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GERMAN AND ENGLISH SOUNDS.

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PREFACE.



IT is hoped that this book, which contains a detailed study of two individual dialects, may be of interest to phoneticians, and, at the same time, serve as a guide to learners of German or English pronunciation. The English presented here is mine; the German is that of Dr. Richard Hochdörfer, now Professor of Modern Languages at Wittenberg College, Springfield, Ohio. It will be seen that I have mentioned, also, some of the most important local variations in the pronunciation of both languages.

My own dialect I have been examining for a number of years. To collect information about Dr. Hochdörfer's speech, he and I went through Vietor's *German Pronunciation* together, and noted all the cases in which his practice differed from the one described in that useful work. His and my individual sounds were investigated with the aid of the instruments described in my pamphlet on *Vowel Measurements*. At the back of this book will be found drawings representing the position of the vocal organs during the formation of nearly all the German and English vowels and consonants that give trouble to beginners.

My heartiest thanks are due to Dr. Hochdörfer, not only for the patience with which he submitted, during several months, to a series of disagreeable and often painful experiments, but also

for many excellent observations on his pronunciation and mine. I am under great obligations, also, to Professor Sheldon, of Harvard University, who was kind enough to look over my manuscript and suggest numerous improvements.

CAMBRIDGE, March, 1892.

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GERMAN AND ENGLISH SOUNDS.



INTRODUCTION.

1. The two dialects that form the basis of this study are the German spoken by Dr. R. Hochdörfer, of Magdeburg, Prussia, and the English of my own speech, formed in and near Boston, Massachusetts. Some features of the latter seem to me to represent a local or individual rather than a general usage: in these cases I add and recommend a different pronunciation.

2. Besides the types of speech just mentioned, I have tried to give the most important local variations in the pronunciation of both languages. In the matter of German dialects I have relied mainly on Vietor. For North English I have followed Lloyd;¹ for South English, Sweet and Miss Soames. My remarks on American dialects are the fruit of my own investigations.

3. It is taken for granted that readers of this book who are not already familiar with both German and English have access to the ordinary grammars, dictionaries, or guides to orthoepy. The following observations are intended merely to supplement the information usually contained in such works.

4. Throughout this book Italics (*a, b, c*, etc.) will be used in citing letters and words in the ordinary spelling; Roman type (*a, b, c*, etc.) will be employed to represent sounds and groups of sounds: for instance, *b* = the letter *b*; *b* = the sound

¹ *Phonetische Studien*, V, 1, p. 78.

of *b* in *labor*. The terms "voiceless" and "voiced" are applied respectively to surds and sonants; the former are produced without, the latter with a vibration of the vocal cords: compare *p* and *b*, *t* and *d*, *k* and *g*, *s* and *z*. A "front" vowel is one pronounced with the tongue massed in the front part of the mouth: such are the vowels in German *riet*, *ritt*, *geht*, *fett*, *rät*, and in English *beet*, *bit*, *bait*, *bet*, *bat*.

ACCENT.

5. The stress on accented syllables is very strong in both languages. The principal accent of words is marked in the dictionaries, and the secondary accent is sometimes indicated also. It is to be noted that in a compound word, each member of which is separately recognized by the speaker, both parts are accented: in *ausgeben* and *boathouse*, for instance, the syllables *ge* and *house* have a strong secondary stress; so it is with *einundzwanzig*, *twenty-one*, *neunzehn*, *nineteen*, etc. In the following paragraphs such syllables will be classed as accented; other syllables with secondary stress (such as *-heit*, *-ate* in *vergangenheit*, *ruminare*) will be called half-accented.

1. Half-accented syllables are much more numerous in American English than in the speech of the mother-country: the word *difficult*, for instance, is in England *diffic'lt*, while with us the *u* has its full value. The difference between American and English pronunciation is especially noticeable in the case of words accented on the fourth syllable from the end: compare American *solitary* and English *solitary* or *solit'ry*. This development of a secondary accent is, I suppose, part of a tendency (much stronger in America than in England) to pronounce words as they are spelled. Foreigners will doubtless prefer to follow the English practice.

QUANTITY.

German.

6. It will be enough to distinguish two degrees, long and short. Consonant letters, whether written single or double,

never have the value of long consonants, except when doubled through the union of two words in a compound: as in *mitteilen*.¹

7. Diphthongs are long: *ai, ay, ei, ey; äu, eu; au*. Vowel sounds represented in the ordinary spelling by digraphs or tri-graphs are long: *aa, ee, ie,*² *oo; ah, äh, eh, ih, ieh, oh, öh, uh, üh*. Vowels represented by a single letter are nearly always long in the following cases:—

1. When they are final: as in *adē, jā, kkdādū, Minnā, Pdulī, sō, sōfā*. Except final unaccented *e* (as in *gabē*),³ and final *a* in the interjections *dā, hā, jā, nā*.

2. When they are accented and (according to the new German orthography) stand before a single consonant letter, a *th*, an *sz* followed by a vowel, or any *sz* that does not change to *ss* when a vowel comes after it:⁴ as in *gab, über, weg, wagen, nur, brot, atem, ethik, strasze, grösze, süsz (süszze)*.⁵ Exceptions are *april, grōb, kapitel, Lūther, zither*, accented *dās* and *wās*, the adverbs *āb, ān, hin, mit, ūm, wēg*, and a number of borrowed words.⁶ The vowels of unemphatic monosyllables, being regularly unaccented, are not included in this rule: *bin, hāt, mǎn, dās, ěs, bis, in, vōn, ōb*, etc.; but *dir, für, mir, vor, wir*, and sometimes *er*, have long vowels in very careful speech.

8. Other vowels are, as a rule, short. The most notable exceptions are:—

¹ In this case the double consonant may be pronounced long, or double, or short.

² The digraph *ie* must be distinguished from *ie = je*, as in *Spanien*.

³ In a few Greek words unaccented *e* is long: *Athēnē*.

⁴ Compare *grōsz (grōsze), sās (sāszen)* with *flusz (flusses), lässt (lassen)*.

⁵ Note the following rules: (1) Adjectives keep everywhere the quantity of the uninflected positive form: *māger, māgre; zdel, zdlar; nāhe, nūchst; hōch, hōchste*. Of course such forms as *besser, beste* have nothing to do with the positive. — (2) Regular weak verbs preserve everywhere the quantity of the infinitive: *sāgen, sāgt; loben, lobte, gelōbt*. Strong verbs and irregular weak verbs keep throughout the present the quantity of the infinitive, and throughout the imperfect the quantity of the first person singular of the imperfect indicative: *rāten, rätst, rāt; fällen, fälltst, fällt; lāg, lāgst, läge*. The few exceptions to this rule (such as *trēten, tritt*) are not likely to give any trouble. — (3) Derivatives nearly always keep the quantity of the primitive: *rēgen, rēgenen; läben, läbsal*. But in *viertel, vierzehn, vierzig*, and often in *vielleicht*, the *ie* = short *i*.

⁶ In a large part of Northern Germany vowels are often short before a single final consonant: as in *bad, hof, lob, tag*.

Long *a* in: *art, bart, brach, harz, magd, nach, papst, schmach, sprach, sprache, stach, zart.*

Long *ä* in: *gespräch, säen.*

Long *e* in: *beschwerde, Dresden, epheu, erde, geberde, Hedwig, herd, herde, nebst, pferd, schwert, stets, werden, wert.*

Long *o* in: *hoch, kloster, mond, obst, ostern, propst, trost, vogt.*

Long *ö* in: *behörde, Österreich.*

Long *u* in: *buch, buche, fluch, geburt, husten, kuchen, Ludwig, schuster, suchen, truchsesz, tuch.*

Long *ü* in: *düster, wüst.*

English.

9. Double consonants may be heard in words like *solely*, and in some compound words, such as *book-case, coat-tail*. An *l* or an *n* preceded by an accented vowel and followed by a final voiced consonant is lengthened: as in *child, build, pens* (compare *built, pence*); the shorter the preceding vowel, the longer the *l* or *n*: compare *hold* and *held*. If another syllable follows, the *l* or *n* is short: as in *childish, build it*. In all other cases consonants may be regarded as short; although in England a final consonant preceded by an accented short vowel is often prolonged.¹

10. For English vowels we must recognize four degrees of quantity: over-long, long, half-long, short. Furthermore, we shall find it convenient to accept, for the present, the common dictionary division of our vowel sounds into three classes, the so-called "long," "short," and "obscure" vowels. Each of these classes will be treated separately.² "Long" and "short" vowels may be accented, half-accented,³ or unaccented; "obscure" vowels are always unaccented.

¹ In America the preceding vowel is usually lengthened instead.

² The quantity of vowels differs very much, according to the education, character, and mood of the speaker; but as the quality of some sounds depends on their length, it is necessary to establish rules. I give those of my ordinary speech. Occasionally, of course, a vowel regularly short is lengthened for some special purpose; as is the second vowel in *carry—arms!* In the drawling pronunciation that prevails in some of the rural districts of the United States, and especially in the South, over-long vowels abound.

³ See § and §, 1.

11. So-called "long vowels" and diphthongs generally follow these rules:¹—

a. If accented, they are

1. **Over-long** when they stand before (1) a pause; (2) a voiced consonant followed by a pause: as in *pa, palm; day, daze; law, laud; see, siege; high, hive; know, known; prow, proud; boy, boys; too, tomb; hue, huge; purr, purl* (*r* silent).

2. **Long** when they stand before (1) a voiced consonant followed by an unaccented syllable;² (2) a voiceless consonant followed by a pause: as in *hardy, heart* (*r* silent); *Eden, eat; Isaac, ice; ogre, oak; prove it, proof.*

3. **Half-long** when they stand before (1) a voiceless consonant followed by an unaccented syllable;² (2) a vowel:² as in *prating, prayer; seated, see it; poker, poem; juicy, jewel.*

b. If half-accented, they are generally about one degree shorter than they would be if they had the full accent: as in *fórtify, grdtitude, mátrimony* (American pronunciation), *inítiate; cúlminating, beautéfier.*

c. If unaccented, they are short: as in *dón't say thát, it máy be só, só I dó, fólloiw, Zúlu.*

12. So-called "short vowels" are regularly about one degree shorter than a "long vowel" would be under the same circumstances:³ as in *man; ready, bit; potter, shut it, putting.*

13. So-called "obscure vowels" are always short: as in *sofa, before, comical, aorist, album, pity.*

CONSONANT SOUNDS.

14. Following is a list of German and English consonants. Those preceded by a star (*) are voiced; the others are voiceless. Attention is called to 4.

¹ Under "long vowels" I include the vowels of *fair, fast, far, fall, fool, fur*, which are sometimes classed separately by the dictionaries.

² If a second unaccented syllable follows, the accented vowel is still further shortened, but hardly enough to bring it into another category: compare *gloomy, voter, theist* with *gloomily, votary, theory.*

³ Under "short vowels" I include the vowel of *pull*, which is sometimes classed separately.

