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LESLIE SPIER, *Editor*
MELVILLE J. HERSKOVITS, CORNELIUS OSGOOD, F. H. H. ROBERTS, JR., AND FRANK SPECK, *Associate Editors*

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American Anthropologist

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THE QUESTION OF MATRILINEAL DESCENT IN THE SOUTHEASTERN SIOUAN AREA

By FRANK G. SPECK

A SUPPOSITION has been entertained and apparently accepted by those interested in the social patterns of eastern North America, that the Southeastern Siouan tribes shared with their Cherokee and Muskhogian neighbors the maternal sib type of organization.

Some concern may therefore be felt over the assertion which I propose to make, namely, that no evidence of a specific character exists, either in past or present sources of information, to support the assumption of a matrilineal social sib system among the Catawba, a representative tribe of the Southeastern Siouans, and their immediate relatives.

An examination of the source material on Catawba ethnology shows no vestige of a sib organization. The Catawba, it may be recalled, form the single surviving group among the once-numerous Southeastern Siouan-speaking divisions to have escaped extinction, having continued existence as an ethnic unit while preserving their idiom intact long enough for investigation to be attempted.

We may now turn to the statements made by Lederer which are considered as basic grounds for including the Southeastern Siouan groups within the area of distribution marked out for the matrilineal sib. In the narrative of John Lederer (1670) information is recorded inclining to show that among some of the Virginia or Carolina mountain tribes visited by him in a curious journey westward and southward from the Virginia coastal settlements, there was a belief in four women as having been ancestors of the human race. Among the descendants of these women exogamy, segregated burial, and a strict system of kinship classification prevailed. In this association of traits Mooney,[1] in 1894, beheld the characteristics of a gentile (clan) system marked by maternal descent; an inference based upon fair reasoning from the nature of the recorded data if we accept the premise that the four "tribes" mentioned by Lederer are equivalent to sib groupings. Yet Mooney assumed that this information referred to the eastern Siouan tribes, and treated the details as such under his discussion of the Monacan group, at the same time observing cautiously

[1] James Mooney, *The Siouan Tribes of the East* (Bulletin, Bureau of American Ethnology, No. 22, 1895), p. 33.

that it was impossible to know to how many tribes, or to what particular tribe, this statement applied. The implication evidently grew from Mooney's initial interpretation of the notice that a maternal sib organization was existent among the Siouan tribes of the Southeast.

In view of the examination to which I propose to subject Lederer's observations, they are quoted in the following paragraphs.

From four women, viz. Pash, Sepoy, Askarin and Maraskarin, they derive the race of mankind; which they therefore divide into four tribes, distinguished under those several names. They very religiously observe the degrees of marriage, which they limit not to distance of kindred, but difference of tribes, which are continued in the issue of the females: now for two of the same tribe to match, is abhorred as incest, and punished with great severity.

Their places of burial they divided into four quarters, assigning to every tribe one: for, to mingle their bodies, even when dead, they hold wicked and ominous. They commonly wrap up the corpse in beasts' skins, and bury with it provision and household stuff for its use in the other world. When their great men die, they likewise slay prisoners of war to attend them. They believe in the transmigration of souls: for the angry they say is possessed with the spirit of a serpent; the bloody with that of a wolf; the timorous, of a deer; the faithful, of a dog, etc., and therefore they are figured by these emblems.[2]

Since the publication of Mooney's conclusions no endeavors have been made by others to check up or test the foundations of his interpretations of the social data, and no other sources have disclosed themselves to be given consideration. Swanton accepted the status of the Southeastern Siouans as falling within the grouping of tribes having a maternal sib organization, and listed them as such in a definitive article in 1905,[3] and again in a review of data in 1906[4] reiterating his classification. He held a similar view in 1928.[5] In 1914 Lowie, citing cases in the Southeast,[6] "found himself

[2] John Lederer, *A General and Brief Account of the North American Continent, 1669–1670* (Walker, Evans and Cogswell Company, Charleston, S. C., 1891), p. 8

[3] J. R. Swanton, *The Social Organization of American Tribes* (American Anthropologist, Vol. 7, 1905), p. 665. "Conforming in some measure to the type of organization assumed in the maternal clan theory are the . . . Tutelo." " . . . and that the remaining eastern Siouan tribes are organized like the Tutelo." He adds to this an observation worth including here, "At the same time it would seem as if totems were wanting."

[4] J. R. Swanton, *A Reconstruction of the Theory of Social Organization* (Boas Anniversary Volume, New York, 1906), p. 170.

[5] J. R. Swanton, *Social Organization and Social Usages of the Indians of the Creek Confederacy* (Forty-second Annual Report, Bureau of American Ethnology, 1928), p. 269.

[6] R. H. Lowie, *Social Organization* (American Journal of Sociology, Vol. 20, pp. 68–97). Lowie (p. 93) reaches a conclusion which may be drafted with a point of view expressed on page 4 of this paper. He thinks that kinship groups "tracing descent unilaterally are not found universally among primitive tribes."

in complete agreement with Swanton's conclusions" as Goldenweiser stated in reviewing the case of social organization in North America in his own analysis of the material in 1914, and with him also the Southeastern Siouan tribes remain in the same category.[7] Of other essays in which the classification as noted may have been specified I am not at present aware. In subsequent treatment by contributors who have discovered and annotated references to social relations in the area, among those cases considered important enough to cite in this paper are Spier[8] and in particular Lesser.[9] The latter remarks

> Material on the isolated Siouan groups, as Tutelo, Catawba, Biloxi and Ofo, is not complete. What we have, as Speck's Catawba MS., and the material on Biloxi and Ofo of J. O. Dorsey and J. R. Swanton in *Bulletin 47, Bureau of American Ethnology*, 1912, indicates that we are dealing with different systems from those which occur among the central or main body of Siouan tribes.[10]

In 1933, however, the latest discussion in which the "other eastern Sioux" besides the Tutelo "traced descent in the maternal line" was published by Olson.[11] While this classification for the area and tribes in question was being established, no concrete facts or other forms of evidence either to corroborate or to disprove the claim have been forthcoming from Catawba or Tutelo sources. The matter has reposed in the quiet security of a settled conclusion since 1894—no one at best to blame.

Investigation of Catawba ethnology among its last speakers and elders, whose life-span extended back to the middle of the last century, during my period of field work, begun seriously in 1921 and continued through to the present as occasion was provided,[12] frequently left me challenged with anxiety over the issue raised in these essays.

To further the aims of research in the field of social typology, a closer critical scrutiny of the grounds upon which some of the less-known tribes in the Southeast have been classified as being matrilineally formed, may be advisable. According to the criteria of judgment now widely accepted

[7] A. A. Goldenweiser, *The Social Organization of the Indians of North America* (Journal of American Folk-Lore, Vol. 27, 1914).

[8] Leslie Spier, *The Distribution of Kinship Systems in North America* (University of Washington Publications in Anthropology, Vol. 1, No. 2, 1925).

[9] Alexander Lesser, *Some Aspects of Siouan Kinship* (Proceedings, Twenty-third International Congress of Americanists, Sept. 1928, New York, pp. 563–71, 1930).

[10] Lesser, *op. cit.*, p. 563, fn. 2.

[11] R. L. Olson, *Clan and Moiety in Native America* (University of California Publications in Archaeology and Ethnology, Vol. 33, No. 4, 1933), p. 359.

[12] Under grants from the Council of Learned Societies, the Bureau of American Ethnology, and the Faculty Research Fund, University of Pennsylvania, Grants Nos. 300 and 322.

in America it would mean that the Catawba, if possessing a matrilineal sib organization, would fall into the relatively most advanced level of American culture; on the other hand, if not organized according to the sib structure at all, in the least advanced level.[13]

As it seems to me, judgment favors the view that the Catawba had not reached the stage of developing or acquiring a matrilineal maternal "clan" system by association with more complicated societies on their western frontiers, rather than a conclusion that they originally possessed it and lost it through "progressive" deculturation before 1850. Whatever the original pattern of Tutelo organization may have been, it would be undeniable that they have followed the matrilineal "clan" system of the Iroquois (Cayuga) since their adoption into the League about 1753.

Bearing upon this equation I may express an opinion, perhaps a premature one in advance of more definitely admissable proof, that Catawba ethnology gives the impression of being a lowly representative of Southeastern culture, not comparable in complexity to the built-up cultural systems of the Cherokee and Muskhogian divisions. For the Catawba, then, to show the simpler social form would conform to the apparent simplicity of its averaged culture rating. I mean, in short, that Catawba institutions betray the contours of a marginal cultural type when cast into profile against those of the Creeks, Yuchi, and Cherokee. I may, indeed, be the sole advocate of such an opinion, yet I will stake a venture upon the outcome of an estimate superficially formed in this case after contact extended over a number of years with both Catawba and Cherokee as well as with the Creek and Yuchi. It strikes me as being consistent with relative cultural structures that the Catawba do not stand in the level of groups possessing a maternal social system, while the other three groups do.

EXAMINATION OF CATAWBA EVIDENCE

So far as inquiring into the possibilities of there being, or having been, a sib organization among the Catawba has yielded results, the conclusions are negative. From the first contact with informants, as early as 1913, the question of its existence was ever present in mind. Both Mrs Owl and Margaret Brown knew of no characteristic in Catawba social life to compare with that they both understood to prevail among the Cherokee,

[13] Goldenweiser (*op. cit.*, p. 412) writes: "At the hand of American evidence, Swanton showed that clan and gentile systems did not exhaust the fundamental forms of social organization; . . . that the tribes organized on the clan basis represented, on the whole, a higher culture than the clanless ones." Olson arbitrarily ignores the treatment of "peripheral peoples" who lack a unilateral system "for the reason that they can have played small part in the history of the unilateral complex among tribes possessing it" (*op. cit.*, p. 353).

namely the "clans" with maternal descent. Mrs Owl was married to a Cherokee chief and spent the later part of her life with the Eastern Cherokee. She was aware of the system of Cherokee descent and identity through matrilineal lineage which reigned among the latter during her early life with them, and which still persists in tradition.[14] I frequently engaged her in discussion of the matter, since it was a topic to which I was constantly attentive. Her memory of Catawba modes of life and society extended back to the middle of the last century. She never acquired the Cherokee language and remained a Catawba in sentiment to the last (1931). And the sum total of her testimony was that no equivalent to the Cherokee classification could be traced. I have, in my notes taken from her, the entry of "no correspondences" with the Cherokee sib organization. Similarly (1921) Margaret Brown, who was a still older woman and who had never lived out of the Catawba territory, dismissed my occasional efforts to find an analogy to the "clan" structure—to be expected among the former Catawba through their location in the Southeast in proximity to groups possessing it so definitely—by disclaiming knowledge of it completely. My interests in such questions led me to test this many times with the last speakers of Catawba. No form of questioning revealed traces of matrilineal grouping. Then comes an entry in notes to the effect that Mrs Brown could not recall any other form of association than that traced through the father. "Families went mostly by the daddy," was her own way of putting it. She further remarked that they observed no restrictions in marriage except to avoid the remotest degree of blood relationship,[15] and that no animal names or associations were transmitted within the families. Other informants of advanced age, when led to discuss the possibility of "clan" groupings in the tribe, verified the conclusion just stated.[16]

[14] F. Eggan (*Historical Changes in the Choctaw Kinship System*, American Anthropologist, Vol. 39, 1937, p. 43) quotes W. H. Gilbert, Jr. to the same effect.

[15] See translation of dictated text concerning marriage limitations in my *Catawba Texts* (Columbia University Contributions to Anthropology, Vol. 24, 1934), p. 66. Sally Brown, the narrator, born 1865, had like her mother, no intimation through tradition or practice of the existence of even matrilineal emphasis. Her only teaching had been: "Persons of close kin, do ye not marry. It is not good." Acculturation had, however, gone so far in her idiom as to have introduced a term *possibly* derived from English for the idea of "kin," i.e. kį·'i·sahəre, "close kin," kę'sa're, "not close kin."

[16] Uncle Bob (Robert) Harris, born Sept. 1867, with whom I occasionally dwelt for the purpose of checking over ethnological entries and vocabularies, lays claim to understanding the Catawba language. He is now the oldest living man in the tribe. His conviction is that no clan system existed among the Catawba, since no knowledge of it had survived in the memory of elderly members of his family with whom he had been brought up, speaking the language continuously in his youth. He knew that matrilineal descent held sway among the Cherokee

The summary of evidence is thus definitely antagonistic to any assumption of matrilineal determination among the Catawba for over a century. I do not believe that anyone would care to insist, in accounting for the absence of a maternal lineage system, that the tribe must have become Europeanized by that time sufficiently to have lost its native pattern of social behavior. Mrs Owl's recollection of conditions prevailing during her childhood, back almost to 1850, disclosed no memory of missionary influence in the tribe, or of social modeling through contact with the surrounding whites. It was, in fact, not until the turn of the last quarter of the century that Christian teaching was introduced among the Catawba through the activity of Mormon evangelists. It may be assumed, I believe, that acculturation to European forms did not begin to alter the cultural complexion of the depleted, poverty-stricken, wandering and neglected Catawba before it did the other Southeastern groups (Choctaw, Creek, Chickasaw).[17] South Carolina whites were not concerned with Indian social or economic conditions—nor are they yet.[18]

EXAMINATION OF TUTELO EVIDENCE

The Tutelo (or Tuteli), also of Southeastern Siouan linguistic affinity, survived the catastrophies of the colonial period long enough to fall, in 1870, into the hands of linguistic and ethnological investigators. It is chiefly, perhaps solely, from records obtained by Horatio Hale that evidence is deduced for the existence of a maternal ("clan") organization in this tribe. Such an assumption seems traceable to the following statement quoted from Hale.[19] In noting information imparted to him by Nikonha, an old Tutelo living among the Cayuga on the Six Nations Reserve, near Brantford, Ontario, who was then supposedly over 100 years old, Hale

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and had of his own accord wondered at the lack of similarity between them and his own people. His estimate was also, as expressed by the present chief Sam Blue, that the Catawba regard their cultural heritage to be of a more "civilized" order since they did not observe the "savage customs and superstitions, as you might call 'em," which characterize the Cherokee—a cultural judgment manifestly prompted by Mormon evangelists. I might add a remark by Bob Harris, who suggested that the "screek-owl" and the snake might have been clan animals, since the stories make reference to these creatures as transformed witches. (See *Catawba Texts*, pp. 24–26 for versions of these tales.)

[17] For estimates and conclusions in respect to change in customs among these tribes after the period 1850–60, see Eggan, *op. cit.*, pp. 42–43.

[18] H. L. Scaife (*History and Condition of the Catawba Indians*, Philadelphia, 1896) offers a picture of the existing state of affairs in the tribe in his time. Scaife (p. 22) states that there was "neither a church nor a school on the reservation" in 1893.

[19] Horatio Hale, *The Tutelo Tribe and Language* (Proceedings, American Philosophical Society, Vol. 21, No. 114, 1883), p. 10.

observes, "There are, however, several half-castes, children of Tutelo mothers by Iroquois fathers, who know the language, and by native law (*which traces descent through female*) [italics mine] are held to be Tuteloes." No further effort was seemingly made by Hale to distinguish whether the "law" referred to was an institution of the ancient Tutelo or whether it was in pursuance of the descent ruling characteristic of the Iroquois which had, we know quite positively, dominated the social pattern of the Tutelo since their adoption by the Iroquois in 1753.[20]

It has undoubtedly some bearing upon the results expected from this interpretation of data to note that the Nanticoke, when adopted into the League of the Iroquois Six Nations at about the same time as the Tutelo, submitted to Iroquois influence and modeled their social pattern upon the scheme of the latter; thenceforth they continued with descent in the Wolf "clan" reckoned through the mother. Since the middle of the 17th century the Nanticoke have adhered to Iroquois political and social procedures acquired after their incorporation. They have no intimation in social tradition of another form of descent to betray what may have been true of their pre-adoption classification. Of the latter we know next to nothing. Likewise the Tutelo affiliates among the Six Nations have borne the Wolf mother-sib designation, and this I conceive to be attributable to circumstances similar to those governing Nanticoke "clan" reckoning. It was the Cayuga of the Wolf moiety who adopted both these tribes and gave them their "clan" identity. This is my interpretation of the observations quoted from Hale, who assigns a matrilineal system to the Tutelo.

In turning toward every source of control by which the evidence of social organization may be checked over, one thinks naturally of the test of kinship systems and kinship terminologies (Lesser and Spier). The accepted identifications of social form with kinship systems, in the grouping of the Crow system with matrilineal exogamic clanship, the Omaha system with the patrilineal organization, and the Dakota with the bilateral non-exogamic type, might be thought to provide a further medium for the tentative classifying of Tutelo and Catawba among the Siouan types. The imperfection of the Tutelo kinship vocabularies, however, has laid a barrier across their use by investigators. Yet no deduction of resemblance to the Crow system can be wrung from the recorded Tutelo terms which niggardly fortune has bequeathed to us. And the Catawba kinship schedules do not fall into any of the lineally defined schemes. Since both these kin-

[20] Date of adoption of the Tutelo into Six Nations as recorded in the minutes of the Council of the Six Nations Iroquois, Ontario, shown me in 1914 by Chief Josiah Hill, then secretary of the Six Nations.

ship patterns are positively not of the Crow type, not even a suspicion of matrilineal organization can be inferred from them.[21]

A few tentations may be ventured, based upon an interpretation of the terminology and restrained as to conclusions by the caution imposed upon such judgments by recent contributors whose papers have been referred to.

Catawba accomodates a bilateral society classification by the evidence of its kinship terminology under the method of application of traits pointed out by Lowie and by Lesser, subject to the restrictions placed upon such judgment by later commentators.

The Catawba system of kinship does not harmonize with the normal requirements of a matrilineal organization, for the wife's nephews and nieces are to male ego "like sons" and "like daughters;" wife's brothers and sisters are like one's own brothers and sisters—wherefore, to say the least, no exogamic ratings are exhibited.

The apparently somewhat extended use in Catawba of the modifying term uksərą́', "resembling, like" ("like mother," "like father," "like son," "like daughter," "like uncle, aunt," for spouses of uncle and aunt, "like sibling," etc.) for relationships close enough to deserve specific terms, suggests a stressing of the feeling for secondary or substitute relationship commented upon by Malinowski.[22] He points out that the use of substitute naming may be "an earlier form of expression of feelings of relationship of which the limited biological concept of motherhood and fatherhood is the pattern." This falls, incidentally, in harmony with the sense of my circumstantial reasoning upon the marginal cultural position for the Siouan peoples of the Southeast (see page 4) when compared with the "clan-" possessing divisions.

Other checks which would help in determining the inclinations of social organization away from the unilateral type among the Catawba—such as descent of chieftainship,[23] matri-patrilocal residence, exogamy, the sororate, husband's sister's son marriage, distinctions between cousins, and between nephews and nieces of different affinal lines, to mention a few social traits to be expected in unilineal organization as outlined by Lesser[24]—are manifestly lacking.

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[21] In another article in course of preparation I shall present a resumé and analysis of extant data on the Tutelo kinship system, and of the Catawba kinship vocabularies reçorded in the course of field work with surviving speakers of the language previously mentioned. Both show resemblance to the European kinship system; type B of Lowie's definition.

[22] B. Malinowski, *Kinship* (Encyclopaedia Britannica, 14 ed., Vol. 13, pp. 406–407).

[23] Tribal tradition, according to the understanding of Robert Harris, the oldest member of the group, holds that the last life chief of the tribe, Haigler, was succeeded by his sister's husband, Big Town, after the death of the former about 1762.

[24] Alexander Lesser, *Kinship Origins in the Light of Some Distributions* (American Anthropologist, Vol. 31, pp. 710–30, 1929), pp. 720-21.

The trend of testimony seems to be cumulative in one direction. Only by strenuous effort and vehement distortion of tradition can Catawba social history be construed to show evidence of a clan pattern. The attempt may as well be abandoned.

EXAMINATION OF LEDERER'S NATIVE TERMS

I shall now indulge in an analysis of the Indian words recorded by Lederer in the narrative which concentrates most of the knowledge we possess on topography and nomenclature of the region penetrated by him as the first European to make contact with the speakers of the Southeastern tongues.[25] It may be noted by students of the ethnology and linguistics of the area that Lederer's terms have not hitherto been challenged for their origin; that they have generally passed without hesitation as referring to the country in the idioms of the Carolinian aborigines. I accordingly propose to show, as a means of throwing further light upon the history of these tribes, that the terms in question are Algonkian and that they were recorded by the explorer from the lips of the Indian companions who accompanied him as guides into the new and distant territories lying in the Carolina Piedmont foothills tenanted by the strange and potentially hostile Siouans. Lederer's narrative covers three separate journeys. His first took place in March, 1669, starting from the Indian village called "Shickehameny." Associated with the party on this adventure were three Indians, by name Magkatunk, Hopottoquoh, and Naunugh. Without question we may conclude these Indians were Chickahominy, speaking this dialect of Pohatan Algonkian.[26] Lederer's second journey (May, 1670) started with five Indians. With one of these, a "Susquehanough Indian" named Jackzetavon he continued on into the Siouan Carolina habitat after the rest of the party, both white and Indian, had turned back. On his third expedition (August, 1670) Lederer was accompanied by five Indians. They set out from the Falls of the Rappahannock. Thus Lederer's association with these Algonkian, and the one possibly Iroquoian speaker, we may suppose to have been fairly intimate and continuous.

Lederer, with his vision limited to eastern Virginia, divides the country into three regions.[27] The flats, by which he designates the Virginia tidewater area, lay "between the eastern coast and the falls of the great rivers—in extent generally taken ninety miles." He applies to this zone the Indian

[25] Lederer, *op. cit.*

[26] These proper names submit to approximate analysis through the medium of well-known and widely corresponding elements in eastern Algonkian. Whether or not the terms yield to accurate interpretation is not the principal concern here: they are recognizably Algonkian in form, bearing no semblance to Catawba in phonetics or in composition.

[27] Lederer, *op. cit.*, pp. 7–9.

name Ahkynt (cp. kacka'nt, "tidal water," viz. the Gulf of St. Lawrence and its environs; ekáctəts, "low tide," the radical element having reference to tidal conditions, Montagnais: -hikan, "ebb tide," Delaware). To the highlands beginning at the falls and going to the foot of the great ridge of mountain northeast and southwest (the Appalachians), now embraced within the Piedmont plateau, he gives the Indian name Ahkontshuck. The Appalachians themselves bear the Indian name Paemotinck (cp. pem-, "crossing," -adən, "ridge," -(i)k, locative, "dividing ridge," Penobscot: -axtən Delaware). To cite other cognates in Algonkian idioms seems scarcely necessary. Lederer goes somewhat into detail on the physical characteristics of the three divisions. He gives an additional geographical term in Indian, of much importance in the problem we are confronted with —he calls the easterly spurs of the mountains, "lower than the main ridge," Tanx-Paemotinck (alias Aquatt") (tanks, diminutive, Delaware—a perfectly clear equivalent). No one has any hesitation in pronouncing these terms to be of pure Algonkian (Powhatan) origin. None of them equates with forms in the Southeastern Siouan languages.

They worship one God, Creator of all things, whom some call Okaec, others Mannith: to him alone the high-priest, or Periku, offers sacrifice; and yet they believe he has no regard to sublunary affairs, but commits the government of mankind to lesser deities, as Quiacosough and Tagkanysough, that is, good and evil spirits: to these the inferior priests pay their devotion and sacrifice, at which they make recitals, to a lamentable tune, of the great things done by their ancestors.

The forms in the above paragraph are recognizable as cognates to well-known designations in Pohatan Algonkian ethnology: namely Okee (oki) "deity;" manito, "spiritual force;" periku, equaling possibly máliku, Delaware, "conjurer;" Quiacosough, "priest" (Pohatan, Nanticoke). Again on the first expedition, when the party reached the great crest of the Appalachian divide (March 14), the cloudy ridges of the distant mountains caused the Indians to howl "in barbarous manner," Okiepaeze, "God is nigh," which we may interpret similarly through Penobscot besu'dji, "near," Delaware pɛxo't, and Montagnais peci'c.

Without subjecting the above terms to critical philological analysis the result of our scrutiny is to list them with the Pohatan idioms of the Virginia tidewater region, from which group of idioms the influence overshadows all the terms recorded by Lederer in his descriptions of native belief and custom based upon the authority of Indians in general, except where tribe and language are specified by him. Only in the case of the tribal proper names and regions in the Carolinas are the terms free from suspicion of being conveyed to his notes by his Algonkian-speaking companions, so it seems to me.

In regard to the Siouan identity of the names of the four women progenitors of the tribes, to wit, Pash, Sepoy, Askarin, and Maraskarin (see page 2), less doubt prevails. While the names will be found to agree with Algonkian elements, they possess at the same time certain of the qualities of eastern Siouan forms, but there would be no check upon their correctness of interpretation. The same is true should one attempt to relate them to Tutelo or Catawba stems. In line with the unquestionably Algonkian source of Lederer's information on religious beliefs and deities, this ethnological reference also stands open to the liklihood of being Algonkian. Wherefore, if the matrilineal sib organization is to be construed from it for tribes within the scope of the Lederer explorations, the Virginia Algonkian of the Powhatan Confederacy should be considered as a possible alternative locale intended in the reference.

CONCLUSION

In this paper I have presented matter and a discussion framed upon it, which, as interpreted, has a bearing upon the decision we are to make henceforth in regard to the validity of the conclusion that the Catawba and Tutelo, as representatives of Southeastern Siouan culture, possessed a maternal sib organization. This conclusion has been reached, as I profess to show, through acceptance on our part of insufficient evidence from early documents, furthered by the tendency to assume an extension of the maternal organization, characteristic of the Cherokee, the Creek, and their affiliates, into the area tenanted by the Siouan peoples under consideration.

The results of any attempt to find evidence in *Catawba* institutions and traditions of a unilineal pattern of descent are simply *nil*. The value of evidence hitherto accepted for a similar conclusion in regard to original Tutelo social organization may be pronounced unstable. The interpretation of Lederer's observations on descent among the Carolina tribes as referring to a maternal sib organization among the members of the Southeastern Siouan division in general may be judged to be too meager, uncertain, and indefinite to be trustworthy. Lederer's observations may, indeed, rather be records of traits of social organization among *Algonkian* tribes in the tidewater area of Virginia. Tenuously and finally we may entertain the idea of the possibility of a former sibless bilateral system, if not even a weakly patrilineal one, having prevailed among the Catawba and Tutelo.

