

nature cannot stand alone, like *ἀμείβετο δὲα θεδωρ, προσέφη κολύμπτρις Ὀβυρετός*, we have a corrected result as follows : 179 feminine tags, occurring 1475 times; in Iliad 871, in Odyssey 604. 47 masculine tags, occurring 376 times; in Iliad 211, in Odyssey 165. The count is accurate enough, however, to show a decided preference for tags to follow the feminine caesura; and since many of these conventional clauses were clearly part of the poet's inheritance from previous generations of bards, we may infer that the feminine or trochaic caesura not only was preferred by Homer, but was also an important characteristic of the earliest Greek hexameter. Nonnus was following in the main Homeric precedent when he established a norm of abundant dactyls and feminine caesuras.

The tags to follow the hephthemimeral caesura alone (i. e. which do not extend to the caesura of the third foot) are not numerous or important. The tags to follow the bucolic diaeresis are so numerous and so oft repeated as to settle all doubts as to the importance of that pause.

Remarks were made upon the paper by Professors A. C. Merriam, W. D. Whitney, W. W. Goodwin, C. R. Lanman, M. L. D'Ooge, and L. S. Potwin, and in reply by Professor Seymour.

Professor Goodwin withdrawing, the chair was taken by one of the Vice-Presidents, Professor A. C. Merriam.

20. Critical Miscellany [Eur. Suppl. 1049; Herod. viii. 124; Dem. c. Dem. 28, and c. Aristog. 15; Thuc. i. 50. 1, and ii. 37. 1; Plutarch. Vit. Lycourg. 13. 5; Xen. Anab. several passages], by E. G. Sihler, Ph. D., of New York, N. Y.

Eur. Suppl. 1049, read *ἕπεε πῶσ' ἤλυθες* for the MSS. *ἕπερῶσ' ἤλυθες*.

Herodotus viii. 124, insert *ἀποβραδύτης*, reading *ἀποστῆλια μέν νυν κῆοσσαν ἀποβραδύτης Εὐβοιάδην ἔλαβης στέφανον*

Dinarchus c. Dem. 28, *μυθῶντος οὐτος, δ' Ἀθηναῖοι, μισθῶντος οὐτός ἐστι*: bracket second οὐτος. — c. Aristog. 15 read *ταυούτων* for the MSS. *τοῖς ταούτων*: after *ὅς ἀγέδην μέν ὑμᾶς περιόηκεν οὐδὲ πάποτε*, add *οὐδὲν*.

Thuc. i. 50. 1, read *πρὸς δὲ τὸ τοῖς ἀποβῶμονος ἐπράουτρο φουεῦται*, inserting *τὸ*. — i. 37. 1, read *ἤκειν* for *οἰκεῖν*.

Plutarch Vit. Lyc. 13. 5. remove *πῶλλακας* from its position before *ἀμύβεσθαι*, and let it precede *ἐπὶ τοῖς αἰῶνος παλαιούσι*.

Xen. Anab. i. 1. 8, *ὧν Τιτασάφῃουσι ἐτ' ὄγχαυε* defended. — i. 4. 15, bracket *ἀόνοσι περιθούσι*. — i. 5. 11, read *τῶν τε Μένωνος του σπαρτιούτων*, with Hertzlein. — i. 8. 15, *πράδασ* of A B C to be preferred. — i. 8. 16, bracket *Κλέαρχος*. — ii. 6. 29, bracket *σπαρτιούτων*. — iii. 2. 10, read *πᾶρὰ τοῖς ἕπουσι λαλῶσσι*. — iii. 2. 26, read *τοῖς νῦν σκαλῶπῶσι ἐκείνῳι σπυρεῶντας . . . παυούσις ὄναυ*. — iv. 4. 14, read *ὑπὸ ἀναβαλάσ*. — Following are believed to be original emendations: i. 9. 8, *αἰ πῶλλας αἰ ἐπὶ σπῆλαιναυ*. — i. 9. 10, *ὄρι οὐκ ἔν ποτε φ λαοὺς προσῶτρο*. — i. 10. 10, *δῶσπερ ὄτε τὸ πῶθων*. — iii. 2. 34, either *ἀκούσασθ' ὧν προσεῖν μοι δοκεῖ*, or *προσεῖν μοι δοκεῖ μοι*. — iv. 6. 13, *μένοισιν γὰρ ἔν αἰτροῖν*.