GERMAN.	ENGLISH.
*b: <i>b</i> in <i>bat</i> (voiced p).	*b: <i>b</i> in <i>bat</i> (voiced p).
ç: <i>ch</i> in <i>ich</i> .	
*d: <i>d</i> in <i>denn</i> (voiced t).	*D: <i>d</i> in <i>den</i> (voiced T).
	*ð: <i>th</i> in <i>then</i> (voiced þ).
f: <i>v</i> in <i>vier</i> (voiceless v).	f: <i>f</i> in <i>four</i> (voiceless v).
*g: <i>g</i> in <i>gift</i> (voiced k).	*g: <i>g</i> in <i>gift</i> (voiced k).
*G: <i>g</i> in <i>gut</i> (voiced K).	*G: <i>g</i> in <i>good</i> (voiced K).
h: <i>h</i> in <i>hat</i> .	h: <i>h</i> in <i>hat</i> .
k: <i>k</i> in <i>kinn</i> (voiceless g).	k: <i>k</i> in <i>kin</i> (voiceless g).
K: <i>k</i> in <i>kann</i> (voiceless G).	K: <i>c</i> in <i>cool</i> (voiceless G).
*l: <i>l</i> in <i>litt</i> .	*L: <i>l</i> in <i>let</i> .
*m: <i>m</i> in <i>musz</i> .	*m: <i>m</i> in <i>must</i> .
*n: <i>n</i> in <i>nun</i> .	*N: <i>n</i> in <i>nun</i> .
*ŋ: <i>ng</i> in <i>singen</i> .	*ŋ: <i>ng</i> in <i>sing</i> .
p: <i>p</i> in <i>papst</i> (voiceless b).	p: <i>p</i> in <i>pop</i> (voiceless b).
*R: <i>r</i> in <i>rohr</i> .	*r: <i>r</i> in <i>red</i> .
s: <i>s</i> in <i>ist</i> (voiceless z).	s: <i>s</i> in <i>sit</i> (voiceless z).
š: <i>sch</i> in <i>schön</i> (voiceless ž).	ʃ: <i>sh</i> in <i>shut</i> (voiceless ʒ).
t: <i>t</i> in <i>tut</i> .	T: <i>t</i> in <i>tut</i> (voiceless D).
	þ: <i>th</i> in <i>thin</i> (voiceless ð).
*v: <i>w</i> in <i>wer</i> (voiced f).	*v: <i>v</i> in <i>vain</i> (voiced f).
	*w: <i>w</i> in <i>we</i> (voiced u).
	u: <i>wh</i> in <i>what</i> (voiceless w).
x: <i>ch</i> in <i>ach</i> .	
*ȳ: <i>j</i> in <i>ja</i> .	*y: <i>y</i> in <i>yes</i> .
*z: <i>s</i> in <i>lesen</i> (voiced s).	*z: <i>s</i> in <i>rose</i> (voiced s).
*ž: <i>g</i> in <i>page</i> (voiced š).	*ʒ: <i>si</i> in <i>vision</i> (voiced ʃ).

Of these, ç and x do not correspond to anything in English, and þ, ð, u, w are foreign to German; moreover, German š, ž, ȳ, r differ considerably from English ʃ, ʒ, y, r. Diagrams will be given showing the formation of these sounds. To our list of German consonants may be added c, j, and q, which will be described in the course of the following notes.

I. c, which is called a "glottal stop," is something like a very weak cough: the glottis is closed and then opened suddenly, the air escaping with a slight explosion. In English this sound is hardly ever used. In German it occurs with varying frequency in the dialects of different speak-

ers. Dr. Hochdörfer does not employ it at all. Students of German would perhaps do well to try to pronounce it before all accented initial vowels, as in *eine alte eiche* = cäine calte cäiçe or nē calte cäiçe. Germans should carefully avoid introducing it into English: they should run the words together, as in *an old oak* = ə NÖLDÔK.

2. ç and x: ç is used at the beginning of words and suffixes, after consonants, and after front vowels; x occurs after other vowels. Hence *Charon, frauchen* (= *frau-chen*), *solch, mich* have ç; *auch, doch, sprach* have x. See 16, 2.

3. d, l, n, t, as Dr. Hochdörfer pronounces them, are formed with the tip of the tongue touching the backs of the upper front teeth; while for English D, L, N, T the point of the tongue is turned up to the roots of these same teeth. In various parts of Germany, however, these consonants are produced in different ways; so it is hardly worth while for students of German to change their native pronunciation. Students of English, on the other hand, need use D, L, N, T only before or after an r. Hereafter D, L, N, T will be written simply d, l, n, t.

4. g and k are used only before front vowels; G and K occur before other vowels, before consonants, and at the end of words: *kiefer, geese* have k, g; *kuh, cow, gross, dog* have K, G. When K and G follow a vowel, they are more or less retracted, according to the nature of that vowel; but they are never formed so far forward as k and g. Dr. Hochdörfer's K and G are generally produced a little further back than mine, but the difference in sound is not noticeable. As speakers unconsciously make the proper distinction between k, g and K, G, it is not necessary to distinguish them in the spelling, and both pairs will hereafter be written k, g.

5. j and q are merely voiced ç and x. Most North Germans use j for a g followed by a vowel and preceded by l, r, or a front vowel; and q for a g that stands between two vowels the first of which is not a front vowel: *berge* = BERjē, *biegen* = bijēn, *bogen* = bōqēn. In Middle Germany ç and x are often used instead of j and q in these cases. In Dr. Hochdörfer's speech g before a vowel (except in some borrowed words) is always g, and the consonants j and q do not exist at all; this pronunciation is in good use, and is vastly easier for foreigners.

6. r is regularly not trilled; but some speakers in England give it a slight trill when it stands between vowels. German R is a voiced uvular trill: in the back part of the tongue there is a deep furrow, in which the uvula rises and falls, being alternately lifted up by the breath and pulled down by its own weight. Often the R consists of only one flap of the uvula. A common substitute for R is a slight buzzing or hissing noise that seems to be produced by the friction of the breath against the lower edge

of the soft palate. Germans should carefully avoid introducing uvular or any kind of "guttural" *r* into English. See **15**, 5, and **16**, 5.

7. **s** and **z** are formed in many ways, both in Germany and in England and America. I give a diagram of Dr. Hochdörfer's *s*; mine is almost exactly like it. A commoner type of English *s* has a greater elevation of the tongue and little or no protrusion of the lower jaw. Students of either language may keep their native tongue-position.

8. **f** is pronounced by Englishmen and Americans in several ways. My *f* has, perhaps, a little more lip-action than most varieties of the sound.

9. **v** is formed by most Middle and South Germans with the lips alone (*v*). English *f* and *v* are always produced by pressing the under lip gently against the upper front teeth; *v* is distinctly voiced. Dr. Hochdörfer's pronunciation of these sounds is like mine; but when his *v* follows a consonant written *q*, *sch*, or *z* (as in *quelle*, *schwer*, *zwei*), the lower lip scarcely touches the upper teeth.

10. **ʒ**, **z**, and **v**, in English, are generally whispered when they are preceded by a consonant and followed by a pause: as in *edge* = *edʒ*, *lives* = *livz*, *twelve* = *twelv*. Otherwise they are distinctly voiced. Germans should be very careful not to substitute *f* for *ʒ*.

15. Some notes are needed on the relations of these sounds to the ordinary spelling. See paragraphs **6** and **9**.

1. **German** *b*, *d*, *g*. — When *b* and *d* belong to the same syllable as the preceding vowel, they are regularly pronounced *p* and *t*; *g* under the same circumstances is pronounced *ç* after consonants and front vowels, *x* after other vowels: as in *abratén*, *abt*, *gab*, *hübsch*, *liebt*, *obst*; *kind*, *mädchen*; *berg*, *biegst*, *liegt*, *regnen*,¹ *sieg*; *bogst*, *magd*, *sagt*, *wagnis*. Exceptions are words with *bb*, *dd*, *gg* or *ng*. See **16**, 3.

2. **English** *h*. — Aside from the words in which English *h* is always mute, it is silent in unaccented *he*, *his*, *him*, *her*, *has*, *have*, *had*, unless these words follow a pause: *isn't he* = *iznti*, *tell him* = *telim*. It is often silent in other unaccented syllables. Ignorant speakers in Southern England use *h* more or less indiscriminately.

3. **German and English** *n*, except at the end of prefixes, is regularly pronounced *ŋ* before *k*, *q*, *x*, *c* = *k*, or *ch* = *k*: as in *dank*, *conquer*, *anxious*, *uncle*, *anchor*, with *ŋ*; but *ankommen*, *income*, with *n*.

4. **German and English** *ng*. — Many North Germans pronounce final *ng* as *ŋk*; but in the best pronunciation German *ng* (except in a few

¹ Pronounced also *rējnen*.

proper names and borrowed words) is always η : as in *finger, länger, ding*. English *ng* may be η , ηg , ng , $nd\zeta$, or ηk ; when final, it is always η : *hanging, ringer; finger, longer; ungainly, ingrate; strange; length; bang, thing*. Some English and American speakers change final η to n in the ending *-ing*, but this practice is universally condemned.

5. **German and English r.** — **German.** In the speech of many Germans final *r* and *-er* are reduced to v^1 : *bier* = *biv*, *nur* = *nūv*, *wasser* = *vasv*. This is Dr. Hochdörfer's pronunciation in ordinary conversation.

English. In the speech of most educated persons in South England, the Southern part of the United States, and all New England, *r* is pronounced as r only when a vowel immediately follows, either in the same or in the next word: as in *red, worry, better off*. In other cases *r* is either entirely silent or pronounced ə :² —

a. It is silent after \hat{a} ,³ æ ,⁴ and ə : as in *far, heart; sir, learn; litter, buttered*.

b. After ɔ^5 the practice varies. Some speakers regularly pronounce the *r* as ə ; others (especially in Southern England) suppress it altogether; others still give it the sound ə when it is followed by a pause, and suppress it in all other cases; in my dialect the *r* is ə when the syllable that contains it is followed by a pause, otherwise it is silent: as in *what for, for me; morn, morning; form, formula*. In unaccented syllables the *r* is silent with nearly all speakers.

c. After all other sounds the *r* is ə : as in *poorly, fearless, careful*. If the syllable containing the ə is followed by a pause, this sound is prolonged: as in *sure, moored; bore, doors; near, steered; their, pairs; fire; ours*.

In the greater part of the United States, however, the letter *r*, when final or followed by a consonant, has a sound approaching r . This sound ranges between r itself and a very much retracted r , the latter type being the more prevalent. Americans should be very careful not to introduce this consonant into German.

In Northern England *r* not followed by a vowel is generally not sounded as a consonant, but affects the pronunciation of the preceding vowel, which it makes coronal.⁶

6. **German s.** — Dr. Hochdörfer's *s* is regularly pronounced z when it is followed by a vowel and not preceded by a voiceless consonant: as in

¹ $v = e$ in *gabe*.

² $\text{ə} = e$ in *bitter*. Strictly speaking, the sound is ə only after consonants and front vowels; after other vowels it approaches \hat{a} (*u* in *hut*): as in *ogre, dear, hair; secure, floor, born, flour*. The difference, however, is scarcely perceptible to the ear, and therefore will not be recognized in our phonetic notation.

³ $\hat{a} = a$ in *far*.

⁴ $\text{æ} = u$ in *hurt*.

⁵ $\text{ɔ} = o$ in *sort*.

⁶ A "coronal" vowel is one formed with the tip of the tongue turned up toward the r -position.

sohn, lesen, insel. Many North Germans, however, give initial *s* before a vowel the sound *sz*: as in *sagt* = *szagt*. See 16.

Dr. Hochdörfer's *sp* and *st* at the beginning either of a word or of one member of a compound are sounded *šp* and *št*: as in *spricht, steht* = *špricht, štět*. This is the usual pronunciation; but some North Germans say *sp* and *st*, and others try to make a compromise between *sp*, *st* and *šp*, *št*.

7. **English** *wh* at the beginning of words¹ is in the United States almost universally² pronounced *u* or *hu*: as *what* = *uɔt* or *huɔt*. In South England *w* is commonly substituted for *u*, which, however, is said to be coming into use again.

16. Most Middle and South Germans substitute for *b*, *d*, *g*, *z*, *ž* a weak *p*, *t*, *k*, *s*, *š*. These speakers sometimes make no distinction between *b* and *p*, *d* and *t*, etc.; they of course have great difficulty in pronouncing the English voiced *b*, *d*, *g*, *z*, *ž*. Some other dialect variations are given below:—

1. *b* between vowels is often pronounced, in Middle and South Germany, as a bilabial spirant (*u*)—a sound between *w* and *v*. See 14, 9.