If, on the grounds established by any critical examination of sources, the Catawba and the Tutelo are to be removed from the social companionship of the Creek and Cherokee, i.e., from the grouping which includes the

tribes having mother-sibs in the Southeast, a change in the social configuration of tribes of the Southeast must henceforth be mapped out. The Southeastern Siouan units cannot be summarily listed with the socially more advanced Iroquoian and Muskhogian tribes which show a matrilineal sib "clan" system. Their cultural position may prove to be marginal in type. Whether later interpretation of facts recorded for these tribes is destined to ascribe a bilateral, or any measure whatever of a unilateral pattern, it remains to decide that their social formation was probably a sibless one, with emphasis falling upon some simplified institutions of small monarchy,[28] centered about the social nucleus of the town-tribe so characteristic of the Southeastern area at large.

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PHILADELPHIA, PA.

[28] Though somewhat divergent from the main topic of this paper, mention might be made of further evidence in Catawba ethnology which could be construed as being favorable to the idea that the Southeastern Siouan peoples were culturally marginal to other Southeastern groups. (See also Paul Weer, *Preliminary Notes on the Siouan Family*, Indiana History Bulletin, Vol. 14, No. 2, 1937, p. 120) Reiterated mention of "despotic" rule at the hand of "kings," as high chiefs among Southeastern tribes were so often styled, occur in chronicles of the times. This causes another question to arise; namely, the interaction of the offices of "royalty" with the prerogatives of "clan" rule. Records show that among the Santee, the Wateree, the Eno, and the Nahyssan (all well-known Southeastern Siouan-speaking representatives) the chiefs had despotic power. They "held court with a retinue" among a people who were "slaves to their chiefs rather than subjects" (Wateree), and had "power of life or death" over the tribe (Santee). These monarchial states are emphasized by Mooney in his monograph *Siouan Tribes of the East*, the sources being chiefly Lederer and Lawson without need of specific reference here. And again a reference to the Nahyssan (Tutelo) as a "Nation governed by an absolute monarch," and to the Eno as having had a government which was "democratic and patriarchal" (*sic!*) (Lederer, *op. cit.*, p. 24, Mooney, *op. cit.*, p. 31). The details which would be required to understand a system of adjustment of control in conflict between kingship and the "clan" formation are lacking, and nothing can be done with the situation until an ingenious and painstaking attempt has been planned. It awaits the attention of a student devotee. A blending of governmental function between these social forces is possible in conformity with theory. It is ethnologically demonstrated as a working principle among the Creek, Choctaw, and Cherokee; without conflict of principle between a monarchial and at the same time a matriarchial system, according to the testimony of the early explorers. In the case of the Catawba and Tutelo the inconsistency of the mixed type of tribal control would not add to perplexity if we permit them and their Siouan congeners to rank among the sibless types in the area, through acceptance of the testimony brought forth in this survey of data. Lederer's mention of agnatic rule among the Eno is, however, a help if admitted as being valid. Of its being valid I must confess myself not convinced. It would, nevertheless, not be too exceptional a case for North America, since we have instances of polarity in the development of a sib system within a single area in the central Algonkian region, in the Plains area, and on the Northwest Coast.

THE ANCIENT CULTURE OF NORTH ASIA

By A. ZOLOTAREV

THE south and southwest of Siberia were peopled in Paleolithic times. The geological maps of the Pleistocene period show that in the late Pleistocene the Barabinsky steppes, upper Irtysh, the Ob and Yenisei regions, and a narrow strip of land which reached to Yakutsk formed "the Siberian pocket," an interglacial space surrounded by ice or frozen swamps.[1] The population of this "pocket" was quite isolated from Europe and South Asia. Here the original Paleolithic culture of Siberia was formed.[2] The greater part of the tundra and taiga regions were not inhabited, and only after the disappearance of the ice cap did man spread northward. By analogy with the history of North Europe, we can suppose that man spread northward as soon as the land was free from ice and had become suitable for habitation. Possibly this process in Siberia corresponds to the Macrolithic stage of culture. At any rate, in North America and on the western shore of the sea of Okhotsk the macrolithic industry was founded.[3] Also the 15,000 years of antiquity for man in America must be taken into consideration.[4] We suppose that the first peopling of North Asia, and consequently of America, had begun at a time when they possessed the early Neolithic stage of culture.

After the disappearance of the ice, man roamed northward and dwelt on the seashores and river banks. He was not a reindeer breeder because, as we can prove now, reindeer breeding is of relatively recent origin.[5] Nor was he primarily a hunter, because in the original condition of the Siberian forests, which had deep soft snow, it was impossible to hunt deer or elk without snowshoes or skis. But as K. Birket-Smith has pointed out, the first inhabitants of the northern regions had neither.[6] They hunted systematically in summer only. But the northern summer is and was chiefly a fishing season, and hunting was of no importance. Man was busy fishing all the year—in summer, and in winter when he caught fish in ice holes. Winter fishery was the basis of ancient culture in North Asia. Without it

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[1] E. Eickstedt, *Rassenkunde und Rassengeschichte der Menschenheit* (Stuttgart, 1934), pp. 256–57.

[2] G. Sosnovskii, *The Paleolithic Sites of North Asia* (Trudy II Mezhdunarodnoi Konferentsii po izuchennii chetvertichnogo perioda Evropy, Vol. 5, Leningrad, 1934).

[3] Collections of the Anthropological Museum, Moscow.

[4] See D. Jenness, *The American Aborigines* (Toronto, 1933).

[5] No traces of reindeer breeding were found in the Neolithic sites of Siberia.

[6] K. Birket-Smith, *The Caribou Eskimos* (Reports, Fifth Thule Expedition, Vol. 5, Copenhagen, 1929).

man, who had neither skis nor snowshoes, could not have inhabited the northern regions.

People of this ancient culture dwelt all the year on the seashores and river banks. In the spring and autumn they hunted elk and reindeer when these animals crossed the rivers: in summer, they caught fish in open water, in winter at holes in the ice. They made underground lodges, used pottery, were clothed in fish, bird, and partly in deer skins, and were active dog breeders. Their social conditions were evidently matriarchal. With this stage of culture were connected totemism, worship of the sun, and female family shamanism. This culture was a necessary stage in the historical development of all the northern tribes of Asia and America.

POTTERY

Traces of the ancient Neolithic settled culture of the winter fishermen have been found in all the northern regions of Siberia and North America. Professor B. Petri, in his review of the Siberian Neolithic culture, has shown that the inhabitants had become settled fishermen during the transition from the Paleolithic to the Neolithic.[7] Although information about the archaeology of the northern regions is very scant, it is certain that all ancient Neolithic remains have been found on river banks, near places favorable for nets. In the year 1885, near Tiumen, on the Andreevskoe Lake banks, a Neolithic station composed of twenty-two underground dwellings was found. In these were pieces of pots with round or conical bottoms, stone axes, flint knives, and arrows. The abundance of fish bones proves that the tribes which dwelt on the banks of Andreevskoe Lake were chiefly fishermen.[8]

Far in the north, in the delta of the Ob, where the Samoyed now live a nomadic life, formerly dwelt settled fishermen. Fragments of pottery have been found there.[9] On the Yamal Peninsula remarkable stations were excavated by V. Chernezov. He found at Cape Tiytesaile (71°21′ n., 77°30′ e.) three earth lodges near the mouth of a little river. These were round (10 m. diameter); the entrance at the side; the hearth in the center. The earthen

[7] B. Petri, *The Neolithic of Siberia* (Irkutsk, 1926), pp. 3–4.

[8] B. Petri, *op. cit.*, p. 25; P. A. Dmitriev, *The Hunting and Fishing of Clan Society in the Eastern Urals* (Iz Istorii Rodovogo Obchestva na Territorii USSR, Moscow-Leningrad, 1934) The author notes especially the leading role of fishing in the Neolithic life of these regions (p. 200). The floor of the underground dwellings was covered with a stratum of scales 10 centimeters deep. At the second site at Andreevskoe Lake, among 435 artifacts, 341 clay sinkers were found (p. 201 *et seq.*).

[9] V. Novitskii, *The Sites on the Dune at the Mouth of the Ob* (Trudy Obchestva Estestvoispitatelei, Kazan University, Vol. 1, 1916).

roof was supported on wooden poles and a whale's jaw used as a door. The cultural stratum consisted of the bones of sea animals (walrus, seal), charcoal chips, fragments of pottery and bone, and wooden, bronze, and iron artifacts. The abundance of sherds shows that pottery had been in common use. The principal forms were jars with pointed bottoms and bowls, sometimes flat bottomed lamps. Among the artifacts, fragments of paddles, arrow points of antler, and a fragment of a bone runner were found, but no traces of dog or reindeer harness.[10] To judge from all these cultural traits, the inhabitants of the Yamal station were settled fishermen and sea mammal hunters. In spite of the presence of some iron objects, it is possible to consider the Yamal culture as pertaining to the Neolithic period. Iron, unquestionably, was imported from the southern regions. Things found in the dune of Tas Sound are connected with the Yamal culture. Many fragments of pottery with primitive ornamentation ("Kammkeramik") resembling the Eneolithic pottery of the Kama area, bone points, stone and iron arrows, and fragments of iron armor, evidently not older than the 15th–16th centuries, were discovered there.[11]

Fragments of pottery have been found in ruins of ancient Ostyak "towns" situated on the banks of the Ob[12] and in the Vasyugansk tundra.[13] At the present time the Samoyed, Ostyak, and Ostyak-Samoyed have no pottery. It evidently disappeared from western Siberia not so very long ago. Fragments of pottery have been found in old stations throughout Samoyed territory, as well as in eastern Siberia and the Far East. New investigations show that all the Amur and Ussuri basin was formerly occupied by settled fishermen and potters.[14] North of the Amur ancient pottery has been found along the Okhotsk Sea shore,[15] in Koryak

[10] V. Chernezov, *Une ancienne culture maritime dans la presqu'île de Ya-mal* (Sovetskaia Etnografia, 1935, No. 4–5, pp. 109–33, Leningrad). "L'ensemble des données fournies par les fouilles, la littérature et le folklore permet de dégager les traits fondamentaux de cette culture, qui sont (1) chasse aux animaux marins (principalement au morse); (2) usage du harpon d'un type semblable au harpon paléasiatique des Esquimaux; (3) emploi du bateau en peau identique au kayak des Esquimaux; (4) industrie osseuse développée; (5) emploi local des os de baleine comme matériaux de construction. Tout cela permet d'affirmer l'existence dans le passé sur le littoral des mers de Barentz et de Kara d'une culture rappelant par la forme celle des Esquimaux et des Tchouktchis" (p. 133).

[11] Collections of the Anthropological Museum, Moscow.

[12] I. Poliakov, *A Letter about a Journey in the Ob Valley* (St. Petersburg, 1877), p. 51. "On the rivers Vakh and Konda," says Starzev, "some Ostyak women make clay pots" (G. Startsev, *The Ostyak*, Leningrad, 1928), p. 28.

[13] Collections of the Anthropological Museum, Moscow.

[14] A Okladnikov, *The Archaeological Investigations at the Amur* (Sovetskaia Arkheologiia, 1936, No. 1, p. 275–78).

[15] Collections of the Anthropological Museum, Moscow.

territory,[16] in Kamchatka,[17] and on the Arctic shores of Asia and America,[18] where it was connected with the Thule culture. Although all this evidence is very scanty, it is possible to assert that the greater number of the Siberian aborigines were formerly acquainted with pottery. This is true not only of seashore inhabitants, but the inland tribes as well. Some years ago on a little island in the Aldan River, 200 miles from the mouth of the Maya, a Neolithic station with many fragments of clay pots was found.[19] This discovery proves that the ancient culture of the pot makers was not limited to the seashores alone.

Naturally the question arises, what relation have the ancient settled fishermen who formerly dwelt in the north of Asia to the present day natives? According to the general view the Paleoasiatic tribes never knew anything about pottery. This misconception reflects the remarkable belief of all these natives in the strange origin of ancient pottery. For example, the Ainu consider Neolithic underground lodges and pottery as the creation of mythical vanished peoples, "koropokguru" or "tonchi."[20] The Eskimo believe that the remains of Thule culture were produced by the mythical giants, tunnit.[21] The Samoyed consider the remains of the Yamal culture as the places of habitation of a vanished people called "sirchi."[22] The Chukchee ascribe the ancient underground dwellings to the vanished tribe "onkilon."[23] In spite of this popular belief there is no discontinuity between the ancient settled culture of northern Asia and that of the modern natives. Cultural tradition has not been interrupted in the course of many thousands of years. The many instances prove that all Siberian tribes were acquainted with pottery not so very long ago.

In the Eskimo settlements of Alaska Murdoch found fragments of clay pots, which were used by Eskimo, according to their own words, before

[16] W. Jochelson, *The Koryak* (Publications, Jesup North Pacific Expedition, Vol. 6, Part 2, 1905), pp. 640–45.

[17] W Jochelson, *Archeological Investigations in Kamchatka* (Washington, 1928).

[18] Th. Mathiassen, *Archeological Collections from the Western Eskimos* (Reports, Fifth Thule Expedition, Copenhagen, 1930); *idem, Preliminary Report of the Thule Expedition* (XXIe Congrès International des Americanistes).

[19] N. Kiakshto, *The Stone Remains at Aldan* (Problemy Istorii Materialnoi Kultury, 1933, No. 7–8, Leningrad).

[20] B. Laufer, *Die angeblichen Urvolker von Yezo und Sachalin* (Centralblatt für Anthropologie, Ethnologie und Urgeschichte, Vol. 5, Part 6, Jena, 1900).

[21] K. Birket-Smith, *The Question of the Origin of Eskimo Culture: a Rejoinder* (American Anthropologist, Vol. 32, pp. 608–24, 1930).

[22] V. Chernezov, *op. cit.*

[23] W. Bogoras, *The Chukchee* (Publications, Jesup North Pacific Expedition, Vol. 7, Part 1, 1904).

the arrival of white men.[24] The Eskimo women of Bering Strait, St. Lawrence Island, and Nunivak Island made pots in the last century.[25] In descriptions of the voyage of the ship "St. Michael" (1772–73) it is said that the Koniag "had clay and wooden vessels."[26] At the end of the 18th century an Eskimo woman, Itteni, informed the Russian administration that "the inhabitants of Alaska boil food in clay pots, but have almost no copper or iron kettles."[27] The merchant Ivanov, who travelled in Alaska, saw "big clay pots" among the Eskimo.[28] The old Russian literature on Alaska is rich in such evidences. Apparently, pottery is met in the Central Eskimo region in the vanished Thule culture only, but it existed in Alaska nearly up to our day. The last excavations of H. Collins prove the existence of a direct connection between the Thule culture and modern Eskimo.[29] Th. Mathiassen showed that the loss of pottery by the Central Eskimo was caused by the transition to nomadic life,[30] but the settled Eskimo of Alaska gave up pottery only after becoming acquainted with European kettles.

Among the Itelmen, Steller and Kracheninkov did not find any pottery. Nevertheless, the Itelmen were acquainted with it. In the report of Vladimir Atlasov, the first Russian explorer of Kamchatka, it is said that "many sables have no tails, because they [the Kamchadal] cut off the tails, and mix them with clay, so that the clay binds the fur, and then pots are made of it."[31] In the second report by Atlasov it is said also that "the Kamchadals make clay and wooden vessels themselves."[32] All Atlasov's information is so exact, that it is impossible to doubt this.[33] It is neces-

[24] J. Murdoch, *Ethnological Results of the Point Barrow Expedition* (Ninth Annual Report, Bureau of American Ethnology, 1892), p. 91 *et seq.*

[25] E. Nelson, *The Eskimo about Bering Strait* (Eighteenth Annual Report, Bureau of American Ethnology, Part 1, 1899), pp 201-202

[26] *A Voyage on the Ship "St. Michael"* (Sobranie sochinenii vybranykh iz mesiatseslovov, Vol. 5, St. Petersburg, 1772), p. 311.

[27] *The Interrogatory of the Chukchee Woman Itteni* (Severnyi Arkhiv, 1825), p 197.

[28] Khvostov and Davidov, *The Journey to America* (St. Petersburg, 1812), Vol. 2, p. 193.

[29] H. B. Collins, *Archeology of the Bering Sea Region* (Annual Report, Smithsonian Institution for 1933, 1935), pp. 453–68; *idem, Archeological Investigations at Point Barrow, Alaska* (Exploration and Field Work of the Smithsonian Institution for 1932, 1933), pp. 45–48; *idem, Prehistoric Art of the Alaskan Eskimo* (Smithsonian Miscellaneous Collections, Vol. 81, No. 14, 1929), and other works of this author.

[30] Th. Mathiassen, *Archeological Collections from the Western Eskimos*, p 91; *idem, The Question of the Origin of Eskimo Culture* (American Anthropologist, Vol. 32, pp. 591-607, 1930).

[31] *The Stories of Vladimir Atlasov* (Kolonialnaia Politika Tsarisma na Kamchatke i Chukotke v XVIII veke, Leningrad, 1935), p. 28. [32] *Ibid.*, p. 31.

[33] See L. Berg, *Discovery of Kamchatka and Expeditions of Bering* (Leningrad, 1935), pp. 70-94.

sary to remember that W. Jochelson found clay pots in all the ancient underground dwellings of Kamchatka.[34] The Chukchee used pottery also. The Cossack, Kuznetskii, who was captured by the Chukchee, related in the year 1754 that the Chukchee cooked their food in clay pots.[35] This fact is confirmed by some other travellers[36] and native traditions.[37] Fragments of clay pots were found by W. Jochelson in ancient Koryak underground dwellings. The Ainu of Sakhalin and the Kurile Islands also used pottery.[38]

In the second half of the 19th century the Gilyak used indigenous birch bark vessels and imported Chinese and Japanese crockery. But in the historical records of the Japanese travellers Mamio Rinso[39] and Mogami Toknai,[40] native pottery of the lower Amur is described. There is no reason for doubt in the truth of these records; first because all Mamio Rinso's information is quite exact, and in the second place because this statement is in accord with recent archaeological discoveries.[41] Perhaps the disappearance of pottery may be ascribed to Chinese influence.

The data pointed out above show that all natives of Siberia made pottery, which was partly supplanted by Russian, American, and Chinese utensils, and partly vanished with the spread of nomadic life.

UNDERGROUND DWELLINGS

Underground dwellings are connected with the ancient strata of northern culture. Among a few tribes they are preserved to the present time, but in the past their distribution was considerably wider. They were connected with a relatively sedentary mode of life, thus constituting a second important element of the ancient fishermen's culture. The full review of their distribution made by W. Jochelson shows that underground dwellings were

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[34] W. Jochelson, *Archeological Investigations in Kamchatka.*

[35] *The Report of the Cossak Kuznetskii, who was Captured by the Chukchee* (Severnyi Arkhiv, 1825), p. 187.

[36] *Information about the Chukchee by Captain Shishmarev* (Zapiski Gidrograficheskogo Departamenta Morskogo Ministerstva, Vol. 1, 1852), p. 186; Kallinikov, *Our Extreme Northeast* (St. Petersburg, 1912), p. 64.

[37] W. Bogoras, *Description of the Material Life of the Reindeer Chukchee* (Sbornik Muzeia po Antropologii i Etnografii, Vol. 2, 1901), p. 25.

[38] B. Laufer, *op. cit.*

[39] F. Siebold, *Nippon* (Archiv zur Beschreibung von Japan, Warzburg and Leipzig, 1897), p. 233.

[40] I. Plath, *Geschichte des östlichen Asiens* (Göttingen, 1830), Vol. 1, pp. 29–51.

[41] See A. Okladnikov, *loc. cit.* Also A. Zolotarev and M. Voevodskii, *Essays on the Archaeology of the Lower Amur* (in press).

the oldest type among the Ainu, Itelmen, Aleut, Eskimo, Koryak, Chukchee, and a number of tribes of the Northwest Coast of America.[42]

Underground dwellings with the entrance through the smoke hole are the oldest type, distributed, according to Jochelson, among the Thompson Indians, Itelmen, Maritime Chukchee, Koryak, and in ancient times among the Gilyak and Californian Indians. But in reality they were distributed on a wider scale. According to Chinese records, the peoples of the Han Principality (Dynasty), the Suchen and the Mohe, had such types of dwellings.[43] The Negidal, Olcha, and Sakhalin Ainu of some generations ago were acquainted with them. La Perouse saw underground dwellings of Kamchadal shape among the Orochi.[44]

The Samoyed also used such types of dwellings.

> They lived [wrote Olearius] in little, half underground lodges, with circular upper parts and without windows. In the middle of the latter there is a hole, through which smoke and people pass. Their lodges are covered with snow, as deep as the stature of two men. Then it is impossible, it is said, to go in or out of them. But they make passages under the snow and crawl from one house to another.[45]

D. Anuchin believed that Olearius's statement was wrong, because Johnson wrote in the year 1556: "Their tents are round and are called chome in their language."[46] But we cannot agree with Anuchin. The ancient Russian document *A Story about the Unknown Peoples in a Far Land* (15th century) describes "the changing of the skin of the Samoyed," "in summer they live at the sea, but do not live on land."[47] The records of the Arabian writers and geographers also maintain that the hunting of sea mammals was an important activity of the ancient Samoyed. "The natives of these lands," says Abu-Hamid, "throw into the sea swords which are bought in Bulgar. Then the Lord sent him a fish as big as a hill."[48] Abu-Hamid evi-

[42] W. Jochelson, *Past and Present Subterranean Dwellings of the Tribes of North Eastern Asia and North Western America* (Congrès International des Americanistes, XVe sess., Vol. 2, Quebec, 1907).

[43] Iakinf-Bichurin, *Collection of Information about the Peoples Dwelling in Central Asia* (St. Petersburg, 1851), Part 2, pp 31, 83, 114; Part 3, pp. 19, 45.

[44] "Au-dessus, et à une tres petite distance, nous avons visité trois jourtes, ou maisons souterraines, absolument semblables à celles des Kamtchadales" (*Voyage de La Perouse autour du monde*, Hamburg, 1798), Vol 3, p. 101.

[45] Olearius, *The Description of the Journey in Moscovia* (Moscow, 1906), p. 167-68.

[46] D. Anuchin, *An Essay on the History of Exploration in Siberia* (Moscow, 1890), pp. 50-51.

[47] D. Anuchin, *op. cit.*, p. 7. Johnson says: "One month in the year they live in the sea and do not come or dwell on the dry land for that month" (quoted by Anuchin, *op. cit.*, p. 46).

[48] I. Markwart, *Arabische Berichte über die Arktische Länder* (Ungarische Jahrbücher, 1921), Vol. 4, p. 300.

dently describes in a vague way the whale hunting of the Proto-Samoyed. Instead of sword throwing it should read harpoon throwing, and the "fish as big as a hill" is simply a whale or walrus. This interpretation is substantiated not only by the Yamal Neolithic sites, but also by definite mention in the ancient historical records of Yugra commerce in walrus tusks. The evidence of Olearius is supported by some other documents. Georgi describes the half underground dwellings of the Samoyed.[49] The Yenisei Samoyed "live in winter in yurtas, frames, or underground dwellings without stoves."[50] According to 18th century information the Samoyed lived in winter in underground dwellings "so big and roomy, that a whole clan might live in them. In the ceiling there is one hole as entrance and exit, and for the smoke if a fire is burning."[51] Nosilov saw such dwellings among the Yamal Samoyed in the 20th century.[52] The maritime clan of the Yurak have preserved traditions of such types of dwellings. All these evidences prove the truth of Olearius's statement.

Underground dwellings were widely distributed in Siberia a few hundred years ago. Thus the Yukaghir and Ostyak dwelt in underground dwellings.[53] It may be that the account of the Arabian writer Ibn Dast (10th century) describing the underground houses of the ancient Bulgars should also be considered as referring to the Paleoasiatic type of underground dwelling. N. Kharuzin asserted that in the mud-hut which the Finnish nations used as cellars, the ancient shape of the houses has been conserved.[54] Consequently it would seem that the Paleoasiatic type of underground dwelling and with it all the ancient traits of fishermen's culture were distributed through western and eastern Siberia and eastern Europe.

THE ANCIENT MODE OF FISHING

The basic economy of the ancient culture of the north was fishing. The people of this culture were occupied in fishing all year round. At the present time summer fishing supplies the staple food for all the northern peoples,

[49] Georgi, *Description of All Nations who Dwell in Russia* (St. Petersburg, 1777), Vol. 3, p. 8.

[50] V. Arefiev, *The Aborigines of Yenesei* (Sibirski Sbornik, 1902), pp. 31–35.

[51] G. Startsev, *The Samoyed* (Leningrad, 1930), p. 43.

[52] V. Nosilov, *At the New Land* (St. Petersburg, 1903), pp. 268–69.

[53] See Isbrant Ides, *Driejaarige Reise naar China van Moskou* (Amsterdam, 1704), p. 28. "Des winters woonen deze Ostiakken't eenemaal onder daarde, behalven dat'er boven een gatis, daar de rook uittrekt, 't geen de ingang is. . . . " For the Yukaghir see Schrenk, *About the Natives of the Amur Region* (St. Petersburg, 1899), Vol. 2, p. 31, and Zenzinov, *To Stay with Yukaghir* (Etnograficheskoe Obozrenie, 1914, No. 1–2).

[54] N. Kharuzin, *A Brief Sketch of the Development of Dwellings among the Finns* (Moscow, 1895).

with the exception of some groups of Samoyed and the reindeer breeders of the northeast. The mode of fishing among the peoples of the north is similar on the whole. The ancient methods are conserved only in part. It is not clear which of the modes of summer fishing may be called ancient, but the ancient winter practise was catching fish through holes in the ice. By this method man can adapt himself to the conditions of the northern winter. This mode of fishing is widely spread at the present time, but it is not important and is preserved as a survival only.

The Gilyak catch fish at ice holes with fish hooks or nets, and traps for sturgeon are let down under the ice. The Tungus-Manchus do likewise. In Chinese records we read of the Kidans: "every year at the first moon, on the first ten days the Emperor starts for the battue, where he spends sixty days; after that he proceeds to Dalu River, where the ice is cut up and fish is caught."[55] That is a survival only, but among the modern Negidal it is an important matter.[56] The Goldi catch fish all winter too. A hole in the ice is made opposite every house and fish is caught with a fish gig or hook. Every man can catch about a hundred kilograms of fish with such primitive implements.[57] But with the big nets, which are now in use on the Olcha's collective farms, the Olcha catch hundreds of thousands of kilograms daily.

