

UNIVERSITY OF CALIFORNIA PUBLICATIONS
IN
AMERICAN ARCHAEOLOGY AND ETHNOLOGY

Vol. 11, No. 4, pp. 279-290

February 10, 1915

SERIAN, TEQUISTLATECAN, AND HOKAN

BY
A. L. KROEBER

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY

UNIVERSITY OF CALIFORNIA PUBLICATIONS
DEPARTMENT OF ANTHROPOLOGY

The following publications dealing with archaeological and ethnological subjects issued under the direction of the Department of Anthropology are sent in exchange for the publications of anthropological departments and museums, and for journals devoted to general anthropology or to archaeology and ethnology. They are for sale at the prices stated, which include postage or express charges. Exchanges should be directed to The Exchange Department, University Library, Berkeley, California, U. S. A. All orders and remittances should be addressed to the University Press.

European agent for the series in American Archaeology and Ethnology, Classical Philology, Education, Modern Philology, Philosophy, and Semitic Philology, Otto Harrassowitz, Leipzig. For the series in Botany, Geology, Pathology, Physiology, Zoology and also American Archaeology and Ethnology, R. Friedlaender & Sohn, Berlin.

AMERICAN ARCHAEOLOGY AND ETHNOLOGY.—A. L. Kroeber, Editor. Price per volume \$3.50 (Vol. 1, \$4.25).

	Cited as Univ. Calif. Publ. Am. Arch. Ethn.	Price
Vol. 1.	1. Life and Culture of the Hupa, by Pliny Earle Goddard. Pp. 1-88; plates 1-30. September, 1903.....	\$1.25
	2. Hupa Texts, by Pliny Earle Goddard. Pp. 89-368. March, 1904..... Index, pp. 369-378.	3.00
Vol. 2.	1. The Exploration of the Potter Creek Cave, by William J. Sinclair. Pp. 1-27; plates 1-14. April, 1904.....	.40
	2. The Languages of the Coast of California South of San Francisco, by A. L. Kroeber. Pp. 29-80, with a map. June, 1904.....	.60
	3. Types of Indian Culture in California, by A. L. Kroeber. Pp. 81-103. June, 1904.....	.25
	4. Basket Designs of the Indians of Northwestern California, by A. L. Kroeber. Pp. 105-164; plates 15-21. January, 1905.....	.75
	5. The Yokuts Language of South Central California, by A. L. Kroeber. Pp. 165-377. January, 1907..... Index, pp. 379-392.	2.25
Vol. 3.	The Morphology of the Hupa Language, by Pliny Earle Goddard. 344 pp. June, 1905.....	3.50
Vol. 4.	1. The Earliest Historical Relations between Mexico and Japan, from original documents preserved in Spain and Japan, by Zelia Nuttall. Pp. 1-47. April, 1906.....	.50
	2. Contribution to the Physical Anthropology of California, based on collections in the Department of Anthropology of the University of California, and in the U. S. National Museum, by Ales Hrdlicka. Pp. 49-64, with 5 tables; plates 1-10, and map. June, 1906.....	.75
	3. The Shoshonean Dialects of California, by A. L. Kroeber. Pp. 65-166. February, 1907.....	1.50
	4. Indian Myths from South Central California, by A. L. Kroeber. Pp. 167-250. May, 1907.....	.75
	5. The Washo Language of East Central California and Nevada, by A. L. Kroeber. Pp. 251-318. September, 1907.....	.75
	6. The Religion of the Indians of California, by A. L. Kroeber. Pp. 319-356. September, 1907..... Index, pp. 357-374.	.50
Vol. 5.	1. The Phonology of the Hupa Language; Part I, The Individual Sounds, by Pliny Earle Goddard. Pp. 1-20, plates 1-8. March, 1907.....	.35
	2. Navaho Myths, Prayers and Songs, with Texts and Translations, by Washington Matthews, edited by Pliny Earle Goddard. Pp. 21-63. September, 1907.....	.75
	3. Kato Texts, by Pliny Earle Goddard. Pp. 65-238, plate 9. December, 1909.....	2.50
	4. The Material Culture of the Klamath Lake and Modoc Indians of Northeastern California and Southern Oregon, by S. A. Barrett. Pp. 239-292, plates 10-25. June, 1910.....	.75
	5. The Chimariko Indians and Language, by Roland B. Dixon. Pp. 293-380. August, 1910..... Index, pp. 381-384.	1.00
Vol. 6.	1. The Ethno-Geography of the Pomo and Neighboring Indians, by Samuel Alfred Barrett. Pp. 1-332, maps 1-2. February, 1908.....	3.25
	2. The Geography and Dialects of the Miwok Indians, by Samuel Alfred Barrett. Pp. 333-368, map 3.	
	3. On the Evidence of the Occupation of Certain Regions by the Miwok Indians, by A. L. Kroeber. Pp. 369-380. Nos. 2 and 3 in one cover. February, 1908..... Index, pp. 381-400.	.50