2. *ç* is pronounced in some parts of Germany almost or quite like *f*. In Saxony *ç* is commonly substituted for *ȳ*: as in *ja*. In some parts of North Germany *x* is used, instead of *ç*, for initial *ch* before *a*, *o*, *u*: as in *Charon* (see 14, 2).

3. *g*, when it belongs to the same syllable as the preceding vowel (see 15, 1), is generally pronounced *k* in South Germany. This pronunciation is sometimes heard in the North, especially on the stage.

4. *p* in the German combination *pf* is often formed by pressing the under lip simultaneously against the upper lip and the upper front teeth.

5. *r* is replaced, in many parts of Germany, and particularly in the South, by a voiced trill of the point of the tongue against the teeth or teeth-roots. This older pronunciation is preferred by Vieter; it is in general use among singers and tragedians. See 14, 6, and 15, 5.

6. *x* is trilled in some German dialects, thus becoming, in reality, a voiceless *r*. See note 2 above.

¹ Except, of course, words in which *wh* precedes "long *oo*" or "long *o*": here *wh* = *h*, as in *who, whole*. But in *whoa* the *wh* = *hu*.

² In my own dialect there are two exceptions, *wharf* and the exclamation *why*: in these *wh* = *w*. The substitution of *w* for *hu* was formerly common in New England; it is still general in Charleston, South Carolina, and perhaps in some other places.

7. *y* is still inserted by a few English and American speakers between a *g* or a *k* and a following *âi* (as in *guide, kind*), and also between the *g* and the *œ* in *girl*. In some of the Southern States *y* is often inserted between *g* or *k* and *â* (as in *garden, card*). For *ȳ* see note 2 above.

VOWEL SOUNDS.

17. The tables contain the principal German and English vowels, arranged (very roughly) according to the position of the highest part of the tongue during the formation of the various sounds. The diacritics used do not indicate quantity: they are employed merely to distinguish different qualities of vowel sound.

German.

18. Diagrams will be given representing the formation of the following vowels:—

ū: <i>gut.</i>	ü: <i>bühne.</i>	ī: <i>biene.</i>
ǔ: <i>mutter.</i>	ī: <i>hütte.</i>	î: <i>bin.</i>
ō: <i>not.</i>	ö: <i>schön.</i>	ē: <i>see.</i>
ö: <i>gott.</i>	ë: <i>götter.</i>	e: <i>denn.</i>
	v: <i>e in güte.</i>	ā: <i>bär.</i>
a: <i>rat.</i>	ä: <i>a in mai.</i>	

Long *u, ü, o, ö, i* or *ie, e, ä* are pronounced respectively *ū, ü, ō, ö, î* or *ē, ä*.¹ Short *u, ü, o, ö, i, e* or *ä* are respectively *ǔ, ĩ, ǒ, ǔ, ĩ, e*. But unaccented *e* in German words, and at the end of words borrowed from the French, is almost invariably *v*: as in *der erschrockene knabe* = *dɛr ɛʁʃrɔkɛnɛ knabɛ*, *dritte etage* = *dʁɪtɛ ɛtazɛ*.² The letter *a* (in German words) is always pronounced *a*, except in the diphthong *ai* or *ay*, where it is *ä*. The digraphs *ai, ay, ei, ey* are, therefore, pronounced *äi*; *au* is *aũ*; *äu* and *eu* are *öi*.

1. *a*: in parts of Middle and South Germany sounds similar to English *o* (*o* in *pot*) and *ɔ* (*o* in *sort*) are used instead of *a*. In Hanover the sound is generally something like *ä*.

¹ See, however, note 4 below.

² In many borrowed words unaccented *e, i, o*, at the end of any syllable but the last, are pronounced as short *ē, î, ō*: as in *sekretär, militär, photograph*. See 24, c, 1.

2. ä: in some parts of North Germany ē is used for ä: as in *bären* = *bēren*.

3. ɐ: in South Germany unaccented *e* often sounds like short ē or *e*; in North Germany it is sometimes pronounced ä or *a*.

4. ē: in Dr. Hochdörfer's pronunciation *leben*, *wer*, and many similar words have ä and not ē. This is, I think, the usual practice in the greater part of Germany; but I have given the preference to Viotor's rule (long *e* always = ē) on account of its simplicity. Compare note 2 above.

5. ō in some dialects is replaced by a long ȝ.

6. ȝ is replaced in some dialects by a short ȝ, in others by ȝ (English *o* in *pot*).

7. ö and ë (as in *schön*, *götter*) in Middle and South Germany are often replaced by ē and *e*.

8. öi (as in *heute*) is replaced in some dialects by ȝi, in others by ȝi, in others by äi or äi.

9. ū in South Germany is often replaced by a short ū.

10. ü and ī (as in *bühne*, *hütte*) in Middle and South Germany are often replaced by ī and *i*.

English.

19. *a*. The sounds commonly known as "long *oo*," "long *o*," "long *a*," "long *e*" we shall call respectively ū, ô, ê, î: as in *food*, *rode*, *fade*, *feed*.¹ These symbols will, as we shall see, have varying values; each one represents a group of sounds. We can distinguish the following simple vowels:—

û.			í.
ù: <i>Jupiter</i> .			ì: <i>e</i> in <i>speciously</i> .
u: <i>pull</i> .			î: <i>fit</i> .
ô.			é.
ò: <i>notary</i> .			è: <i>a</i> in <i>graciously</i> .
o: <i>Noah</i> . ²	â: <i>u</i> in <i>hut</i> .	æ: <i>a</i> in <i>fast</i> . ³	e: <i>pet</i> .
ɔ: <i>sort</i> .	œ: <i>u</i> in <i>hurt</i> .	ə: <i>a</i> in <i>sofa</i> .	ę: <i>ai</i> in <i>fairy</i> .
	ȝ: <i>o</i> in <i>hot</i> .	â: <i>a</i> in <i>hart</i> .	æ: <i>fat</i> .

¹ I include under ê, for the sake of convenience, "long *a*" before *r* (as in *dare*), which the dictionaries often class separately.

² In Southern England this word usually has ɔ and not o.

³ In the dictionary pronunciation.

The vowels *ú, ó, é, í* occur only as the final elements of *û, ô, ê, î*, when these sounds are diphthongs (see 20). The dictionary "long *i*," "*ou*," "*oi*," and "long *u*" are respectively *âi, âu, oi*, and *yû*: as in *size = sâiz, loud = lâud, boil = boil, use = yûz*.

b. Aside from *û, ô, ê, î*, the combination *yû*, and the diphthongs *âi, âu, oi*, our dictionaries distinguish the following vowels:—

1. "Italian *a*" (generally written *ar, al, au, or a*), which is my *â*.
2. "Intermediate *a*" (nearly always written *a*), by which is meant *â*; but in reality the vowel is commonly pronounced either *â* or *æ*. With me it is generally *â*; I use *â* only in a few words where the vowel is apparently on its way from *æ* to *â*.
3. "Broad *a* or *o*" (commonly written *or, au, aw, a, o, augh, or ough*), which is regularly *ɔ*.
4. "Obtuse *u*" (commonly written *ur, er, ir, ear, yr, or our*), which is my *œ*.
5. "Short *a, e, i* or *y, o, oo, u*," which are respectively *æ, e, i, ɔ, u, á*.
6. "Obscure *a, e, o, oo, u*" (always unaccented), which are regularly *ə*.
7. "Obscure *ā, ē, ō, ī, y*" (always unaccented), which are usually *i* (see 23, *a, 10*).
8. "Obscure *ū*" (always unaccented), which is *yə*.

20. We must now examine more closely the sounds which we have called *û, ô, ê, î*.

a. Not before r:—

1. When over-long or long (see 11), they are diphthongs, and range between *uí, oó, eé, íí* and *ùú, òò, èè, íí*: as in *food, goes, gave it, wreath*. In my own dialect the first set of diphthongs answers to over-long, the second to long *û, ô, ê, í*: as in *gloom, goad, save, breathe = gluúm, goód, seév, briið; gloomy, goat, savior, teeth = gluúmi, gòót, sèévya, tiíp*.

2. When half-long or short, they are usually (in America, at least) simple vowels rather than diphthongs, and are generally pronounced *ù, ò, è, ì*: as in *loosen, dōing, mōtor, herōic, shāken, chāos, ēther, bēing*;¹ *execūting, dōn't gō out, nōmināting, cān't hē cōme*. Before *ə*,² however,

¹ In Southern England half-long *û, ô, ê, í* in such cases are, I think, commonly diphthongal.

² Including *ə = r*: see 15, 5.

nearly all speakers use ϵ or æ^1 in place of è : as in *aorist, care*; many² use ɔ instead of ò^3 : as in *Noah, core*; and some (including myself) substitute u , o , i for ù , ò , ì : as in *doer, poor, boa, door, museum, fear*.

b. Before r. In this case there is great diversity of pronunciation. I give here simply my own dialect; students of English should consult the table on page 19.

1. If the word or word-group in question is a derivative of a word in uə , oə , eə , or iə , I have uər , oər , eər , iər : as in *poorer, tourist, poor and rich, boring, storage, more and more, fairest, staring, pair of, dearer, steerage, fear it*. In all these cases the ə is very faint.

2. If the word is not a derivative of a word in uə , oə , eə , iə , I have ùr , òr , ər ,⁴ ìr ⁵: as in *fury, furious, chorus, laborious, fairy, parent, era, superior*.

21. The diphthongs $\hat{\text{a}}\text{i}$, $\hat{\text{a}}\text{u}$, oi , in my pronunciation, are seldom short. When they are half-long (as in *icicle*), the two elements are about equal in length; when they are long (as in *ice*), the first element is doubled, thus becoming about twice as long as the second; and when they are over-long (as in *eye*), the two elements are nearly equal again, each being about twice as long as the corresponding element in the half-long diphthong. See **23**, *a*, 3, 4.

22. Diagrams will be given representing the formation of all the simple vowels, except $\hat{\text{æ}}$ (which need not be used) and ù , ò , é , è , i , which stand just midway between ú and u , ó and o , æ and e , e and é , i and í , respectively.

23. I mention below some of the most important local variations for English vowels, confining myself to the speech

¹ My own vowel is e : *air* = eə .

² This is the usual pronunciation in Southern England and in New York City; it is not uncommon in Boston.

³ Derivatives of words in -ê , -ô do not change è , ò to é , ó : *player, slower* = plèə , slòə even in those dialects where *hair, bore* = hèə , bòə .

⁴ I have èr instead of ər in *caret, Cary, Mary, Sarah, vary* (and its derivatives). Most Americans have, I think, still more words with èr .

⁵ I have ìr instead of lr in *dreary, Erie, O'Leary, weary*.

of educated people in England and the United States. By "London" dialect I mean the pronunciation that Sweet calls "Cockney English."

a. Variations of the individual vowels:—

1. *á* (as in *hut*) is pronounced in several ways. In the United States (except Maine) it is perhaps formed a little further forward than the usual English *á*. In the Southern States it is often replaced by a sound resembling *œ*. Many American speakers, especially in the West and South, substitute *œ* for *á* before *r* + vowel, as in *courage*, *hurry*. Londoners often use for *á* a sound that suggests *â*.

2. *â* (as in *far*): many speakers (principally, I think, in England) use in place of *â* a vowel (*à*) made with the tongue in the position for *o*, and the lips in the position for *â*; in sound, however, *â* and *à* are practically identical. Hereafter both these vowels will be written *â*. In London, and also in Pennsylvania, Maryland, Eastern Virginia, and some of the Western States, we find a long *o* or even an *o* in place of *â*. In Northern England, on the other hand, *â* tends toward *æ*.