The Yukaghir cut the ice as soon as the rivers are frozen and let down nets. Fish gigs and spoon bait are also used.[58] The Lamut search for unfrozen patches of water, which are formed by rapid mountain streams.[59] The Koryak make special holes in the ice. Generally with them the catching of fish through ice holes is woman's task.[60] The Keto and Ostyak do the same.[61] A very interesting method was used by the Baikal Tungus (Samagir clan), Orochi, and the Udhe: all of them built a little skin tent over an

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[55] Vasilev, *The History and Antiquity of Central Asia (Eastern Part)* (Trudy Vostochnogo Otdeleniia Arkheologicheskogo Obshchestva, 1854), Vol. 4, p. 185.

[56] A. Lipski, *A Brief Review of Manchu-Tungusian Peoples of the Amur River* (First Native Meeting, Far East District, Khabarovsk, 1925), p. 25.

[57] I. Lopatin, *The Goldi* (Vladivostok, 1922), p. 163. See also O. Lattimore, *The Goldi Tribe, "Fishskin Tatars" of the Lower Sungari* (Memoirs, American Anthropological Association, No. 40, 1933), p. 33.

[58] W. Jochelson, *A Brief Sketch of the Hunting and Fur Trade in the Kolyma Region* (Trudy Iakutskoi Ekspeditsii, Otd. III, Vol. 10, Ch. 3, St. Petersburg, 1898), p. 269.

[59] W. Bogoras, *The Lamut* (Zemlevedenje, Vol. 7, Moscow, 1900), p. 67.

[60] W. Jochelson, *The Koryak*, p. 527.

[61] Arefev, *op. cit.*, p. 33; M. Krivoshapkin, *About the Ostyak, Tungus, and Other Aborigines of the Yenesei District* (Zapiski Sibirskogo Otdela Russkogo Geograficheskogo Obshchestva, 1863), p. 55; A. Dunin-Gorkavich, *The North of Tobolsk* (St. Petersburg, 1904), Vol. 1, p. 142.

ice hole; inside the hunter sat with a long fish gig.[62] This is similar to the mode of seal catching in Greenland and fish catching in Canada.[63]

Those facts prove beyond doubt the truth of Kaj Birket-Smith's theory of an ice hunting stage of culture. The Tungus myth of the hero Umna is an eloquent corroboration. This myth tells of the ancient Tungus hero, who lived at a time when the Tungus had no domesticated reindeer, but dwelt all the year on the shore of the lake and sought food by fishing at ice holes.[64]

DOG BREEDING

This fourth important element in the ancient culture of these northern fishermen has been fully set forth in Birket-Smith's valuable monographs. Therefore we confine ourselves here to a few remarks only. As a matter of fact, dog breeding was widely spread at the time the ancient culture prevailed. The careful inquiry into the Russian annals which I have made shows the existence of dog breeding in western Siberia and northeastern Russia *before* the appearance of domestic reindeer. At least, all the Ostyak and some of the Samoyed were dog breeders in the 15th century. In the 16th century the Ostyak borrowed reindeer from the Samoyed, but at that time the greater part of the former tribe were essentially dog breeders.[65] Some groups of Ostyak, for instance the Ostyak at Sosva River, continued such a mode of life until the 19th century.[66]

The culture of winter fishermen is now extinct. Survivals are present, especially among the Maritime Chukchee, Koryak, and Gilyak, and traces are widely distributed among a number of other Siberian tribes. A direct connection exists between the Tungus, the most typical representative of snowshoe culture, and the extinct culture of winter fishermen. On the northeastern shores of Lake Baikal now live the Samagir clan of Tungus. They have very few reindeer, and hunting for seals and fishing in summer and winter are their most important occupations. In the 16th–18th centuries the Okhotsk seashore was inhabited by Pedestrian Tungus. They had no reindeer, travelled with dogs, lived in underground dwellings, and were fishermen and sea mammal hunters. Their language was unquestionably Tungusian. In them we have part of the Tungusian stock conserving

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[62] Oral information from Dr M. Levin on Tungus and Dr B. Vasiliev on Orochi. For Udhe see V. Arsenev, *Dersu Udzala* (2nd ed., Moscow, 1934), p. 231.

[63] K. Birket-Smith, *The Caribou Eskimos*, Vol. 1, pp. 70–71, 162–63.

[64] G. Vasilevich, *Materials for Ewenkee (Tungus) Folklore* (Leningrad, 1936), pp. 251–52.

[65] I intend to publish a special article on the origin of reindeer breeding.

[66] A. Dunin-Gorkavich, *The North of Tobolsk: Vol. III, Ethnographical Sketch* (Tobolsk, 1911), p. 31.

the ancient mode of life until the 18th century. The transition from the ancient culture of winter fishermen to the culture of forest hunters took place perhaps not so long ago; and the invention and spread of snowshoes (and skis) can hardly be assigned to prehistoric times. At least the traditions of the Tungus and Yukaghir remind us of the time when there were no snowshoes.

This is but a brief summary of such investigations as I have been able to make. I hope to publish a fuller account later.

ACADEMY FOR THE HISTORY OF MATERIAL CULTURE
Moscow, USSR

WHITE MOUNTAIN APACHE RELIGION *By* GRENVILLE GOODWIN

THE inclusion of cosmogony and beliefs concerning life and death with religion may seem unnecessary. However since "religion" is here used not only in the sense of shamanism and ritual, but with the broader meaning of man's explanation of life and the universe, which after all is almost necessarily religion among a people to whom science is not a reality, their inclusion seems warranted. Shamanism, ritual, and prayer are after all only the outlets of the religious concepts of the White Mountain Apache, whether in actuality they fostered these concepts or not.[1]

UNIVERSE, PLANTS, AND ANIMALS

The earth is female; her head to the east, her feet to the west. She has life. Her bones are the mountains and rocks, her hair the trees and plants. Four great beings support her.

The sky is male; like the earth he has life, a body, and a head. Indicative of his sex, he lies above the female earth in the same direction, but without touching her.[2]

The sun, a male being created after the earth, holds foremost place in the universe. His home is in the east. Each day he travels across the sky till noon, but from there one of his servants goes down to the west. During the night the sun travels back through the underworld, from west to east. This underworld is a vague region below, where Snake and Frog People live, identified by some with the world from which mythical emergence was made. The sun's wife's identity is uncertain. Some say she is the moon.

The moon is female. From new moon to new moon she is said to age from infancy to old womanhood and back. A more realistic explanation of her phases is that she is embedded in the sky to varying degree.

Stars at one time were people. Six commonly recognized constellations exist; the most important, Ursa Major, a male being of great efficacy. Next him come the morning and evening stars.

Four great winds—black in east, blue in south, yellow in west, and white in north—live together beneath the sky. They seldom come on earth and then only in the form of a terrific wind storm. On the earth are three other classes of winds, working for the four above.

There are Water People of human form. Water itself has life; witness the way that it ripples and flows in a river, the noise it makes in flood. Rain

[1] This paper is based on twenty-two months of field work among White Mountain Apache in Arizona, under auspices of the University of Arizona, in 1932, 1935, and 1936.

[2] The shape of earth and sky is not always thought of in such human form. Some say that they are masses pointed at eastern and western ends.

comes from the Water People, Cloud People, and Lightning People in the form of male (pelting) or female (gentle) rain. Lightning People are a most powerful class of supernaturals, only present in the clouds, where they travel and live during summer months. In autumn they depart to their homes at the edge of the earth and sky and to a land that is said to lie on the other side of the sky. Lightning People and Cloud People cause thunder and lightning; the lightning being their arrows. They are in human form: men and women, girls and boys, etc. Rainbow belongs to them.

Certain species of snakes, some from earth and some imaginary ones, with porcupine, lizard, and skunk, fly about in space just beneath the sky. From certain of these animals comes the dangerous lightning. A great snake in the underworld communicates with a lightning being above concerning certain happenings on the earth. The connection between snakes and lightning is an important one.

Even types of clouds have their sex. There are Mirage People. The four main rivers on the earth have sex and one is chief. Likewise there are four great holy mountains, each with sex.

Day and night are personified in the form of the holy beings "Dawn Boy" and "Dawn Girl" and "Darkness Boy" and "Darkness Girl." The yellow afterglow of sunset is represented by Yellow Afterglow Boy and Yellow Afterglow Girl.

The scheme of the four directions permeates all ritual; is present in ceremonial sand paintings, holy charms, religious songs and prayers, even in dreams. This is represented by colors; east black, south blue, west yellow, and north white. The sequence beginning with east, is clockwise; a rule of motion which holds for everything in rotation. Animals, plants, mountains, and the like, associated with a direction, also assume its color. This form occurs again and again in song and picture. East and west are male, north and south female. This ascription of sex carries over to their colors, as well as animals, mountains, etc., used in conjunction with them. East, because always first mentioned in ritual, is the most powerful and holy. Anything associated with it holds the same position.

Plants have life. They are people divided into related groups. Many of them are believed to have power, and the more potent of these are personified and invoked in ritual and prayer. Pollen is not connected with fertilization; instead, it is merely a part of the plant.

Animals, birds, insects, and reptiles are each separated into different groups, likened to various tribes, speaking their own language and having their customs. Many animals have power, some excelling others in this respect. Because of this they play a part in ceremony and religion.

SUPERNATURAL BEINGS AND DEITIES

Each supernatural being or class of beings has its special place in religious concept. Rules over Life, or In Charge of Life, is the supreme deity. Though his name is familiar, yet he is indefinite and impersonal. Where he lives, what he looks like, of what sex he is, are not important. There is a vague idea that he dwells somewhere above. He seems to be male. Some men with supernatural power claim to have seen him in dreams. Such shamans impress their listeners by stating that they know where In Charge of Life lives, that they have been there, have seen him, but only as a passing flash. In Charge of Life is the creator of everything.

Almost, if not entirely, of equal position is the sun. There is confusion as to whether he and In Charge of Life are not one and the same, and they are occasionally mentioned as such. True, the sun is the accredited source of most of the things which come from In Charge of Life. He gives life; he created the first sickness; is the cause of death; made all religious ceremonies for man. But mythology does account for the creation of the sun: he is readily pictured and had direct dealings with man. None of this is true of In Charge of Life. It seems probable In Charge of Life is a valid pre-European concept.

Important also is Changing Woman, the mother of Slayer of Monsters, the culture hero. She has control over fertility and fruition of plants; is kindly. She is the essence of long life, having the power to change from old to young and back. Rather than the sun or In Charge of Life, who occasionally take pleasure in abruptly cutting man off, she is addressed at times in prayer for long life.

Slayer of Monsters, man's champion, once lived on earth. At rare times he still appears there in the shape of some animal or wind, or other guise to aid man. He is important in war power and mentioned in almost every ceremonial song cycle.

Besides these four principal beings are many lesser ones: Born from Water (brother to Slayer of Monsters), Pollen Boy and Pollen Girl, Dawn Boy and Dawn Girl, Darkness Boy and Darkness Girl, Yellow Afterglow Boy and Yellow Afterglow Girl, Turquoise Boy and White Shell Girl personifying the holy turquoise and white shell, Water Old Man and the Water People, Holy Water Boy and Holy Fog Girl, Thunder People, Cloud People, Black Wind Old Man and the other three colored winds, Ursa Major, morning and evening stars, gułil'isi (sometimes called ngo'iłbį·he, He Wins) who has great power over gambling. Besides these are other personifications: Metal People, Life People, and Medicine People, and many of the animal and plant people who have holy power.

An important class of supernaturals are the ga·n, sometimes called ha·stc'i in songs and prayers, and corresponding to the Navajo hactc'e'. They are a people who resided on earth long ago, but departed hence in search of eternal life and now live in certain mountains, places below the ground, as well as living and traveling in clouds and water. They have a third name, t'e'na·ka·hn, They Travel in Water. The several kinds of ga·n, differing in appearance, are thought of as intermixed clans. An important ga·n rite exists in which the dancers are masked and made to represent ga·n. Now only the leader, Black ga·n, and the clown are distinguished as individuals. The rest merely represent ga·n as a whole.

The close similarity of the White Mountain ga·n to the Navajo hactc'e' is quite evident in their names, seven of which are almost identical.[3] The likeness to the Pueblo katcina is also striking: the association of the ga·n with clouds and water; their division into different kinds; the shapes of the masks worn; the dancing kilts and belts; the use of the bullroarer by the clown and his bold sexual horse play; the drab painting of his body and his ragged scanty clothing. Even whipping in certain form is inflicted on boys and girls by the ga·n dancers, and they may impose obligation on those who trespass their rights. Association of ga·n with agriculture and a certain connection with clan may further ally them to the Pueblo katcina.

All major supernaturals have a set of workers or messengers at their command. A special word by which they are designated may be interpreted as "servants."

These supernaturals hold control over man's life. There is a much used term denoting "due religious respect and observance." The Apache strives to maintain a like attitude in his daily life. If he is successful in this, evil will not befall his interests and family. (It is common belief that a man's wife and children may suffer for his sins.) Principally In Charge of Life and the sun pass judgment on man. The sun ascending the sky sees all, and from noon on the one who goes in his place reports to him. Certain winds on earth act as spies. Sacrilegious talk and action is promptly reported to In Charge of Life, but good actions are likewise reported. The most common punishment is sickness or misfortune or being struck by lightning. Some guilty consciences live in dread of the approaching lightning season. Any source of power which is not shown due respect by man may cause him trouble.

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[3] Franciscan Fathers, *An Ethnologic Dictionary of the Navajo Language* (St. Michaels, Arizona, 1910), pp. 384–85.

SUPERNATURAL POWER

To the question "Just what is religion?" I once received the answer "It is supernatural power," and this is true, for it is its keynote. It is expressed most commonly by the term diγį' meaning holy, supernatural, or supernatural power—on the one hand a great display of force which awes man and cannot be explained by him, and on the other a force attributed to certain objects or phenomena, both animate and inanimate. The demonstrations of nature and the universe are diγį' and certain plants and animals may be diγį', as well as some men. This power, when man can utilize it, is an incomparable tool by which to exist and combat the very sources from which it emanates. To be able to kill deer, the Apache felt that he must have some of the power of deer; to prevent lightning striking him or his family, he must use lightning power; to cure sickness caused by bear he needed the power of bear, and so on.

Sources of power are numerous, and include all parts and phenomena of the universe already discussed, as well as many objects such as stones, shells, plants, and animals. The amount of power possessed by these sources is indicated by the varying degree to which each is utilized ceremonially. The sun is mentioned innumerable times, whereas some bird may have only one song. But each has its function; may produce a result that no other can. Back of all supernatural power is In Charge of Life, its original source.

The personification of powers is all important. Dawn, darkness, lightning, turquoise, water, as sources of power are not prayed to. Instead the invocation is made to their personifications.

USING SUPERNATURAL POWER

The power in a source may remain unused by man until, by a series of events, it is released and takes effect. Man has access to it in both a mechanical and spiritual way. By going through the proper forms and ceremonial sequences he may bring about the required result and direct the power as he wishes, or there is the personal approach to the power through direct communion with it. Supernatural power can be tapped by ceremony or by individual prayer. Anyone can pray. Prayers may be either traditional or spontaneous. The most common prayer is for long life and health and safety for one's children, but there are prayers for many other aspects of life. Prayers to the sun are most common; but the moon, earth, sky, certain stars, rivers, mountains, anything which is holy or has power, can be prayed to. Some are able to help the individual in any circumstance; others only in limited ways. Men usually accompany prayer by use of tobacco: the smoke is puffed towards the being addressed.

In ceremony each power or set of associated powers must be approached

through its own ritual. There were some thirty-six of these rites, which may be classed as actual ceremonies. The appeal to one source of power is not always limited to a single ceremony. Sun is invoked in many; so are Slayer of Monsters, Turquoise Boy and White Shell Girl, bear, snake, water, and others. Numerous sources are drawn on in curing rites because in actual life they are considered immune to or unafraid of the source of the disease, or are its natural enemies. Others, such as the sun or Turquoise Boy and White Shell Girl, etc., have enough power to be of help in almost any circumstance.

The sources of power for each ceremony are limited to certain traditional ones and cannot be added to. To invent or claim new ones would be sacrilege. The same is true of a ritual. A man cannot invent new ceremonies. He must use those already established.

Ceremonies may be divided into three types. The first is purely traditional, to which nothing can be added by any personal experience of the man conducting it. The second is also considered traditional and handed down intact; but it is possible for the possessor of the ceremony to have direct contact with the source of the power, either by dream or more direct experience, whereby additional power and songs are acquired. Bear may come and teach the man a few songs, sometimes giving him a special name. The songs, together with contact with the source, give the man strong power and he may become a very successful conductor of the bear ceremony. But often one who practices this type of ceremony will conduct it merely on the basis of what he has learned from another. In the third kind of ceremony all songs, ceremonial prayers, and knowledge of the power are gained by actual experience in dream or waking. There are only two of this type among the White Mountain Apache; the lightning ceremony being the best example. Though it is possible for a man to learn this from another without personal experience with the supernatural source, his power is never considered equal to that of one who has acquired it directly.

Whereas in the second type of rite personal experiences are limited to the acquisition of only five or six songs, with the lightning ceremony (third type) often over a hundred songs are thus obtained. The first type is considered the oldest; after this the second; and the last acquired was the lightning ceremony. The traditional type predominates, although the element of personal experience is not to be underrated. It is possible for one man to possess all three types of ceremony.

COMMUNITY CEREMONIES

Rites for sickness generally are held for only one person. But there are a limited number of rites which can be given in time of epidemics and con-

tagions to ward off the disease from everyone. Besides these are others for the community, called gojǫ·jinde· (holy ceremonies), taking place in the spring and summer when snakes, other poisonous forms of life, and lightning are present. Their purpose is to protect everyone within the area of the ceremony from these dangers. The lightning ceremony, one of these, is also given to cause rain and insure good crops, both wild and cultivated, and is held as well for the community when some evil influence is thought to be at work. Even puberty ceremonies were believed to benefit people of the locality as a whole. Though ostensibly for the girl, part of the girl's rite is also considered a prayer for good crops. Anyone can make a wish at her ceremonial tipi, and the medicine used for her may be splattered over the crowd. The corn ritually poured over her head is picked up and planted by those able to get it. Again, in agricultural ceremonies, though performed over only one field, the benefit is believed and desired to spread to all the farms in the district.

The practice of such ceremonies with aims beneficial to the whole community was common and still is much in vogue.[4] Even with a curing ceremony for a single individual, the idea of group benefit is sometimes present. In the ga·n curing rite the shaman prays to the masks before the dance that all the people may have long life. Or, at the close of a cure for which a sand painting has been made, all who wish may roll in the painting or preserve some of the colored sand to use as medicine.

WITCHCRAFT

Besides the use of power through ceremonies, there is witchcraft or the illegitimate drawing on power sources to cause evil. Knowledge of certain powers is necessary to practice witchcraft; there being only a limited number which can be used in this way. Some sources from which power is obtained to gain beneficial results may be also used for evil ones.

SHAMANS

The usual way of acquiring one of the more important traditional ceremonies is by a ceremonial gift made to a person already possessing it. If he is not a close clan or blood relative, a substantial payment of material goods accompanies this. Instruction in the secrets and mechanics of the ceremony is given in return. When the novice is considered proficient, he may begin to practice. Another way of acquiring a traditional ceremony, termed "stealing it," is to be present on each occasion it is conducted;

[4] The gojǫ·jinde· ceremonies are given annually at certain times of the year. This is the nearest approach to a ceremonial calendar.

though it may not be completely learned thus. Occasionally a rite was stolen by eavesdropping on another's lessons.

As already noted, additions may be made to a traditional ceremony by a personal experience. The latter, however, cannot be used alone, but must accompany the traditional part. Sometimes this is learned after the personal experience, but may be already known. Instruction in a ceremony of this second type itself may induce the power to make contact with the pupil if it so wishes. But in only one of such ceremonies, the snake ceremony, is the personal experience element required; the teacher not imparting all the power to the pupil, but requiring him to dream a portion of it. To my knowledge there is only one case (possibly two) in which an individual has by personal experience alone acquired the power for this second type of ceremony. This was a snake shaman. In acquiring a traditional ceremony which has several functions, the pupil may only learn to perform one of these, being taught the rest later if he desires.

Obtaining the third type of ceremony—by personal experience alone—seems to attract a certain mental type. Most of the men who have the lightning ceremony are the imaginative, mystic kind, relying more on their own intuition than the average Apache, who is a stickler for exactness and fact in all information not gossip. Working with several such men proved this. The acquisition of personal experience of the lightning power parallels that of the traditional ceremonies. The sources of the power have observed the individual in question; notice that he is deserving; and single him out as their recipient. They present themselves to him while he is alone in the hills, or while asleep at night, bestowing on him a holy name. Later he is taken into the sky with them, traveling from place to place. This period of instruction may continue for several days, even weeks. Following it he dreams his songs, putting words to them when awake. When a sufficient number are acquired, he reveals himself as a holy man.

Men who have only traditional curing rites are sharply distinguished from those who have the lightning ceremony. The latter alone are spoken of as diγį' (holy) and are considered so, i.e., invested with supernatural power of a high quality. They are addressed in prayer, just like sources of power, for protection against lightning, etc. People also pray with pollen to the shaman conducting a lightning ceremony. To my knowledge the only other like practices occur in connection with men possessing high 'snake power—another indication of their position adjacent to shamans having the third type of ceremony.

It is evident from the above that ceremonies based on personal experience with supernatural power are held in greater esteem than the traditional,

though the latter are ritually predominant. The man with a traditional ceremony and added personal contact with the source is considered as having stronger power than one who merely learns from another. Power must like a man before it will come to him personally. The relation between the individual and his supernatural power is all important. It can deceive him or fail to do what he asks. Punishment for transgressions or neglect to fulfill a demand made on a man by his power, takes one of these forms, and his power sometimes abandons him altogether. In the important traditional ceremonies the relationship, although more remote, still exists. A mistake or omission of a vital part of the ceremony may lose the shaman ability to cure with it. Old men who have practiced a ceremony successfully for years are not considered the equals of younger men who have newly acquired it. The source of power holds the younger men in greater esteem, for they are in the prime of life.

The necessary payment and ceremonial gift made to a shaman to secure his services vary according to the importance of the ceremony. In those for hunting and war, which benefit several individuals, the shaman is not paid ceremonially or materially, but receives a part of the spoils. In the community type of ceremony, a chief or influential man will usually request the shaman's help. For this the latter may receive a substantial present, but no formal payment since it is a public affair.

Most major ceremonies are in the hands of men, but quite a number of women practice minor ones with ability. Though some women possess parts of certain major ceremonies, they are definitely barred from their complete practice and the making of various necessary ceremonial objects and paintings. But they are not entirely excluded from personal supernatural experiences.

FORM AND MECHANICS OF CEREMONIES

Some minor ceremonies last only half an hour. The larger ones are given over a period of from one to four days or nights. Many, though not all, have their own set of songs. Some have set prayers with words similar to songs. These songs and prayers must be used in proper sequence.

Most ceremonies have their own equipment: certain plants or parts of animals and various charms. Because of the power they contain they are applied to the patient to draw out sickness, either being held against the patient's body and drawn away, or used to brush the sickness off. Sucking is not practiced, though expelling of breath to blow off disease is.

Pollen, the most important ceremonial offering, is holy and the fitting and proper medium to use in religious approaches. It is sometimes mixed

with yellow corn meal. Again, yellow corn meal may be used in the place of pollen. Corn is used in several ceremonies. Of equal importance are sacred black jet, turquoise, catlinite, and white shell; each having directional associations. They embody strong supernatural power, particularly turquoise and white shell. The ever present eagle feathers form an important part of religious equipment.

The use of ceremonial hoops is common. Some are only five inches or so in diameter, but there are large ones, over two feet in diameter. The latter are made in sets of four, painted with the color of the direction represented. When put over the patient and taken off, they remove sickness. A ceremonial staff also is made, usually four or five feet long, often with a short cross piece near the top. (It is doubtful whether or not this is the result of Spanish influence.) Four are made and painted with figures. Laid on the sick person and lifted off, they remove the illness. When four staffs or hoops are made in the lightning ceremony, each represents a class of supernaturals connected with lightning. In the ga·n ceremony only are masks and certain other accoutrements required as dress for the dancers.

Sand paintings of a large size, similar in complexity of design and fully equal to those of the Navajo, were made as part of six different ceremonies. But a ceremony never had more than a single sand painting. They were made inside a circular enclosure of boughs, opening to the east, and were destroyed before sundown. The patient was placed in the center, where various parts of the colored designs were applied to his body.

Corresponding to the sand painting is the ceremonially painted buckskin, covered with figures in various colors. Made for the cure of a sick person or for use in battle, it can be kept over a period of years. In sickness, its making under direction of the shaman is part of the curing rite. These are often in the form of a shirt or cap. The owner is instructed how to use them. Many have a song and holy name, and are considered a protecting agent.

A generic term, ge'estcin (painted on), applies to anything bearing ceremonial designs: sand paintings, hoops and staffs, painted buckskin objects, ga·n masks, etc. Ge'estcin are holy and prayed to because endowed with supernatural power and are personifications of it. They must be addressed before they can exert full influence. Even ga·n masks are prayed to by the dancers before being donned. Only certain ceremonies include the right to make ge'estcin. Eventually these objects must be disposed of in some cave or rock crevice, with appropriate prayers and under instruction of the shaman who directed their making. Some ge'estcin made to use in a single ceremony must be put away shortly afterwards; others made for an individual may be kept by him as long as their power lasts.

Several White Mountain ceremonies have dances connected with them. In the war dance participants were men going to war, as well as their women kin. The girl's puberty ceremony is limited to the dancing of the girl, the social dances that go on at the same time, and that of the ga·n impersonators. The ga·n rite, the most important of the dancing ceremonies, has masked impersonators of the ga·n. The ga·n ceremony can also be given in conjunction with the bear ceremony since it has power to cure bear sickness. This may possibly correspond to the Navajo Mountain Chant in which the hactc'e' act also.[5] One case was recorded of ga·n impersonators taking part in a coyote ceremony. (The Navajo are said to have used hactc'e' in conjunction with their coyote ceremony.)[6] The onlookers at the lightning ceremony may dance, but commonly there are four or eight dancers—four maidens and four youths with the ceremonial hoops and staffs in their hands—impersonating lightning youths and maidens. The snake ceremony has no dancing when given as a cure, but as a community ceremony in the spring there may be accompanying social dancing. Formerly a live snake was occasionally carried about by the participants, prayed to, and later released. The medicine ceremony was, at very infrequent times, given with a sand painting. In conjunction with this as many as sixteen impersonators of the Life People danced. A water rite, in which impersonators of Water People appeared, sometimes occurred.