UNIVERSITY OF CALIFORNIA PUBLICATIONS
IN
AMERICAN ARCHAEOLOGY AND ETHNOLOGY

Vol. 11, No. 4, pp. 279-290

February 10, 1915

SERIAN, TEQUISTLATECAN, AND HOKAN

BY
A. L. KROEBER

Daniel Garrison Brinton many years ago affirmed a genetic connection between the Seri¹ language of Sonora, the Chontal or Tequistlatecan² idiom of Oaxaca, and the Yuman group of dialects, which Dr. R. B. Dixon and I recently united with six other Californian languages into the new Hokan family.³ Assuming the validity of Hokan as a single group, Seri and Chontal would therefore be members of it if Brinton's assertion of their relationship with Yuman is true. As his contentions have not been generally accepted, the present essay is a re-examination of the evidence.

Brinton's union of Tequistlatecan and Yuman has hardly elicited a reaction. It must be admitted that the twenty-three Chontal words available to him were not enough for very convincing effect. The unsatisfactory quality of his word parallels was also in part due to the poor material accessible to him from the Yuman group of dialects. The enormous geographical distance between the two languages was a further obstacle to acceptance of his findings. The Yuman idioms do not reach farther east than longitude 112° nor farther south than latitude 31½° in Sonora or 26° in the peninsula of Lower California. Tequistlatecan is spoken on the Pacific Coast in the vicinity of longitude 96° and latitude 16°, near the isthmus of Tehuantepec. Brinton's remarks have therefore been ignored by nearly all of his

¹ *The American Race* (1901), 110, 113, 335.

² *Ibid.*, 112, 148.

³ *Science*, n. s., xxxvii, 225, 1913; *American Anthropologist*, n. s., xv, 647-655, 1913.

colleagues and successors. Thomas and Swanton in their map of linguistic stocks of Mexico⁴ retain Chontal as an independent family under Brinton's provisional name Tequistlatecan.

Seri has provoked one discussion. In a linguistic appendix to the late W J McGee's famous monograph on the Seri, Mr. J. N. B. Hewitt has compared in detail a considerable number of Seri and Yuman stems, with consistently negative findings as to original similarity. A careful examination of this report at the time of its publication, however, left me with a strong belief that genetic relationship existed. Several American anthropologists have expressed to me the same conviction. Mr. Hewitt's conclusion seemed not unnatural in view of his affectionate friendship with Dr. McGee, who was strongly attached to the impression that the Seri were in every respect a thoroughly unique and isolated people; and also because Mr. Hewitt and Dr. Brinton were scientific antagonists in other fields. These early misgivings as to the distinctness of Seri and Yuman were fortified by the change of point of view which I underwent in the course of my recent collaboration with Dr. Dixon, which resulted in the unexpected union of Yuman with so many other languages. The geographical barrier is also wanting for the Seri. Their habitat, between parallels 28° and 30° and longitude 111° and the Gulf of California, is almost in contact with the territory of the Cocopa and directly across the narrow strait from the Cochimi, both admitted Yuman tribes.

For Tequistlatecan there is available Francisco Belmar's *Estudio de El Chontal* (Oaxaca, 1900). For Seri there is, besides the various vocabularies drawn on and cited by Mr. Hewitt, a compilation by F. Hernandez in his *Guerra del Yaqui*. These two works together provide vocabularies by or from McGee, Pinart, Loustanou, Peñafiel, Tenochio, and Bartlett. The sounds of Seri evidently gave the European ears of these hearers much trouble. A process of averaging, however, allows a probably fair reconstruction of the spoken sounds. These have been expressed in an orthography used in my rendition of the Yuman Mohave dialect. In essentials this is the alphabet used by professional American ethnologists. Certain details are explained below.

⁴ Indian Languages of Mexico and Central America, Bureau of American Ethnology, Bulletin 44, 1911.

Fortunately both Spanish and English spellings were employed by the six recorders of Seri, and they included native Frenchmen. The averages struck from their variant forms are therefore nearer the truth than if all six had been of one nationality. To represent the Yuman group of languages, Mohave was chosen because of personal familiarity.⁵ I have not heard other Yuman idioms except Diegueño, and not much of that. The attempt to combine the rendition by other workers of other Yuman dialects with the author's spelling of Mohave would have been difficult, and left many doubtful points. For that matter, just because Mohave is one dialect of many, and apparently a somewhat specialized one, any similarity between it and Chontal or Seri that may be accepted as established will only be reinforced when satisfactory comparisons with the entire Yuman group are instituted. Señor Belmar's orthography has been somewhat altered, but not materially, to conform to that used for Seri and Mohave. The comparative table of words from the three languages has been enlarged by selections of parallel forms from the Hokan languages of California other than Yuman: Esselen, Pomo, Yana, Shastan, Chimariko, and Karok.⁶

In detail the orthography needs little elucidation. Following American usage, *c* stands for sounds of the *sh*-type; *tc* therefore equals English *ch*; *x* is a surd palatal fricative, *l* a surd *l*; and *θ* and *δ* are surd and sonant interdental fricatives derived in Mohave from original *s* and *y*. Chontal *ng* and *gh*, and Seri *gh*, are as written in the original sources. Mohave *ly* and *ny* are simple sounds, palatalized; and *kw* and *xw* in all the languages referred to are probably simple labializations of palatals. The apostrophe indicates the glottal stop, except after stopped consonants, of which it denotes the glottalization. Mohave *v* is bilabial: the same quality appears to attach to *f* and *v* in the other Californian Hokan languages, and may be looked for in Seri and Chontal.

