and therefore before the voice can imitate them at all satisfactorily. Hence the best phonetists differ. It may certainly be considered impossible from a knowledge of a few languages to construct an alphabet which will serve for all. Nevertheless a consideration of some partial schemes is of great value as a stepping-stone. We give Mr Melville Bell’s vowel system and Mr Henry Sweet’s alteration of Mr M. Bell’s consonant system, both sup­posed to be universal, but neither properly appreciating Asiatic, African, and American-Indian languages and habits of speech. After these follows a modification of a confessedly partial system by the present writer, applying chiefly to English, German, Italian, Spanish, and French, with a few partly theoretical sounds, introduced to show connexions. In all these the sounds will be expressed by palaeotype symbols without any explanation in the tables themselves, because that is furnished at better length than would there be possible in the alphabetical list of art. 20.

17. *Mr Melville Bell's “ Visible Speech" Vowels.—*These are arranged primarily according to the height of tlie tongue, which is supposed to be divided into “back ” and “ front ” or central part, beyond which lies the “point.” The heights refer first to the “back” and lastly to the “front,” and between them lie the “mixed,” for which both back and front are more raised than the “front,” so that there is generally a hollow between them. Each set is then divided into “narrow” and “wide,” the precise meaning of which, as stated in art. 4, is not settled. Finally come the “rounded” vowels, there being three degrees of rounding,—one for “high,” one for “mid,” and one for “low” tongue. For convenience here the back, the mixed, and the front are formed into separate groups, and all the vowel signs are numbered, being referred to in the following lists by V and the number, thus V4 is (*u*), which in Mr Bell’s nomencla­ture would be called “high-back wide-round.” The letters *n, w, nr, wr* at the heads of columns mean “ narrow, wide, narrow-round, wide-round.”

Mr. *Melville Bell's “Visible Speech" Vowel Table.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tongue  Height. | Tongue Back. | | | | Mixed. | | | | Tongue Front. | | | |
| *n.* | *w.* | *nr.* | *wr.* | *n.* | *u.* | *nr.* | *wr.* | *n.* | *w.* | *nr.* | *wr.* |
| High.. | 1 *œ* | 2 ɐ | 3 u | 4 *u* | 13 Y | 14 *y* | 15 U | 16 *u*h | 25 i | 26 *i* | 27 I | 28 y |
| Mid .. | 5 Ǝ | 6 a | 7 *ο* | 8 o | 17 ǝ | 18 ah | 19 *o*h | 20 oh | 29 *e* | 30 e | 31 ǝ | 32 œ |
| Low .. | 9 Œ | 10 *a* | ll A | 12 ɔ | 21 ǝh | 22 oe | 23 *a*h | 24 ɔh | 33 E | 34 æ | 35 ǝh | 36 æh |

These positions being insufficient, although supposed to be pre­cisely known, may be “modified” by raising the tongue more (a1) or lowering it more (a1), or bringing it nearer the teeth (a) or nearer the throat (a,). And, even this not sufficing, Mr Sweet has contrived a number of new modifiers, here passed over. And with all this none of the sounds can be produced purely through any position without an effort of will dependent on a conception of the sound. The characteristic of the vowel notation contrived by Mr Bell is that each sign shows at once the position of the sound in the Table. 18. Mr. *Henry Sweet’s “Sound Notation" Consonant Table.*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | α.  Tongue  Back. | *b*.  Tongue  Front. | *c*.  Tongue  Point. | d.  Point  Teeth. | *e.*  Blade. | *f*.  Blade  Point. | *g*∙  Lips. | *h*.  Lip  Back. | *i*.  Lip  Teeth. |
| 1. Open .. | kh | Jh | Voiceless Consonants roh th | | s | sh | ph | wh | f |
| 2. Divided | *l*h | lɟh | lh | lh |  |  | ph1 |  |  |
| 3. Shut .. | k | kɟ | t | t |  |  | p |  |  |
| 4. Nasal.. | qh | qɟh | nh | nh |  |  | mh |  |  |
| 5. Open .. | gh  *I* | J | Voiced C  ro | onsona  dh | nts.  z | zh | bh | w | V |
| 6. Divided | lɟ | 1 | l |  |  | bb1 |  |  |
| 7. Shut .. | g | gɟ | d | d |  |  | b |  |  |
| 8. Nasal.. | q | qɟ | n | n |  |  | m |  |  |

These signs will be referred to as S 8 *c*, or Sweet, line 8, col c, giving (n). The consonants are modified in a similar manner to the vowels. Columns *a, b, c* indicate straits or contacts between the palate and the parts of the tongue named. By the “blade ” is meant the part of the tongue between the “front” and the “point.” Mr Sweet’s substitutes for glottids and physems, and his and Mi- Bell’s notation of glides are omitted for brevity. Their notation throughout is entirely different from that here used.