RELIGIOUS CULTS

A striking peculiarity is the appearance at various times of new religious cults. The first one remembered started among the Cibecue Apache in 1881, but influenced certain of the White Mountain people at the time. It was called na'ilde' (having reference to return from the dead) and conceived by a shaman on Cibecue Creek, who claimed it would be possible to bring the dead back again. The cult did not last long, for government troops interfered and in the fight which ensued the shaman lost his life.

The next came in 1903 and continued in force till 1906. It was called daɣodiɣa' (rising upwards). This was also originated by a shaman among the Cibecue Apache, but spread quickly to the White Mountain group, where it was adopted by certain shamans who claimed the power to conduct the ceremony and direct the people. A fusion of quite definite Christian and old Apache concepts, its leaders dreamed long cycles of songs, an important character in them being called "Black Coat," the term now applied to Catholic priests and brothers. It contained elaborate ritual in the form of dancing and a special mode of dress was prescribed. Its leaders claimed that

[5] *Idem*, page 385. [6] *Idem*.

if it was conducted regularly and conscientiously, all its followers were to be raised up into the sky and a great flood purge the earth of evil. Descending to earth again, the chosen would live there in peace and plenty. A definite desire to return to conditions of pre-reservation times is evident. Many lost faith and the cult came to an end because of the mysterious death of three of its leaders. The excuse for its failure is that the leaders made some mistake which threw the power off balance (an extremely common Apache explanation for ceremonial miscarriages), and the event was diverted.

About 1920 a third great movement was born and is still in practice. A man of the eastern White Mountain band had certain revelations giving him extraordinary power and many songs, with a form of ritual which was first directed against witchcraft; but it soon developed further. It preached that many of the old shamans were charlatans. The feeling against him was bitter at times among shamans of the old school, who saw their glory waning. For a while the religion held great sway over many Western Apache, as well as other tribes in the Southwest. It also had definite Christian tendencies and turned into a public ceremony given every Sunday, having a special dance ground in each community. By some the founder of the movement was believed to be a reincarnation of Slayer of Monsters. Men called "disciples" conducted the ceremony in his absence. Its most spectacular aspects were the dances with live snakes held during its first years. Live snakes were also used in curing. A curious characteristic of this cult is that it sensationally contradicts certain established customs. Its decline in the last few years is due to an unfortunate series of events.

Several other minor religious movements did not survive. In almost all, the leaders previously had lightning power acquired through personal religious experience. In the case of the movement described in the preceding paragraph, the power comes through the snake medium, whose relation to the religious experience type of ceremony has been explained. It is quite evident that religions such as these rely on the leadership of men of the mystic type, never drawn from the ranks of those merely practicing the traditional rites. It is certain that the greatest religious feeling and excitement has been aroused in the past only by men who gained their power entirely through contact with the supernatural itself. The remarkable fact is that in spite of such deep religious movement, the old type of ceremony and religion is still in force and apparently remains uninfluenced. The others have come and receded like waves. What connection these cults may have had with the Ghost and Prophet Dances among other tribes in the West is difficult to say. At present all that can be stated is that the Western

Apache feel them to be products of their own culture, not borrowed from other tribes: inquiries in the field brought to light no evidence of the introduction of a Ghost or Prophet Dance cult from other peoples.

LIFE AND DEATH

In Charge of Life endowed the first person or people on earth with life and from them it has descended to the present generation. Life and breath are one and the same, and no other element in man is separately comparable to a soul. An individual receives life from his mother—a part of her life. A baby's life is small and in proportion to its size; as the body grows, life grows.

Death is caused in three ways: by violence, sickness, or witchcraft. Death by old age is not known. There is an allotted span of life, likened to a long path with lines across at various places: a line for everyone and when reached, they die. Only death by witchcraft can shorten this. The being controlling this span is In Charge of Life, but the sun and Changing Woman are also factors.

Food and water are included with a burial for use before departure to the land of the dead. The last breath of the dying person remains on earth in the form of a little wind. On the fourth day after death the life or breath and shadow, conducted by ghost people, starts to the land of the dead somewhere to the north in an indefinite place. A great canyon is reached, with a giant yucca plant growing on the brink. By means of one of its leaves the dead swing across to the farther side, the land of the dead. That country and the life there is exactly as on earth, but little or no labor is necessary. Corn and wild crops grow ripe continually; game is plentiful.

Shamans with high lightning or snake power are said to go in part both to the land of their power and to the land of the dead. Persons killed by water, lightning, or certain animals live with them, not in the land of the dead. A separate place for witches exists; a gloomy land where continual work is the lot. Those who had very strong evil power are singled out and put where little or no light and air penetrate.

A being who rules over the land of the dead is Ghost Chief. Ghosts have the power to come back to earth, and they sometimes appear to humans. They like to take their own kin, for they are lonely. They sometimes cause bad dreams. A ghost appearing to a human indicates that a relative will soon die.

CONCLUSION

The foregoing is the briefest of outlines. Intended only as a statement of the character and elements of the religion, it does not discuss other vitally

important questions, such as practices which show connection with surrounding tribes or culture areas, nor the religion as it actually functions in its setting in relation to society and economic life. However, it may be in order to say something concerning traditional forms versus personal supernatural contact. The part played by personal experience with supernatural power, its clear distinction from the traditional, the peculiarity of its limitation in the main to one type of shaman, the lightning shaman, and the consequent part that men possessing it have held in religious movements and customs, are important. The White Mountain belief that the lightning ceremony of today is of later introduction than the traditional ceremonies is definite; but does this indicate a post-position for all direct supernatural experience? It seems unlikely that the deep rooted idea of personal contact with supernatural power sprang up after the traditional cermonies were established. More reasonable is the conjecture that White Mountain Apache culture with its developments of agriculture and matrilineal clans, resulting quite possibly from Pueblo contact, also acquired an accompanying tendency towards traditional rites which blended with a strong and antecedent concept of direct supernatural experience and contact.

SANTA FÉ, NEW MEXICO

STONE AXES OF WESTERN AUSTRALIA

By D. S. DAVIDSON

ONE of the important features of Australian material culture is the hafted stone ax. Of widespread but not continental distribution, this class of object occurs in several types which range from extremely crude flakes to completely polished specimens with one or more grooves. Typological considerations suggest that many of these are genetically related but it is by no means certain at the moment that there has been a unitary origin for all. This problem cannot be treated adequately until the distributions of the individual types and their stratigraphical positions in archaeological deposits have been determined.

In view of the lack of hafted implements and of polished stone tools in Tasmania it seems quite evident that these classes of objects are of post-Tasmanian age on the continent, but how great an antiquity may be involved cannot be indicated at present. It seems to be commonly accepted that the completely polished ax, the distribution of which is widespread in the east but centered in Queensland, is not of Australian origin but came to the continent from New Guinea. However, it has not been demonstrated that it was the first type of hafted ax used by the Australians, nor does it necessarily follow that other types of greater antiquity, if any, also are importations. Such questions are concerned with very ultimate problems in Australian archaeology and it should be recognized that the history of hafting axes in general may be distinct from the history of polished axes.

In this paper consideration will be given only to the axes of Western Australia, a region which, although embracing almost one-third of the continent, appears to lack the complexity of ax types found in eastern localities. In addition two of the major areas in which axes are unknown are situated wholly or partly in Western Australia and it also is in this state that one of the crudest types of ax is found (see map, Fig. 1.). Thus although many important problems in respect to axes in general are not concerned with Western Australia, the problems of the latter region nevertheless are intimately linked with basic considerations of continental significance and the simpler appearances in the west may throw important light upon the more complex situation in the east. Unfortunately, Western Australia is poorly known ethnologically and totally unknown archaeologically, hence in this paper we can do no more than offer a most preliminary discussion.

As already noted, stone axes are not of continental distribution. Aside from Tasmania there are three significant areas in which they appear to be unknown: (1) southern Australia, apparently from Warrina and the Lower Murray Valley on the east to east of Israelite Bay and west of the

Fraser Range, Western Australia, on the west, and from the coast inland to at least the boundary of Central Australia; (2) the western coast of Western Australia from Northwest Cape to the Murchison River, thence inland to the Upper Sanford River district and possibly other nearby areas;[1] (3) Melville and Bathurst Islands, North Australia.[2]

The reasons why axes are lacking in these regions are not clear. In some rather extensive areas suitable stone is not available. However, such a condition characterizes many small localities in various parts of the continent in which the natives employ axes imported from other districts. Hence, although lack of material may deter the manufacture of axes in certain regions, it need not prohibit their importation and use.[3] Helms[4] attempted to explain the non-appearance of axes in western South Australia on a functional basis by maintaining that they are not used because watercraft are not constructed and because there are no large trees to climb. The inadequacy of such an explanation seems obvious, for watercraft are lacking in most of the interior[5] where axes are in use, and in many areas where axes are present they are not employed for climbing trees. Furthermore the natives of Melville and Bathurst Islands, who constructed sewn bark canoes long before the Malays introduced the dugout, still lack stone axes. Although it cannot be denied that the aborigines of the region traversed by Helms manage very well without axes, it seems quite apparent that they would find these implements as advantageous as do their neighbors in Central Australia who live in a not dissimilar environment. Certainly axes are as *necessary* or as *unnecessary* in the one region as in the other. Whether the natives of South Australia have had the opportunity to acquire these implements by trade or by diffusion and have rejected them is quite another matter, but the little information we have suggests that imported specimens are readily accepted. For instance, at Ooldea, South Australia, where suitable stone is lacking, axes are now being brought in from far to the north. This importation apparently is a rather recent development and it may not be a coincidence that it is only in relatively recent years that abori-

[1] Available information is not satisfactory for much of this region.

[2] Spencer (*The Native Tribes*, p. 355) describes the one example he found on Melville Island as the only specimen he had ever seen in Australia which was flaked and not polished. The ax also seems to be rare on the nearby mainland. See Spencer, *Wanderings in Wild Australia*, p. 844.

[3] The trading arrangements of Australian tribes have never received adequate attention, but it is well known that goods pass along definite routes. In some instances expeditions travel hundreds of miles to secure materials lacking in a tribal area.

[4] Helms, *Anthropology*, p. 274.

[5] See Davidson, *Chronology of Australian Watercraft*.

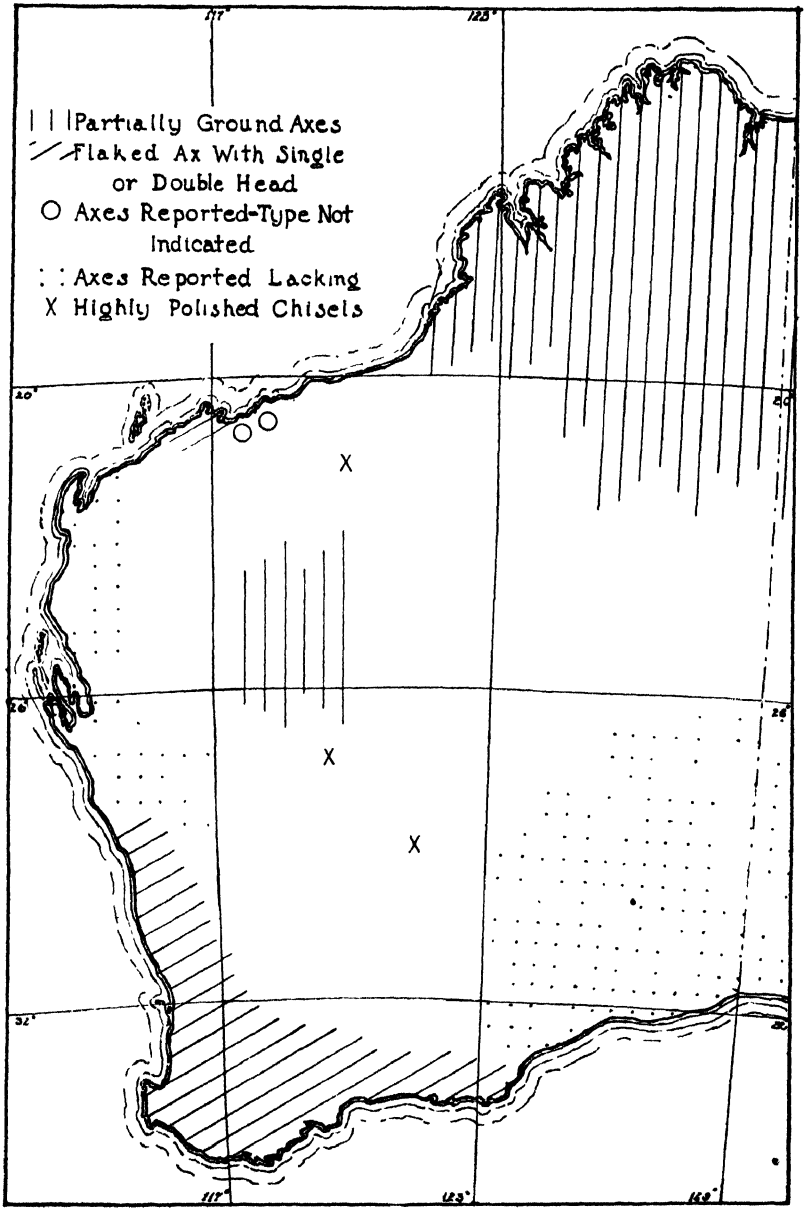


FIG. 1. Distribution of stone axes in Western Australia. (For explanatory data see foot of opposite page.)

gines have come to Ooldea from such distant regions as the Macdonnell Range, Central Australia, 470 miles to the north, where stone axes are manufactured.[6] Such considerations suggest that stone axes may be lacking in much of southern Australia for the simple reason that they are only now being introduced there.

In this respect it is important to note that the regions of negative appearance are all peripherally located in respect to Torres Strait, across

Explanation of Figure 1.

Double-Headed Axes (some may contain only one stone). The following localities are given by Curr, *Australian Race*, Vol. 1: Champion Bay, Geraldton area (kooga, 317), New Norcia and Leschenault Bay (cokio, 319), Victoria Plains (kodja, 323), Newcastle (kaddu, 327), Perth (kodjer, gadjoo, 329, 333, 335), York (kodja, kodju, kodge, 337, 340, 345), Bunbury (kooga, 355), Geographe Bay, Vasse (kodja, 357), Blackwood River (kooga, kodge, 361, 363), Doubtful Bay to Israelite Bay (koich, 393), Kent (kodch, 390). WAM (Western Australian Museum)—King George Sound (King, *Narrative*, Vol. 2, 139), Albany. Southwest in general. WAM; Moore, 38 (kadjo); Nind, 26; Peron, *Voyage*, pl. 22. UP (Univ. of Pennsylvania Museum)—Quindalup, Australind (fragment). Hassell, *Notes*, 691 (hoitch), Wheelman tribe and neighbors (Bremer Bay region).

Single-Headed Ax of Crude Flake. Perth (Curr, *Australian Race*, Vol. 1, 329, 333, 335, kodjer, gadjoo); Wheelman tribe and neighbors, Bremer Bay region (Hassell, *Notes*, hoitch). Nickol Bay (Curr, *op. cit.*, Vol. 1, 297, kaijoo). Southwest in general (Hammond, *Winjan's People*, 37, kodjah).

Partially Polished Ax. WAM—Halls Creek, Port George IV, Pender Bay, Drysdale R., Hannover Bay (also King, *Narrative*, Vol. 2, pl. fac. 68), Secure Bay, Broome, Kimberley. UP—"Desert tribes" collected at Port George IV and at Forrest R , King Edward R., Munji Station (Wororra tribe, also Love, *Notes*, 23), Montgomery Is., Mt. Hann, Forrest R., 200 miles "n." (*sic*) of Wyndham, Jigalong Cr., Peak Hill, 60 miles n. of Wiluna. Northern Desert (Carnegie, *Spinifex and Sand*, 342, 343).

Ax Reported, Type not Determined. Irwin R. to Murchison R., which is within area of double-headed ax (Curr, *Australian Race*, Vol. 1, 373, eyearawa). Ngurla tribe, mouth of De Grey R.; Weedookarry tribe, Shaw R. (*ibid.*, 293, 295, watha). Roebourne (Clement, *Ethnological Notes*, 9, 15, f. n. on 21, kaidu, garama). Former may refer to double-headed ax he illustrates. However, this specimen was not from his collection but from an older collection in Rijks Ethnological Museum. Nevertheless cf. Nickol Bay, kaijoo, a crude ax of one flake (Curr, *op. cit.*, Vol. 1, 297).

Ax Lacking. Warrina, S. A., to west of Fraser Range, W. A. (Helms, *Anthropology*, 273) Eyre's Sandpatch, Eucla (Curr, *Australian Race*, Vol. 1, 395, 401). Ooldea, S. A. (Bolam, *Trans-Australian Wonderland*, 84). Shark Bay, Upper Sanford R., 200 miles northeast of New Castle (Curr, *op. cit.*, Vol. 1, 306, 376, 380). Name for ax not given in vocabulary and its lack is implied for region between Northwest Cape and 30 miles south of Gascoyne R., mouth of Murchison R., Northampton (Curr, *op. cit.*, Vol. 1, 305, 313, 315). Warburton Range (Mr N. B. Tindale).

[6] Bolam, *Trans-Australian Wonderland*, p. 71. Note also should be made of the importation into the Coopers Creek area of axes from Queensland and from a southern direction. Horne and Aiston, *Savage Life*, p. 104.

which it is generally believed the hafted polished ax was introduced into Australia, hence they would be among the very last areas to be reached by trade or diffusion. Thus there seem to be good grounds for suspecting that historical forces may be primarily responsible for the lack of axes in these marginal regions. However, the problem is by no means a simple one, for there are several factors which becloud the issue. Before they can be satisfactorily treated we must know more about the genetic and chronological relationships of the various types of axes in eastern Australia. A few clues which may be significant are suggested by the evidence from Western Australia where to date only two major types have been found: (1) the partially ground ax, and (2) the crude flaked ax with a single or double head.

(1) The partially ground stone ax, generally of diorite, but occasionally of trapstone, basalt or other stones, is a very common type in Australia. It is manufactured by reducing a pebble by flaking to the desired size and shape and then by grinding along two converging planes at one end to produce a cutting edge. The extent of the grinding varies considerably from area to area as well as from specimen to specimen in any one locality (fig. 2). In some the extent of the ground surface is negligible, in others it covers almost the entire ax, thus making it difficult to distinguish such examples from those with completely polished surfaces. The standard method of hafting these axes is by gumming the head in the angle of a withy bent double, the arms of which act as a vice and are lashed firmly together[7] (fig. 2a,b).

In Western Australia partially ground axes are of widespread use in the Kimberley area and adjacent desert country to the south. A few specimens also have been collected from the Peak Hill district and it seems not unlikely that there is a contiguous distribution between these two areas. It also appears not improbable that this type of ax may be found along the northern coast at least as far west as Roebourne, where stone axes have been reported but the type not described. Whether the distribution of the partially ground ax extends southward to the region of negative appearance is unknown, but in view of the fact that this type also prevails in adjacent North Australia and Central Australia, it would seem that it should be present in the central eastern portion of Western Australia.

Although too few specimens are available at present to warrant the drawing of definite conclusions, the known facts of distribution of use

[7] This method of hafting, so common in Australia, also is widespread in Melanesia, and von Fürer-Haimendorf (*Zur Urgeschichte Australiens*, pp. 441–42) discusses the question of its former use westward to southeastern Asia.

suggest that partially ground axes have diffused into Western Australia from North Australia and Central Australia. The antiquity of this movement, however, cannot be indicated. We have no archaeological evidence as yet, nor do we possess ethnological information to show the distribution of manufacturing sites or the routes over which specimens are traded from such centers.

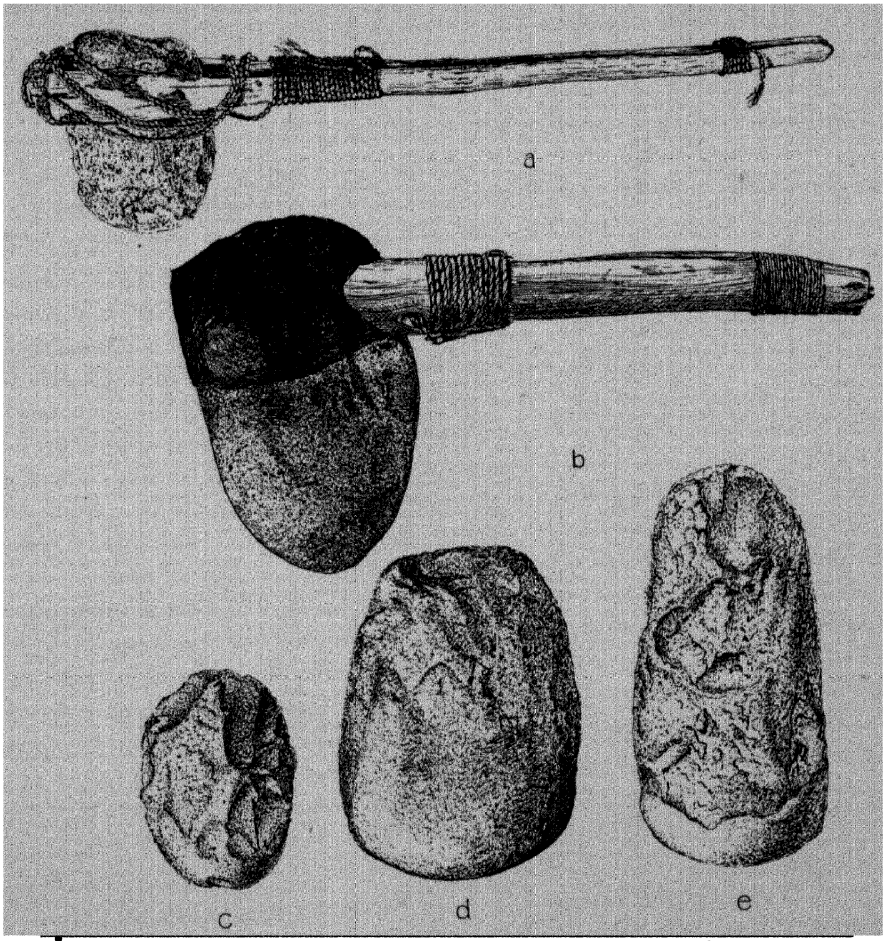


FIG. 2. Partially ground stone axes, Western Australia. a, Mount Hahn, Kimberley District (diorite, length 43 cm.; length of head 11.5 cm.); b, Desert "beyond" Forrest River, Kimberley District (traprock, length 25 cm.; length of head 13.6 cm.); c, Montgomery Island (traprock, length 8.5 cm.); d, Sixty miles from Wiluna (diorite, length 12.5 cm.); e, Two hundred miles "north" (*sic*) of Wyndham (traprock, length 15.2 cm.). (All University of Pennsylvania Museum.)

From a continental point of view it is important to note that the appearances of partially ground axes in Western Australia, North Australia,[8] Central Australia,[9] southeastern South Australia,[10] and Victoria[11] are peripherally located in respect to the area of completely polished axes centered in Queensland and New South Wales where partially ground specimens also are found. These facts suggest that the partially ground type has a greater antiquity than the completely polished type and that the latter represents the natural result of applying the grinding technique to its logical conclusion. In such an event the question would arise whether the completely polished ax was developed independently in Australia or diffused from New Guinea subsequent to the introduction of the partially ground ax.

On the other hand there is the possibility that the partially ground specimens may represent the emulation of the completely polished ax in its unfinished state, a conclusion which also would be consistent from a distributional point of view. Archaeological investigation should furnish answers to these questions. We also must depend upon archaeology to determine the chronological relationships between the two types with ground surfaces on the one hand and the various crude flaked and fractured pebble axes in eastern areas on the other. In addition, in so far as Western Australia is concerned, there is the indirectly related problem of the appearance of the highly polished chisel-like implements reported from Warrawoona, Yandil, and Mount Malcolm (fig. 3). These objects are unlike any others so far described from Australia, and their presence in central Western Australia where the grinding technique seems to be feebly employed in respect to axes introduces an interesting problem in lithic development.

(2) The flaked ax of the southwest is one of the crudest types of which we have record for any part of the world. Apparently most specimens are double-headed in that the head consists of two stones set in gum in the same plane on opposite sides of a solid stick handle (fig. 4).[12] The stones so

[8] Davidson *Archaeological Problems*. But rare in extreme north among Kakadu, etc. (Spencer, *Wanderings in Wild Australia*, p. 844).

[9] Spencer and Gillen, *Native Tribes*, pp. 589–90; *Northern Tribes*, pp. 656–61.

[10] Hale and Tindale (*Notes on Some Human Remains*, p. 206) regard the partially ground ax of the Murundian (historic) occupants of the lower Murray Valley as the result of trade from Western Victoria and southeastern South Australia. It does not appear in older archaeological strata.

[11] Smyth, *Aborigines of Victoria*, Vol. 1, p. 365 *et seq.*; Dawson, *Australian Aborigines*, p. 24.