⁵ Present series, x, 45-96, 1911.

⁶ For Esselen, see present series, II, 29-80, 1904; for Pomo, S. A. Barrett, *ibid.*, VI, 1-332, 1908; for Chimariko, R. B. Dixon, *ibid.*, V, 293-380, 1910. The Shastan material is Dr. Dixon's; it covers Shasta, Achomawi, Atsugewi, and minor dialects. Yana and Karok are mainly from manuscript notes by myself; there is published material on these languages in the present series, IX, 1-235, 1910 (by Dr. E. Sapir), and IX, 273-435, 1911.

Even without discussion, this comparative table may be admitted to make the case for the relationship of Chontal and Seri to Hokan at least plausible. It is hoped that the following sound equivalences, many of which occur repeatedly, will convince even the skeptical. To save space and detail, the words adduced are not written out, but referred to by the numbers prefixed to them in the table. Unless otherwise noted, references are always in the order: Chontal, Seri, Mohave.

The correspondence $m : m : m$ is found in words number 2, 3, and 6. In 4, 21, 27, Chontal and Mohave retain m , but Seri has p , v , or nothing. Seri $v : \text{Mohave } m$ in 29 probably belongs to the same class: a corresponding Chontal stem has not been found. The formula $f : p : m$ occurs in 9 and again in 23, and therefore is probably regular; $p : m : m$ is found only in 14. Five of these ten Mohave stems containing m have been traced in other Hokan languages: the corresponding forms all show m . The same is true of 17, $m : m : w$, m in Californian Hokan, which throws light on the origin of the rather uncommon and hitherto unexplained w of Mohave.⁷

Chontal f does not always correspond to Mohave m : 33 shows the equivalence $f : x : p$. This Chontal-Seri correspondence $f : x$ is corroborated by Seri-Mohave $f : h$ in number 15—the fricative character is retained, but the point of articulation changed. Other cases of correspondence between labials and palatals will be encountered; the dentals and alveolars seem to shift less frequently. The obvious course of a change from palatal to labial or reverse is through labialized palatals, especially if the palatal articulation is distinctly posterior. But it is not certain that the $f : x : p$ of 33 represents original $f : x : f < f : f : f$, for Esselen agrees with Mohave in this stem in showing p .

Unvarying p occurs in 5 and 7. In the former of these, p or b persists in the Californian cognates.

Mohave v occurs in seven of the stems available for comparison. In these it shows a variety of correspondences:

⁷ Present series, xi, 182, 1914.

English	Chontal	Seri	Mohave	Other Hokan Languages
1 Water	a-ha	ax	aha	as, atsa, aka, xa
2 Earth	a-mats	amt	amaṭa	ama, ma, maksala
3 Sky	e-maa	amime	ammaya	imita
4 Leg	i-mits ¹	ipeL	ime ²	
5 Tongue	i-paL	ipl	ipalya	ipli, apri, bal, hiba, i-pen
6 Sleep	emai	sim, kim	isma, suma	itsmi, sima-, samsi, eṭn
7 Hot	e-paL		ipily	
8 Rain	u-kwi	ipka	ikwe ³	otci, itce, tce
9 White	(niga)-fuk-a	-hpe	nyamasam	
10 Woman	a-kano	kmam	Ḡenya'-aka	daritei
11 Old	a-kwe		kwora'-aka ⁴	
12 Salt	oghue ⁵	antip	aḠ'i	aki, inti, atax
13 Sing	cow ⁶		isvar, suvar	es, etca, eteni, ihmin, isiduk
14 Ash	a-pi	-emagh	hammulye	
15 Nose		if	ihu	iudi, ed, oxu, yufi, yumi, limo
16 Blood	a-was	avat	ahwata ⁷	axta, ax, axdi
17 Heart	o-m-caxma	imos	iwa	xam, samai, masia-
18 House	a-huL	ako	ava	awa, ama, wowi, iwa-
19 Stone	a-pik	ast	avi	kabe, k'ai-, ka'a, ciefe
20 Wood	eke	ehe	a'i	ahai, ga'au, ii, i-
21 Star	camna	vacox	hamuse	amutas, kamul, kamots, tsamik
22 Two	o-ke	ka-xku-m	ha-vi-k	xoka, axak, hak, hoki, ako, xote, ko
23 Three	a-fan	ka-xpa-m	ha-mo-k	
24 Drink	ewa	kasi	iḠi	si, ic, ihima
25 Fire	u-nga	amak	a'auva	ima, apu, au-, oho
26 Eye	i-piwa	ito	iḠo	ui, oi, u-sot, yup, asa
27 Ear	i-cmats	isLo	ismalyka ⁸	isak, asmak, cima, i-sam, man'gu
28 Hand		inoL	isalya	i-ta, tana, atan, dalla
29 Child		ove	humar	
30 Bone		itak	isaka	ak, iya, ihdalla
31 Dog		axc	ahaṭa	haiyu
32 Tobacco	a-me	api-	auva	uwu, ohpi, owa, moha
33 Arrow	on-fants	axasa	ipa	pawi
34 Large	kweka	ka-koL, ka-kox	ku-vatay-a	mato, bate, badjal-
35 Foot	i-tungu ⁹	itova		