21. On the Affinity of the Cherokee to the Iroquois Dialects, by Albert S. Gatschet, Esq., of the United States Bureau of Ethnology,

Smithsonian Institution, Washington, D. C.: read by Professor C. R. Lanman, of Harvard College, Cambridge, Mass.

THE LANGUAGES OF THE CHEROKI AND IROQUOIS RELATED TO EACH OTHER.

To trace racial kinship through the affinity of language has always been a favorite mode of investigation with ethnologists. The proof of racial affinity hereby furnished is not absolutely sure and incontrovertible; but it is infinitely more safe than the one resting on similarity or identity of legal institutions, customs, or religious ideas, all of which are of a comparatively late origin. Frequently the linguistic material available is of a precarious quality, intensively and extensively, and this is the chief hindrance impeding progress in this line of research; for American languages, reliable dictionaries and grammars have come to hand in more recent times only.

A common origin for the Cherokee language and the numerous Iroquois dialects had been surmised by Dr. Barton as early as 1797 ("New Views," reprinted in 1798, with additions), and upheld by Albert Gallatin in his "Synopsis of the Indian Tribes" (in *Archaeol. Americana*, Vol. II, 1836); but none of these authors arrived at a final decision upon this problem. Barton also assumed genealogic connections between the most heterogeneous North American languages, and thus greatly weakened his arguments bearing upon the affinity of Cherokee and the languages of the Six Nations. The reason why he and the far-seeing, philosphic Gallatin did not come nearer the truth chiefly lay in the absurd and preposterous phonetic alphabet in which the majority of the vocabularies passing through their hands were worded. The mode of transcription used in them was the so-called "historic" English alphabet; homophones are often produced by it where there are none in reality, and discrepancies obscuring the common origin of other terms. Neither was at that time any attention paid to the fact, that in illiterate languages like those of the American natives, *one* and the same term may be *correctly* pronounced in six, ten, or twelve different ways, on account of the alternation or permutability of certain sounds, as we see it done in the Greek *θάλασσα* from *ταρδάσσειν*, or in Latin *meritibus* for *meritis* (*meritis dicit*). For successfully comparing vocables belonging to different languages, it is extremely important to observe this phonetic law.

Mr. Horatio Hale was the first to establish on scientific principles the fact that Cherokee and Iroquois belong to the same linguistic family. In his article, "Indian Migrations as evidenced by Language" (*Amer. Antiquarian*, 1883, January, April, 27 pages), he established this connection, not on lexical data only,¹ but also, and more firmly, on grammatic grounds. Many more of both may be found out and brought to bear on the question by individuals fully conversant with one or several of the dialects involved. Gallatin states: "There is a similarity in the general termination of syllables, in the pronunciation and accent, which has struck some of the native Cherokees." Mr. Hale was enabled to arrive at his result only by possessing better and fuller information on both branches (especially on New York Iroquois and Huron) than that which had been previously published.

¹ Three words of his comparative list are adduced on sound resemblance only, not on real identity: *woman, boy, girl*.

With a view to examining the merits of Mr. Hale's article, the author of the present treatise set himself to comparing the collections of four Iroquois dialects, and of Cherokee verbal forms and vocables, made by himself with the aid of Indians, and to which he could implicitly trust concerning the important factor of *phonetics*. It will be well to remember that there are at present known to exist *four main branches* of Iroquois dialects, to be summarized in the following synopsis:—

A. *Huron*, formerly north of Lakes Ontario and Erie, and subdivided into (1.) the Tobacco Nation, Quatoghies, or Huron Proper, and (2.) the Wandót, who were in later times settled around Detroit, Mich., and Sandusky, Ohio, and lastly removed to Kansas and the Indian Territory, northeastern corner.

B. *Five Nations*, or *Iroquois Proper*, in Northwestern New York. The tribes extended from east to west in the following order: Mohawks, Oneidas, Onondagas, Cayugas, and Senecas. All the Mohawk Indians have emigrated to Canada.