[12] This type of handle is seldom found associated with other types of head. Generally it is pointed at the handle extremity and thus serves as a dagger-like implement. It is particularly serviceable as an aid for tree climbing; the ax blade for cutting holes in the bark for toegrips, the pointed handle for jabbing into the bark for handholds.

used are of the crudest description and in many specimens show no signs of preparation. Indeed if detached from the gum matrix it might be impossible to recognize them as ax blades. Other examples betray signs of preparation in that the cutting edge shows definite intent even though it has been attained by a very crude flaking process. However, it should be noted that if we had no specimens of these axes, the simple flakes would not indicate in any way that they had been intended for or used as ax heads. In addition, in many specimens the second stone is quite definitely blunt and

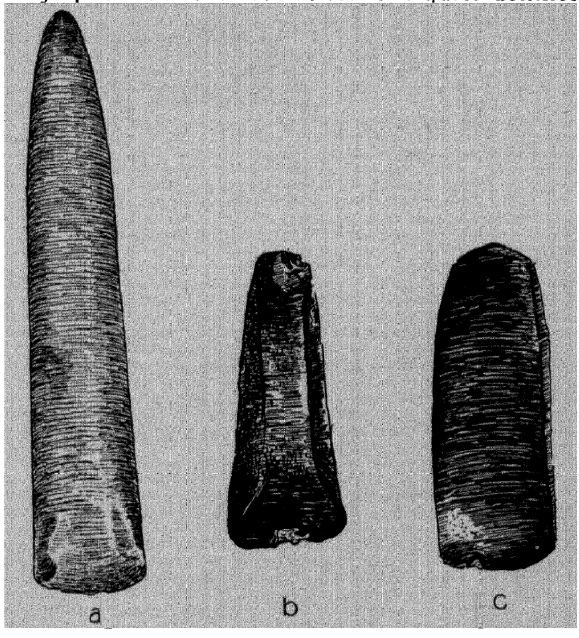


FIG. 3. Completely polished chisels or adzes, Western Australia. a, Malcolm, Eastern Goldfields (gabbro, length 20 cm.); b, Yandil Station (greenstone); c, Twenty miles from Marble Bar (fine-grained diorite, length 12 cm.). (All University of Pennsylvania Museum.)

seems to serve as a hammer, although in others both stones seem to be equally sharp or equally blunt. However, aside from whether the second stone was intended originally for cutting or for pounding, it does give balance to the head of the ax and adds weight to the blow, important considerations in hafting axes or mallets which seem to be more or less generally recognized throughout the world.

The origin of the double-headed ax is obscure. In so far as our data indicate, this type in historic times was confined to the southwestern coast from Geraldton to Israelite Bay and adjacent inland districts where it was

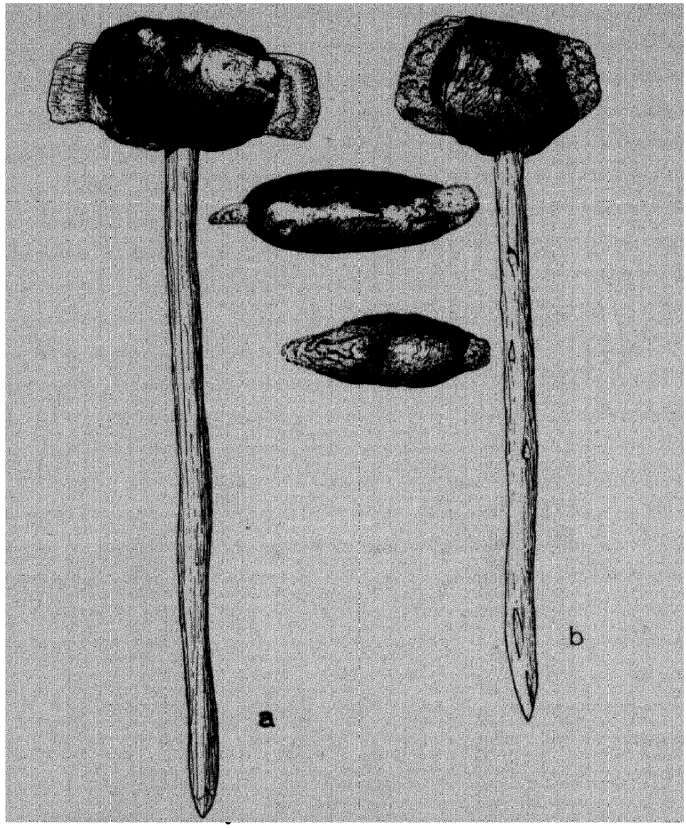


FIG. 4. Southwestern type axes, Western Australia. a, Quindalup, Vasse District (length 40 cm.; length of head 13.5 cm.); b, "Southwest." (Both University of Pennsylvania Museum.)

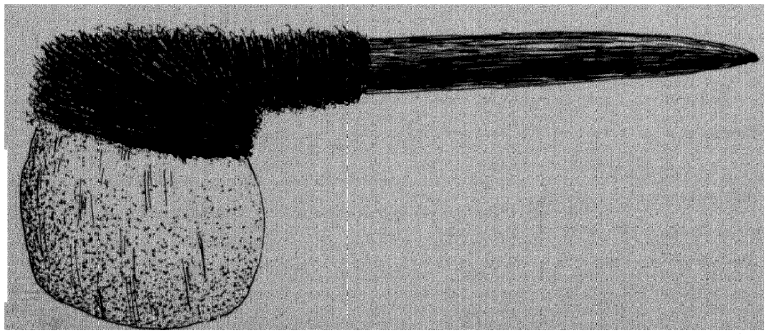


FIG. 5. Axe of two shells. Sunday Island, Kimberley District, Western Australia. (Western Australian Museum.)

called koitch, kodge, kodjer, etc.[13] However, although it has not been reported from other parts of the continent we cannot conclude that its use was restricted to the southwest until archaeological studies demonstrate that it was unknown in other areas.

The presence of the double-headed ax in archaeological deposits may be most difficult to detect, for if the wooden handle and gum matrix have disintegrated the sole evidence will be the spacial relationship of the two stone parts. As already indicated these stones often are of such a crude nature that unless the possibility of recovering this type of ax is kept in mind the archaeologist might never suspect two stones lying near each other as the remains of a double-headed ax. Since it may be a difficult matter to recognize these axes in archaeological deposits even in the southwest it seems apparent that only by most careful excavation will evidence of their former presence in other areas—if there is such evidence—be secured.

At the moment we have no data which suggest that the double-headed ax ever occupied a distribution greater than that given. Indeed, there are a few facts which suggest that it may represent the local elaboration of the ax with a single crude flaked head. The latter not only is reported from several localities in the southwest in conjunction with the double-headed forms but also from Nickol Bay on the northern coast where, strangely enough, it also is called kaijoo. The significance of this fact cannot be discussed at present, for specimens are lacking and we have only the information that this ax was made from a crude flake. Nevertheless, it should be emphasized that no instance has been reported of the use of the word koitch or a cognate for any ax other than the crude flaked type with the single- or double-head, nor do we know of any other name being applied to the flaked axes with the possible exception of eyearawa in the region between the Irwin and Murchison Rivers where no other type of ax is reported. The possibility must be recognized, therefore, that axes with single heads of crude flakes may have been formerly quite widespread in Western Australia,[14] if not elsewhere, and that they may have been replaced in many regions by the partially ground type of ax which seems to have diffused from the east. Such a possibility seems to be supported by distributional considerations.

[13] Among Europeans it has become known either as the Palaeolithic ax or the Southwestern ax, but these designations are unsatisfactory because of the association of the former with certain typological and chronological aspects of the prehistory of the Old World, where this type of ax has not been reported, and because the latter suggests a point of origin which has not yet been demonstrated.

[14] An unusual ax from Sunday Island, consisting of two shells cupped together and hafted to a one-piece handle, is shown in Figure 5. It is impossible to state whether it is a unique specimen or a representative of a local northern type.

Thus we have a suggestion that at least in the west the partially ground ax may have been preceded by a crude flaked ax, and the question of the origin of hafting in its application to axes becomes more involved. Did the Australians haft a crude flake independently or is this application the result of foreign influences? Such a question must await archaeological investigations in both the eastern and western parts of the continent.

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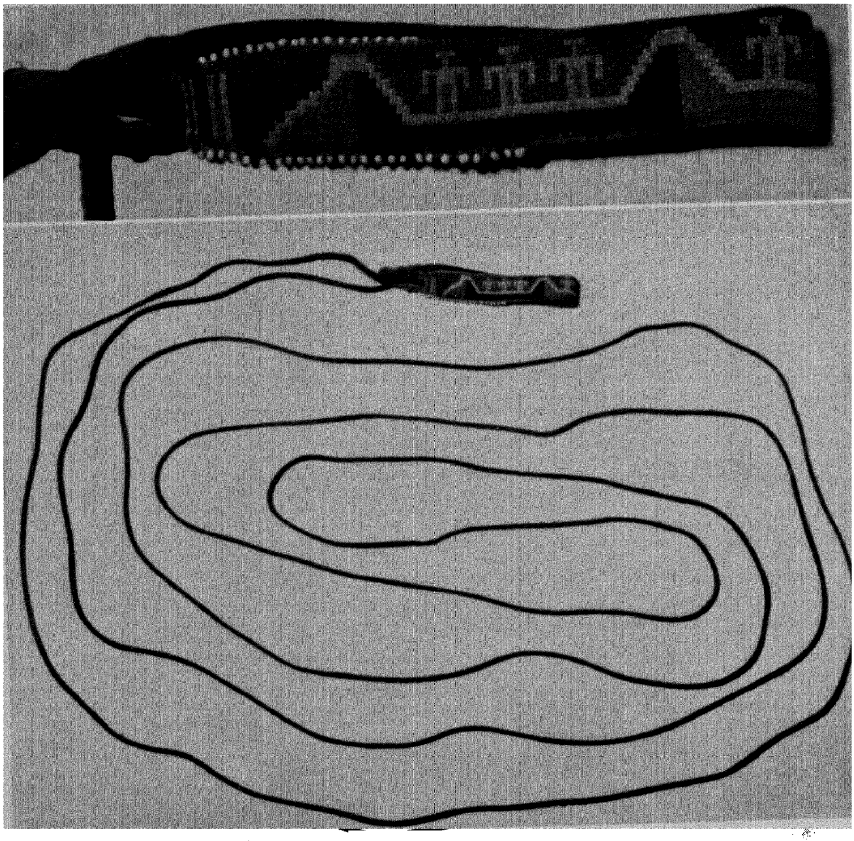
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University of Pennsylvania
Philadelphia, Pa.



A neck halter for leading prisoners: Caughnawaga Indians (French Mohawks).

A MOHAWK (CAUGHNAWAGA) HALTER FOR LEADING CAPTIVES

By C. C. WILLOUGHBY

FORT Massachusetts, built about 1743 on the shore of Hoosic River in the town of Adams, Mass., was attacked by a party of seven hundred French and Caughnawaga (French Mohawks) in August, 1746. After capturing the fort, sixty Indians were sent to intercept a small party of English who were returning to the fort from Deerfield with supplies. Fifteen of the English were shot from ambush and the others captured. The Indians then proceeded as far as Deerfield and secreted themselves in bushes along the edge of Stebbin's meadow where men were haying. Four of these settlers were killed and one, a boy, captured. Aroused by the discharge of guns, Lieutenant Clesson, with his men stationed at Deerfield, came upon the scene but the Indians had disappeared, leaving behind two of their dead.

The line here shown (Plate 1), intended for leading a prisoner back to Canada, was found in the meadow after the fight. Tradition does not inform us definitely whether it was in the possession of one of the dead Indians or was picked up in the field. This encounter is known as Bars Fight and took place Monday morning, August 25, 1746.

I saw this interesting specimen in the Memorial Museum at Deerfield some years ago but had no opportunity to examine it carefully at the time. I am indebted to Mrs George Sheldon, the curator of the museum, for the accompanying illustration sent to me later, and also for verifying my tentative description of the relative arrangement of the loops and cord which do not show clearly in the photograph.

This halter for leading captives consists of an embroidered collar furnished with a loop at either extremity, and from these loops extends a braided line about twenty-two feet in length, the whole affair, both collar and line being made in a single piece. The cord, which continues from either loop, passes through the opening in each opposite loop, forming thereby a noose of the central embroidered portion which cannot be drawn close together but which can be easily opened by slipping the cord through the loops. The length of the collar including the loops is fourteen and three-fourths inches, about the average size of an ordinary linen collar, and when placed about the neck of a captive and the cord drawn tight would probably not strangle him so long as he remained quiescent. The doubled cord or leading line extending from the collar is approximately eleven feet long, one-half the total length of the cord.

The material of which the halter is woven is a carefully prepared native twine of vegetable fiber. The line is neatly braided. The collar is in twined

weaving, a technic widely distributed among American tribes. This is ornamented upon the outer side in false embroidery with the long white hairs of the moose in their natural color or dyed in pleasing pastel shades, the colors usually employed in this work being a light blue, a reddish yellow, a purplish brown, and the natural white of the selected moose hair. The few examples of this embroidery that have been preserved are old and the colors somewhat faded. When fresh they doubtless were much brighter, although perhaps less pleasing. This collar was originally edged with white trade beads, many of which have become detached.

This excellent example of Mohawk work is very similar to the beautiful burden straps or tump-lines of the Mohawk women, three of which have been figured and described by Mr Orchard[1] and a fourth example is in the Peabody Museum at Harvard University. The flattened central portion of the tump-line is nine or ten inches longer than in the halter, however, and is woven without loops for the passage of the cord, and the total lengths of the tump-lines are five to eight feet shorter than the halter. While the details of the two classes of objects are somewhat similar, there is little danger of confusing the uses for which they were intended.

PEABODY MUSEUM
CAMBRIDGE, MASS.

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[1] William C. Orchard, *Mohawk Burden-Straps* (Indian Notes, Museum of the American Indian, Heye Foundation, Vol. 6, pp. 351–59, 1929).

THE SOCIAL STRUCTURE OF THE RAMKO'KAMEKRA (CANELLA)

By CURT NIMUENDAJÚ

Translated and edited by Robert H. Lowie

INTRODUCTORY NOTE

IN a previous article[1] we defined the position of the Ramko'kamekra within the Gê stock and described the four types of dichotomy characteristic of their social organization. The present contribution sketches all the essential social ties, with special attention to formalized friendship, age-classes, and government.

Strictly speaking, the Ramko'kamekra of Ponto, Maranhão, are not the sole inhabitants of this village, but form the overwhelming majority of their community, which harbors remnants of kindred groups, viz. the Ča'kamekra, the Kare'kateye and the Kro'rekamekra. The King Vulture ceremonial (see p. 69) preserves these distinctions, the indigenous Ramko'kamekra men occupying the very center of the plaza, while the three immigrant groups remain in the east, northwest, and southwest, respectively, corresponding to their original homes. Formerly there were also representatives of the now extinct Hoti' (an offshoot of the Apinaye', *Western* Timbira) and the Apa'nyekra, who in 1931 had dwindled down to two members. The Ča'kamekra, once an independent Timbira tribe related in speech and custom, are second to the Ramko'kamekra in numbers; they were formally incorporated about the turn of this century. The number of Kare'kateye and Kro'rekamekra is insignificant.

PRINCIPAL SOCIAL UNITS

The social structure of this people is extraordinarily complex. Every individual belongs to (a) a family; (b) a matrilineal lineage growing out of matrilocal residence and feminine house ownership; (c) a matrilineal exogamous moiety; (d) a nonexogamous Rainy Season moiety. In addition, all males belong to (e) a particular group stationed in the plaza on certain occasions and forming part of (f) a nonexogamous Plaza moiety, East or West; (g) an age-class. The four athletically active age-classes are paired, the two pairs (h) yielding a fourth type of moiety.

Membership in (b) and (c) is hereditary; in (d), (e), and (f) it hinges on the bearing of certain names; in (g) on joint initiation into adult status.

[1] Curt Nimuendajú and Robert H. Lowie, *The Dual Organizations of the Ramko'kamekra (Canella) of Northern Brazil* (American Anthropologist, Vol. 39, pp. 565–82, 1937). The Ramko'kamekra occupy the village of Ponto, in the steppes of Maranhão, about 78 km. south of the town of Barra do Corda.

There are six men's societies, each with a membership of about 30 and most of them with two girl auxiliaries (mekuičwei), who, however, serve only for a particular ceremonial period. A man may simultaneously belong to two societies, but some of them are mutually exclusive. The total list follows: (i) Rop = Jaguar; (j) Kuke'n = Agouti; (k) Koikayu' = Duck; (l) Hak = Falcon; (m) Kokri't = Water Monster, a masquerading society; (n) Me'ke'n = Water Bird, the Clown society.[2]

Membership in (n) depends on one's talent for buffoonery; in the other societies, on personal names, each determining admission to two of the five organizations—Duck and Agouti; or Falcon and Jaguar; or Jaguar and Mummers. Masculine names are transferred in the maternal line, feminine names patrilineally.[3] The names, of which each individual successively acquires from two to eight, also determine affiliation with other social units. For every name of either sex is associated with one of the Rainy Season moieties, and every masculine name goes with one of the Plaza groups constituting the Plaza moieties. Further, formalized friendships largely rest on a similar basis.

FORMALIZED FRIENDSHIPS

Hapi'n–pinčwe'i. This relation most frequently springs from name conveyance. A man who bestows his name on a sister's son and a woman who transfers hers to a brother's daughter thereby make the boy the hapi'n and the girl the pinčwe'i of all those who by a similar transfer had become the uncle's and aunt's "friends." For every personal name involves this bond with the bearers of from six to ten other names, masculine and feminine, including individuals of alien Timbira tribes. Thus, Tunko''s friends are those called by the following names:

	Males	*Females*
Kaukre'	Pepkro'	Krakupe'
Keča	Panate'k	Nyona'n
Priče't	Kukapro'	Ikure'
Ke'ke'		

A person is always the special friend (hapi'n-pey or pinčwe'i-pey, pey = real, proper) of the bearer of a particular name, while the others treat relevant obligations more lightly.

More rarely the tie automatically results from joint exercise of ceremonial offices or is created voluntarily in two ways. First, a person becomes

[2] For convenience' sake (m) and (n) will be called "Mummers" and "Clowns," respectively.

[3] For the principle of transfer, see Nimuendajú and Lowie, *op. cit.*, p. 569.

an unborn child's friend by tying any ornament round the pregnant mother's neck. The relationship holds regardless of sex and is considered as strong as though it rested on names. Secondly, youths and their two auxiliary maidens in the final phase of initiation may choose one or more "friends." The day after their seclusion is lifted, the initiates, limiting themselves to their own age-class, make their choice when camped in the woods by a creek near the village. If two initiates not yet so coupled by virtue of their names wish to become "friends," they enter the creek, which is about a meter in depth, stand back to back, dive and simultaneously swim away in opposite directions, rise to the surface, and turn about so as to face each other. The relationship thus formed, though taken less seriously than in the two preceding cases, may be inherited.

Especially at secret nocturnal meetings during the second (Pepye') initiation, the first commandant of the novices explains the twofold obligations involved in "friendship," viz. mutual respect and solidarity. Speaking of or to one another, friends never use personal names, invariably substituting hapi'n and pinčwe'i without the pronominal prefix; the second term mostly accompanies teknonymous circumlocution. If two friends meet on a narrow trail, neither yields precedence, *both* turning aside to the right and left, respectively, until past each other. A hapi'n is neither allowed to marry nor to philander with his pinčwe'i; the two avoid erotic references in mutual conversation, mentioning nothing relating to their own sex experience. Even friends of the same sex are serious in social intercourse with each other; neither laughs at or mocks the other. A dispute, if unavoidable, must not be carried on in the presence of others. For a definite breach the chief preferably names an arbiter who is hapi'n to both. Conjugal quarrels are usually settled by a similarly appointed umpire, a hapi'n of both spouses,[4] who are obliged to heed his admonitions.

Too much familiarity is forbidden to "friends." Without looking at each other, they converse standing abreast and each gazing straight ahead. At the Mummers' entrance into the village, girls customarily tie badges to the horns of the paraders, thereby becoming the masqueraders' "mothers." But a mummer whose girl friend is about to favor him in this way mutely declines the gift by a movement of his shoulders.

No friend may beg of another. At times it was droll to watch my special friend Čatu', an age-class commandant and one of the worst mendicants in the village, when in inward conflict he tried to check himself from begging of me. If I absolutely refused to take a hint, he would wait for a moment

[4] How this double bond is possible, remains obscure. A subsequent statement indicates that the arbiter is the friend of only one spouse.—R. H. L.

when we were alone, then in a soft voice and with timid glances round about he would say, "Hapi'n, as you know, . . . I am not allowed to say anything, . . . but . . . ." Only when I expressly insisted, would he express his wishes in plain terms.

Obligatory solidarity may assume grotesque forms. Though mutual mendicancy is barred, each friend must heed the other's needs and present gifts spontaneously. In danger and disputes they make common cause. Odd, indeed, is the official appeal to a fellow-hapi'n for aid in some difficulty. The supplicant waits for an assembly of the men in the plaza, then steps in front of his friend but with his back toward him, explains the matter publicly without once glancing at his "friend," and goes home. The man addressed then must do his best to carry the affair to a satisfactory conclusion.

But even unsought a friend is supposed to leap into the breach if there is danger. During my periodic disputes with the whisky dealers, Čatu' quite unobtrusively takes up his stand near-by, leaning on his huge sword-club and noting the course of events. Sometimes he would bring with him several members of his age-class. Subsequently he is likely to approach and say apologetically: "Look, hapi'n, I know you told me not to meddle, but he might have been impudent . . . ." And at that Čatu' is very far from being a teetotaler!

In case of a "friend's" accident it is meritorious to subject oneself voluntarily to the same pain or what not, thereby giving evidence of one's solidarity. Once I slightly injured my arm; as soon as Čatu' heard about it he lightly gashed himself with a knife in the corresponding spot. Such a display of friendship is usually rewarded with a present.

For a girl friend such performances are exaggerated to a grotesque degree. When a little girl had once been stung by a scorpion, her two women friends publicly executed a mad scene. While the child was wailing indoors, the two women acted as though they had caught the scorpion (which had long since escaped) and were allowing themselves to be stung. Then they pretended crushing it between their fingers and devouring it. In addition they indulged in all sorts of antics, so as to evoke general mirth.

Similar nonsense is also practised when a "friend" is ceremonially honored, especially when he is to be secluded for the puberty initiation or the Pepkaha'k festival, or when the seclusion is lifted. Then the "comrades" carry on most extravagantly round about their friend in order to indicate their mad exultation over the distinction conferred on him. One man once straddled his sword-club hobby-horse fashion and wildly galloped about, wielding his signal-drum as a crop; another howled and

scratched up the earth like a dog; still another pulled back his prepuce and simulated copulation. Most commonly they dance about with protruding tongues, grotesquely swinging their limbs and heads.

Mutual ceremonial obligations are extremely numerous and intricate. A friend of either sex invests a person with ornaments, glues falcon down on his body, or daubs him with ceremonial paint. Thus, the first commandant of the Pepye' was decorated by his pinčwe'i when freed from his seclusion. So far as possible a hapi'n paints the Pepye' with the designs peculiar to their Plaza groups. When King Vultures are feathered for their great ceremony at the Pepkaha'k, the falcon down is stuck on by their girl friends; and the similar decoration of the Pepkaha'k themselves devolves on corresponding "friends." Anyone who has either absented himself from the tribe for a long time or been long segregated from social activities because of illness, mourning, etc., cannot publicly participate in the communal life until his pinčwe'i or hapi'n, respectively, has painted him for presentation before the elders and chiefs in the plaza. Whenever I return to the tribe, my girl friend Kanõ' paints me and—since I am a King Vulture, hence hamre'n (see p. 67)—she adorns me with falcon down. As a fee for such services at a major ceremony of the main festivals the friends receive meat-pies from the decorated performers' kinswomen; otherwise a minor gift is offered.

When set on the bier, a man's corpse is painted by his pinčwe'i, a woman's by her hapi'n; the feathering with falcon down being substituted for a hamre'n. The remuneration is not taken from among the dead person's possessions.

Usually the decoration worn at a ceremony is surrendered to the wearer's friend immediately after its close. At the end of a Pepye' seclusion, the comb with which a Pepye''s sister had stroked his hair was forthwith given to his pinčwe'i, who hung it on her back from a cord round her neck. After the procession of the first Pepye' commandant subsequent to his segregation, his special girl friend immediately removed all his decoration: his forehead and girdle bands, bandoliers, and cotton belt; and nothing could induce her to sell it to me. The two girls graduating with the Pepye' were divested by their pinčwe'i at the girls' final appearance in the plaza, while their hapi'n took up the presents laid down before them by the initiates' kinswomen. When at the close of their festival the Pepye', decorated with cloths, beads and green tucum cords, left for a log-race against the next oldest age-class, their pinčwe'i surrounded them at the exit from the village and took off all their ornaments. Similarly, the women and girls who twice divest the Pepkaha'k of their yellow cords are the wearers' friends.

At the Pepkaha'k a man delegated for the task and accompanied by an assistant cuts off the long hairs at the back of the heads of the Falcons' pinčwe'i, as well as of the King Vultures' friends of either sex. The clipped hair, united in a tuft, is hung from a tree in front of the village.

Further, at certain occasions the hapi'n and pinčwe'i have to clean the streets used for ceremonies in which their "friends" participate. Thus, at the Pepkaha'k, celebrants' hapi'n and pinčwe'i cleaned the radial paths leading from the performers' mothers' huts to the plaza; and the King Vultures' friends cleaned the radii on which these performers appeared for their main ceremony. The street-cleaners are always compensated with food by the kinswomen of the persons on whose behalf they work. At other festivities, however, street-cleaning devolves on definite societies.

A friend also in certain circumstances carries his hapi'n on his shoulders. At the solemnity closing the ceremonial season the Little Falcon, a boy about four years of age, straddled the neck of his friend because the maternal uncle who had bequeathed the office to him and should properly have introduced him was no longer living. At the "Parare" log-race of the terminal ceremony of both initiation phases, the two new class leaders ride on the shoulders of their hapi'n.

In other cases the hapi'n and pinčwe'i protect "friends" taking part in ceremonies. When at the close of the Mummers' masquerade the feathered Little Falcon parades round the village ring, the Agoutis swarm about him in order to tear off the down stuck on his body, while his friends of both sexes protect him. At the inspection of the new class-leaders, toward the close of the Pepye', their hapi'n with transversely held sword-clubs seemed to bar the older age-class from access to the seclusion hut, but finally they left the way clear. For this act the two leaders' kinswomen gave them bowls of food, put in front of the house. At the close of their festival the Pepkaha'k joined the King Vultures in a house, where the pinčwe'i of the former stuck falcon down on them; the Falcons approached, but the friends of the Pepkaha'k denied them ingress and were remunerated with meat-pies.

On the eve of the King Vulture ceremony the members' women friends have a special duty while the Pepkaha'k and King Vultures chant in the plaza. Spreading the mats made by the Pepkaha'k for the King Vultures over their own backs, the pinčwe'i formed a close circle around the dancers in order to shield them from the nocturnal cold. For this service they had received an advance payment of small meat-pies from the King Vultures' kinswomen and further retained the mats as their property.

