

we look among the *Vertebrata*, or among the *Articulata*, or the *Mollusca*, or the *Radiata*, it can be shown by evidence derived from palæontology and geology, that the older are, as it were, the embryonic forms of those which live in our days; that, for instance, the first *Crustacea* which existed, resembled images, grown to full size, of the first stages of development which we observe in the egg of our lobsters or crabs; that the earliest starfishes which existed, were the living representatives of the earliest microscopic forms which we observe in our starfishes when they are forming within the egg. The egg or reproductive cell is, therefore, in every point of view, morphologically, anatomically, embryologically, or geologically, the organic unit of the animal kingdom.

But in the succession of organized beings we find such a progress, that tracing all these relations we arrive at man as the last. He is by his structure the highest. He is in the order of succession the last. And as we have traced all these different connections with reference to the plan laid out at the beginning, at what conclusion do we arrive in the most direct manner? It is that the creation of man was the aim of the plan from the beginning. And in a higher view, and without any reference to utilitarian considerations, we may say that this world has been made for man; for man was the object which the Creator had in view when he framed the plan for the development of this globe. And if this be the case, let us never forget what a responsibility it throws upon us, to be the object of such a development, and the close of such a magnificent construction as that which we have before our eyes every day; and let that be the fullest evidence that man was created in the image of his God.

ON SOME POINTS OF LINGUISTIC ETHNOLOGY: WITH ILLUSTRATIONS, CHIEFLY FROM THE ABORIGINAL LANGUAGES OF AMERICA. BY PROF. S. S. HALDEMAN, A. M.

THE classification of the elements is of great importance in the study of language, and I am convinced that a distribution of the consonants into *contacts*, as proposed in a rude way by the Abbé Sicard, is the only proper mode. These are essentially five, the labial, dental, palatal, guttural, and glottal. There are, however, some intermediate ones, or sub-contacts, which raise the number to *ten*, each

containing in general eight consonants, but as this number *may* be doubled, the entire number of consonants, in case all the blanks were filled, would amount to 160, or even to 200, if the cerebral and trilled varieties were included.

The latest work on the sounds employed in speech is, The Essentials of Phonetics, by A. J. Ellis, A. B., founded upon researches in the chief languages of Europe, which, although prepared with judgment, is clothed in an alphabet full of corruptions; primarily adapted to English alone, and being intended to replace the ordinary one, the most unjustifiable concessions were made to the present spelling of English. The common sense of Europe, Polynesia, Africa, and a great part of America, as well as those to whom these literary husks are offered, if made acquainted with the merits of the case, would reject them. And yet uniformity is to be found somewhere, because the Sandwich Islander spells the name of one of his islands *Mau*, and an English or American missionary, a Spaniard, Portuguese, Italian, German, Choctaw, or African Mandingo, would do the same. The excuse that the power of the Latin alphabet is "uncertain," (p. 222) is neutralized by his own opinion that the Latin vowel characters had their Italian and German alphabetic power, and we find an English author making an adjective HIBERIANA out of the English name *Heber*; and a German HEBERNUS out of the German name *Hueber*. Mr. Ellis cites the forms MAXIMUS and MAXXUMUS to prove that U had "undoubtedly several sounds in Latin." He should have informed his unclassical readers that in these words, according to the ancient grammarians, the I and U had *not* their *true power*, but an allied one for which Claudius proposed a special character.

There is a gradual deterioration in the various alphabets of Mr. Ellis, the last being the worst. The analogy between the vowels in *meal mill*; *dale dell*; was recognized in 1844, but now, the last words are spelt "dal;" "del;" and A, made for the sound in *far*, is perverted to the rare Welsh vowel in *far*. Having reached its lowest point of deterioration, this alphabet is "brought to a satisfactory conclusion," and fault is found with those who will not adopt what are facetiously termed the "improvements." Yet his alphabet is still imperfect, his ideas of the open and close vowels being very confused. He does not properly distinguish the vowels in *pan, fan, pool, lo*, from those in *nough, worth, fall, obey*, and sacrifices much to phonography (which has nothing to do with the printing of speech) leaving phonography itself imperfect, as it cannot represent the Eng-

lish *wh* as employed in some languages before a consonant, as in the Delaware *wh-lee*; or the German *j* (English *y*) when *glauden* takes the dialectic form *glauhn*. Mr. Ellis places the vowel of *fall* in *water*, *alko*, *short*, *cross*; and that in *not*, in *quarter*, *god*, *hog*, *horse*, *gross*. The inconsistency is obvious which demands a *different* vowel in *for* and *not*; and an identical one in *far*, *nut*; a different one in *conclude* and *good*, but the same one in *endure*, *duty*, or (theoretically) in *coil*, *quail*.