¹ Foot.

² Leg or foot.

³ Cloud. Identity of the stem is established by Diegueño ekwi, rain.

⁴ Old man.

⁵ "gh" perhaps represents a fricative.

⁶ The form is extracted from the renditions shoo, shou, shob.

⁷ Or ahoata. See the present series, xi, 180, 187, 1914.

⁸ Given erroneously, *ibid.*, 186, as amalya, which means leaf.

⁹ Leg.

18	h : k : v	California : w, (m)
22	k : k : v	California : x, h, k
34	k : k : v	California : b, m
19	p : s : v	California : b, f, ', -
32	m : p : v	California : w, h, hp
25	ng : m : v	California : m, p, h
35	ng : v	
13	w : v	California : m, n, -

The remarkable correspondence $k:k:v$ seems reasonably established, in spite of the fact that two of the Hokan cognates have labials and one palatals. The same may be said of Chontal ng as equated to Seri and Mohave v . This correspondence is corroborated by the occurrence of both labials and palatals in the Californian cognates. See in this connection also 32. In fact, the entire v group evidences the close relationship of labials and palatals throughout Hokan. Number 13 is uncertain, the Chontal w being only the present writer's hypothetical rendering of several variants in the original.

Other instances of Chontal w occur in 16, where the formula is $w : v : hw$, with consistent x in the Californian languages, and in 24 and 26, where none of the other tongues show a correspondence and the Chontal sound may be of parasitic or vocalic origin.

The palatal stop k is found less frequently in other relations than in that with v . Number 30 has k common to Seri and Mohave. Number 10 shows the formula $k:k:\theta$. Mohave θ is from Diegueño⁸ and general Yuman s ; in this stem other Hokan words also have dentals. The equivalence is, however, probable on account of an established $s-h-k$ shift in Hokan.⁹

Chontal kw :Mohave kw occurs in 8 and 11; in the former case the equivalent is pk in Seri, tc in several Californian languages.

For $h:x:h$ see 1 and 31; for $k:h:'$, 20; the Seri-Mohave correspondence $f:h$ in 15 has already been mentioned. Mohave h is produced with some stricture;¹⁰ the difference between it and Seri x ("jj", "chk") is therefore probably not great.

S , with which I have included c , is in many cases persistent throughout Hokan: see 6, 13, 21, 24, 27. Mohave θ is shown

⁸ Present series, xi, 179, 1914.

⁹ Am. Anthropologist, n. s., xv, 651, 1914.

¹⁰ Present series, x, 62, 1911; xi, 179, 1914.

by its Diegueño equivalent *s* to be a recent mutation, and the occasional California variants *ts*, *tc*, *h*, are what might be anticipated in a large array of diversified dialects.

T is not very common in the stems used. The equation *s* : *t* : *t*, Californian *t*, *d*, is found in 16; *t* : *t* : ? in 35; *gh* : *t* : *θ*, Diegueño *s*, Californian *k* or *t*, in 12. The variation of the Californian languages between palatal and dental in this last word makes the Chontal-Seri-Mohave equivalence practically certain.

Two of the compared Mohave words, 2 and 31, contain the alveolar-prepalatal stop *t̥*,¹¹ which occurs also in Diegueño. In place of this, Chontal shows *ts* in one case, Seri once *t* and once *s*. It is not impossible that *ts* and *t* may here stand for a sound similar to *t̥*, the rendition of which has puzzled recorders in several Hokan and non-Hokan languages of California.

For laterals there is a well defined equivalence *L* : *L* : *ly* in 5, 7, 27, 28, varied only once by the apparent substitution of *ts* in Chontal. This correspondence is the more pregnant because Diegueño, and apparently the Yuman dialects in general, agree with Chontal and Seri in retaining surd *L* where specialized Mohave has acquired sonant palatalized *ly*. The Californian Hokan languages in the same stems have *l*, or its variants *r*, *n*, or *-*.

Mohave trilled *r* in 11, 13, 29 is without Chontal or Seri equivalent, except that one orthography of Seri 29 shows a final *d*, perhaps written for a sonant fricative corresponding to *r*.