3. *âi* (as in *ice*, *eyes*) is in England generally replaced by *æi* or *æi*; but in London the diphthong is *âi* or *qi*. In some of the Southern States (especially Virginia, the Carolinas, Tennessee, and Kentucky) we find something like *æi* before a voiceless consonant, and *âæ* or *âe* before a voiced consonant or at the end of a word: *write* = *râit*, *ride* = *râed* or *râed*. See note 4 below. In the Northern States *âi* is the usual form, but *oi* and *æi* are sometimes heard; my own *âi* has a slightly advanced *â*.

4. *âu* (as in *out*, *loud*) is in England generally replaced by a diphthong resembling *œu* or *æu*; in London, and also in many of the rural districts of the United States, by *æu*. In some of the Southern States we find *œu* before a voiceless consonant, and *âu* before a voiced consonant or at the end of a word: as in *out* = *œut*, *loud* = *lâud*. See note 3 above. In the Northern States the *â* of *âu* often approaches *o*.

5. *æ* (as in *cab*) is in London sometimes replaced by *e*.

6. *æ* (as in *fast*):¹ for the dictionary *æ* (which, I believe, is not in general use anywhere) we find *â* in Southern England and generally in New England;² a long *o* in London and in Eastern Virginia; a long *e* or

¹ To the list of *â*—*æ* words usually given should be added, for American usage, *Alabama*, *almond*, *aunt*, *banana*, *calf*, *calm*, *draught*, *example*, *half*, *laugh*, *piano*, *rather*, *salmon*, *sample*. The prefix *trans-* regularly has *â* in Southern England and *æ* in America.

² In New England the pronunciation wavers between *â* and *æ* when the *a* is followed by *m* or *n*: as in *example*, *dance*. In these cases I originally had *æ*.

e in Pennsylvania and a large part of the South; a long æ in the rest of the United States and in Northern England.

7. e (as in *bet*): some Americans (especially Westerners) substitute á or œ for e before r + vowel in a few words, such as *American, bury, terrible, very*.

8. ê (as in *bait*) is, I think, more plainly diphthongal in Southern England than elsewhere. In London it is replaced by æi.

9. tǝ in the Southern States often becomes yœ or yâ; in Southern England it occasionally approaches yâ: as in *fear, here*.

10. i (as in *hit*), when unaccented,¹ is generally formed somewhat lower and further back than accented i; this flattening is, with me, most noticeable at the end of a word or before a final voiced consonant: as in *pity, naked, cabbage*. In Philadelphia many speakers nearly always substitute ə for i: as in *honest* = ɔnəst, *I've got it* = âivgɔtət.²

11. ô (as in *note*) is in Southern England often replaced by something like œu; in London, by a diphthong resembling âu. Some speakers (especially Anglomaniacs) in Eastern American cities use áu or œu. In New England a short vowel, ɒ (a rounded³ á), is often substituted for ô in certain words;⁴ this sound is not infrequently heard in other parts of the United States. We have seen (20, a, 2) that ɔ is substituted for ô before ə in Southern England, in New York City, and often in Boston.

12. oi (as in *oil*) in the United States is generally replaced by ɔi. In Southern England we sometimes find qi.

13. ɔ (as in *hot*) in the United States (except in Eastern New England) is generally devoid of lip-rounding, but in England it is regularly somewhat rounded; in New York State and a large part of the West it is

¹ Some of the ordinary representations of unaccented i are: — (1) i or y: as in *disturb, comical, sorry*; (2) e before a vowel: as in *meander, piteous*; (3) e, followed by a consonant other than rr, in initial syllables just before the accent: as in *begin, except, refer, select*; (4) the vowels in final *-ace, -age, -ain, -ange, -ate, -ay, -ea, -ed, -edge, -ee, -ege, -eign, -eil, -em, -enge, -es, -ess, -est, -et, -ey, -iage, -ie, -ies, -ief, -uce, -uit, -ute*: as in *palace, forage, mountain, orange, senate, Monday, guinea, spotted, knowledge, coffee, college, foreign, surfeit, poem, lozenge, rushes, goodness, biggest, sonnet, pulley, carriage, Minnie, fairies, mischief, lettuce, circuit, minute*. But i in *-ible* and e in case (3) above may be pronounced either i or ə: as in *possible, behind*; with me they are generally ə.

² In all other parts of the United States this pronunciation is, I think, generally confined to the Irish. In New York City, however, I have sometimes heard it from persons whose dialect showed no other traces of Irish influence.

³ A "rounded" vowel is one whose sound is modified by a partial closure of the lips.

⁴ Some of the commonest are *wholly, whole, polka, bolt, colt, folks, comb, both, most, only, stony*. I have the short sound in *whole* and its compounds. The same vowel is often used before ə and r: as in *store, story*.

replaced by a short â. There is a long list of popular words in which *o* or *a*, followed by *s*, *f*, or *th*, generally has in Southern England and America the sound ɔ, although most of the dictionaries prescribe ɒ: such words are *loss*, *wasp*, *off*, *moth*. Words in which the dictionaries give to *a* before *l* or *n* the sound ɒ (as *halter*, *swan*) commonly have ɒ in England, and vary between ɔ and ɒ in America. Accented *ong* is in England ɒŋ, in America usually ɔŋ:¹ as *wrong*, *longer*. I have ɔ in all these cases. In the Southern States ɔ is used in *dog*, *fog*, *frog*, *God*, *gone*, *hog*, *log*, *on*, *pomp*, and many similar words; ɒŋ and ɡɒd are, however, often heard in the North, and ɒŋ and ɡɒn seem to be the regular forms in all parts of the United States.

14. ɔ (as in *sort*) is perhaps a little more rounded, as a rule, in England than in America; my ɔ can hardly be called rounded at all. *Au* before *nch*, *nd*, *nt* (except in *aunt*) varies between â and ɔ; I have â in all the words.

15. œ (as in *hurt*) is unrounded in England, but generally rounded in America. In Southern England it seems to be pronounced nearly like a long ɜ; to an American this sound often suggests â. Many Americans substitute for œr not followed by a vowel a coronal² œ or á, while others use ár: as in *fur*, *worse*. In New York City, Philadelphia, and some parts of the South œr before a consonant is often replaced by the diphthong œi, in which the œ is usually rounded and the i is retracted: as in *bird*, *first* = bæid, fœist.

16. û, u in the Southern States are often replaced by sounds mid-way between ù and ü, u and î: as in *boot*, *could*. In the rural districts of various parts of America û is frequently replaced by iû (with the accent on the i), a diphthong in which the i is considerably retracted and the û is somewhat advanced: as in *do*, *rule* = diû, riû; this pronunciation is very rare among educated persons. Some speakers round the first element of iû, which thus becomes îû; this latter diphthong is often heard in London. In *broom*, *Cooper*, *hoof*, *hoop*, *Hooper*, *roof*, *room*, *root*, *soon*, *soot*, and their derivatives the pronunciation wavers between û and u; I have û in all but *Cooper*, *hoof*, *hoop*, *Hooper*. The diphthong ûə (as in *poor*) often becomes òə in the Southern States; in Southern England it sometimes approaches ɔə.

17. yû (as in *new*) in the greater part of the United States is often replaced, under certain conditions, by iû. After *f*, *ʒ*, *y*, *r*, or consonant

¹ The difference is chiefly one of vowel quantity, for the usual American ɔ is in sound nearly like English ɒ.

² For American coronal vowels the tip of the tongue is lifted high enough to produce the effect of a very strong r. See 23, *b*.

+l a "long u" is simply û, both in England and in America: as in *sure, juice, yew, rule, blue*; after l, s, or z, it is generally yû in England (û or îû in London), and either û or îû (û preferred) in America: as in *lute, sue, resume*; after d, n, t, þ, it is commonly yû in England (û or îû in London), and û,¹ îû, or yû in America: as in *duty, new, tune, enthusiasm*; after b, f, g, h, k, m, p, v, it is yû in England, and yû or îû (yû preferred) in America: as in *beauty, few, hue, view*. In Southern England yû before ə is often replaced by yɔ: as in *pure, your* = pyɔə, yɔə; the form yɔə is common in and near Boston.

b. Coronal vowels.— It may be seen from the table on page 19 that certain vowels are often coronal in the North of England. With all the representatives of the "American" pronunciation² whom I have examined, œ + r final or before a consonant is simply a coronal œ or á; I suspect, moreover, that "American" âr, qr, ər are often replaced by coronal â, q, ə, but I have not been able to prove it. There is a marked difference between American coronal vowels and the English sounds described by Lloyd: the acoustic effect of the former is that of somewhat muffled vowels + a vigorous r, while in the case of the English coronal vowel the r-effect seems to be very weak. In my own dialect any front vowel is slightly modified when it stands between two alveolar consonants;³ but I have no vowel that I should call coronal.

c. Nasality.— Most Americans nasalize their vowels to a greater or less degree; vowels that stand next to *m* or *n* are most liable to such modification. This practice, which is universally condemned, is commoner in the country than in the cities, and, I think, more general in the South and West than in the East. It is not entirely confined to America, but prevails also in London, and is tolerably common in some parts of Germany.

d. Vowels with r.— In the following table only the most important types are given; for some special points see 20 and 23, a, 1, 2, 7, 9, 11, 15, 16, 17. A little *r* (as in â^r) means that the preceding vowel is coronal; a little ə (as in u^ər) indicates a very slight glide. By "American" is meant (in this table) the speech of the United States except New England and the South.

¹ The South is strongly opposed to û in this case.

² See paragraph *d* below.

³ My alveolar consonants are d, l, n, r ʃ, t, ʒ.

	Examples.	No. Eng.	So. Eng.	New Eng.	So. U. S.	Amer.
â + r final ¹	<i>star, start</i>	â ^r	â	â	â	âr, ɔr
â + r + vow.	<i>starry</i>	âr	âr	âr	âr	âr
âi + r final ¹	<i>tire, tired</i>	âiə ^r	âiə	âiə	âeə	âiər
âi + r + vow. ²	<i>tiring</i>	âiər	âiər	âiər	âeər	âiər
âi + r + vow. ³	<i>tyrant</i>	âiɪr	âiɪr	âir	âer	âir
âu + r final ¹	<i>cower, scours</i>	âuə ^r	əuə	âuə	âuə	âuər
âu + r + vow. ²	<i>scourer</i>	âueɪr	əuər	âuər	âuər	âuər
âu + r + vow. ³	<i>cowry</i>	âur	əuər	âur	âur	âur
ê + r final ¹	<i>fare, fares</i>	ɛ ^r	ɛə	æə, ɛə	æə, ɛə	æər, ɛər
ê + r + vow. ²	<i>fairest</i>	ɛr	ɛər, ɛər	æər, ɛr	æər, ɛr	æər, ɛr
ê + r + vow. ³	<i>vary, fairy</i>	ɛr	ɛər, ɛər	èr, ɛr ⁵	èr, ɛr	èr, ɛr
ə + r final ¹	<i>offer, offered</i>	ə ^r	ə	ə	ə	ər
ə + r + vow.	<i>offering</i>	ər	ər	ər	ər	ər
ɪ + r final ¹	<i>fear, fears</i>	iə ^r	iə	iə, iə	iə, yœ	iər, iər
ɪ + r + vow. ²	<i>fearing</i>	ɪr	iər	iər, iər	iər, yœ	iər, iər
ɪ + r + vow. ³	<i>serious</i>	ɪr	iər	ɪr	ɪr	ɪr
ô + r final ¹	<i>store, stored</i>	òə ^r	ɔə, ɔ	oə, 0ə	òə	oər, òər
ô + r + vow. ²	<i>storage</i>	òr, òər	ɔr, ɔər	oər, 0r	òər	oər, òər
ô + r + vow. ³	<i>story</i>	òr	ɔr, ɔər	òr, 0r	òr	òr
ɔ + r final ¹	<i>for, form</i>	ɔ ^r	ɔə, ɔ	ɔə, ɔ	ɔə, ɔ	ɔər, ɔr
ɔ + r + vow.	<i>laureate</i>	ɔr	ɔr	ɔr	ɔr	ɔr
œ + r final ¹	<i>fur, furl</i>	œ ^r	œ	œ	œ	œ ^r , œr
œ + r + vow.	<i>furry</i>	œr	œr	œr	œr	œr
ù + r final ¹	<i>abjure, abjured</i>	ùə ^r	uə	uə, ùə	ùə, òə	uər, ùər
ù + r + vow. ²	<i>abjuring</i>	ùr	uər	uər, ùər	ùər, òər	uər, ùər
ù + r + vow. ³	<i>jury</i>	ùr	uər	ùr	ùr	ùr
ê + er final ⁴	<i>player</i>	êə ^r	êə	èə	èə	èər
ô + er final ⁴	<i>slower</i>	ôə ^r	ôə	òə	òə	òər

¹ Also r + consonant.² In derivatives of words of the preceding class.³ In words not derivative.⁴ In derivatives of words in -ê, -ô.⁵ See 20, ò, 2.