Labial consonants are rare in some of the American languages, the Cherokee having only *w* and *m*. The so-called whistle in Lenape is merely English *wh* preceding a consonant, as in *wh-lee*. No one has hitherto analyzed this sound, or any of the allied ones, which follow a law not yet announced; namely, that a whispered aspirate has a tendency to be followed by the same sound in a vocal and ordinary condition. The English word *when* is therefore *wh-w-e-n*; the sneering exclamation written *h'm* is (using a notation allied to the English) *mh-m*; the Welsh aspirate *l* is both *lh-l* and *lh*; so that Mr. Ellis has failed to hear an ordinary *l*. *N* takes the same phase in Cherokee, which has also an aspirate of the German *J*.

I have found whispered vowels, and even syllables, not uncommon in several American languages, as in the two final syllables of the Camanche word for *ten*, *SEWAWUHUT*, the first vowel as in *send*, but nasal.

The Wyandot language has many nasals, as in the word for *bear*, which in German characters (letting Italian *n* follow the nasal letters) is *DANKNOMMEN*—, affording an example of a nasal liquid. The character > indicates a close of the glottis, which also occurs medial, as in my name in this language—*HAKBA*>*AREMAN*, the last syllable being nasal.

The Weko (Wako) has a medial or final clack or smack formed by the sudden separation of the closed fauces, independent of any action of the lungs, as in the word for *eye*—*kihly*. The Nadako has an allied independent dental sound, which is more dull and less loud than the corresponding Hottentot clack.

In French, the nature of syllables is better understood than in German or English. The English word *luck* is properly a dissyllable, but I have heard it as a monosyllable (meaning *six*) in Chinese (luck³), where it is pronounced without opening the organs at the close, for the escape of a faint aspirate. The same thing takes place with *p* and *t*.

Prof. HALDEMAN illustrated the above paper by examples from Indian and other languages containing the various glottals, clacks, and whispered syllables, to the great amusement of the audience.

Adjourned.

W. I. BURNETT, *Secretary.*

Seventh Day, August 21, 1849.

AFTERNOON GENERAL SESSION.

ON RUTILATED QUARTZ CRYSTALS FROM VERMONT, AND PHENOMENA CONNECTED WITH THEM. BY FRANCIS ALGER.

Mr. ALGER presented a paper on the quartz crystals from Waterbury, Vermont, containing acicular or capillary Rutile, and exhibited illustrative specimens of great perfection and beauty. He compared them with other specimens from the Alps and Brazil, and pointed out some important phenomena in which they differed from those, and all other rock crystals he had ever seen.

Erratic masses of rutilated quartz had, from time to time, been found in Waterbury, and several of the neighboring towns, and they had even been picked up in New Hampshire; but their geological association, or the character of the rock from which they originated, had not been well understood until recently. Mr. Alger had lately visited a remarkable locality of this mineral, where a true vein, two feet or more in width, had been brought to light in making a deep cut through a hill in Waterbury, on the line of the Vermont Central Railroad. The rock is a very tenacious talcose slate, sometimes passing into mica slate, and prevails to a great extent in this part of Vermont. Metaliferous minerals are rarely contained in it, but veins of quartz are common. The vein here referred to, consisted principally of common amorphous quartz, presenting internal cavities or druses, lined or studded with projecting prismatic crystals, sometimes colorless and transparent, but more frequently of a smoky color, or brownish yellow tint, (Caringorm.) The pure glassy white crystals, are but rarely penetrated by the acicular rutile, while the colored varieties abound with it, and seem in fact to owe the intensity of their color to the very prevalence of it through their substance.

The rutile is sometimes grouped in tufts of radiating crystals, proceeding from a common point, and shooting through the quartz; this being also the ordinary manner of its occurrence in the Brazilian specimens. The direction of many of these diffused crystals in the position they now occupy, would seem to show that they had been