C. *Turkwröta*, before 1720 or 1722 residing on Neuse and Tar Rivers, North Carolina, now near Buffalo, N. Y., and on the Brantford Reserve, Canada. A tribe affiliated to them were the Nottoways, in Southeastern Virginia.

D. *Cherokee*, with various sub-dialects, which are still spoken in their *old* homes,—the mountain tracts of Tennessee, North Carolina, and Georgia,—though five sixths of the people have emigrated over fifty years ago to the west of the Mississippi.

The collections made by the author comprise a few Iroquois dialects only, and are not very extensive; but they fully suffice to confirm and to amplify considerably the results laid down in Mr. Hale's article. Ten of the terms compared by Mr. Hale were incorporated into the list below, in which the abbreviations are as follows:—

- C. Mohawk of Caughnawaga, near Montreal.
 Cher. Eastern or Mountain Cherokee, N. C.
 M. Mohawk of Brantford, Province of Ontario.
 S. Seneca, State of New York.
 T. Tuskaröta, or, as they abbreviate their tribal name, Skarüré.
 W. Wandót, commonly called Wéyandot, Indian Territory.

I now proceed to the enumeration of the lexical coincidences observed by me between Cherokee and the Iroquois dialects of the three branches (Huron, Iroquois Proper, Tuskaröta), after which is to follow a list of the phonetic and morphologic congruencies. The Cherokee word is placed at the head of the items throughout, before a semicolon. The terms are arranged after categories, as parts of the animal body, animals, plants, numerals, etc. In investigations of this kind grammatic affinity is of greater weight, however, than resemblances of words.

I. LEXICAL AFFINITY.

Cher. kanoxká, abbrev. kan'ká, 'tongue'; kanaxsáke, 'my tongue,' C. Cf. handá'hsa, 'tongue,' W.
 kayá'sa, 'nose,' kaya'sóli, 'his nose'; huni't'sa, M.; 'nitsa, C.
 kanöge, 'arm'; kaná'shut, S. Cf. unü't'dsha, M.
 askó, uskó, 'head,' and usit'é'ikai, 'his hair'; uskuára, 'hair,' W. Head and

hair are very frequently derived from the same radix in Indian and other languages: Latin *capillus*, from *capillus*, Greek *κεφαλαιον*.

ulasi'then, 'his foot'; uhsíta, 'his foot,' M.
 kanáká, 'skin' (of men, animals); gané'lm, C.
 una'hwí, 'heart'; probably of the same origin as awé'ri, awé'li, 'heart,' in M. and C. Compare, as to phonetics, Cher. únale, 'wind,' with owé'tra, howé'tra, 'wind,' in M.

ayelá's-i, 'his body'; yueró'ta, 'his body,' M.
 akéyá'lhke, 'old' and 'old person'; yukayú't, 'old,' chiefly said of inanimate things, M.

ékskani, 'left,' on left side'; skenekuá'ti, C., 'skatkwadígwa, S.
 kató'xka, 'tail'; kataxshá'ki, C.

kanoski'ski, 'thief'; haná'skuá'na, 'thief,' W., kanú'ng'hska, 'to steal,' M.
 yóna, 'bear'; anióyá', W. The French called the Mohawk Indians *Agniers*, after an Iroquois term for 'bear.'

á'hwi, 'deer,' á'hwi'ékwa, 'elk,' viz. 'large deer'; ákwá, 'deer,' T.
 ókana, 'ground-hog'; ukuntis'yúhi, or the 'white-faced,' W.
 tsí'skwa, 'bird,' generic term; tsí't'ha, C.; tchítang'ha, M.
 tne, téné, 'house'; utshnu, C.

tálu, 'oak'; ránu, 'white oak,' T.
 úhíala, úhíalíga, 'bark' (of plants); uyará, 'inner' or 'fibre bark,' W.
 ussila, 'flower,' utslíassá'í, 'flower,' when still on the plant; udsí'dsha, 'flower,' C.

ná'ya, 'stone,' 'rock,' na'yóhi, 'rocky'; oná'ya, 'stone,' M.
 aguena'sá'í, 'my home,' kanú'sa, M., yendó'sha, 'house,' W.; yannu'hsé'á,
 'lodge,' W. Occurs also in Cher. ganú'sá, ka'stá, 'stick,' 'pole,' the Indian lodges being set up upon sticks.
 kanú, gánu, 'arrow'; kánu, S., and in kaya'kwire, C., gayú'kwire, M., 'arrow.'