SYNTHESIS.

24. German: —

a. **Syllabication** — 1. In words with prefixes the syllabic division is generally made after the prefix; in other compound words, between the two members: as in *auf-atmen*, *sonnen-unter-gang*.

2. In all other cases a single consonant sound between vowels belongs, after a long vowel or a diphthong, to the following syllable; after a short vowel it is divided between the two syllables, and can hardly be said to belong to one any more than to the other: *bie-ne*, *gē-ben*, *rau-schen*, *sprā-che*, *strā-sze*; *lassen*, *mischen*, *müt-te*, *rēnnen*, *singen*, *sprēchen*. When two or more consonant sounds come together, they are divided between the two syllables: as in *war-te*, *er-ste*, *mün-ze*.

3. The sounds l, m, n are often used instead of ɛl , ɛm , ɛn , and thus form syllables without a vowel: as in *vogel*, *liebem*, *raten* = fōgl , libm , ratn . In careless speech this syllabic n is frequently changed to m after b, p, or m, and to η after g, k, or η : as in *leben*, *nehmen*, *danken*, *singen* = lēbm , nēm̄m , dan̄k\eta , ziŋ\eta .

b. **Consonants**. — The sounds ç and ʀ are somewhat difficult for English-speaking people; hence such groups as lç , rç , and consonant + ʀ (as in *welcher*, *berg*, *drei*) are hard to master. The only other combinations that give much trouble are initial gn, kn, pf, and ts (as in *gnade*, *knie*, *pferd*, *zu*): gn and kn require only a little practice; pf is easy if the under lip is made to touch the upper teeth and the upper lip at the same time; ts our students almost always pronounce too feebly. See 14, 9, and 15, 1, 6.

c. **Vowels**. — 1. Vowels that are regularly long usually become short when they occupy entirely unemphatic positions in the sentence; but they keep their original quality: as in *die frau*, *nicht so güt*, *sie sang zu ihm*, with short i , o , u .

2. When vowels regularly unemphatic and short are, for any reason, accented, they keep their original quantity and quality: as in *damit*, *darān*, *darin*, *davōn*; *nicht ān*, *sondern ĩn die schule*.

d. **Word-groups**. — Germans who use the glottal stop (see 14, 1) naturally make, in most cases, a sharp separation between their words: *der alte esel* is (for instance) not dɛraltēzl , but dɛraltɛcēzl . Those who have no c usually run some of their words together: dɛraltɛēzl .

e. **Emphasis and Intonation**. — The distribution of emphasis in the sentence is about the same as in English. German intonation has not yet been thoroughly studied; it does not differ very much from that of American English.

f. **Texts** in phonetic spelling, as well as an extended description of German speech, may be found in Vietor's *German Pronunciation* (second edition, 1890), published in Leipzig by O. R. Reisland.

25. English :—

a. **Syllabication.**—1. There is no very sharp syllabic division in English, except in the case of a few compound words, such as *book-case*, *coat-tail*. A single consonant sound preceded by an unaccented and followed by an accented vowel regularly belongs to the following syllable: as in *be-cause*, *re-pose*, *to-day*, *a-nother*, *a-tall* (*at all*). In all other cases we may regard the consonant or consonant group as being divided about equally between the two syllables: as in *invént*, *cdbin*, *stóny*, *cóuntry*, *impracticability*.

2. The sounds l, n, r frequently have a syllabic value: as in *little*, *seven*, *blackberry* = litl, sevŋ, blækbrī. In careless speech other consonants are used in the same way: as are the m and s in *kæpm*, *lektristi* = *captain*, *electricity*.

b. **Consonants.**—1. English r being rather a hard sound for foreigners, the combinations of consonant + r are generally found difficult; the worst of these, tr and dr (as in *try*, *dry*), are easier when the t and d are pronounced with the point of the tongue turned up toward the hard palate. Germans usually fail to voice the group dʒ (as in *judgment*). They should be careful not to substitute p, k, t, f, s for final b, g, d, v, z, especially when these sounds are preceded by another consonant, as in *bulb*, *band*. See 9.

2. In ordinary speech non-initial dy and ty, when followed by an unaccented or a half-accented vowel, change to dʒ and tʃ: as in *gradual*, *soldier*, *natural*, *don't you*, *Christian* = grædʒuəl, sòldʒə, nætʃəɹəl, dòntʃu, kristʃən.¹ So final *-dure* and *-ture*, when entirely unaccented, become -dʒə and -tʃə: as in *verdure*, *picture* = vœdʒə, pikʃə; but *literature* (in America) = litərətʃuə. Before an accented vowel dy, ty often become dʒ, tʃ if the d or t and the y belong to separate words; the y of *you*, *yours*, *your* is most subject to this change: as in *I'd use it* = âidʒûzit, *not yet* = nɔtʃet, *did you* = didʒû, *all but yours* = əlbətʃuəz; but *duty*, *tune*, etc. rarely = dʒûti, tʃûn, etc. Similarly, most speakers substitute ʒ, ʃ for zy, sy, provided the z or s and the y do not belong to the same word: as in *as yet* = əʒet, *this year* = ðiʃiə; but *resume*, *suit*, etc. almost never = riʒûm, fût, etc.

¹ Some words which have y in England are pronounced with i in America: so *hideous*, *immediate* = in England hidyəs, imidyit or hidʒəs, imiddit, but in America usually hidis, imidiit.

3. In my own dialect the *d* and *t* of *dʒ* and *tʃ*, when preceded by an accented front vowel (as in *edge, itch*), are generally palatal — that is, they are formed by pressing the fore-part of the upper surface of the tongue against the roots of the upper teeth, while the point of the tongue remains just behind the lower teeth.

c. Vowels. — 1. In rapid speech nearly all entirely unaccented vowels tend more or less toward *ə* or *i*. Sometimes a slightly rounded *ə* takes the place of unaccented *u* or *o*: as in *to-night, you know, obey, prolong*.

2. When a vowel regularly unaccented and “obscure” receives the stress, it is usually replaced by the sound that its written sign most readily suggests under the given conditions: as *not a man, but the man* = *nɔt ê mæn bətði-mæn*; *of the people, for the people, and by the people* = *ɔv ðəpipl fə ðəptpl ənbâi ðəptpl*.

d. Word-groups. — Words closely connected in sense are joined together in pronunciation: *I don't like it at all* = *ədôntlâikitətɔl* (a group in which *ɔ* and *âi* are accented, and *ô* is half-accented). Thus an *r* at the end of a word is often brought immediately before a vowel, and is then nearly always pronounced: compare *far* = *fâ* and *far off* = *fârɔf*. When two vowels, the first of which is *ə*, are brought together in a word-group, and no *r* stands between them in the spelling, careless speakers, both in England and in America, frequently insert an *r* in their pronunciation: as in *the idea of going to Georgia or Florida in the summer* = *ðiâidiərvəgðinj tədʒədʒərəflɔridə(r) inðəsámə*. Uneducated persons sometimes introduce this *r* after *ɔ* or *â*: as in *I saw it* = *âisɔrit*, *gnawing* = *nɔrij*, *the Shah of Persia* = *ðəfârəvræʒə*.

e. Students can find in Sweet's *Elementarbuch des gesprochenen English* (Oxford, Clarendon Press) some useful remarks on English accent, emphasis, and intonation, as well as a brief description of English sounds, a grammar constructed on a phonetic basis, and a collection of texts in phonetic spelling.

REMARKS ON THE DRAWINGS.

26. The diagrams at the back of this book were made according to the methods described in my article on *Vowel Measurements*, which appeared in the *Publications of the Modern Language Association of America*, 1890, Supplement to Vol. V, No. 2.¹ Each dimension is reduced to one-half the

¹ I have, however, improved my methods in some respects. By using a combination of mirrors I have been able to watch the movements of the uvula.

natural size. The drawings for English sounds represent my own mouth. Those for German were made by me from Dr. Hochdörfer's vocal organs; but the region behind the tongue was explored mainly by Dr. Hochdörfer himself. Whenever I am not sure of the accuracy of my results, I indicate that fact by the use of broken lines.

27. The large drawing in each cut represents a longitudinal section of the mouth, including the lips, teeth, hard and soft palate, uvula, tongue, and (for vowels) the upper edge of the epiglottis; the tongue-line indicates the position of the central groove of the tongue — not that of the side edges, which are nearly always lower than the middle strip. The relative height of the edges and of the middle of the tongue may be seen from the upper one of the two smaller diagrams given: this shows the respective positions of the palate and tongue, as viewed from the outside; in the case of *ç*, *s*, *ʃ*, *ʒ*, *y*, *ȳ*, and the front vowels the drawing represents the passage between the fore-part (for *ʃ* the point) of the tongue and the roots of the teeth, as it appears when the head is thrown back;¹ in all other cases the figure shows the highest part of the tongue that can be seen, and the section of the palate that is over it. The third diagram gives a front view of the lips; it is to be noted that for most consonants the lip-shapes vary according to the nature of the preceding and following vowels.²

28. Every effort was made to catch the lip and tongue-positions used in ordinary speech. Students should remember that if the mouth is opened wider than usual during the production of a sound, the tongue will be correspondingly raised; hence observers looking into their mouths are likely to see tongue-shapes somewhat different from those depicted in the cuts.

¹ For *s*, *ʃ*, and *ʒ* this outline can be seen only by slightly relaxing the position of the jaw or tongue-point immediately after the production of the sound.

² My drawings represent the lip-shapes of consonants as they appear when uninfluenced by vowels.

29. The position of the tongue for a given sound depends, to a certain extent, on the shape of the speaker's hard palate. If the cavity just behind the roots of the upper teeth is high and wide (as it is in my case), it is seldom necessary to draw the tongue back very far; if, on the other hand, the inverted bowl formed by the hard palate is shallow and small (as it is with Dr. Hochdörfer), room must be made for the back vowels by retracting the tongue. Moreover, the bulk of the tongue itself probably varies more or less with different speakers. We must, therefore, define the essential features of any non-nasal vowel in some such way as this: (1) the size of the mouth-aperture, (2) the relation of the amount of space before and above the tongue to the size of the cavity behind it, and (3) the size of the narrowest part of the passage between the tongue and the palate. In general, and within certain limits, drawing back the tongue and narrowing the lip-aperture produce somewhat similar acoustic results: a retracted \bar{i} , for instance, strongly suggests \bar{u} . Germans often gain additional mouth-space for rounded vowels by protruding the lips.