The vowels of the three languages agree even more consistently than their consonants. *A* is unchanged in 1, 2, 3, 16 (twice), 18, 19, 25, 30, 31, 33. The Californian languages also show *a* in the great majority of their forms for these stems. The equivalence *a* : - : *a* occurs in 1, 2, 5, 6, 31. Mohave and Diegueño unaccented vowels are often very light, so as to be easily missed by an observer unfamiliar with the languages; but this hardly explains the situation in Seri, as in all of the above five cases the missing Seri vowel corresponds to the most markedly accented one in the equivalent Mohave word.

Fewer instances appear of the agreement *a* : *o* : *a*, namely, numbers 17, 27, 28, 34; but the correspondence is equally posi-

¹¹ Present series, x, 57, 1911.

tive. Seri *o* in these cases is clearly a special formation, as the Californian languages regularly show *a*. In the first three of the four words the equivalent Mohave *a* is accented. Chontal *o* and *u*, so far as comparable at all, correspond to Mohave *a*, Seri and the Californian languages showing less regular forms: 9, 10, 12, 18, 25.

Chontal has *a* where Seri and Mohave show *a*, *e*, or *i* in 3, 7, 10, 14, 24. Californian analogues vary between *a* and *i*. This appears to be an instance of assimilation in Chontal of originally distinct vowels.

Chontal *e* seems reducible to two types: *e:e:a* in 20, 29, 32, and *e:i(?) :i* in 7, 12, 22. Californian analogues are so variable that several original vowels may be involved.

Number 4 shows *i:e:e*, with which I am inclined to unite the *i:a:e* of 8, on account of the Californian equivalents *i* and *e*. More frequently, however, *i* is unchanged in the three southern languages, as in 4, 5, 26, and, for Seri and Mohave at least, in 15, 28, 30. In every instance at least some of the California dialects also show *i*, but others do not; it is worthy of note that in 5, 15, and 26 apparent metathesis of vowels occurs. In 6 the formula *i:i:i* is modified by loss of vowel in Chontal and in 19 in Seri. The lost Chontal vowel is unaccented; that of Seri corresponds, like lost Seri *a*, to an accented vowel in Mohave.

These correspondences cover fully three-fourths of all comparable vowels in the list.

The Chontal initial vowels separated in the list by a hyphen are included by Señor Belmar in a series of noun prefixes indicative of number. Thus he writes *le-maa*, sky, as if *le* were the morphological element and *maa* the noun stem. The equivalences of these "prefix" vowels with the initial vowels of the stem in the Seri and Mohave words are, however, so close that it is clear they are not part of the prefix at all. The division should be *l-ema*. In the same way, under "Other Hokan Languages" I have written Chimariko *i-pen*, *u-sot*, *i-sam*, *i-ṭa*. When Dr. Dixon studied Chimariko as an independent¹² language, these initial sounds seemed to be connecting vowels of the possessive prefixes of body part terms. But it is clear that here also the

¹² Present series, v, 326, note 12, 1910.

division should be h-ipen, his tongue, not hi-pen. At one time it seemed possible to Dr. Dixon¹³ and myself¹⁴ that such forms were all from monosyllabic radicals; but a comparison of Chontal ipaL, Seri ipL, Mohave ipalya, Chimariko ipen, Pomo hiba, Shastan ipli, proves the initial i to be part either of the original stem or of a prefix which became definitely associated with the stem before the diverse and long separated Hokan languages became detached from one another.

Apart from correspondences of specific sounds, one general phonetic fact is clear about Hokan: fricatives, both surd and sonant, and in labial as well as in dental and palatal articulation, are exceptionally well developed. The contrast on this point is marked with Penutian, which is as bare of fricatives as it is at present the fashion to depict original Indo-European speech to have been, and with Uto-Azetaken, where stops also largely outnumber fricatives. Labial fricatives have long been noted as excessively uncommon in American languages; yet within the limits of the Hokan group *f* occurs in Chontal, Seri, Esselen, Pomo, and Karok, and *v* in Seri, Mohave, and Karok. It is not to be argued that this *f* and *v* correspond directly in the several languages or represent survivals of original *f* and *v*. In fact, the reverse is the case. Mohave *v* equates with Seri-Chontal *k* and north Hokan *m*, *w*, *b*; Chontal *f* is a development from labial stops or nasals, Seri at least sometimes from palatal fricatives. But the tendency for fricatives to appear is evidently deep-rooted in the family, and must be regarded as a significant character. This is confirmed by the fact that those languages, such as Yana and some of the Pomo dialects, which are weakest in fricatives, are the ones in which sonant stops are most pronounced. The theory of an underlying impulse toward fricatives would also explain the development of two such closely related and rare sounds as Mohave *θ* and *δ* from such unrelated ones as *s* and *y*. I feel very strongly that it is impossible to institute even slight comparisons among the Hokan languages as a group, once this impulse has been perceived, without attaining to an ineradicable conviction of their original unity.

¹³ *Am. Anthropologist*, n. s., xv, 651, 1913.

¹⁴ Present series, xi, 183, 1914.