All these terms contain the radix or base *knu* of the terms contained in the previous item ('house'), also of Cher. kanúnwa, 'pipe'; kanú'trawa, 'tobacco pipe,' M.

ónusi, ú't'si, 'snow'; óniéte, C., unie't'he, M.
 ána, aná, 'water,' anáyí, 'at, in the water'; áwé, 'water,' T.; aná'j'ye, amá'ye, 'on the water,' W.

ónati, 'milk'; onú'ngua, S.
 á'tali, 'lake'; kaniátara, 'lake' and 'river,' 'expanse of water,' also 'ocean,' M.
 talúksíki, 'iron,' tin; *tal* corresponds to *kal* in kalishradsi, 'iron,' M. and C.
 Cf. kashití, 'steel,' C.

atsíla, 'fire'; ó'dsile, ú'ssire C., ó'tchire M., utsí'shta W., 'fire.' The latter term appears in the Cher. udsí'stli kanó'ska, 'living,' coals' (kanó'ska, 'coal'), and utso'la'nia, 'soot.'

ná'to, 'sun,' 'moon'; nda in nda-uhá'ra, 'sunrise,' W. Probably also in yándísha, 'sun,' 'moon,' W.; and yátu in yátu-wats hüt'hu, 'sunset,' C.
 galú'lahi, galúnasa'ti, 'sky,' 'on high'; karúnha, M., C., tekaroni'é'te, 'sky,' W.

suná'le, 'morning' and 'to-morrow'; cf. surawé'ye, 'in the forenoon,' W.
 sanóyí, 'night'; usanbé'ra, 'evening.' Here *san* corresponds to *san* in ashú't'a C., á'hsuntá'ngne M., ewá'hsunté'ye W., 'night.'
 uné'ga-i, uné'ka, 'white'; undinié, W.

ékwa, 'large'; kówa, ko-u-ána, 'large,' 'great,' M. and other Iroq. dialects.

The Cher. term occurs in Cher. ékwoni, 'river,' which stands for ékwoni áma, 'large water.'

sák'wé, 'one' (*sa-* in the decades 11, 21, 31, etc.); 'nská, M. hiski, 'five'; wisk, uisk, M. and other dialects.

The thoroughly *concrete* signification, and the large number of the terms compared, are a sufficient guarantee that they do not represent *words borrowed* from other languages, but that, in Cherokee as well as in Iroquois, they belong to the original, independent stock of vocabules pertaining to one common linguistic family.

II. AFFINITY IN GRAMMATIC ELEMENTS.

Phonology. — The curious fact that the Iroquois dialects do not possess the sounds *b, p, v*, has already been observed by the earlier French missionaries. *F* is wanting also, for the *f* of Tuskaróra is not a real *f*, but should be written *w/h*; *m* appears only in a few dialects, and in Seneca it is difficult to distinguish it from *w* on hearing. Another labial, *zw*, occurs in all dialects, and alternates with *z* and with a spirant commonly written *š, š,* or *o*; it also occurs in the Algonkin dialects. Nearly the *same* remarks may be made concerning the labials in Cherokee. *B, p,* and *v* do not exist; *f* is very rare, and adulterine also; but *zw* is clearly distinguished from *m*. This aversion for labial sounds occurs nowhere east of Mississippi River, and forms a strong argument in favor of the affinity between Cherokee and the Iroquois dialects.

Morphology. — The verbal forms of the languages under discussion are so perplexing through their great number and variety, that for the present I have selected only a few for comparison, which mainly refer to nominal, not to verbal, inflection.

1. Terms designating the parts of the human and animal body show a prefix *ka-*, *ga-*, in both branches, which seems to represent a possessive prefix, — 'somebody's' (cf. 'tongue,' 'nose,' 'arm,' etc.). In the Iroquois dialects *u-*, *hu-* is sometimes found instead.