30. If the height of the larynx varies with the different vowels, the rise or fall of this organ may change somewhat the size of the pharynx, and should therefore be noted. These movements are, however, very irregular. I have tried to ascertain by measurement the distance (in millimetres) that the "Adam's apple" rises, when the different long vowels are whispered, above the position it occupies during ordinary breathing. My most successful set of experiments with Dr. Hochdörfer gave these results: for \bar{o} and $\bar{ö}$, $2\frac{1}{2}$; for \bar{u} and $\bar{ü}$, $4\frac{1}{2}$; for a , 7; for $\bar{ä}$, $8\frac{1}{2}$; for \bar{e} , $10\frac{1}{2}$; for \bar{i} , 12. Of my own thyroid cartilage I can say nothing very definite: sometimes it seems to rise about a millimetre for all the vowels, and sometimes I cannot detect a rise for any vowel but \hat{i} .

31. Figures are given, at the back of the book, for all of Dr. Hochdörfer's vowels; for all of my vowels, except the

unnecessary \hat{e} and o and the intermediate sounds \grave{u} , \grave{o} , ϵ , \grave{e} , i (see 22); for the German consonants R , x , ζ , \bar{y} , \check{s} , s , and the English consonants r , w , y , j , β . Students are reminded that w , q , j , \check{z} , \check{z} , z , δ have respectively the same lip and tongue-positions as w , x , ζ , \check{s} , j , s , β . I add some notes on the individual sounds.

1. R , x , ζ , \bar{y} , \check{s} , s and r , w , y , j , β will be discussed separately: —

1. R has been described in 14, 6. Notice the resemblance between the tongue-position for R and that for v (see 15, 5).

2. x is a hiss produced in the back of the mouth by a broad stream of air escaping between the inner part of the tongue and the lower edge of the soft palate. It differs from R in having no furrow in the back of the tongue, so that the uvula simply rests on that organ, instead of vibrating. See 16, 6.

3. ζ is a hiss caused by a narrow stream of breath escaping between the roots of the upper teeth and the fore-part of the tongue. It is almost a voiceless \bar{y} ; \bar{y} has, however, a somewhat closer formation, both at the lips and at the teeth-roots. For Dr. Hochdörfer's \bar{y} , moreover, the point of the tongue is raised; while for his ζ it is pressed against the lower teeth, a wide groove being formed in the part of the tongue just behind the tip.

4. \check{s} is a dull hiss produced by a broad stream of air escaping between the two rows of teeth, and modified by protrusion and rounding of the lips.

5. s is a sharp hiss caused by a very narrow stream of breath escaping between the upper and lower front teeth. The under jaw is advanced, so as to bring the lower teeth directly beneath the upper. If I raise the tip of my tongue two millimetres from its s -position, I form a β .

6. r is a very slight buzz produced by the voiced breath escaping between the upturned point of the tongue and some part of the hard palate. It usually requires a tolerably big space in front of the tongue. The degree of approximation of the tongue-point to the palate varies considerably in different cases and with different speakers; in general, the further the r is carried back, the wider the passage becomes.

7. w hardly differs from a very short \acute{u} .

8. y does not differ essentially from a very short i . It is far more open than German \bar{y} .

9. j is a hiss, higher in pitch than the corresponding German sound, and lower than s . It is produced, with me, by the breath escaping, first between the roots of the upper teeth and the tip of the tongue, and then

between the two rows of teeth, which are brought close together. It is modified by protrusion of the lips; ¹ the pouting is, however, less marked than in the case of the German consonant. The lower jaw is advanced, but (in my case) not quite so far as for *s*.

10. *ʃ* is (with me) a dull hiss caused by the air escaping through the interstices of the upper front teeth, and between the little notches of these teeth and the rim of the tongue. The fore-part of my tongue is spread out flat, and the semi-circular rim is pressed gently against the lower edge of the upper teeth; the jaw is not advanced; the vertical distance between the two rows of teeth is about three millimetres. As very little breath can get out, the sound is feeble. See note 5 above.

II. *ū, ũ, ō, ǒ, and ú (ù), u, ó (ò), o, ɔ* may be called "back vowels." They are all rounded except *ɔ* (see 23, *a*, 14), which, with me, has about the same lip-shape as *i*. Dr. Hochdörfer's *ū, ũ, ō, ǒ* sound nearly like my *ù, u, ò, o*, but I think they are a little lower in pitch. Although his palate-cavity is smaller than mine, his mouth-space for back vowels is so enlarged by tongue-retraction and lip-protrusion that it far exceeds my own; his lip-apertures, on the other hand, are considerably larger than mine (see 29). It is to be noted that English rounding consists of mere approximation of the lips, while German rounding is usually produced by more or less energetic puckering. For Dr. Hochdörfer's *ū, ũ, ō, ǒ*, and also for my *ú, ù, u, ó, ò, o, ɔ*, the palate and tongue-positions form a regularly descending series. The lip-shapes for my *ú, ù, u* form a regularly widening series, and those for my *ó, ò, o, ɔ* form another.

III. *a, ǎ, ɐ* and *ɔ, â, œ, á, ə* stand between the back and the front vowels. For *a* and *â* the soft palate is lowest. All these sounds are unrounded, except *œ*, which is decidedly round (see 23, *a*, 15), and *ɐ*, which has a touch of English rounding (see note II. above). When *ɐ* stands for *-er* (see 15, 5), it is pronounced with the under jaw somewhat higher than I have represented it in the drawing. Note the similarity in tongue-position between *ɐ* and *œ*: the two vowels are nearly alike in sound. Both *a* and *ǎ* sound almost exactly like my *â*. My *ɔ, á, ə* are different from any of Dr. Hochdörfer's vowels.

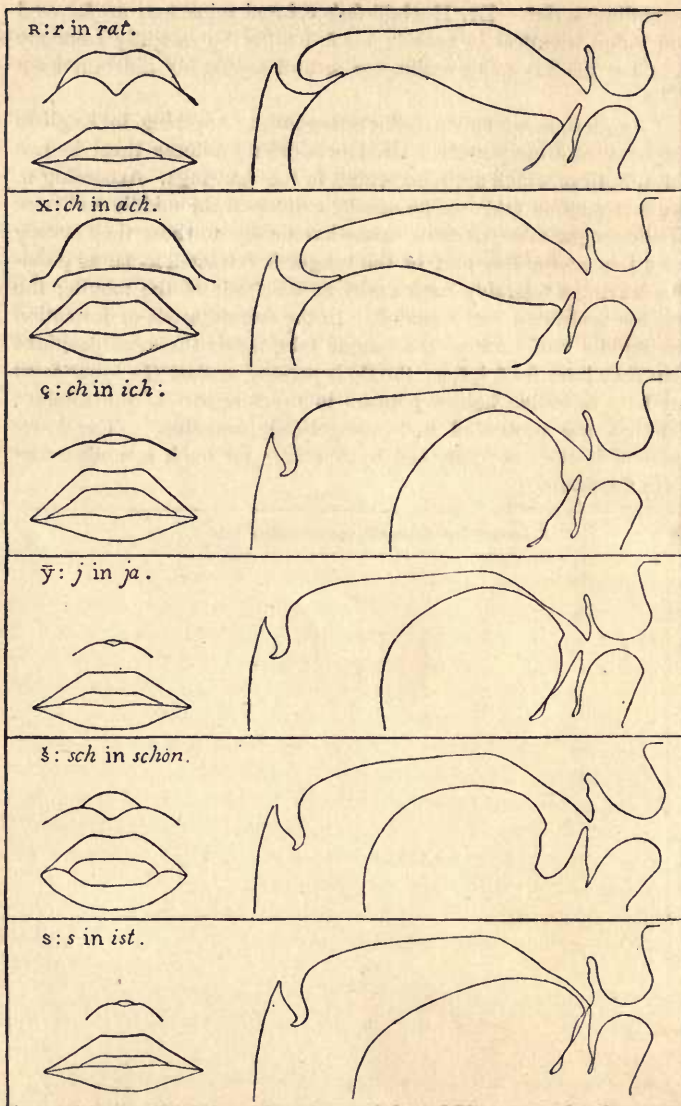
IV. *ä, e, ē, i, ī* and *æ (ɛ), e (è), -é, i (ì), í* are unrounded front vowels. The palate and tongue-positions for each set form an

¹ With many persons the lip-opening for this sound is quite unsymmetrical.

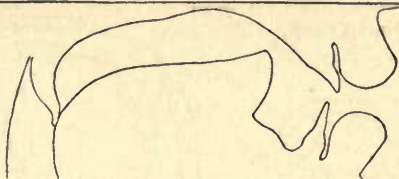
ascending series. Dr. Hochdörfer's e, i and mine are, so far as I can judge, identical in sound; his ē, ī differ but slightly from my è, ì; but his ä is quite unlike my æ and noticeably different from my e.

V. ü, ī, ö, ë, which do not correspond to anything in English, are rounded front vowels. Dr. Hochdörfer produces them in two ways, both of which are represented in the drawings. According to the first method (the one he usually employs), the middle and back of the tongue take positions somewhat similar to those they occupy for ī, i, ē, e; the fore-part of the tongue is retracted as far as possible, leaving a tolerably large cavity in the front of the mouth; the lips are protruded and rounded. In the second mode of formation the middle and back of the tongue take nearly the same positions that they have for ī, i, ē, e; the tip is pressed against the lower front teeth; a bowl-like hollow appears in the fore-part of the tongue; the lips are protruded and energetically rounded. The latter method is the one described by Vietor;¹ for me it is much easier than the other.

¹ *Elemente der Phonetik*, second edition (1887), p. 85.



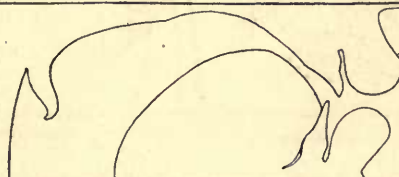
r: r in red.



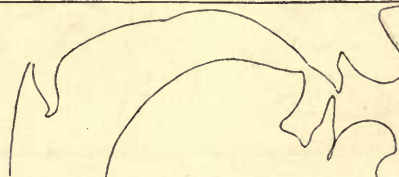
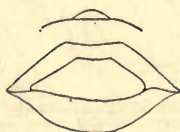
w: w in wet.



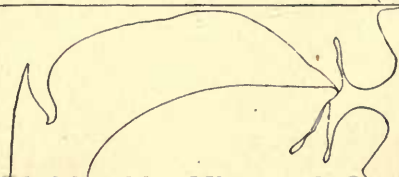
y: y in yet.



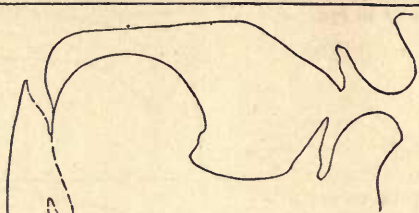
ʃ: sh in shut.



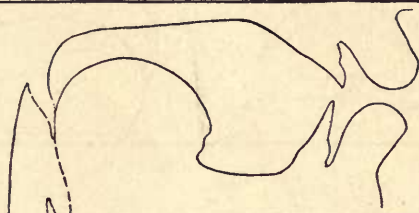
θ: th in thin.



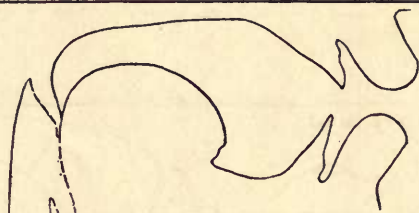
ū : u in *mut*.