The only institution personally observed that in any way corresponds

to this bond is the maitu'ma of the Šipaya (Tupi stock), who lived on the Rio Iriry, an affluent of the lower Xingu', and were in every respect closely related to the Yuruna'. Those desiring to become maitu'ma had to step before the wooden statue of Kumapa'ri, the war and national spirit, during a purely religious festival sacred to him, and announce their wish. The medicine man replied on behalf of the spirit and blew tobacco smoke at the supplicants, who then jointly drank fermented manioc. Two maitu'ma must not quarrel, but respect each other; refrain from indecent speech in each other's presence; and render mutual aid as long as they live. In Portuguese the Šipaya and Timbira, respectively, render maitu'ma and hapi'n by "compadre."[5]

Kwu'no'. The kwu'no' radically differs from the hapi'n relationship in lacking its manifold ceremonial affiliations and duties, for which it substitutes the boon companionship of young age-mates.

The tie is invariably formed by voluntary agreement during the last Pepye' of a particular age-class—the occasion also used for creating the hapi'n relationship. The candidates step into the brook, grasp each other while standing abreast, jointly dive, then without relinquishing their grip swim as far as possible below the surface of the water. The two girl auxiliaries also became kwu'no' to a fair number of their contemporaries.

The term of address, irrespective of the sex of the person spoken to, is iy-kwu'ṇo', iy- being the first person singular pronominal prefix. Very often the form iy-no-re is substituted (-re = diminutive).

This relationship is reckoned indissoluble, lasting theoretically until one partner's death; practically its importance is confined to youth. Persons over about forty no longer use the kwu'no' address, nor have I noted anything relating to this bond among older persons.

Two kwu'no' are expected to be particularly good comrades, constantly associating and aiding each other, in former times especially on war expeditions. In speech and jesting they are unrestrained, each at his pleasure publicly reproving and mocking the other as opportunity arises. This is not considered an insult but a friendly service; no one resents a kwu'no''s scoffing.

Between married kwu'no' the occasional exchange of wives is the finest proof of comradeship; the free consent of the women, however, being prerequisite. When all concerned are agreed, the matter is arranged quite unobtrusively. Kwu'no' are in any case in the habit of visiting each other. If on such an occasion the husband is alone with his wife, he may say some-

[5] See Curt Nimuendajú, *Bruchstücke aus Religion und Überlieferung der Šipaia-Indianer* (Anthropos, Vols. 14–15, p. 1028, 1919–20).

thing like, "Iy-no-re, I am going out for a while now; you may stay here." This puts the guest under obligation to offer his host the corresponding opportunity some time in the future.

Such wife-exchange is invariably temporary, in no way affecting the permanency of the two marital bonds. Although no blame attaches to the participants, the transaction is arranged as unobtrusively as possible, so that its frequency is difficult to ascertain accurately. It is probably rather rare, for since it implies reciprocity, a proposal fails from either wife's refusal.

At all events the institution has nothing to do with either "promiscuity" or civilized prostitution. The wives traded receive not the slightest gift, nor is the exchange the main purpose of the kwu'no' bond, for anciently the Pepye' were not yet married at the time of the contract, and with only a few exceptions this holds even today.

I have neither seen nor heard of any homosexual aspect of this tie. Characteristically the Ramko'kamekra turn a usage of this type not into homosexual excesses, but into a heterosexual exchange of women.

The two forms of formalized friendship evidently correspond roughly to the respect and joking relationships of North American tribes.

AGE-CLASSES

The age-classes result from the boys' initiation, hence cannot be described apart therefrom, but for present purposes the ceremonial aspect of the phenomena is minimized.

Rotation of Classes. All males pass through an approximately ten-year cycle of initiation. Those jointly initiated form a fixed life-long age-class: no one can resign membership to join a younger or older class. Thus, males (except for the boys below, say, ten) are divided into age-groups; separate units *not* consolidated into anything like a tribal society. In addition, the prospective novices at the next initiation organize themselves in an unofficial class and mimic as far as possible their elders' activities.

The four youngest and athletically active of the recognized classes occupy each a distinct place in the plaza, two on the east side and two on the west side. This position automatically shifts with the lapse of time. Two successive entering classes always alternate as to the side of the plaza they first occupy: if the former is admitted on the east, the second inevitably goes to the west side ten years later (see fig. 1). With the appearance of a new class, the survivors of the oldest active class on the same side leave the sport community to pass into the council, i.e. into the very

center of the plaza; the next older class of the side moves up to the site thus vacated, creating in turn a gap filled by the new class. Ten years later, when a new age-class is founded, a corresponding shift occurs on the complementary side. Since every group of novices enters at the north side of its semicircle, the transposition is invariably southward.

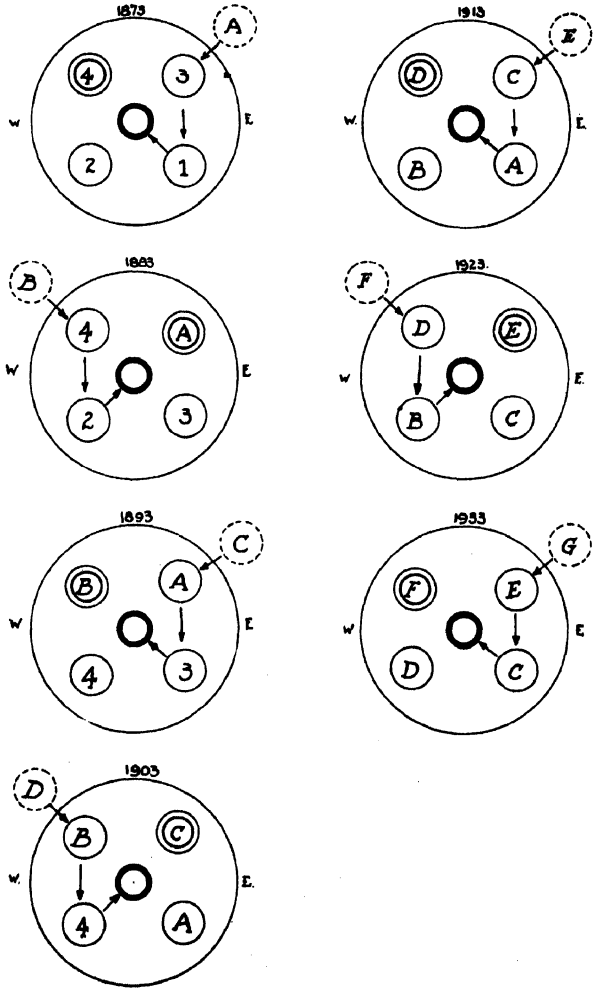


FIG. 1. Diagram showing the successive age-classes occupying positions in the plaza. (Broken circle—prospective initiates; double circle—the group completing initiation; bold circle—the council.)

In the diagram (fig. 1) the prospective initiates are indicated by a broken circle. The age-mates completing initiation in a given year are called Pepye', "warriors;" their position is marked by a double circle. The entrance, shift, and exit of all surviving classes (in November, 1935) are schematically represented; four classes now extinct are designated by Arabic ciphers, their inclusion showing the period of initiation of the oldest men now living. However, the mechanism is adequately illustrated by the last three initiations (1913, 1923, 1933). All dates prior to 1923 are only approximate. In general a cycle lasts ten years, with positive or negative variations of two years.

In 1913 the cycle of age-class D—the Ro'pkama of today—occupying the northwest site of the plaza, came to a close. Accordingly, the hitherto unofficial class E (now called Kapranpoti'kama) entered the scene opposite D, i.e. on the northeast, until then occupied by C, the Kokru'tkama of today. Hence C moved to the site of A (now Kuko'ekama), a class about twenty years older than C and then the oldest of the four racing classes. As a result the survivors of A left the sports association, passing into the middle of the plaza to become councilors.

In 1923 the cycle of class E was completed, hence the boys, F (today Pohiti'kama), entered the section opposite their immediate predecessors, viz. the northwest. This precipitated the shift of D to the site of B, occupied by the Pro'kama of today, men about twenty years older. This time the B men, as the oldest of the athletes, advanced to senatorship.

In 1933, the cycle of F came to a close, so that a new class, G (now Kra'ta'kama) entered on the northeast, causing the shift of E, their seniors by twenty years, to the section hitherto held by the C class, which entered the council.

Thus, the recent situation is as follows, the parentheses enclosing the date of completed initiation, while the number of members is set off by colons:

Active Age-Classes:

East (Ko'i-kateye):	54	West (Hara'-kateye):	57
(a) Kra'ta'kama (initiation incomplete):	31	(b) Pohiti'kama (1933):	36
(c) Kapranpoti'kama (1923):	23	(d) Ro'pkama (1913):	21
	Council: 14		
(e) Kokru'tkama (1903):	8	(f) Pro'kama (1893):	4
(g) Kuko'ekama (1883):	2	(h) ? (1873)	

Girl Auxiliaries. Thus, there are always four official and athletically active age-classes in the plaza; one pair on the west, the other on the east

side. These two pairs are connected with the two Vu'te' girls (see below) and form the opposing teams in the log-races held during the formally inaugurated and closed Vu'te' period, roughly corresponding to the dry, i.e. ceremonial, season. Dances and songs in the circular village street are proper only during this season; otherwise they are confined to the plaza. The Ramko'kamekra annually celebrate one great festival—either one phase of initiation or one of three major ceremonies held in intervening years. During a festival the Vu'te' girls recede into the background, but when it closes, the activities of the age-classes in the houses of their respective Vu'te' at once set in, not ceasing until the approach of the rainy season ushers in special ceremonies formally closing the season.

The Vu'te' are chosen at a secret and unobtrusive session of the council and chiefs, held on a cultivated plot some distance from the village. They primarily select two men with the following qualifications:

(a) Each must have a daughter about 7 to 10 years of age who might serve as Vu'te'.

(b) The fathers must be industrious and sociable in order to play their part successfully, for they—not the girls' maternal uncles—are responsible for the entertainment of the age-class moieties.

(c) One of these men must belong to the Eastern, the other to the Western age-class moiety.

(d) The wives of these men must live in houses diametrically opposite to each other, but the position as to cardinal directions is immaterial.

The girls retain office until they put on a string girdle, i.e. approximately until puberty. Virginity is imperative. If either should lose it before her term is over, she would remain in office until the end of the current Vu'te' period, but when the next ceremonial season opens both Vu'te' would be superseded by newly chosen girls. Usually they serve until the end of the last Pepye', so that the incipient age-class may start their cycle with new auxiliaries. This rule held in 1933, when the Pohiti'kama class completed their cycle.

A Vu'te' girl should be of reserved and staid demeanor; she must not play games in the plaza with girls of her age.

As explained,[6] the age-class dichotomy is distinct from that of the exogamous East and West moieties, each age-class having members of both moieties. Nevertheless, the pairs of age-classes share the term for exogamous moities, viz. mehakra'; they also bear the same specific designations, the Eastern pair figuring as Ko'ikateye, the Western pair as Hara'kateye.

[6] *Op. cit.*, p. 572 f.

The Eastern age-classes assemble in the maternal house of the Vu'te' whose father belongs to the *Western* age-class moiety, and vice versa. The members of a moiety and their Vu'te' address and treat each other as siblings. The members help their Vu'te''s father construct a dwelling or enlarge it into an adequate meeting place; they also aid him in farming.

The eastern semicircle of the village belongs to the Vu'te' of the Eastern age-class moiety, and vice versa. Victorious racers, arriving at the village ring with their log, always run toward their Vu'te' house and its semicircle, followed by the beaten team. Sometimes the racers continue to run along this ring until completely exhausted. Then the victors' Vu'te' may pity them, step in their path as they get to her house, and with her hand touch their log, which is then at once dropped.

Relay races and the races between two individuals always begin in front of the house of the challenging team's Vu'te'. The former's course is from the Vu'te''s house, along her semicircle, and then onward; single competitors theoretically run from the challengers' Vu'te' house across the plaza to the opponents' Vu'te' house. In the present village the ground slopes southward, hence these latter races invariably take place from the Vu'te' house of the Eastern age-class moiety (on the north side of the village circle) to the Vu'te' house of the complementary pair.

Leaders. The official class leaders are its two mamkye'ti, one representing the Eastern, the other the Western Plaza group.[7] Prior to the opening of the first ceremonial phase, the chiefs and elders carefully select them from among the prospective initiates. To begin solemnities, these two boys are led out of their mother's houses and made to face each other in the plaza. Their badge is an erect fan of arara tail-feathers worn at the back of the head. In the first (Ketu'aye) phase, where the initiates of the Eastern and Western Plaza groups appear separately, each mamkye'ti leads his group, who march in Indian file. In the second (Pepye') phase, for which this dichotomy no longer holds, and after the close of the initiation, the Eastern mamkye'ti takes precedence.

The mamkye'ti form part of a ceremonial aristocracy (see p. 67). It is they who properly govern the age-classes; they are possibly the only authorities who issue real orders among these Indians, and they are trained to do so from the beginning. Only they have the right to call together their classfellows, who must obey the summons and may not assemble without their leaders. Any one having dealings with a class, including the chiefs, must address the mamkye'ti. These are subject only to the chiefs and council

[7] See *op. cit.*, p. 571.

and, during the initiation period, to the mekapo'nkate (commandant, instructor), who belongs to an older class, and his deputy, the mekapo'nkate-kaha'k, the senior member of the class to be initiated.

In case of death there are no substitutes for the mamkye'ti. If both of them die prematurely, the instructor's deputy assumes the lead, but this is always regarded as a calamity for the class. In theory the leaders are equal, actually the abler soon gains ascendancy without, however, completely eclipsing his colleague. In contrast to the chiefs, the mamkye'ti have no authority whatsoever beyond their class.

In former times the mamkye'ti led their class in war and hunting, though always aided by one or several elders. Since warfare has completely ceased and communal hunts have largely lost their importance, the present significance of the mamkye'ti is slight—apart from ceremonial. The present situation is as follows:

(a) The youngest class, Kra'ta'kama, is actually governed by its mekapo'nkate.

(b) The next older class, Pohiti'kama, has two mamkye'ti, who, however, are completely eclipsed by Kapertu'k, the second commandant and actual leader.

(c) The Kapranpoti'kama class has a very able and energetic Eastern mamkye'ti, named Yo'ro; his colleague is no longer living. During the last Pepye' of this group (1923) Čatu' served as instructor, stayed with them after their initiation, and from sheer devotion to his pupils remains as their non-official commandant. Yo'ro still regards him as a superior.

(d) The oldest active class, Ro'pkama, has only one living mamkye'ti, named Koipo'ro.

The term mamkye'ti, manifestly connected with kye, "exogamous moiety," suggests that the leaders originally represented these units rather than the Plaza moieties; or, that their office dates back to a time when these two types of dual division were coterminous.

Exit from Active Sport. When retiring, the Kukru'tkama, men about fifty years old, whose cycle was completed about 1903, had dwindled to eight members. Both their leaders, also the deputy instructor, had long been dead, and as a social unit the group was insignificant; meetings were few, and hardly ever fully attended in the appropriate plaza section; also there was little participation in log-races. On the other hand, several members, who enjoyed a certain prestige, almost regularly appeared in the council. Nevertheless, they had not by any means forgotten their Kukru't-kama affiiliation.

When the Pepye' of 1932 closed the initiation of the Pohiti'kama, the

boys (Kra'ta'kama) entering the northeast of the plaza, the Kukru'tkama yielded their place to the advancing Kapranpoti'kama. Ten days after the end of the Pepye' all the survivors once more gathered in paint and grass decoration in order to run their last log-race, held between the Eastern and Western plaza classes. Thereafter they did not appear as a body except in the council, where they joined the numerically insignificant survivors of two older classes.

Economic Significance. Economic activities are quite subordinate to the socio-ceremonial and sportive functions of these units. No class as such owns property; even the place of assembly into which it transforms the Vu'te''s home belongs exclusively to her mother. At the beginning of each ceremonial season, the class must humbly ask this woman for permission to commence their performances. However, on two occasions the age-classes engage in economic work, though not systematically.

First, they build houses for persons engaged in matters of public concern. Thus, the two junior classes erected the dwelling of a woman whose husband was a tribal delegate in the state capital. Further, men help an age-mate put up his house. In 1935 I witnessed the hurried erection of a house by the Pohiti'kama, whose deputy instructor's wife was looking forward to her delivery in the near future.

Secondly, age-classes assist in harvesting. Since farming is growing more important every year, the classes play an ever larger part at crop-gathering, especially at the formerly nonexistent rice harvest. For meteorological reasons it is essential to expedite the harvest as much as possible, and the prospective beneficiary, often expected at the commencement of a major festival in the village, cannot neglect the harvest in his plantation. For several years it has become customary not to begin the great celebrations in the village before the garnering of the rice, and to obviate delay for the whole village, the age-classes then help those who are behind schedule. Whoever requires assistance appeals to the chiefs and council to draft the younger age-class belonging to his own half. The elders decide whether this is feasible, for the young men may already have been requisitioned for other tasks, and communicate their decision to the class leaders. Soon after this the class members appear as a body at the proper site, with a number of women of their own age for occasional dances. Rarely is there any remuneration, consisting of a small share of the crop, which is subsequently prepared for all members on orders of the class leaders. As a rule, the beneficiary merely feeds her assistants, who, it is true, by no means over-exert themselves, dawdling so that I have often asked myself whether their collaboration was worth while. However, toward the end of the rice

harvest, the workers are constantly occupied. The societies and the King Vultures similarly assist *their* members.

But while the growth of agriculture adds to the labors of the classes, they diminish through the lessening importance of communal hunting and the now complete elimination of war-raids.

The Cycle of Initiation. Initiation embraces two festivals, Ketu'aye (men-tu'a, boy) and Pepye' (pep, warrior). These are celebrated twice by the same group within the span of about ten years, one of them being occasionally held three times. Since a new cycle begins approximately after another decade, the oldest and the youngest members of a class differ in age correspondingly. As a rule several boys are deliberately excluded from their proper age group in order to retain a few more mature lads for the next class.

In short, the boys first assemble for a Ketu'aye when from five to ten years old and close their final Pepye' when about fifteen to twenty-five. These are approximate estimates, for the Timbira have no terms for numbers beyond 4 or 5, and no one knows his age. It is the councilors who decide whether the coming generation is fit to begin their cycle, which may be lengthened by intercalary festivals not at all immediately connected with initiation, but set between the several Ketu'aye and Pepye' solemnities according to demand. That, however, the average duration is about ten years appears from the number of classes and the age of their oldest members.

The three major festivals celebrated according to the elders' judgment in lieu of initiation are: Pep-kaha'k (warrior-like), Tep-yarkwa' (fish song), and Kokri't (water monster = mummers).

I have partly ascertained the sequence of ceremonials from 1923 to 1933, i.e. from the final initiation of the present Kapranpoti'kama to the last Pepye' of the present Pohiti'kama:

1923 Pepye' (end of Kapranpoti' initiation)
1924 Kokri't (observed by H. Snethlage)
1925 ? Tepyarkwa' ?
1926 First Ketu'aye of Pohiti'kama
1927 Second Ketu'aye
1928 Pep-kaha'k (observed by Fróes Abreu)
1929 First Pepye'
1930 Third Ketu'aye (observed by Nimuendajú)
1931 Pep-kaha'k (observed by N.)
1932 Tep-yarkwa'

1933 Second Pepye' (observed by N.; close of initiation of Pohiti'-kama)
1934 First Ketu'aye (beginning of Kra'ta'kama initiation)
1935 Kokri't (observed by N.)

Thus, after the close of the Kapranpoti'kama initiation in 1923, two years elapsed before the incipient initiation of a new class, the intervening seasons being filled with Kokri't and another (not definitely ascertainable) festival. In 1926 the new class, Pohiti'kama, was secluded for the first time, but their initial Ketu'aye was deemed inadequate by the elders, hence its repetition the next year. In the following year, Pep-kaha'k was substituted for initiation, which was not resumed before 1929, when the Pohiti'kama underwent the first Pepye' seclusion, terminating the first half of their cycle. In 1930 the second half began with their third Ketu'-aye. Judged too immature to complete their cycle, they had to postpone the second Pepye' until the third year, Pep-kaha'k being interpolated in 1931 and Tep-yarkwa' in 1932. In 1933 their initiation closed with their second Pepye', a new cycle starting in the following year with the first Ketu'aye of the new class.

Ketu'aye and Pepye' remain each identical in the two parts of the cycle.

Ketu'aye and Pepye'. Both ceremonies involve about three months' seclusion, ended by a three days' celebration for Ketu'aye and a fortnight's for Pepye'. The mode of seclusion, however, radically differs. Ketu'aye novices publicly dance in the plaza every afternoon with their kin; and in exceptional cases they appear singly for fleeting moments. Those of the Eastern plaza groups are housed in a special section of an ample house on the east side of the village, those of the Western plaza groups being similarly domiciled on the west side. The Pepye' seclusion is far more rigorous, outsiders not being meant either to hear or see anything of them and every participant remaining shut up in his own mother's home.

Both terminal rituals share the hunting of perea's, followed by a race; a Para-re race with miniature logs representing the souls of the dead; and the ceremonial killing of a tamed tai-tetu' pig. The Para-re race and probably also the perea' hunt with subsequent race may be secondary transfers from the Ketu'aye to the Pepye'.

The Ketu'aye is obviously meant to connect the boys with the souls of the dead, this being the sole religious motif in a Ramko'kamekra social unit. Communion with the souls is useful and essential for the novices, but dangerous for the inexperienced. This idea turns up in the origin myth, which describes the discovery of the several ceremonies and songs by spy-

ing on the souls, and recurs in the feeding of the boys with invisible food. The primary conception seems to be that the souls of the dead, lured by their own chants, which are regularly sung by the Ketu'aye, approach and enter the bodies of the boys, who then act like the souls themselves until purged of them by ablutions and flagellation. This also explains the racing with the miniature logs of the souls.

This association of ideas, however, is not wholly clear to any living Ramko'kamekra. Several offer explanations and hints in consonance with the above interpretation; others cast about for all sorts of rationalistic or even therapeutic motivations of obviously secondary character. Honestly convinced that ceremonial exists for its own sake, for the exclusive purpose of being performed, they have not the faintest urge to break their heads over its origin and meaning. The somewhat more religious-minded Apinaye' wholly lack the motif of communion between the novices and the souls.

The Pepye' pursues quite different aims. According to its myth, two boys went into voluntary seclusion in order to grow up rapidly into strong youths, not in order to hasten marriage but to avenge the death of their parents, who had been destroyed by a gigantic anthropophagous falcon. This goal—sudden emergence as a young and handsome man—has not escaped even neo-Brazilian neighbors. Any settler in the vicinity avers that the Indians immure their youngsters in a "chiqueiro" (pig-sty) and stuff them with food so that they may subsequently marry and exhibit great virility; the cramming process is considered a prerequisite to marriage.

Actually, undergoing all the initiation rites is or was essential for matrimony, but by no means implied immediate marriage, the age of initiates fluctuating between 15 and 25 while a young man rarely married before about 20. However, the Pepye' probationers learn about the choice of a wife and a husband's conduct; and the terminal rite of their future mothers-in-law leading the Pepye' youths by a cord drastically represents the prospective marriages.

In short, the underlying idea of Ketu'aye is animistic; of Pepye', social.

THE HAMRE'N

Besides the social units listed above, there is the honorific order of hamre'n, comprising five otherwise unrelated groups that share public esteem and ceremonial eminence: (a) the village chiefs (pa'hi'); (b) the age-class leaders (mamkye'ti); (c) the girls initiated with the boys (pep-kwe'i after initiation); (d) the women's precentresses (me-hokrepu'i); (e) the King Vultures (tamha'k).

Chiefs, age-class leaders, and prospective pep-kwe'i are appointed by

the council because of personal fitness, which also determines the status of a precentress, who, however, is generally selected by the girl's family.

Although the hamre'n enjoy distinction, the term is not coextensive with eminence. The councilors, though the real rulers, and always approached reverentially, are not hamre'n *ex officio*, but only by virtue of individual circumstances. Similarly the precentor, though far more important than his female colleague, is never hamre'n *ipso facto*.

The natives link the concept hamre'n (literally "restored to health") with the idea of something apart, higher, more refined. The head of the King Vultures compared the hamre'n to the "doutores" of neo-Brazilian rustic speech, which applies the term to all intellectuals, higher officials, etc. All other Ramko'kamekra are me-kakra'n-kra, "unripe people"—not because of social immaturity, but because the hamre'n must eat only fully ripened fruits, a restriction that does not hold for others. Further, a hamre'n never eats the first fruits of a crop lest he be attacked by snakes or other venomous beasts. To eat of a green gourd would cause wounds on his body; in gathering honey he must not partake of it directly from the bees' nest, but only after laying it on a gourd bowl, otherwise he would risk injury from stepping on the stump of a tree. He would incur the same danger if he were to fashion clubs, arrowheads, and other implements out of pau-roxo wood when in the central plaza, where the men frequently practice their skills during assemblies. Non-hamre'n are free from these taboos.

Since the King Vultures alone outnumber all the other hamre'n, the term for them often serves as a synonym for the entire order; hence it is not certain how many of their numerous restrictions extend to the four other groups.

Formerly all the hamre'n had a distinctive form of burial, the corpse being feathered with falcon down and interred not behind but in front of the dead person's maternal home, at the inner margin of the village ring. Secondary burial was also confined to the hamre'n, though conceivably the custom originally held for all, but had long lapsed for the me-kakra'n-kra while still preserved for the hamre'n.

The author encountered nothing at all suggestive of this institution elsewhere except among the Kaingang of the Rio Ivahy region, state of Paraná, where at least three classes appear—the pai', voto'ro, and pe'nye. The first, superior to the others, comprises the chiefs; its members enjoy such ceremonial prerogatives as sitting on a white caraguata' blanket. Because they are reckoned peculiarly sensitive to harmful influences, the Kaingang chief gave his naturally frail son a pe'nye rather than a pai'

name: names being allotted by a child's father and determining class affiliation. These classes have distinct duties in the cult of the dead.