19. A. J. Ellis’s partial schemes, modified from his *Speech in Song.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *Vowel Trigram.* | | | | | | | |
| 1 i | 2 *i* | 3 e | 4 e | 5 E | 6 æ | 7 ah |  |
|  | 16 y | 17 ǝ | 18 œ | 19 ɐ | 20 ǝ | 21 Ǝ | 8 = 22 a |
| 15 u | 14 *u* | 13 *o* | 12 o | 11 ɔ | 10 A | 9 *a* |  |

The meaning of this arrangement is that, if we pronounce the vowels in the order of the numbers, they will form a sufficiently unbroken series of qualities of tone, or, if each line be so pronounced leading to 8 = 22 a, three series of the same kind are produced, and also that the speaker feels that the vowels in the middle line lie “between” the vowels in the first and third lines between which they are written. These intermediate characters refer only to qualities of tone and not to the vowel positions, as they apparently did in the older “vowel triangles” from which the trigram is adapted. The arrangement of Mr Bell is excellent for showing the relations of the positions, but gives no more clue to the relations of sound than the indispensable ratios 1 : 2, 2 : 3, 3 : 4, 4 : 5, 5 : 6 give to the musical sensations of the intervals known as the octave, fifth, fourth, major third, and minor third. Hence the advantage of this additional arrangement. It will be referred to as T 6, that is, trigram, vowel 6, or (œ).

*Consonant Table.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 12 | | 13 |
|  |  |  | I. | |  | II. |  |  | III. | |  |  | IV. | |
|  | Contacts | Tongue Back and | | | Tongue Front and | | | Tongue Point | | | |  | Lips | |
| 1 |  |  |  |  |  |  |  |  | *s* |  |  |  |  |
| or |
| cβ | Straits |  |  |  |  |  |  | ⅛3 |  |  |  |  |  |
|  | formed | Uvula | Soft Palate amd Lips |  | ⅝∙2 | G  O |  | ι∙5 |  | o |  | α>  <υ | 4J |  |
|  | by |  |  |  | !» |  |  | 4-3 Cw | Direct wit |  | t→ |  | G |
|  |  |  |  | Soft  Ol |  | Palal | G cβ o \* | Re∖  with | 2 (⅛ Ω | Direc  Te | with |  | s |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ORAL.  Contacts. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| i | Mute .. | κ | kw | k | kj | Ki | ti | τ | t | lt |  | P | Pi | p |
| fi | Sonant.. Straits. | G | gw | g | gj | gl | dj | D | d r0 | 1d |  | B | ½ | b |
|  | *Fixed.* |  |  |  |  |  |  |  |  |  |  |  |  |  |
| in | Flated .. |  | kwh kh | | kjh | jh | sj | sh | shj | s vs | th, th | ***t*** | ph | wh |
| iv | voiced .. |  | κwh gh *r„* | | gjh | J | ⅞i | zh Ro | zhj | z .z | dh, dh | V | bh | w |
|  | *Flaps.*  *Central.* |  |  |  |  |  |  |  |  |  |  |  |  |
|  |
| V | Flated .. |  |  | krh rh |  |  |  | • · | rh |  |  |  |  | prh  brh |
| vi | voiced .. *Lateral.* |  | *rw* | grh *r* |  |  |  | R | r | κr |  |  | κ |
|  |
| vfi | Flated .. |  |  |  |  |  |  | Lħ | lh ISh | lh |  |  |  |  |
| viii | voiced .. |  |  |  |  |  | ΰ | L | 1 is | ,1 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | NASAL. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ix | Flated .. |  |  | qh  q |  |  |  |  | nh |  |  |  |  | ιnh |
| X | voiced .. |  |  | qj | qj | nj | N | n | kn |  |  |  | m |
|  |  |  |  |  |  |  |  |  |

This table will be referred to as C iv 7, or consonant table, class iv, column 7 = (zh). The glottids and physems are sufficiently explained in art. 5, and are here omitted.

20. *A lphabetical List and Explanation of the Palaeotype Symbols. —* Small letters, italics, small capitals, and the forms resulting from turning them must be sought under the large capital of the same class, where the order of all the letters is specified. Explanations are greatly condensed and often confined to references to the preced­ing articles and tables, or to an example. The notation for differ­ences of length is explained in art. 6.

Abbreviations.

ar. Arabic.

B. Melville Bell.

C. A. J. Ellis’s consonant

table (art. 19).

dn Danish.

E. A. J. Ellis.

e. English.

f. French.

g. German.

it. Italian.

LLB. Prince Louis - Lucien

Bonaparte.

ls. Lowland Scotch.

mg. Modern Greek, occ. occasionally.

pl. Polish.

pr. Portuguese.

S. Sweet’s consonants

(art. 18).

sn. Sanskrit. sp. Spanish.

St. Storm.

Sv. Sievers.

Sw. Sweet. swd. Swedish.

T. A. J. Ellis’s vowel

trigram (art. 19).

V. Bell’s visible speech

vowels (art. 17).

A. (a ah a'i a'u aΛ a'y, a1, *a* *a*h, ɐ, ).

(a) V 6, T 8 = T 22, short G m*a*nn, long e f*a*ther, art. 6.

(ah) V 18, T7, occ. e p*a*ss, p*a*th.

(a'i) art. 7 i, unanalysed diphthong, e *eye,* g *ei.*

(a'u) art. 7 ii, unanalysed diphthong, E h*ow*, G b*au*.

(ax) art. ll, f v*en*t, a conventional form.

(a'y) art. 7 iii, unanalysed g fr*eu*de, often (ɔ'i).

(a1) or (a) with higher tongue, it and f short *a*, nearly=(ah).

(a) V 10, T 9. B. hears it in e f*a*ther, *a*rms, *a*lms ; E. does not.

Sw. and E. hear it in ls f*a*ther, E. and LLB. in f di*a*ble, E. in f p*â*te, p*a*s.

(ah) V 23. B. says (a) with advanced tongue = (a), (a) on the road to (a).

(a) Vll, T10, short open in e authority, long closed e *aw*l, almost peculiarly e.