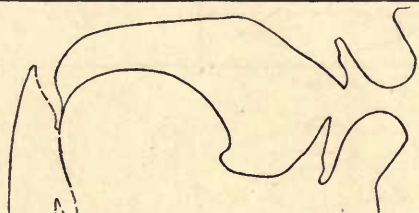
Û : u in *mutter*.



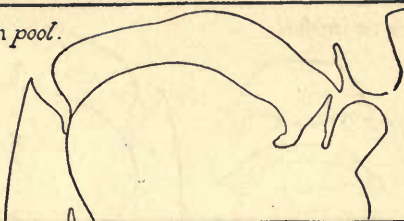
ō : o in *sohn*.



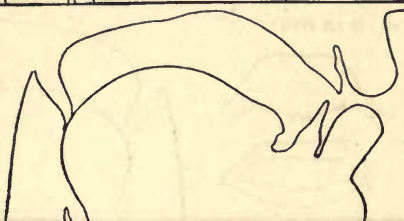
ö : o in *sonne*.



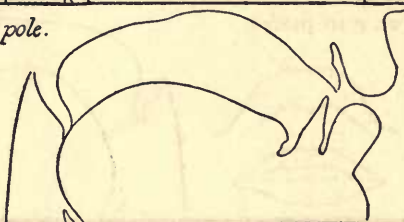
ú : latter part of oo in *pool*.



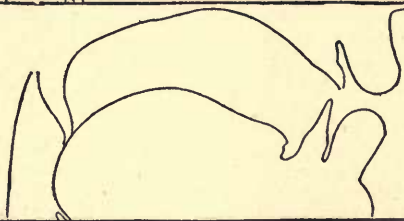
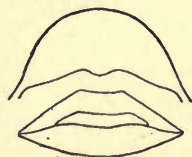
u : u in *pull*.



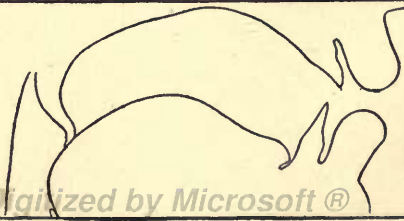
ó : latter part of o in *pole*.



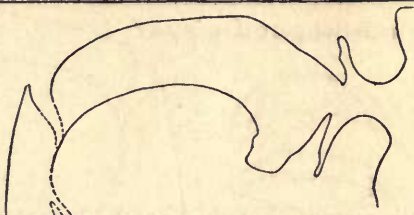
o : o in *port*.



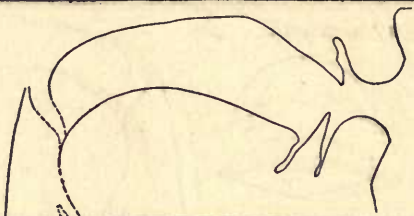
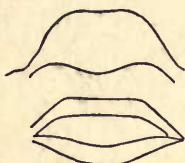
ó : a in *pall*.



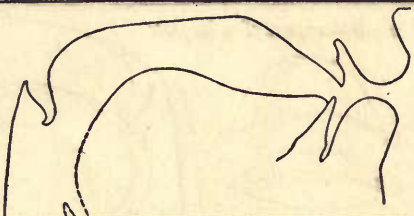
a : a in *mal*.



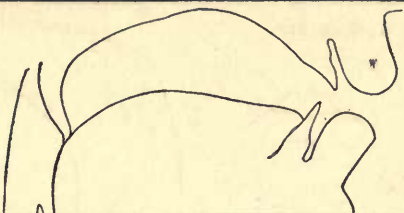
ä ; a in *mai*.



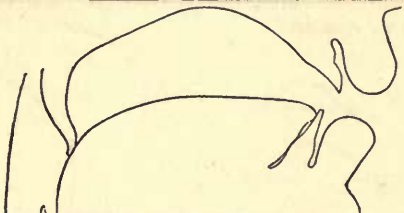
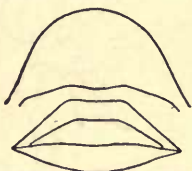
ø : e in *male*.



ɔ : o in *hot*.



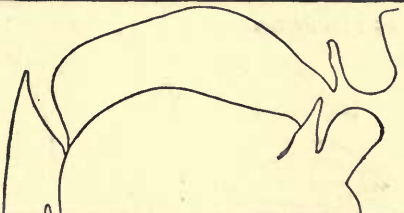
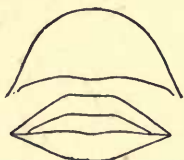
ā : a in *hart*.



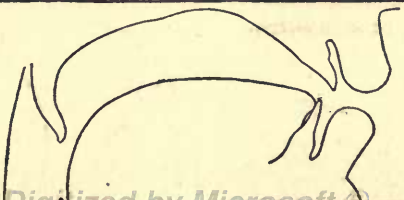
œ : u in *hurt*.



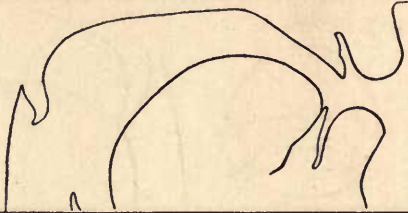
á : u in *hut*.



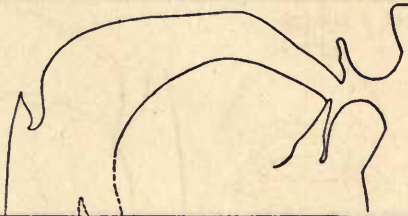
ə : e in *hotter*.



ä : ä in *bär*.



e : e in *bett*.



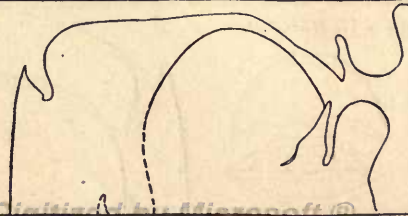
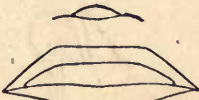
ē : e in *beten*

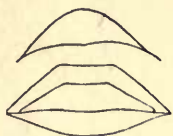
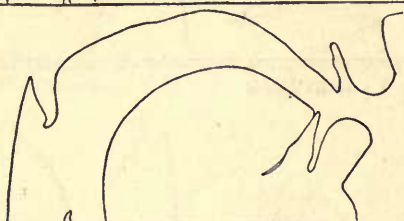
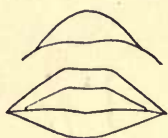
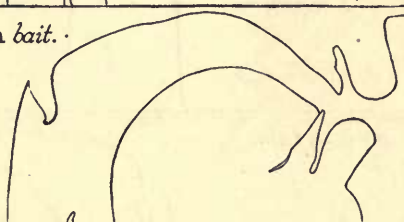
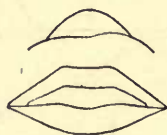
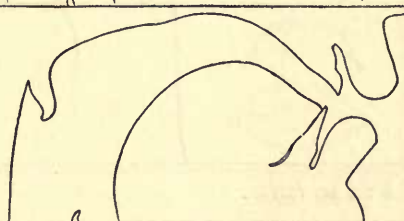
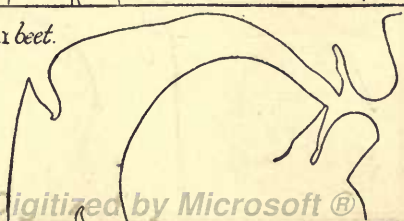


i : i in *bitten*.

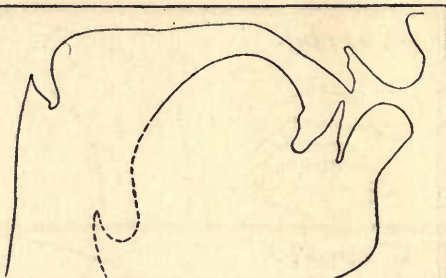
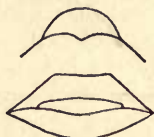


ī : ie in *biechen*.

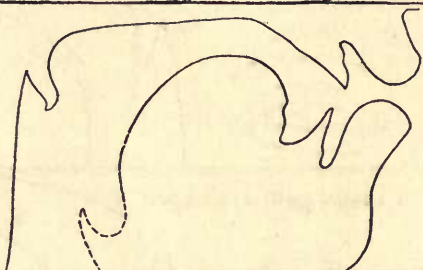
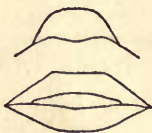


æ : a in *bat*.e : e in *bet*.é : latter part of *ai* in *bait*.i : i in *bit*.í : latter part of *ee* in *beet*.

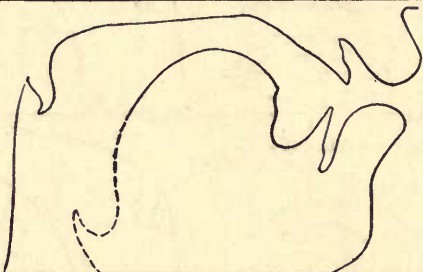
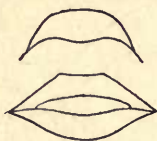
ü : ü in *hüte*.



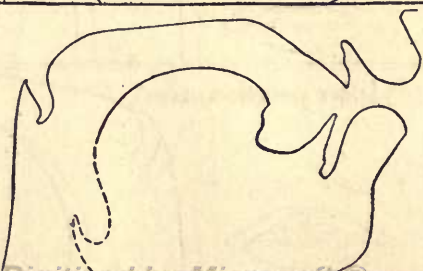
ï : ü in *hütte*.



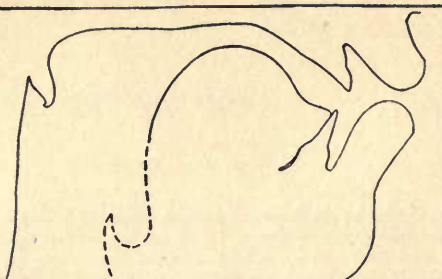
ö : ö in *höhle*.



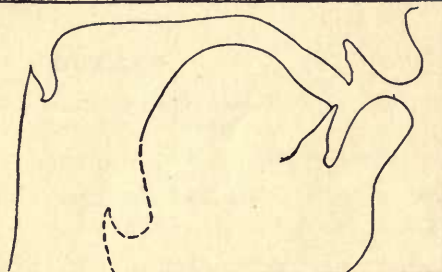
ë : ö in *hölle*.



ü : ü in *hüte*.



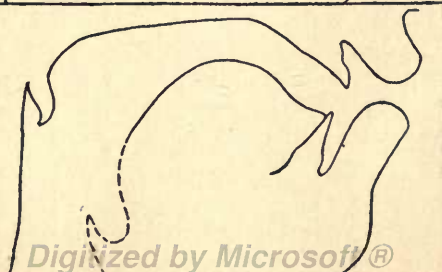
ï : ü in *hütte*.