It may be worth while to add a few general Hokan parallels for Chontal and Seri for which no direct equivalents are known in Mohave.

Night: Seri, amok; Chimariko, hime, himok-ni; Achomawi Shastan, mahektea; Esselen tumas; Pomo, duwe.

Sun: Seri, sax (moon: isax, *sic*); Esselen, asi; Chimariko, asi, day; Atsugewi Shastan, asiyi, day.

Navel: Chontal, a-tu; Shasta, edau; Achomawi Shastan, a'lu; Atsugewi Shastan, tsup'-; Chimariko, o-napu; Yana, -lak'i.

Person: Chontal, acans; Shasta, ic; Pomo, atea, teate; Chimariko, itci, man; Yana 'ihsi, man; Esselen, exi-.

I trust that this presentation will both establish the original unity of Tequistlatecan, Serian, and Yuman, and help to allay the doubts of those who may have remained unconvinced by the announcement of Dr. Dixon and myself that seven Californian languages heretofore considered distinct could be united into the one family which we denominated Hokan. No one is better aware than we of the slenderness of the evidence as yet presented in support of our assertion; but our first serious suspicions of relationship are only recent, and each further hesitating inquiry into the question has thrown open such vistas that the material has accumulated faster than we could handle it, and a delay in our promised proof has been inevitable. The present little treatise may reveal some glimpses of the possibilities before us.

There was a time when the merging of one of the accepted North American linguistic stocks into another was a rare and notable event in American anthropology, and the simultaneous wiping out of two was not heard of. That time is past. The Hokan family as here treated comprises what a few years since were regarded as nine families. That two others, Chumash and Salinan, might be includable was suggested a year ago by Dr. Dixon and myself. Since then Mr. J. P. Harrington has affirmed the genetic unity of Chumash and Yuman.¹⁵ As his studies in recent years have made him the best informed authority on both languages, his verdict must at least be taken seriously. If Chumash is Yuman, it is Hokan; and as Salinan will almost certainly

¹⁵ *American Anthropologist*, n. s., xv, 716, 1913.

go where Chumash goes, eleven¹⁶ former families are now ranged under the banner of one. The new Penutian family takes care of five other former stocks. Two are eliminated by Dr. Sapir's daring but unquestionably valid recognition of Wiyot and Yurok as Algonkin. The same investigator is also giving proof, sufficiently critical and detailed to satisfy the most pedantic, of the relationship of Shoshonean, Piman, and Nahuatlan, as first affirmed by Brinton, and accepted by the late Dr. Chamberlain and myself. Dr. Swanton has shown Natchezan to be Muskogean. His comparison of Athabascan, Haida, and Tlingit, on a suggestion of similarity long ago made by Dr. Boas, is inconclusive, but in the light of events elsewhere forces the suspicion that a re-examination may result in a positive establishment of relationship here also. The same may be said of Dr. Boas' other demonstration of resemblance of morphological type between Salishan, Wakashan, and Chemakuan. Still other unions and inclusions will undoubtedly be made. Hokan now stretches from southern Mexico to southern Oregon. Inquiry in the complex linguistic field of the latter state and of the coast to the north may result in determinations at the very first touch.

We may accordingly be confident that the language map of North America will be thoroughly recolored in a few years. For a long period the Powell-Henshaw list of 58 stocks in Canada and the United States stood almost unaltered. The convenience of this first exhaustive and entirely definite classification was so great that it was soon looked upon as fundamental, and the incentive to tamper with it was lost. The revision of the map in the *Handbook of American Indians* in 1907 reduced the 58 stocks only to 56. With the additional families formulated in 1911 by Thomas and Swanton for Mexico and Central America, the total for the continent was 82. In a few years this has shrunk to 64, with most of the field still lying under the old ban. At a chance gathering of anthropologists in Washington a few months since, predictions were made, informally, it is true, and in part perhaps not very seriously, but with an undercurrent of conviction, as to the number of families that would be generally

¹⁶ Really twelve, as Shasta and Achomawi-Atsugewi (Palainhihan) were long considered distinct and only recently connected by Dr. Dixon, *ibid.*, n. s., VII, 213, 1905.

recognized in ten years. The estimates ranged from 15 to 30. Surely anthropologists may begin to realize that in these matters a new order is upon them, merely through the progress of knowledge and without any abandonment of the safely conservative principles of the past.

It has been suggested to me that while there is probably some underlying truth in most of the recent mergings of stocks, the kind of relationship involved may be of a different sort from what has heretofore been regarded as the relationship binding together the members of a linguistic family. I wish to express my absolute opposition to this attitude. If Chontal and Seri are not related just as thoroughly and just as completely to Yuman and Pomo and Chimariko as Omaha is to Dakota or as Cherokee is to Iroquois or as Arapaho is to Delaware, they are not related at all, and the present essay has entirely failed of its purpose. I recognize only one criterion of relationship: reasonably demonstrable genetic unity. Either two languages can be seen to have been originally one, or they cannot be seen to have been one. The evidence may be of such kind and quantity as to leave us in doubt for a time; but there can be no such thing as half-relationship. Philosophically, the concept of the linguistic family may be of little moment or validity, like the concept of species in biology; but for the organization and practical control of knowledge both these categories are indispensable. And they can be of use only if they stand for something definite and if as categories they are inflexible.