2. A Cherokee prefix *te-* forms the plural of certain nouns: *túy'ka-i*, 'tree,' pl. *tetúy'ka-i*; *káusi*, 'mountain,' pl. *tekáusi*. The same particle, *te-*, *de-*, serves to indicate that the action of the Cherokee transitive verb extends to more than one object:

gaká'íha, 'I tie' one object; *tegaká'íha*, more than one object.

tsísgá, 'I take' one object; *tetsísgá*, *de-tsísgá*, more than one object.

In Mohawk the suffixed syllable *-i* forms the plural pronominal object in several combinations (Cuog, *Études Philologiques*, p. 118):

sakoti, 'they them' ('they' masc.).

yakoti, 'they them' ('they' fem.).

ko'wati, *ro'wati*, 'one they' (French *on eux*).

In Cherokee we find *te-pyá'xad* in the same function: *te-awka*, 'he us'; *te-gíhwa*, 'thou them'; *te-yawka*, 'they us' (H. Hale, *Antiq.*, 1883). The nominal dual in Mohawk, which originated from the numeral *tékeni*, 'two,' is perhaps of similar origin, but suffices *-ke* at the end of the term: *kantu'sha*, 'house'; *tekanu'sáke*, 'two houses'; *nikanu'sáke*, 'houses.'

3. Cherokee, as well as Iroquois, possesses a personal conjugation for the dual in the transitive and in the intransitive verb. Herein they probably differ from all Indian tongues spoken east of Mississippi River, for the majority of North American languages possess a dual in the intransitive verb only, and only *one* form for all the three persons.

4. Add to the above the grammatic paradigm of 'I alone,' 'thou alone,' etc., and that of the combined subject and object-pronouns given in Mr. Hale's article. Several of the dialectic changes relative to phonetics are also pointed out there.

At first might Cherokee appears wholly distinct from Tuskaróra, Wandó, and the Iroquois dialects; but the more comparisons are made between them, the more their original kinship becomes apparent. The recognition of this common origin will have its effects in setting forth unexpected ethnologic connections between the Southern and Northern branches, which in historic times were always involved in mutual warfare, and seemed wholly bent on exterminating each other.

22. On Positions of the Larynx in Vowel Articulations, with Remarks concerning Bell's "Visible Speech," by Professor Samuel Porter, of the National Deaf-Mute College, Washington, D. C.

The larynx is so connected with the hyoid bone and the root of the tongue that its position must change with changes in the action and position of the tongue, and may thus be regarded as having no direct agency in vowel formation, but as related thereto only in a secondary and incidental way. Observations made in a few instances by the writer show a considerable want of uniformity as among different individuals, to be accounted for, doubtless, in part, by differences in the natural shape and structure of the organs, — the concavity of the palate, for instance, which varies greatly in different persons; besides the fact that the same vowel may be given by organic positions differing within certain limits.

In the majority of the cases examined, the larynx was drawn forward and depressed for the vowels *ee* (in *ee*) and *oo* (in *too*), and receded and rose higher for other vowels. In one individual with a nearly flat palate, the change in this direction, in passing from *ee* to the *a* in *ade*, and again from that to the *a* in *aiy*, was most strongly marked. The explanation is this. In each of these three vowels there is an approximation, or constriction, between tongue and palate, giving a resonant cavity behind and before, — the one behind to be regarded as the more important. Both the part of the tongue behind and the part before the place of constriction are lower for the *a* in *aiy* than for *ee*, and the connecting channel shorter; and still more so for the *a* in *ade* than for *ee*, and the root of the tongue is thus thrust backward, and the larynx is thereby forced back, and by the action of the hyoid bone drawn upward.

Reference was made in this connection to the views of Mr. Schwyder, opposed to those of Bell, and reported by Professor Whitney to the Association in 1884. The speaker proceeded to advocate the adoption of the Bell vowel scheme in its leading features, and with its nomenclature, as a suitable basis on which to build a perfect system. He adverted to the prominence and precedence given by Bell to tongue positions; the division of these into back, front, and mixed;