The King Vultures were at first mistaken for an ordinary ceremonial organization like the Ducks and the Falcons that was obliged to appear at the Pepkaha'k. Actually they hardly differ in behavior at certain dances and log-races from these societies, but soon their radical distinctness appeared, the King Vultures being *ipso facto* hamre'n, indeed forming the bulk of the order. Further, while the performances of other societies are limited to their appropriate festive periods and are predominantly dramatic, the King Vultures have permanent functions of pronouncedly magical and social character. Finally, they are without the girl auxiliaries (mekuič-we'i) of the other organizations.

Tamha'k is a synonym of kukri-ti, "king vulture" (*Gypagus papa*), with whom members identify themselves, designating him as their maternal uncle. However, they neither worship the bird in any way nor ceremonially use his feathers or other parts of his body. As the king vulture feeds the ordinary black vultures by tearing open carrion which their weaker bills leave unscotched, so the Tamha'k feed ordinary people.

Membership is not essentially transferred from maternal uncle to sister's son, but goes with the honorary chieftainship of an alien Timbira tribe. When one Timbira group visits another, the hosts stick falcon down on one of the guests, preferably a young man, paint him with urucu', and make him present himself before the councilors in the plaza, holding a bowl of food; thereby they create him their me-ho-pa'hi', honorary chief. This ceremony, a great honor, always takes place shortly before sunset, when the girls sing in the plaza and the elders assemble there. At a return visit to their erstwhile guests, the former hosts look up the man thus chosen, who billets them on his mother or wife or both, and charges himself with their entertainment.

In 1930 the chief of the Kraho', who had incurred the animosity of the Apinaye', made an offer of peace and friendship through me. He specifically referred to their having appointed his son their courtesy chief and urged them to visit their me-ho-pa'hi'. In 1931 the Guajaja'ra (Tupi stock) paid their first visit to the Ramko'kamekra, who chose a young Guajaja'ra as their honorary chief, whereupon whole bands of Ramko'-kamekra favored him with continuous and lengthy visits.

In short, the honorary chief's duty to entertain members of the tribe choosing him represents one phase of the King Vulture institution. Of the four tribal groups now in the Ramko'kamekra settlement (p. 51) each has one or more honorary chiefs in each of the others—the more, the better in

the interest of their food supply. All these courtesy chiefs, then, form the King Vultures, who in 1931 numbered 34; and following the pattern of the actual chiefs, they are automatically hamre'n.

This is the only way of becoming a Tamha'k. It happens that a man's electors subsequently adopt his nephew so that he may step into his aging uncle's place, since youth is deemed essential for the fraternity's magical practices. But in one case, a son was taken in to supersede his aging father, and other youths were admitted though neither their fathers nor uncles had been members. This principle applies also to the leadership of the fraternity.

Adopted by a Čakamekra family, I am classed accordingly in the village; my hapi'n, Čatu', a Ramko'kamekra proper, had me initiated to Tamha'k status by his tribal division.

A King Vulture ought to be generous toward his electors and to conform in every way to native standards of conduct. If he returns with game and meets a non-Tamha'k of the initiating group, he deposits the booty before him as a gift and silently departs. All Tamha'k give presents to the groups who chose them as their honorary chiefs. On the other hand, when people at large have killed big game, the King Vultures, with the other hamre'n, receive the first share in the distribution. The ideal behavior expected of a Tamha'k seems to be likewise incumbent on his next of kin: an Indian who had deserted his wife without just cause was reminded of his son's quite recent admission to the King Vultures.

Initiation may occur at a very early age, say, from 6 or 10 years on, so that the fraternity included many lads and no really old men.

Tamha'k magic rests on the belief that members—especially if young and vigorous—beneficially influence activities they inaugurate or objects they handle. This view finds expression in farming, fishing, and hunting ritual. In order to enrich the crop, a Tamha'k is the first to taste of certain fruits. In a communal drive he lights the grass, thereby insuring a big kill. He makes the first cut in the hide of a slain tapir, so that it may prove fat; and he, preceding others, steps into the water to spit drugged fish, since that makes for an abundant catch thereafter.

Many Tamha'k regard their obligations as a nuisance and formally resign in the only possible way. If a King Vulture helps ceremonially destroy a wasp nest during the Pep-kaha'k, he no longer figures as a member and is absolved of all his duties.

As a body the Tamha'k appear solely in the Pep-kaha'k, and only in the last two weeks of that festival. They function as allies of the Clowns, Falcons, and Pep-kaha'k, and thus participate in sundry dances and log-

races, culminating in the ceremonial distribution of food by the Tamha'k to the tribal groups. On this occasion all the King Vultures wear the following identical decoration. On their backs, chests, arms, and thighs maternal kinswomen stick vertical strips of falcon down, three fingers in width, other hamre'n being completely feathered with falcon down for ceremonials. The uncovered parts of the body are daubed red with urucu'. The hair at the back of the head is tied together, and has fastened to it a rattling ornamental bundle ot some thirty carefully smoothed bamboo rods, ca. 30 cm. long and of the thickness of lead-pencils. The tuft of the wearer's hair is pulled through a plaited ring at the top of the ornament; two long ara'ra feathers—nowadays rarely worn because in this region the species is almost extinct—are thrust through the ring so as to project obliquely upward and outward.

GOVERNMENT

Except in the age-classes, the leader of any unit is called pa'hi', meho-pa'hi'; but only the village chiefs are hamre'n.

For a new chief, the chiefs in office and the senate of elders select a mature man of calm, conciliatory disposition and some oratorical gifts. For the official is not an executive who commands and punishes, but a peacemaker who unites people and at the will of the parties concerned smooths out difficulties. Unbidden, he does not interfere with the private affairs of the families; but if he is appealed to, his decision is binding.

If strife threatens, the chiefs and councilors dispatch some other men of acknowledged capacity to talk a refractory tribesman into docility. Or, especially if the quarrel is among kinsmen, one of the contending parties may of their own accord summon these professional moderators.

The electors gladly confer the chief's dignity on an old mamkye'ti, who, by guiding others from an early age, has acquired experience in leadership. But this is by no means the rule; of the three chiefs in 1931 only the oldest had led his age-class.

Strictly speaking, the chiefs are relieved of political control, because private and public life is restricted by an omnipresent ceremonial, which actually leaves little scope for individual assertiveness. The normal course of economic and social life is assured by conformity to this customary law, which the chiefs and council do not create but merely preserve. Precisely as old survivors from the past they are in duty bound to instruct their juniors about their forefathers' actions, with the inescapable conclusion that the same behavior is obligatory on their descendants. Since the pressure on Ramko'kamekra territory by neo-Brazilians, these latter automatically try to transform the chiefs into officials responsible for the mostly

rather unbearable relations between the citizenry and their Indian neighbors. Naturally, the chiefs almost without exception fail in this task or, almost wholly lacking a clear sense of the common weal, regard these relations as their private affair.

Visiting strangers must present themselves to one of the chiefs—not necessarily the one of senior rank—and explain their intentions, whereupon he either discusses the matter with his colleagues and the council at the next session, or immediately summons an extraordinary meeting in the plaza.

I have never heard of the demotion of a chief, but in one case an old man, Čarca, pleading unfitness, was relieved of the office at his own request.

Snethlage[8] mentions another type of chiefs, men who—only exceptionally by consent of the chiefs and councilors, usually against their wishes—travel to the larger towns as mendicants. There, if sufficiently eloquent, they lay claim to a chief's status, not from ambition or a desire to rule on their return, but merely in order to beg gifts in the name of their tribe. The state government, not suspecting the true condition of affairs, sometimes officially accepts the travelers at their face value. However, among the Ramko'kamekra this pseudo-chieftaincy has not yet been able to establish itself, and as yet none of these mendicants would dare play the chief at home on the strength of a governmental patent.

Nowadays there are three chiefs, of whom the oldest, Rop-ka' (Jaguar-skin), some sixty years of age, takes precedence. He is the mamkye'ti of the Eastern moiety of the Pro'kama, an age-class that graduated about 1893 and is now reduced to four council members. His tribesmen do not consider him a good chief, for he grossly neglects official duties, which he discharges with reluctance in his private interest. Instead of presiding at the plaza assemblies, he spends weeks and even months on the plantations of his wife's extended family, letting the other chiefs and councilors wait for the discussion of important matters since no one would regard a decision made in Rop-ka''s absence as proper and valid. When, however, he finally appears and seats himself in the plaza with the rest, he is every inch a chief. Speaking but little, he delivers his decisions succinctly and energetically, in an impressively strong and deep voice, acting altogether like an old mamkye'ti laying down the law for his age-class. Another grave defect of this man is his drunkenness, which is fostered by the whisky dealers, who regularly seek out the paramount chief and furnish him liquor gratis in return for a free hand. In 1932 I caught Rop-ka' in the act

[8] E. Heinrich Snethlage, *Unter nordostbrasilianischen Indianern* (Zeitschrift für Ethnologie, Vols. 62–63, 1930–31), pp. 168, 176.

of permitting a Negro, who had constantly presented him with whisky, to settle in the tribal territory.

The two other chiefs, Hak-toko't and Kukrača', are of equal age and rank. The former, by pure coincidence a younger brother of Rop-ka"s, is also a sot. He mostly directs major festivals and ceremonies, not as a prerogative of a second chief, but simply because of his experience and inclination. On such occasions, however, he abstains from alcoholic beverages.

Kukrača' (Bees' Nest) is of Čakemekra descent. Of the trio, he is the least prone to intoxication, the only one with some feeling for the communal welfare, and the center of all opposition to land-grabbers. When I left the village, his last request was that I should exert myself to maintain the tribal domain. No one is so deeply convinced of the exclusive correctness of old Indian tradition and the absolute need for preserving it. At least twice he has been found guilty of cattle lifting, but I am under the impression that he regards this as a meritorious reprisal against the intruders. In general, he is a merry blade given to all sorts of pranks, hence one of the most eminent Clowns.

A fourth man, Čatu' (Fox-belly), is manifestly preparing for the chieftaincy. He is about fifty, remarkably nervous for an Indian, somewhat garrulous, but a keen and brave man. The civilized enemies of his people view him with great suspicion, scenting in him their most dangerous adversary in a possible conflict. He is the age-class commandant mentioned (p. 63) as remaining with his disciples after a lapse of eleven years. Čatu' already sits in the plaza with the council, but though verily not inclined to reticence he still checks himself in discussion, seeing that after all he is not yet a chief.

The chiefs of the Ramko'kamekra lack all badges of authority. On various occasions senators and chiefs get an offering of food in the plaza, but they eat it jointly and in amount no chief is favored above the other elders. Similarly they receive no extra portion in the distribution of food to plaza groups, men's societies, or other social units. They work for their support precisely like any other tribesmen. In the plaza sessions they always sit more or less in the center because decorum forbids any one to turn his back on a chief or seat himself in front of him.

The Timbira display remarkably little individual lust of power with reference to the chieftaincy. I have not observed any great desire for this office or discovered young men who dreamt of some time becoming great chiefs. Nor, could I note any rivalry among the chiefs. Now and then there were moderate complaints about Rop-ka"s defects, but no one ever said, "If *I* were paramount chief. . . . " There were merely invidious comparisons with his far abler predecessor, the defunct Delfino Kokaipo'.

Diverse statements about Timbira chiefs in the literature are not wholly accurate. Snethlage rightly recognized that the influence ascribed to the Kraho′ chief Kokrit by Ribeiro, or by Pohl to the Po′rekamekra chief Romao, was due to a systematic strengthening of their position by civilized neighbors who tried to check the natives through such chiefs. But he errs in identifying the chiefs with the age-class commandants and in assuming that chieftainship has anything to do with exogamous moiety affiliation. The "second" chief, whom he saw direct the women's dances in Ponto, obviously the above-mentioned Hak-toko′t, does not belong to the moiety complementary to the first chief's since the two are full blood-brothers. As it happens, none of the three chiefs, nor even the prospective chief Čatu′, is of the complementary moiety, all four being by sheer chance Easterners. Snethlage's "chief" who apparently commanded at communal hunts was probably the leader or commandant of an age-class. Finally, the chiefs have nothing to with designating the girls as of age. Ignace and Pompeu Sobrinho have also ascribed to Canella chiefs civil functions completely foreign to them.

Froes Abreu certainly goes too far in virtually denying any chief to the Ponto villagers. According to him, Rop-ka′ made no decisions, and no one was responsible to him. As shown above, this is an exaggeration. This author expected a chief who constantly ordered about, punished, and directed his "subjects." That these were quite sufficiently controlled by customary ceremonial law remained completely unknown to Abreu.

BELÉM DO PARÁ, BRAZIL

THE SOUTHERN ATHAPASKAN LANGUAGES

By HARRY HOIJER

THE Southern Athapaskan languages are spoken by the following tribes of the American Southwest: the Navaho in the northwestern portion of the area, the San Carlos (Western Apache) in east central Arizona, the Chiricahua in southern Arizona and New Mexico, the Mescalero in east central New Mexico, the Jicarilla in northeastern New Mexico, the Kiowa Apache in northern Texas, and the Lipan in southern Texas.

The nearest tribes that speak cognate languages are the Hupa, Wailaki, and Mattole in northern California. In western Canada are found other cognate languages such as Chipewyan, Sarcee, and Carrier. The problem of this paper is to determine the linguistic position of the Southern Athapaskan languages both with respect to one another and to the other, more distant, dialects.

The data quoted on the Southern Athapaskan languages, except Navaho, is from my own unpublished material.[1] The Navaho forms and most of the Hupa and Sarcee quotations are from Dr Sapir's unpublished lists of stems and prefixes which he has kindly placed at my disposal. Mattole, Wailaki, Kato, Chipewyan, and some Hupa and Sarcee forms are taken from the publications of Dr Fang-Kuei Li, which are listed in the bibliography.

1. In the Southern Athapaskan[2] languages, as in all other Athapaskan languages, the consonantal scheme is far more important than the vowel system for comparative purposes. For this reason, and because a proper summary of the complex problems of vocalic quantity, quality, and pitch accent is not yet possible, the following comparisons will include only the consonants.

The typical Athapaskan word is composed of one or more prefixes plus a stem. Prefixes are of two general types: those which stand farthest from the stem and are loosely incorporated into the word, and those which stand closer to the stem and are often fused together. Prefixes of the former type we shall call derivational prefixes, and those of the latter type, paradigmatic prefixes.

A comparison of Athapaskan languages soon makes it apparent that

[1] My work on the Southern Athapaskan languages has been financed by the University of Chicago, the Committee on Native Languages of America of the American Council of Learned Societies, and the Laboratory of Anthropology, Santa Fé, New Mexico.

[2] The following abbreviations will hereinafter be used: Ath. = Athapaskan, S. Ath. = Southern Athapaskan, Nav. = Navaho, S.C. = San Carlos, Chir. = Chiricahua, Mesc. = Mescalero, Jic. = Jicarilla, Lip. = Lipan, K.A. = Kiowa Apache, Mat. = Mattole Wail. = Wailaki, Chip. = Chipewyan, Sar. = Sarcee.

the consonants vary in development depending upon their position in the word.[3] Thus, Ath. *x-,[4] as the initial consonant of the stem, becomes x- in all the Southern Athapaskan languages but, as the initial consonant of a paradigmatic prefix, becomes Nav. h-, S. C. k-, and g- in the other Southern Athapaskan languages (§§9, 15). A similar distinction must be made between initial stem consonants and final stem consonants. Nav. d-, in the initial stem position, corresponds to d- in the other Southern Athapaskan languages, but Nav. and S. C. final -d correspond to final zero in Chiricahua, Mescalero, Lipan, and Kiowa Apache, and to final glottal stop in Jicarilla (§21).

INITIAL CONSONANTS OF THE STEM SYLLABLE

2. Ath. *m- (*b-ʔ) > Nav., S.C., Chir., Mesc., Jic., Lip., K.A. b-, m-.

Athapaskan had apparently only one bilabial consonant which becomes m- in Hupa, Sarcee, and other dialects and b- in Wailaki, Kato, and Mattole. In the Southern Athapaskan languages, the majority of the stems have b-; m- appears in relatively few stems.

Nav., S.C., K.A. -bìd *stomach;* Jic. -bìʔ; Mesc., Lip., Chir. -bì; Mat. -bi'ɬ; Hupa -miɬ; Wail. -biɬ; Sar. -mìʔ; Chip. -bə́r.

Nav., S.C., Chir. -má·s, -má·z *to roll* (*something*); Mesc. -má·s, -má·ʒ; Jic., Lip. -más, -más; K.A. -má·s, -má·s; Mat. -ba·s, -ba·s *to coil a rope.*

Kiowa Apache sometimes has m- corresponding to b- in the other Southern Athapaskan languages: Nav., S.C., Chir. -bìž, -bìž *to braid;* Mesc. -bìǯ, -bìǯ; Jic., Lip. -bìš, -bìš; K.A. -mìš, -mìš.

3. Ath. *t- > Nav., S.C., Chir., Mesc. t-; Jic., Lip. k-; K.A. k- (before the vowels a and o), č- (before the vowels e and i).

Nav. ší-tá·ʔ *my forehead;* Chir. ší-tá; Mesc. šį-tá; S.C. ší·-táʔ; Jic. šį-káʔ; Lip. ší-káʔ; K.A. šį·-káʔ.

Nav. -tà·ʔ *father;* S.C., Chir., Mesc. -tà·; Jic. -kàʔ-é·; Hupa, Wail., Mat. -taʔ; Sar. -tąʔ; Chip. -tá.

Nav., Chir., Mesc. tó *water;* S.C. tó·; Jic., Lip. kó; K.A. kó·; Sar. tó; Chip. tù.

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[3] Cf. Fang-Kuei Li, *Mattole*, pp. 6–7, and Fang-Kuei Li, *Chipewyan Consonants*, p. 430 and pp. 459–60.

[4] The orthography employed is strictly phonemic. The symbols used are those recommended in Vol. 66, No. 6 of the Smithsonian Miscellaneous Collections, 1916, with the changes suggested by George Herzog and others in the American Anthropologist, Vol. 36, pp. 629–31, 1934. Because some of the recommmended symbols are not available, the following substitutions have been made: front palatal g is represented with the breve above rather than below the character (§§6 and 9), and nasalized low toned e, o, and u are written with the grave accent following instead of directly over the vowel (§§7, 26, and 28).

Nav., S.C., Chir., Mesc. -tè·l *to be wide;* Jic. -kè·ł; Lip. -kì·ł; K.A. -čè·ł; Mat. -te·ł, -te·l; Sar. -ta·l; Chip. -tél.

Nav. -tè·h, -tį *to handle a living being;* Chir., Mesc. -tè·, -tį; S.C. -tè·, -tį·; Jic. -kè·, -kį; Lip. -kì·, -kį; K.A. -čè·s, -čį·; Hupa -tiw, -tiŋ (-te·n); Mat. -tix, -tiŋ (-te·n); Wail. -teš, -tiŋ; Sar. -tàh, -tí(n-); Chip. -tə́ih, -tį·.

4. Ath. *n- > Nav. n-; S.C., Chir., Mesc., Jic., Lip. ^{n}d-; K.A. d-.

Nav. -nà$^{?}$-í *enemy;* S.C., Chir., Mesc., Jic., Lip. -^{n}dà$^{?}$; K.A. -dà$^{?}$-éi; Chip. -ná.

Nav. -ná·$^{?}$ *eye;* S.C. -^{n}dá·; Chir., Mesc., Lip. -^{n}dâ·; Jic. -^{n}dá·; K.A. -dá·$^{?}$; Hupa, Wail. -na·$^{?}$; Mat. -na$^{?}$, -na·g-; Chip. -nàγá.

Nav. dì-né *person;* S.C. ǹ-^{n}dé·; Chir. ^{n}dé; Mesc. ǹ-^{n}dé; Jic. dì-^{n}dé; Lip. dì-^{n}dí; K.A. dį̀·-dé; Chip. -nè.

Nav. -nè·z *to be tall;* S.C., Chir. -^{n}dè·z; Mesc. -^{n}dè·ʒ; Jic. -^{n}dè·s; Lip. -^{n}dì·s; K.A. -dè·s; Mat. -ne·s; Sar. -nà·z; Chip. -néδ.

5. Ath. *k- > Nav., S.C., Chir., Mesc., Jic., Lip. k-; K.A. k- (before the vowels a and o), č- (before the vowels e and i).

Nav. -kà·h, -ką *to handle something in a container;* S.C. -kà·, -ką·; Chir., Mesc., Lip. -kà·, -ką; Jic. -kài, -ką; K.A. -kà·, -ką·; Hupa -ɣahw (-ɣa·w), -ɣaŋ (-ɣa·n); Mat. -ka·x, -kaŋ (-ka·n); Wail. -kaš, -kaŋ; Sar. -kąh, -ką(n-); Chip. -káih, -kąą.

Nav. ké-, -kè·$^{?}$ *foot, shoe;* S.C. ké·, -kè·; Chir., Mesc., Jic. ké, -kè·; Lip. kí, -kì·; K.A. -čé·-; Chip. kɛ́, -kɛ́; Mat., Wail. -ke$^{?}$, Hupa ɣe·-, -ɣe$^{?}$; Kato -k^{w}e$^{?}$; Sar. ká-, -kà$^{?}$.

6. Ath. *ǧ-, *ǩ-, and *ǩ- > Nav., S.C., Chir., Mesc., Jic., Lip., K.A ʒ-, c-, and ć-, respectively.

The Southern Athapaskan group is most clearly distinguished from the other Athapaskan languages by its treatment of these sounds. In Hupa and Wailaki the primitive Athapaskan sounds are preserved, in Mattole they become ǯ-, č-, and ć^{y}-, respectively, and in Chipewyan and Sarcee they go to ǯ-, č-, and ć-, respectively.

Nav., S.C. -ʒìd *there is fear;* Chir., Lip., K.A. -ʒì; Jic. -ʒì$^{?}$; Mat. -ǯih (-ǯid), -ǯid *to be afraid;* Hupa, Wail. -ǧid, -ǧid; Chip. -ǯɛ́r, -ǯɛ́r, Sar. -ǯì$^{?}$(d-), -ǯì$^{?}$(d-).

Nav., S.C., Chir. -có·s, -cò·z *to handle a fabric-like object;* Mesc., -có·s, -cò·ʒ; Jic., Lip. -cós, -cò·s; K.A. -có·s, -cò·s; Mat. -č̣o·s, -č̣o·s; Hupa -ǩohs, -ǩohs; Wail. -ǩos, -ǩos; Chip. -čùθ, -čúδ.

Nav. -ćìł, -ćìl *to break;* S.C., Jic., Lip. -ćìł, -ćìł; Mat. -ć^{y}eł, -ć^{y}el *to split with the hand;* Hupa -ǩił, -ǩil *to tear, rip a skin;* Chip. -ć̆ùł, -ć̆èl; -Sar. -ć̆ùł, -ć̆úl.

7. Ath. *ɣ- > Nav., S.C., Chir., Mesc., Jic., Lip. s-; K.A. š-.

Nav. sìn *song;* S.C., Chir., Mesc., Jic., Lip. sį̀, K.A. šį̀; Chip. šə̀n; Mat. -xin-.

Nav. sę̀·s *wart;* S.C. sǫ̀·s *venereal disease;* Chir., Mesc., Jic., Lip. sǫ̀·s *wart;* Chip. šį̀*θ*.

8. Ath. *y >Nav., S.C., Chir., Mesc., Jic., Lip. y- (before the vowels a and o), *γ*- (before the vowels e and i); K.A. ž-.

Nav., Chir., Mesc., Jic., Lip. yá *sky;* S.C. yá·; Mat. ya· *cloud.*

Nav., S.C., Jic. yà·ʔ, -yàʔ *louse;* Chir., Mesc., Lip. yà·, -yàʔ; K.A. žà·, -žàʔ; Chip. yá; Mat. yaʔ-; Sar. yàʔ.

Nav., S.C., Chir., Mesc., Jic. -γèʔ *son;* Lip. -γìʔ-į; K.A. -žàʔ-ą́·; Chip. bì-yɛ̀sɛ́; Sar. -γá.

Nav. γìh, -γìh *breath, spirit;* Jic. γìh, -γìhì; K.A. hą́·dì-žìs *breath;* Chip. -yíy-.

Nav., S.C., Jic. yò·ʔ, -yòʔ *bead;* Chir., Lip. yò·, -yòʔ; K.A. žò·ʔ, -žòʔ; Chip. yú, -yúwɛ́ *clothing, material implements.*

9. The following Athapaskan initial stem consonants, *d-, *ť-, *g-, *ǩ-, *x-, *γ-, *s-, *z-, *ʒ-, *c-, *ć-, *š-, *ž-, *ǯ-, *č-, *ć̌-, *ł-, *l-, *λ-, *ƛ̌-, *ƛ̌-, and *ʔ-, remain unchanged in the Southern Athapaskan languages.

It is apparent from the preceding paragraphs that the initial consonants of the stem in Southern Athapaskan are fairly representative of the primitive Athapaskan system. The most important divergence is in the development of the primitive Athapaskan front palatal stops *ĝ-, *ǩ-, and *ǩ̂-. These sounds, preserved in Hupa and Wailaki of the Pacific Coast group, and becoming ǯ-, č-, and ć̌-, respectively, in Chipewyan and Sarcee, fall together in all the Southern Athapaskan languages with the Athapaskan dental affricatives *ʒ-, *c-, and *ć- (§6).

We may infer from this that the Southern Athapaskan languages are divergent descendants of a single homogeneous primitive form. This inference is further borne out by the development of Ath. *m-, *x̧-, and *y- (§§2, 7, and 8).

The development of Ath. *t- (i.e., Nav., S.C., Chir., Mesc. t-; Jic., Lip. k-; K.A. k-, č-; see §3) provides an important criterion distinguishing two groups of Southern Athapaskan languages. The primitive language of the Western group (i.e., Navaho, San Carlos, Chiricahua, and Mescalero) preserved Ath. *t-, whereas that of the Eastern group (Jicarilla, Lipan, and Kiowa Apache) confused Ath. *t- with Ath. *k- (§§3, 5). It will also be noted that Kiowa Apache may be differentiated from Jicarilla and Lipan by its treatment of both Ath. *t- and Ath. *k-.

The shift of Ath. *n- to Nav. n-; S.C., Chir., Mesc., Jic., Lip. ⁿd-; K.A. d- is obviously later than that of Ath. *t- to k- in the languages of the

Eastern group. The fact that Navaho has preserved Ath. *n- and that, in Kiowa Apache, Ath. *n- has gone to d-, suggests an early separation of these two languages from the Western and Eastern groups, respectively. The similarity of development in the remainder of the languages may be due either to parallel development or to later contact between certain members of the Eastern and Western groups.