It is to me a particular gratification that the outcome of this investigation re-establishes the findings of Brinton made by him on so much slighter evidence. Brinton was dogmatic beyond a doubt, and his attitudes seem at times inconsistent. But his work is permeated by a clear grasp and a lucidity of thought and expression; and these qualities are given their full value by a remarkable basic understanding, an instinctive feeling for phenomena of the human mind that has rarely been equaled in the field of ethnology or linguistics. On the points here discussed Brinton's material was nearly worthless; we must bear him the greater tribute for his power of intuitive sane insight and interpretation.

I should have liked to examine Brinton's further prognosis that the Waikuri language of the southern portion of Lower California was also Yuman. The available information on this idiom, however, all goes back to one very tenuous source, the picturesquely abusive and spirited description of Baegert. The few words contained in this do not look like Yuman or even Hokan; but they are too few and too specialized to allow of any very certain conclusions. Unless new records from Lower California can be discovered, a final judgment as to the position of Waikuri will not be possible until the comparative analysis of the Hokan languages has progressed so far that they can be successfully measured against the fragments of this obscure tongue. Pending this decision, Waikuri must be regarded as of unproved affinities and therefore held tentatively distinct.

Transmitted October 21, 1914.

UNIVERSITY OF CALIFORNIA PUBLICATIONS—(CONTINUED)

Vol. 7.	1. The Emeryville Shellmound, by Max Uhle. Pp. 1-106, plates 1-12, with 38 text figures. June, 1907	1.25
	2. Recent Investigations bearing upon the Question of the Occurrence of Neocene Man in the Auriferous Gravels of California, by William J. Sinclair. Pp. 107-130, plates 13-14. February, 1908 .....	.35
	3. Pomo Indian Basketry, by S. A. Barrett. Pp. 133-306, plates 15-30, 231 text figures. December, 1908	1.75
	4. Shellmounds of the San Francisco Bay Region, by N. C. Nelson. Pp. 309-356, plates 32-34. December, 1909 .....	.50
	5. The Ellis Landing Shellmound, by N. C. Nelson. Pp. 357-426, plates 36-50. April, 1910 .....	.75
	Index, pp. 427-443.	
Vol. 8.	1. A Mission Record of the California Indians, from a Manuscript in the Bancroft Library, by A. L. Kroeber. Pp. 1-27. May, 1908 .....	.25
	2. The Ethnography of the Cahuilla Indians, by A. L. Kroeber. Pp. 29-68, plates 1-15. July, 1908 .....	.75
	3. The Religion of the Luiseño and Diegueño Indians of Southern California, by Constance Goddard Dubois. Pp. 69-186, plates 16-19. June, 1908	1.25
	4. The Culture of the Luiseño Indians, by Philip Stedman Sparkman. Pp. 187-234, plate 20. August, 1908 .....	.50
	5. Notes on Shoshonean Dialects of Southern California, by A. L. Kroeber. Pp. 235-269. September, 1909 .....	.35
	6. The Religious Practices of the Diegueño Indians, by T. T. Waterman. Pp. 271-358, plates 21-28. March, 1910 .....	.80
Index, pp. 359-369.		
Vol. 9.	1. Yana Texts, by Edward Sapir, together with Yana Myths collected by Roland B. Dixon. Pp. 1-235. February, 1910	2.50
	2. The Chumash and Costanoan Languages, by A. L. Kroeber. Pp. 237-271. November, 1910 .....	.35
	3. The Languages of the Coast of California North of San Francisco, by A. L. Kroeber. Pp. 273-435, and map. April, 1911	1.50
Index, pp. 437-439.		
Vol. 10.	1. Phonetic Constituents of the Native Languages of California, by A. L. Kroeber. Pp. 1-12. May, 1911 .....	.10
	2. The Phonetic Elements of the Northern Paiute Language, by T. T. Waterman. Pp. 13-44, plates 1-5. November, 1911 .....	.45
	3. Phonetic Elements of the Mohave Language, by A. L. Kroeber. Pp. 45-96, plates 6-20. November, 1911 .....	.65
	4. The Ethnology of the Salinan Indians, by J. Alden Mason. Pp. 97-240, plates 21-37. December, 1912	1.75
	5. Papago Verb Stems, by Juan Dolores. Pp. 241-263. August, 1913 .....	.25
	6. Notes on the Chilula Indians of Northwestern California, by Pliny Earle Goddard. Pp. 265-288, plates 38-41. April, 1914 .....	.30
	7. Chilula Texts, by Pliny Earle Goddard. Pp. 289-379. November, 1914	1.00
Index in press.		
Vol. 11.	1. Elements of the Kato Language, by Pliny Earle Goddard. Pp. 1-176, plates 1-45. October, 1912	2.00
	2. Phonetic Elements of the Diegueño Language, by A. L. Kroeber and J. P. Harrington. Pp. 177-188. April, 1914 .....	.10
	3. Sarsi Texts, by Pliny Earle Goddard. Pp. 189-277	(In press)
	4. Serian, Tequistlatecan, and Hokan, by A. L. Kroeber. Pp. 279-290. February, 1915 .....	.10