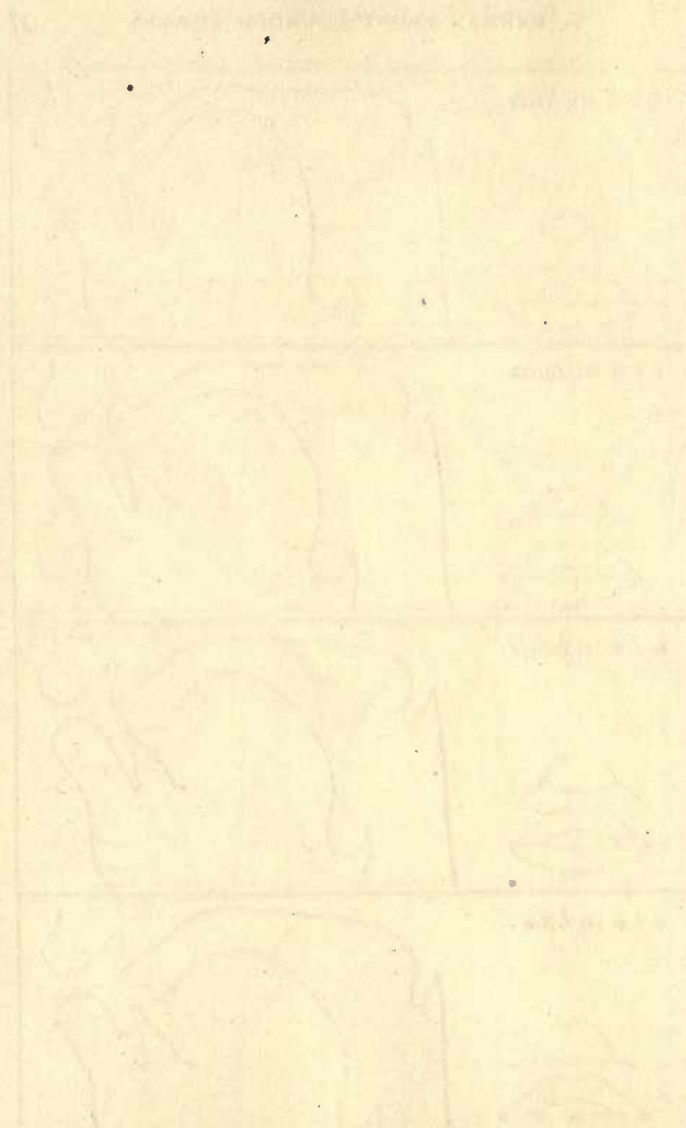


ö : ö in *höhle*.



ë : ö in *hölle*.





INDEX OF SOUNDS.

NOTE. — The numbers refer to pages. None of the diacritics employed are intended to denote quantity; the diæresis and the "long" and "short" marks are used only with German sounds, while the acute, grave, and circumflex accents are confined to English vowels. Consonants indicated by small capitals are produced further back than the sounds represented by the corresponding lower case letters.

GERMAN.

[*Dr.* = Drawing, *Des.* = Description, *Lar.* = Larynx, *Tab.* = Table, *Qu.* = Quantity,
Acc. = Accent, *Dial.* = Dialects.]

Sounds.	Dr.	Des.	Lar.	Tab.	Qu.	Acc.	Use.	Dial.
a (<i>a</i> in <i>habe</i>)	32	26	24	11	3-4	20	11	11
aü (<i>au</i> in <i>haus</i>)		11			3		11	
ã (<i>a</i> in <i>mai</i>)	32	26		11	3-4		11	
äi (<i>ei</i> in <i>eis</i>)		11			3		11	
ä (<i>ä</i> in <i>bär</i>)	34	26-27	24	11	3-4		11	12
e (<i>e</i> in <i>habe</i>)	32	26		11	3		9, 11	12
b (<i>b</i> in <i>bat</i>)				6	2-3		8	10
c (glottal stop)		6-7					6-7, 20	
ç (<i>ch</i> in <i>ich</i>)	28	25		6			7, 8	7, 10
d (<i>d</i> in <i>da</i>)		7		6	2-3		8	8, 10
e (<i>e</i> in <i>bett</i>)	34	26-27		11	3-4	20	11	
ē (<i>e</i> in <i>beten</i>)	34	26-27	24	11	3-4	20	11	12
ë (<i>ö</i> in <i>können</i>)	36, 37	27		11	3-4		11	12
f (<i>v</i> in <i>viel</i>)		8		6	2-3			8
g (<i>g</i> in <i>gift</i>)		7		6	2-3		7, 8	10
o (<i>g</i> in <i>gut</i>)		7		6	2-3		7, 8	10

Sounds.	Dr.	Des.	Lar.	Tab.	Qu.	Acc.	Use.	Dial.
h (<i>h</i> in <i>habe</i>)				6				
i (<i>i</i> in <i>bitte</i>)	34	26-27		11	3-4	20	11	
ī (<i>ie</i> in <i>biēten</i>)	34	26-27	24	11	3-4	20	11	
ī (<i>ü</i> in <i>hütte</i>)	36, 37	27		11	3-4		11	12
j (<i>g</i> in <i>biegen</i>)	28	7, 25					7	7
k (<i>k</i> in <i>kinn</i>)		7		6	2-3		7	10
κ (<i>k</i> in <i>kunst</i>)		7		6	2-3		7	10
l (<i>l</i> in <i>lob</i>)		7		6	2-3		20	7
m (<i>m</i> in <i>musz</i>)				6	2-3		20	20
n (<i>n</i> in <i>nun</i>)		7		6	2-3		8, 20	7
ŋ (<i>ng</i> in <i>singen</i>)				6			8-9, 20	8-9, 20
ō (<i>oh</i> in <i>sohn</i>)	30	26	24	11	3-4	20	11	12
ö (<i>o</i> in <i>sonne</i>)	30	26		11	3-4	20	11	12
öi (<i>eu</i> in <i>heute</i>)		11			3		11	12
ö (<i>ö</i> in <i>hören</i>)	36, 37	27	24	11	3-4	20	11	12
p (<i>p</i> in <i>papst</i>)				6	2-3		8, 20	10
q (<i>g</i> in <i>wagen</i>)	28	7, 25					7	7
r (<i>r</i> in <i>rot</i>)	28	7, 25		6	2-3		9	7-8, 9, 10
s (<i>s</i> in <i>see</i>)	28	25		6	2-3		9-10	8, 9-10
š (<i>sch</i> in <i>schön</i>)	28	25		6			10	10
t (<i>t</i> in <i>tag</i>)		7		6	2-3		8	10
ū (<i>u</i> in <i>gut</i>)	30	26	24	11	3-4	20	11	12
ü (<i>u</i> in <i>mutter</i>)	30	26		11	3-4	20	11	12
ü (<i>ü</i> in <i>hüten</i>)	36, 37	27	24	11	3-4	20	11	12
u (<i>w</i> in <i>wo</i>)		8, 10			2-3		8, 10	8, 10
v (<i>w</i> in <i>wo</i>)		8		6	2-3			8
x (<i>ch</i> in <i>ach</i>)	28	25		6			7, 8	7, 10
ȳ (<i>j</i> in <i>ja</i>)	28	25		6	2-3			10
z (<i>s</i> in <i>rose</i>)	28	25		6	2-3		9-10	8, 9-10
ž (<i>g</i> in <i>page</i>)	28	25		6	2-3			10

ENGLISH.

[*Dr.* = Drawing, *Des.* = Description, *Tab.* = Table, *Qu.* = Quantity, *Acc.* = Accent, *Com.* = Combinations, *Dial.* = Dialects.]

Sounds.	Dr.	Des.	Tab.	Qu.	Acc.	Use.	Com.	Dial.
á (<i>u</i> in <i>hut</i>)	33	26	12	5	22	13		15
â ¹ (<i>a</i> in <i>hard</i>)	-	15			22			15
â ¹ (<i>a</i> in <i>hard</i>)	33	26	12	5	22	13		15
âi (<i>i</i> in <i>hide</i>)		14		5, 14	22	13		15, 19
âu (<i>ou</i> in <i>loud</i>)		14		5, 14	22	13		15, 19
æ (<i>a</i> in <i>hat</i>)	35	26-27	12	5	22	13		15
æ (<i>a</i> in <i>fast</i>)		13	12	5	22	13		15-16
b (<i>b</i> in <i>bat</i>)			6	4				
d (<i>d</i> in <i>dam</i>)		7	6	4			21, 22	
ð (<i>th</i> in <i>then</i>)	29	26	6	4				
e (<i>e</i> in <i>bet</i>)	35	26-27	12	5	22	13		14, 16
é (last part of ê)	35	26-27	12			13		
è (first part of ê)		14, 26-27	12	5, 13	22	13-14		14, 19
ê (<i>a</i> in <i>hate</i>)		12, 13-14		5, 13	22	12		14, 16, 19
ê (<i>ai</i> in <i>fairly</i>)		14, 26-27	12	5		14		14, 19
o (<i>a</i> in <i>soda</i>)	33	26	12	5	22	13, 22		16
f (<i>f</i> in <i>fat</i>)		8	6	4				
g (<i>g</i> in <i>geese</i>)		7	6	4		7		
g (<i>g</i> in <i>goose</i>)		7	6	4		7		
h (<i>h</i> in <i>hat</i>)			6	4		8	10	8
i (<i>i</i> in <i>hit</i>)	35	26-27	12	5	22	13		14, 16
í (last part of ð)	35	26-27	12			13		
l (first part of ð)		14, 26-27	12	5, 13	22	13-14		14, 19
l (<i>ea</i> in <i>heat</i>)		12, 13-14		5, 13	22	12		14, 16, 19
k (<i>k</i> in <i>keep</i>)		7	6	4		7		

¹ â is Sweet's vowel (mid-back-wide), â is mine (low-mixed?).

Sounds.	Dr.	Des.	Tab.	Qu.	Acc.	Use.	Com.	Dial.
κ (<i>c</i> in <i>coop</i>)		7	6	4		7		
L (<i>l</i> in <i>let</i>)		7	6	4		21		
m (<i>m</i> in <i>met</i>)			6	4				
N (<i>n</i> in <i>net</i>)		7	6	4		21		
ŋ (<i>ng</i> in <i>hang</i>)			6	4		8-9		
o (<i>o</i> in <i>boa</i>)	31	26	12	5	22	13		14, 19
oi (<i>oy</i> in <i>boy</i>)		14		5, 14	22	13		16
ó (last part of ô)	31	26	12			13		
ò (first part of ô)		14, 26	12	5, 13	22	13-14		14, 19
ô (<i>oa</i> in <i>oak</i>)		12, 13-14		5, 13	22	12		14, 16, 19
o (<i>o</i> in <i>hot</i>)	33	26	12	5	22	13		16-17
o (<i>o</i> in <i>whole</i> ¹)		16		5, 16	22	16, 19		16, 19
o (<i>au</i> in <i>haul</i>)	31	26	12	5	22	13, 14		14, 16, 17, 19
œ (<i>u</i> in <i>hurt</i>)	33	26	12	5	22	13		17, 19
p (<i>p</i> in <i>pet</i>)			6	4				
r ² (<i>r</i> in <i>red</i>)	29	7, 25	6	4		9, 21, 22	21	7, 9, 17, 22
s (<i>s</i> in <i>set</i>)	28	8, 25	6	4			21	8
ʃ (<i>sh</i> in <i>shed</i>)	29	8, 25-26	6	4				8
t (<i>t</i> in <i>tin</i>)		7	6	4			21, 22	
θ (<i>th</i> in <i>thin</i>)	29	26	6	4				
u (<i>u</i> in <i>pull</i>)	31	26	12	5	22	13, 14		14, 17-18, 19
ú (last part of û)	31	26	12			13		
û (first part of û)		14, 26	12	5, 13	22	13-14		14, 19
û (<i>oo</i> in <i>boot</i>)		12, 13-14		5, 13	22	12		14, 17-18, 19
v ³ (<i>v</i> in <i>vain</i>)		8	6	4				
w (<i>w</i> in <i>we</i>)	29	25	6	4		10		10
w (<i>wh</i> in <i>when</i>)	29	25	6	4		10	10	10
y (<i>y</i> in <i>yet</i>)	29	25	6	4			21	11
z ³ (<i>s</i> in <i>rose</i>)	28	8, 25	6	4			21	
ʒ ³ (<i>si</i> in <i>vision</i>)	29	8, 25-26	6	4				

¹ New England dialect.² For the effect of r on vowels, see pages 14, 15, 16, 17, 18, 19.³ For whispered v, z, ʒ, see page 8.

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