lunar sphere, the globe of the moon-god Sin. Like that it would be conceived of as perfectly transparent, and hence like the others invisible. The *visible* lunar disk would doubtless be thought of, as it was in Babylonia, as the moon-god's "Ship of Light," the vehicle in which in sacred state he made his nightly journeys round and round upon his spacious earth-inclosing sphere, lighting at the same time the central world of men within. In Babylonian thought the only natural passages into or out of this earth-inclosing lunar sphere were one through a north-polar gate on the "Way of Anu," and one through a south-polar gate on the "Way of Ea." Three items almost seem to imply that the original conception of Plaksha was in correspondence with this.

First, while in the Vishnu Purana Vishnu is naturally represented as worshiped in all the dvīpas below Brahman's, he is said to be worshiped in Plaksha in the form or person of Soma, the moon.

Second, in the account of the descent of Gañgā from the throne of Vishnu in the north-polar heavens, the celestial stream is represented as falling on and "washing the lunar orb" before it reaches the top of Meru at the north pole of the earth. (Wilson's Vishnu Purana, pp. 170 and 228.) Of course, the only lunar orb that the celestial waters in making this direct descent at the pole could possibly encounter and wash would be one overarching the whole northern hemisphere of the earth, precisely as did the globe of the moon-god Sin.

Third, the Southern Buddhists, in some of their texts, almost seem to have retained an older Hindu idea of the same kind, for it is said of Yugandhara, the dvīpa which in their system corresponds to Plaksha: "The region of Yugandhara *covers, as a vaulted cope*, the whole of these divisions." (Edward Upham, History and Doctrines of Buddhism, p. 77.[1]) Speaking from any standpoint on the surface of E-KUR, this would perfectly apply to the globe of Sin.

That the remaining (extra-lunar) dvīpas were originally globes, and not annular disks, seems almost implied in the fact that according to the Puranas each, with the exception of the outermost, had divisions of its surface corresponding in number and apparently in form with those of the spherical Jambu-dvīpa. This could not be the case were the dvīpas merely annular disks. Furthermore, in the description of them given to Dr. Edward Upham by the Buddhist high priest of Ceylon, their undersides are represented as corresponding to the upper, which would imply antipodal regions similar in outline and equal in extent to the regions belonging to the upper or north-polar half of the cosmos as a whole (*loc. cit.*, p. 86). Finally, in a prize essay printed in the Asiatic Researches in 1849, Babu Shome, a native Indian teacher, closes a description of the dvīpas as follows: "The seven divisions [varshas] in each of the continents [dvīpas] are separated by seven chains of mountains and seven rivers, lying breadthways, and placed at such inclination in respect to one another that if a straight line be drawn through any chain of mountains or rivers

[1] Of the value of the text thus rendered by Upham, or of the correctness of the rendering, the present writer has no means of forming an opinion, but it may at least be said that Dr. Upham had no discoverable inducement to attempt to represent Yugandhara as a globe.

on the other continents and produced toward the central isle it would meet the center of the earth." These terms certainly seem to imply, not only that the dvīpas were concentric globes, but also that the varshas of each, and the pātālas of each, and the mountain ridges by which in each the varshas and pātālas were respectively bounded, were all in such perfect correspondence in the system that a right line in any direction from the center point of the earth would, if sufficiently produced, pass through an identically shaped varsha or pātāla, or an identically placed mountain range, in each of seven concentric spheres. Babu Shome does not give his textual authority, but, though a Christian convert, he was in constant touch with the chief Brahman teachers of Calcutta in his time. Surely the authorship and the warrant of so incomparably elaborate and beautiful a world-concept as this calls for an early and exhaustive investigation.[1]

Another problem which still awaits solution is the following: When, where, and under what influences in the development of the Buddhist form of the Indo-Aryan cosmology did the term Jambu-dvīpa cease to designate the central one of all the spheres and come to mean merely one of four diversely shaped, but symmetrically located, islands far out in the outermost of the seven world-seas? The "nebular hypothesis" may

[1] In the Kalpa Sūtra of Bhadrabāhu (SBE., vol. xxii, pp. 227–229) Harinegamesi is represented as flying *"upward"* in a straight line from Jambu-dvīpa to the heavenly council-chamber and throne-room of Śakra, yet as passing on his way *"right through numberless continents and oceans."* His previous descent from Śakra's heaven was also *"right through numberless continents and oceans."* Neither of these representations is at all compatible with Indian cosmology as commonly interpreted. On the other hand, once conceive of the dvīpas as originally concentric globes, and allow for an exaggeration merely in the number, and the representations perfectly fit the requirements of the world-view.

think to explain how an *outermost* revolving ring may break up and gather itself together into a planetary mass, but who can tell us when, where, and how this central Jambu-dvīpa got itself first plucked out of the center of the total cosmic system, then contracted to the dimensions of the Buddhists' triangular isle, and finally towed out and anchored in the world-engirdling sea? One's first thought is that this revolution in cosmological thought must have taken place in consequence of the transference of the center of Buddhist consciousness from continental India to insular Ceylon; but even this consideration fails to relieve the utter unthinkableness of the change that crowded six or seven enormously extended world-rings and world-seas into the narrow space between Ceylon and the Asian mainland.

A further problem remains, the investigation of which cannot fail to throw light upon the one just mentioned. It relates to the cosmology of the Jains. It asks: Wherein at the beginning did the Jain cosmology agree with, and wherein differ from, that presented in the Epic and Puranic texts? When and why did it take on the modifications which now differentiate it from the traditional teaching of the modern Brahmans on the one hand and from the Buddhist cosmology on the other?

These questions have not yet received the attention they deserve. Of one of the most important of the texts affording data for their solution Weber had nothing more or better to say than that it contains "nur mythische Phantastereien" (Indische Studien, xvi, 390). Even Professor Thibaut, in his excellent work on the astronomical and related ideas of India, makes no effort to trace the origin or significance of that strange doctrine of the earth's two suns and two moons found in the Jain astronomies (as it was also in the teaching of some

of the Greek astronomers),[1] but dismisses the whole subject with the cool remark that this peculiarity of the system is "ohne Belang" (Grundriss, iii, 22).

Other peculiarities of the Jain cosmology well deserve investigation both by themselves and according to comparative methods. Such, for example, is the enumeration of the Canda-dīva and the Sūra-dīva in due order after Jambuddīva, and yet the making of Dhāyaïsanda, beyond the Lavana sea, the second in the normal series of the dvīpas. Another is the bringing down of Pushkara from the seventh place in the original series to the third, and the new definition of the Manussa-Khetta connected therewith. (E. Leumann, Indische Studien, xvi, 390–392.)

Possibly we may never obtain the data required for the solution of the several problems mentioned in the foregoing paper. It is encouraging, however, to remember that in every field of knowledge the clear formulation of the questions next needing to be attacked often proves to be a most helpful preliminary to new discoveries.

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[1] "They (the Jains) similarly allot twice that number to the salt ocean, six times as many to Dhātuci Dvīpa, twenty-one times as many to the Cālōdadhi, and seventy-two of each to Pushkara Dvīpa."—F. Buchanan, in *Asiatic Researches*, vol. ix, p. 322. According to Hardy's *Manual of Buddhism*, pp. 20 and 22, footnote, they also locate the moon eighty yojanas above the sun instead of one yojana below it.

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