Volumes now completed:

Volume 1. 1903-1904. 378 pages and 30 plates	\$4.25
Volume 2. 1904-1907. 393 pages and 21 plates	3.50
Volume 3. 1905. The Morphology of the Hupa Language. 344 pages	3.50
Volume 4. 1906-1907. 374 pages, with 5 tables, 10 plates, and map	3.50
Volume 5. 1907-1910. 384 pages, with 25 plates	3.50
Volume 6. 1908. 400 pages, with 3 maps	3.50
Volume 7. 1907-1910. 443 pages and 50 plates	3.50
Volume 8. 1908-1910. 369 pages and 28 plates	3.50
Volume 9. 1910-1911. 439 pages	3.50

UNIVERSITY OF CALIFORNIA PUBLICATIONS—(CONTINUED)

Note.—The University of California Publications are offered in exchange for the publications of learned societies and institutions, universities and libraries. Complete lists of all the publications of the University will be sent upon request. For sample copies, lists of publications or other information, address the Manager of the University Press, Berkeley, California, U. S. A. All matter sent in exchange should be addressed to The Exchange Department, University Library, Berkeley, California, U. S. A.

AGRICULTURAL SCIENCES.—E. B. Babcock, J. W. Gilmore, and C. B. Lipman, Editors. Price per volume, \$3.50. Volumes I and II in progress.

ASTRONOMY.—W. W. Campbell, Editor. (Lick Observatory, Mt. Hamilton, Cal.) Publications of the Lick Observatory.—Volumes I-XI completed.

BOTANY.—W. A. Setchell, Editor. Price per volume \$3.50. Volumes I (pp. 418), II (pp. 360), III (pp. 400), and IV (pp. 397) completed. Volumes V and VI in progress.

CLASSICAL PHILOLOGY.—Edward B. Clapp, William A. Merrill, Herbert C. Nutting, Editors. Price per volume \$2.00. Volume I (pp. 270) completed. Volume II in progress.

ECONOMICS.—A. C. Miller, Editor.

EDUCATION.—Edited by the Department of Education. Price per volume \$2.50.

ENGINEERING.—Edited under the direction of the Engineering Departments. This series will contain contributions from the Colleges of Mechanics, Mining, and Civil Engineering. Volume I in progress.

GEOGRAPHY.—Ruliff S. Holway, Editor. Volume I in progress.

GEOLOGY.—Bulletin of the Department of Geology. Andrew C. Lawson and John C. Merriam, Editors. Price per volume \$3.50. Volumes I (pp. 435), II (pp. 457), III (pp. 482), IV (pp. 462), V (pp. 458), VI (pp. 454), and VII (pp. 495, index in press) completed. Volume VIII in progress.

MODERN PHILOLOGY.—Volumes I (pp. 400) and II (pp. 373) completed. Volumes III and IV in progress.

PATHOLOGY.—Frederick P. Gay, Editor. Price per volume, \$2.50. Volume I (pp. 347) completed. Volume II in progress.

PHILOSOPHY.—G. H. Howison, Editor. Volume I (pp. 262) completed. Volume II in progress. Price per volume \$2.00.

PHYSIOLOGY.—S. S. Maxwell, Editor. Price per volume \$2.00. Volumes I (pp. 217), II (pp. 215), III (pp. 197) completed. Volume IV in progress.

PSYCHOLOGY.—George M. Stratton, Editor. Volume I in progress.

ZOOLOGY.—W. E. Ritter and C. A. Kofoid, Editors. Price per volume for volumes I-X, \$3.50; for volume XI and following, \$5.00. Volumes I (pp. 317), II (pp. 382), III (pp. 383), IV (pp. 400), V (pp. 440), VI (pp. 478), VII (pp. 446), VIII (pp. 357), IX (pp. 365), X (pp. 417), and XI (pp. 538) completed. Volumes XII and XIII in progress.

UNIVERSITY OF CALIFORNIA CHRONICLE.—An official record of University life, issued quarterly, edited by a committee of the Faculty. Price, \$1.00 per year. Current volume No. XVII.

Address all orders or requests for information concerning the above publications to The University Press, Berkeley, California.

European agent for the series in American Archaeology and Ethnology, Classical Philology, Education, Philosophy, and Semitic Philology, Otto Harrassowitz, Leipzig. For the series in Agricultural Sciences, Botany, Geography, Geology, Mathematics, Pathology, Physiology, Zoology, and also American Archaeology and Ethnology, R. Friedlaender & Sohn, Berlin.