To summarize, the development of the initial stem consonants indicates, first, a basic homogeneity of the Southern Athapaskan languages; secondly, an early division of the primitive Southern Athapaskan speech community into an Eastern and a Western group; and, finally, that Kiowa Apache and Navaho were the first of the modern tribes to break off from the Eastern and Western groups, respectively.

INITIAL CONSONANTS OF THE PREFIX SYLLABLE

10. We have already stated (§1) that Southern Athapaskan prefixes are of two types: derivational prefixes and paradigmatic prefixes.[5] This distinction has phonological importance in that an initial prefix consonant may have two distinct developments if it occurs in both kinds of prefix. Thus, for example, Ath. *x-, in derivational prefixes such as Nav. hà- *out (of an enclosed space)*, becomes h- in all the Southern Athapaskan languages whereas, in paradigmatic prefixes, it becomes Nav. h-, S.C. k-, Chir., Mesc., Jic., Lip., K.A. g- (§15).

The initial consonants of derivational prefixes are almost as numerous as the initial stem consonants and have essentially the same development. Initial consonants of paradigmatic prefixes, on the other hand, are very few in number and, because these prefixes frequently coalesce, are subject to weakening of consonantal articulation and loss.

11. Ath. *m- (*b- ?) > Nav., S.C., Chir., Mesc., Jic., Lip., K.A. b-.

The only prefix illustrating this correspondence is the third person pronominal prefix. Nav., S.C., Chir., Mesc., Jic., Lip., K.A. bi-; Mat. bi- *his;* Sar. mi-.

12. Ath. *t- in derivational prefixes has the same development as the stem initial (§3).

In paradigmatic prefixes, Ath. *t- weakens to d- in all the Southern Athapaskan languages.

Nav., S.C., Chir., Mesc., Jic., Lip., K.A. di- *inceptive prefix;* Mat. di-, de·-; Wail., Hupa ti-, te·-. Kato te-; Chip. tɛ-; Sar. di-.

13. Ath. *n- in derivational prefixes is retained in all the Southern Athapaskan languages.

[5] Cf. Fang-Kuei Li, *Chipewyan Consonants*, pp. 459–60.

Nav. nà- *about, here and there;* S.C., Chir., Mesc., Jic., Lip., K.A. nà·-; Mat. na-, na·- *indefinite or continuous movement;* Hupa na·- *indefinite motion.*

In paradigmatic prefixes, Ath. *n->Nav., S.C., Chir., Mesc. n-; Jic., Lip. ⁿd-; K.A. d-.

Nav., S.C., Chir., Mesc. ní- *completive perfective prefix;* Jic., Lip. ⁿdí-; K.A. dí-; Mat. ni- *momentaneous perfective;* Chip. nɬ- *perfective;* Hupa niŋ-.

14. Ath. *ɬ̡- becomes ʔ- in all the Southern Athapaskan languages.

Nav. ʔa- *indefinite object pronoun;* S.C., Chir., Mesc., Jic., Lip., K.A. ʔi-; Mat. ʔi-, y-; Hupa ɬ̡i-; Chip. ʔɛ-; Sar. i-.

15. Ath. *x- in derivational prefixes weakens to h- in all the Southern Athapaskan languages.

Nav., S.C., Chir., Mesc., Jic., Lip., K.A. hà- *out (of an enclosed space);* Mat. ga-; Sar. xą̀- *out;* Hupa xa·-; Kato ka-, Chip. xá-.

In paradigmatic prefixes, Ath. *x->S. Ath. *k->Nav. h-; S.C. k-, Chir., Mesc., Jic., Lip., K.A. g-.

Nav. ha-, ho- *place, time pronoun;* S.C. ko-; Chir., Mesc., Jic., Lip., K.A. go-; Mat. gʷo-; Sar. gu-; Wail. ki-; Chip. ho-.

16. Ath. *γ-, in paradigmatic prefixes,[6] >Nav. y-; Chir., Mesc., S.C., Jic., Lip. h-; K.A. γ-.

Nav. yí- *perfective prefix, third person;* Chir. hó·-; Mesc., Lip. hǫ́·-; S.C., Jic. hɬ́·-; K.A. γɬ́·-; Mat. γin-; Hupa wiŋ-; Sar. yí-.

Nav. yi- *progressive prefix;* Chir., Mesc., Lip. ho-; S.C., Jic. hi-; K.A. γi-; Mat. γi-; Hupa wi-; Sar. yi-.

17. Ath. *h-, in paradigmatic prefixes, >Nav. y-, Chir., Mesc., S.C., Jic., Lip., K.A. h-.

Nav. yi- *peg prefix;*[7] Chir., Mesc., S.C., Jic., Lip., K.A. hi-; Hupa ʔi-; Chip. hɛ-; Sar. i-.

18. Ath. *č̡-, in derivational prefixes, is retained in all the Southern Athapaskan languages.

Nav., S.C., Chir., Mesc., Jic., Lip., K.A. čí- (*to go*) *out;* Mat. ǯi-, ǯe·-, -'ǯi-, -'ǯe·- *out of, out;* Hupa čɛ·-, či-.

In paradigmatic prefixes, Ath. *č̡->Nav., Chir. ǯ-; Mesc., S.C., Jic., Lip., K.A. č̡-.

Nav., Chir. ǯi- *third person subject pronoun;* S.C., Mesc., Jic., Lip., K.A.

[6] In derivational prefixes, it is retained in all the Southern Athapaskan languages.

[7] This prefix is found in the imperfective paradigm of verbs having no derivational prefixes. It occurs: in the first person singular and dual of intransitive verbs, in the first person singular and dual of transitive verbs with third person objects, and in the third person singular of intransitive verbs.

čí-; Mat. žį-, -'žį- *third person indefinite subject;* Sar. čį-; Hupa čį-, -ʔ-; Chip. čɛ-, -ʒɛ- (contracted from čɛ-+nɛ- or dɛ-).

19. Ath. *d-, *k-, *ǩ-, *y-, *s-, *c-, *ć-, *š-, *č-, *ł-, *ƛ-, and *ʔ- in derivational prefixes, and *y-, *s-, and *š- in paradigmatic prefixes remain unchanged in the Southern Athapaskan languages.

The development of Ath. *m-, *t-, *ǩ-, and *x- (in derivational prefixes) confirm our conclusions of section 9 with regard to the homogeneity of the Southern Athapaskan languages. Similarly, the development of Ath. *n- (see §13) supports the classification of the modern languages into a Western and an Eastern group.

From Ath. *x- > Nav. h-, S.C. k-, Chir., Mesc., Jic., Lip., K.A. g-, we may infer a development Ath. *x- > S. Ath. *k-.[8] This was presumably retained in the Western group and the modern Navaho, San Carlos, Chiricahua, and Mescalero forms represent various degrees of weakening from it. In the Eastern group, the weakened form g- probably occurred earlier.

In the case of Ath. *č- > Nav., Chir. ž-; S.C., Mesc., Jic., Lip., K.A. č-, it is clear that weakening has occurred only in Navaho and Chiricahua. In view of the evidence for the early dissociation of Navaho from the Western group, it is likely that this single similarity between Navaho and Chiricahua is due to parallel development.

The development of Ath. *γ- (see §16), as in the case of Ath. *n- in the initial stem position (see §§4, 9), suggests that Navaho and Kiowa Apache broke off from the Western and Eastern groups, respectively, at a relatively early date. The similarity of development in the other languages is probably due to contacts of a later date.

It may be concluded, therefore, that the evidence presented in sections 11 to 18, in the majority of cases, further substantiates the conclusions arrived at in section 9. The few exceptions, which are not numerous enough to suggest an alternative hypothesis, can be explained in terms of those conclusions.

FINAL CONSONANTS OF THE STEM SYLLABLE

20. The final consonants of the stem syllable differ from those occurring as initials of stems and prefixes in four important respects:

a. The finals are generally fewer in number. In Chiricahua, for example, only -h, -ʔ, -s, -z, -š, -ž, -ł, and -l occur regularly in the final position.

b. The finals reveal a greater divergence of development. Compare, for example, sections 22 and 7, 24 and 15.

[8] Cf. Fang-Kuei Li, *Mattole*, §34.

c. Final consonants often alternate between a voiceless and voiced, semi-syllabic consonant. Such alternations (referred to as light and heavy forms, respectively) seem to have resulted from a vocalic suffix which was added to the light form in primitive Athapaskan.[9]

d. Doubled consonants, e.g., consonant plus glottal stop and -n plus -d, may occur in the final stem position.[10]

21. Ath. *-d (light and heavy) > Nav., S.C. -d; Chir., Mesc., Lip., K.A. zero; Jic. -ʔ.

Nav., S.C. -zí·d, -zìd *to become;* Chir., Mesc., Lip. -zí, -zì; Jic. -zíʔ, zìʔ; K.A. -zí·, -zì; Chip. -δər, -δər; Sar. -zíʔ (d-), -ziʔ (or -zíd); Mat. -cih (-cid),[11] -cid; Hupa, Wail. -sid, -sid.

Nav., S.C. -yó·d, -yò·d *to drive (animals);* Chir., Mesc., Lip. -yó, -yò·; Jic. -yóh (read -yóʔ ʔ), -yò·ʔ; K.A. -žó, -žò·; Chip. -yùr, -yú; Sar. -γʷúʔ(d-), -γʷùʔ(d-); Mat. -yo·h (-yo·d), -yo·d.

Nav., S.C. -có·d, -cò·d *to seize;* Chir., Mesc., Lip. -có, -cò·; Jic. -cóʔ, -cò·ʔ; Chip. -čù, -čú; Sar. -čúʔ(d-), -čùʔ(d-); Mat. -čoh (-čod), -čod.

In Chiricahua, Mescalero, Lipan, and Jicarilla, the heavy -d has, in the following examples, been preserved by the retention of an original vocalic suffix or in old compounds.

Nav. łìd, -lìd *smoke,* S.C. łìd, -łìd; Chir., Mesc. łì, -lìd-è; Jic. łìʔ, -lìd-ì; Lip. łì, -łìd-; Chip. łər; Sar. ɬíh; Mat. łih; Hupa łid.

Nav. -ǯá·d *leg;* Chir. -ǯád-è; Mesc., Lip. -ǯád-í; S.C. -ǯád; Jic. -ǯád-ì; K.A. -ǯá·; Chip. -ǯàr-é; Mat. -ǯa·d-eʔ.

Ath. *-d+ʔ (light and heavy) falls together with Ath. *-d.

Nav., S.C. -zìd *liver;* Chir., Mesc., Lip. -zì; Jic. -zìʔ; Chip. -δər; Mat. -ci'ł; Hupa -siť; Sar. -zìʔ.

Nav., S.C. -kàd, -kàd *to sew;* Jic. -kàʔ, -kàʔ; Lip., K.A. -kà, -kà; Sar. -kąʔ(d-), -kąʔ(d-); Mat. -ka'ł, -ka'd.

Nav., S.C. -gòd *knee;* Mesc. -gòd-í; Jic. -gòʔ; Lip. -gò; Chip. -gʷór; Mat. -gʷo'ł; Hupa -gʷoť.

Nav., S.C., K.A. -bìd *stomach;* Chir. -bì, -bìd-; Mesc. -bì or -bìd-ì; Jic. -bìʔ-ì; Lip. -bì; Chip. bór; Mat. -bi'ł; Sar. -mìʔ; Hupa -miť; Wail. -biť.

22. Ath. *-x̌ : *-y > Nav. -h : -ʔ; S.C. -h : zero; Chir., Mesc., Lip., K.A. -š : zero; Jic. -ih : -i (-h : zero, when the stem vowel is e or i).

Nav. -ǯá·h, -ǯà·ʔ *to handle a mass;* Chir., Mesc. -ǯá·š, -ǯà·; S.C. -ǯáh, -ǯà·; Jic. -ǯáih, -ǯài; Lip. -ǯáš, -ǯà·; K.A. -ǯá·š, -ǯà·; Chip. -ǯàih, -ǯáy *to handle grain-like objects;* Mat. -ǯa·š, -ǯa·ž; Sar. -ǯáh, -ǯa·ž.

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[9] See Fang-Kuei Li, *Chipewyan Consonants,* §60.

[10] See Fang-Kuei Li, *Chipewyan Consonants,* §61–64.

[11] Stems in parentheses are relative forms of the stems preceding.

Nav. -ʔà·h *to handle a round object;* S.C., Chir., Mesc., Lip. -ʔà·; Jic. -ʔài; K.A. -ʔà·š (or -ʔà·); Chip. -ʔáih; Mat. -ʔa·x; Sar. -ʔą̀h; Hupa -ʔahw.

Nav. -tè·h *to handle a living being;* S.C., Chir., Mesc. -tè·; Jic. -kè·; Lip. -kì·; K.A. čè·š; Hupa -tiw; Mat. -tix; Wail. -teš; Chip. -tə́ih; Sar. -tàh.

Nav. -ní·h, -nì·ʔ *to apply one's fingers;* Jic. -níh, -nì· *to move hands;* Chip. -nì, -níy *to push (with hands);* Sar. -níh, -nì·ž *to do with one's hand.*

23. Ath. *-x̧+ʔ : *-y+ʔ>Nav., S.C., Jic. -h : -ʔ; Chir., Mesc., Lip., K.A. zero.

Nav. -ťé·h, -tî ʔ *to string;* S.C., Jic. -ťéh, -tîʔ; Chir., Mesc. -ťé, -tî; Lip. -tí, -tî; Chip. -ťə́ih, -tîy; Hupa -ťi̯ɬ, -ťi̯ɬ *to tighten rope.*

Nav., S.C. -tìʔ, -tìʔ *to talk;* Chir., Mesc. -tì, -tì; Jic. -kìʔ, -kìʔ; Lip. -kì, -kì; K.A. -čì, -čì; Chip. -tə̀i, -tə̀i.

24. Ath. *-x : *-γ>Nav. -h : -ʔ; Chir., Mesc., Lip., K.A. zero; S.C., Jic. -h : zero.

Nav. -bá·h, -bà·ʔ *to go to war;* Chir., Mesc., Lip. -bá, -bà·; K.A. -bá·, -bà·; S.C., Jic. -báh, -bà·; Chip. -bà, -báγ; Sar. -mą́h, -mą̀·i (-mą̀g-); Mat. -bah, -baγ; Wail. -bah, -bah; Hupa -mah, -maw.

Nav. -dé·h, -dè·ʔ *to clean out;* Chir., Mesc., Lip. -dá, -dà·; S.C., Jic. -déh, -dè·; Chip. -dɛ́, -dɛ́; Sar. -dáh, -dà·i; Mat. -deh, -dìγ; Hupa -deh, -diw.

Nav. -lé·h, -là· *to do;* Chir., Mesc., Lip. K.A. -lá, -là·; S.C., Jic. -léh, -là·; Chip. -lɛ́, -lá; Sar. -lá, -lą̀ʔ(g-); Mat. -leh, -laγ; Wail. -leh, -lah; Hupa -leh, -law.

25. Ath. *-x+ʔ : *-γ+ʔ>Nav. -ʔ (-g-); Chir., Mesc., Lip. -ʔ; S.C. -g; Jic. -iʔ or -ʔ; K.A. -h(?).

Nav., Chir., Mesc. -tàʔ, -tàʔ *to count;* S.C. -tàg, -tàg; Jic. -kàiʔ, -kàiʔ; Lip. -kàʔ, -kàʔ; K.A. -kàh, -kàh; Chip. -tá, -tá; Sar. -tą̀·i, -tą̀·i; Mat. -ta'x, -ta'g.

Nav. -čòʔ, -čòg- *genitals, testicles;* Chir., Jic. -čòʔ *penis;* S.C. -čòg; Chip. -cóγ *to be round;* Mat. -čo'gʷ *testicles.*

26. Ath. *-n (light and heavy)>Nav. zero (stem vowel nasalized) : -n; S.C., Chir., Mesc., Jic., Lip., K.A. zero (stem vowel nasalized).

Nav., Chir., Mesc., Jic. -žǫ́ *to be good;* S.C., K.A. -žǫ́·; Chip. -zų̀·; Mat. -xʷoŋ (-xʷo·n); Hupa -woŋ; Wail. -šoŋ.

Nav., Chir., Mesc. Jic., Lip. -ʒi̯ɬ *day;* S.C., K.A. -ʒi̯ɬ·; Chip. -ʒì, -ʒìn-ɛ́; Mat. -ʒiŋ (-ʒi·n) *to be daylight.*

Nav. -žìn *to be black;* Chir., Mesc., S.C., Jic., Lip., K.A. -žì; Chip. -zə̀n; Mat. -xin.

Nav. -zìn *to think;* S.C., Chir., Mesc., Jic., Lip., K.A. -zì; Sar. -zì·n, -zì·n; Mat. -si·n, -si·'n, -si·l, Hupa -siŋ (-sin), -siŋ' (-se'n).

27. Ath. *-n+ʔ (light and heavy). In all the Southern Athapaskan languages the -n disappears and leaves a nasalized stem vowel. The -ʔ is preserved in Navaho and Jicarilla and is lost in the other languages.

Nav. -ɬą́·ʔ *to burn;* Chir., Mesc., Lip. -ɬą́, S.C., -ɬą́·, Jic. -ɬą́ʔ, Mat. -ɬaŋ' (-ɬa·'n); Sar. -ɬą́(n-),-ɬą́(n-); Chip. -ɬą́ih, -ɬą̀·.

Nav. -bį́·ʔ *to pick;* Chir., Mesc., Lip. -bį́; Jic. -bį́ʔ; Sar. -mi(n-).

Nav. -bį̀ʔ, -bį̀ʔ *to build a (new) hogan;* S.C. bį̀, -bį̀ *covering of wickiup;* Jic. gòs-bį̀ʔ *wickiup, corral;* Lip., K.A. gò·s-bį̀ *brush enclosure;* Mat. -biŋ' (-be'n), -biŋ' (-be'n) *to build a house;* Hupa -miŋ' (-me'n).

Nav. -ťą̀·ʔ *leaf;* Chir., Mesc., S.C., Jic., Lip., K.A. -ťą̀·; Hupa ɬi-ťaŋ'; Mat. -ťaŋ'; Chip. -ťą́.

28. Ath. *-n+d, *-n+ɣ, *-n+s, *-n+š, and *-n+ł develop in Southern Athapaskan just as Ath. *-d, *-ɣ, *-s, *-š, and *-ł, respectively, except that the stem vowel is nasalized.[12]

Nav., S.C. -ʒ́į́·d, -ʒ́į́·d *to jump quickly;* Chir., Mesc., Lip. -ʒ́į́, -ʒ́į́; Jic. -ʒ́į́ʔ, -ʒ́į́ʔ; K.A. -ʒ́į́·, -ʒ́į́·.

Nav. bí-čį́·h *his nose;* Chir., Mesc., bí-čį́; S.C. bí-čį́h; Jic. bį́-čį́š; Lip. bí-čį́š, K.A. bį́·-čį́·š; Chip. -ńcìh; Mat. -nčix; Hupa -nčʷiw.

Nav., S.C., Chir., Mesc. -bą̀·s, -bą́·z *to roll;* Jic., Lip. -bą̀·s, -bą́s; K.A. -bą̀·s, -bą́·s; Hupa -mahs (-ma·s); Mat. -ba·s, -ba·s; Wail. -bas; Chip. -bą̀θ, -bą̀δ.

Nav., S.C., Chir. -ǩǫ́·ž *to be sour;* Mesc. -ǩǫ́·ʒ́; Jic., Lip. -ǩǫ́š; K.A. -ǩǫ́·ʒ́-é; Chip. -ǩų̀'z; Mat. -ǩo·'ʒ́ *sweet.*

Nav. -ʔį́·ɬ, -ʔį̀ɬ *to copulate;* Chir. -ʔį́·ɬ, -ʔį̀·l; S.C. -ʔį́·ɬ; Jic., Lip. -ʔį́ɬ, -ʔį̀ɬ.

29. Ath. *-s : *-z and *-s+ʔ : *-z+ʔ fall together in Southern Athapaskan : Nav., Chir., S.C. -s : -z, Mesc. -s : -ʒ; Jic., Lip., K.A. -s.

Nav., S.C., Chir., Mesc., Jic., Lip., K.A. bìs *river bank;* Mat. bis; Chip. -bɛ̀δ- in tùòlbɛ̀δé *river bank;* Sar. mís; Hupa mis.

Nav., Chir., S.C. -có·s, -cò·z *to handle a fabric-like object;* Mesc. -có·s, -cò·ʒ, Jic., Lip. -cós, -cò·s, K.A. -có·s, -cò·s, Chip. -čùθ, -čúδ; Sar. -cús, -cù·z; Mat. -ʂo·s, -ʂo·s; Hupa -ɬohs, -ɬohs; Wail. -ɬos, -ɬos.

Nav., S.C. -má·s, -mà·s, -má·z *to roll;* Chir. -má·s, -má·z; Mesc. -má·s, -má·ʒ; Jic. -mà·s, -más; Lip. -más, -más; K.A. -mà·s, -má·s; Mat. -ba·s, -ba·s *to coil a rope.*

Nav., Chir., Mesc., S.C., Jic., Lip. -zìs *sack;* K.A. -zìs *blanket;* Chip. -δɛ́θ *skin bag;* Mat. -ce's *skin;* Hupa -sic.

Nav., Chir., S.C. -ɬ̀ìz *to be hard;* Mesc. -ɬ̀ìʒ; Jic., Lip., K.A. -ɬ̀ìs; Chip. -ɬ̀ɛ́δ; Mat. -ɬe'c; Hupa -ɬic.

Nav. -ɬé·s, -ɬìz *to crack;* Mat. -ɬe'c, -ɬe'c.

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[12] See §§21, 22, 29, 30, and 31.

30. Ath. *-š : *-ž and *-š+ʔ : *-ž+ʔ fall together in Southern Athapaskan : Nav., S.C., Chir. -š : -ž; Mesc. -š : -ǯ; Jic., Lip., K.A. -š.

Nav., S.C., Chir., Mesc., Lip., K.A. xòš *thorn;* Jic. γòš; Chip. xòs; Mat. -kox^{w}-; Sar. x^{w}ús.

Nav., Chir. čìž, -čìž *firewood;* Mesc. čìǯ; S.C. čì·ž, -čì·ž; Jic., Lip., K.A. čìš; Chip. cɛ́z; Mat. čiš; Hupa č^{w}iǯ.

Nav. -žìž, -žìž *to draw in (by breathing, sucking);* Jic., K.A. -žìš, -žìš *to sip;* Chip. -zəz, -zəz; Sar. -zì·z, -zì·z; Mat. -xix, -xix; Hupa -wiw, -wiw.

Nav. bé·š, -bé·ž *knife, metal;* Chir. bé·š, -béž-è; Mesc. bé·š, -béǯ-è·; S.C. bé·š, -bíž; Jic. béš, -béž-ì; Lip. bíš; K.A. bé·š, -bé·š; Chip. bès; Sar. más.

Nav., S.C., Chir. -bé·ž, -bé·ž *to boil;* Mesc. -bé·ǯ, -bé·ǯ; Jic. -béš, -béš; Lip. -bíš, -bíš; K.A. -bé·š, -bé·š; Chip. -bɛ́z, -bɛ̀z; Sar. -má·z, -má·z, Hupa -mehǯ (-me·ǯ).

Nav. hàš-ɬ̀iš *mud;* Chir., Mesc., S.C., Jic., K.A. gòš-ɬ̀iš; Chip. -ɬ̀és; Sar. -ɬ̀ì·z *to be swampy;* gúdì·^{i}-ɬ̀ìč-í *swamp.*

Nav., S.C., Chir., Mesc., Jic., Lip., K.A. šàš *bear;* Chip. sàs.

31. Ath. *-ł : *-l and *-ł+ʔ : *-l+ʔ fall together in Southern Athapaskan : Nav., S.C., Chir., Mesc. -ł : -l; Jic., Lip., K.A. -ł.

Nav., S.C., Chir., Mesc., Jic., Lip., K.A. bìł *sleep;* Sar. míł; Chip. bèł; Hupa mił.

Nav., S.C. xàł *stick;* Mesc., Lip., Jic. -xàł; Chip. xáł, -γáł; Sar. xa̧ł; Mat. kał.

Nav. -ć́ìł, -ć́il *to break;* Jic., Lip. -ć́ìł, -ć́ìł; Chip. -ć́ùł, -ć́èl *to burst;* Sar. -ć́ùł, -ć́ù·l *to tear;* Mat. -ć^{y}eł, -ć^{y}el *to split with the hand;* Hupa -ɡ̣́ił, -ɡ̣́il.

Nav., S.C., Chir., Mesc. -γà·ł, -γà·l *to beat with a stick;* Jic., Lip., K.A. -γà·ł, -γà·ł; Mat. -ga·ł, -ga·'l; Hupa -wał, -waɬ́ *to throw a club, a long stick.*

32. The outstanding feature of the Southern Athapaskan treatment of the final stem consonant is the weakening, loss, and consequent confusion of Ath. *-d, *-x̣, *-x̣+ʔ, *-x, and *-x+ʔ (§§21–25). This process is most marked in the languages of the Eastern group; in the Western group, both Navaho and San Carlos are relatively conservative compared to Chiricahua and Mescalero (see particularly §§21, 23, and 25).

Within the Southern Athapaskan stock Chiricahua and Mescalero of the Western group show a surprising similarity to Lipan and Kiowa Apache of the Eastern group in the treatment of the above mentioned finals. In view of the evidence of the initial consonants of both stem and prefix, however, it must be concluded that these similarities are due to parallel development rather than to a common history. Furthermore, the fact that the few remaining speakers of Lipan have lived with the Mescalero for the

do their own language has perhaps helped to bring about this similarity. In the same way, the long residence of the Chiricahua in Oklahoma following their release by the government may have led to dialectic borrowing between Chiricahua and Kiowa Apache.

The treatment of Ath. *-s, *-š, and *-ł again confirms the division of the Southern Athapaskan languages into an Eastern and a Western group (§§29–31). The languages of the Western group preserve a reflex of the distinction between the light and heavy forms of these consonants, whereas in the Eastern group this distinction has almost completely disappeared.

It may be concluded, then, that the treatment of Athapaskan final consonants in Southern Athapaskan confirms in general our inference as to the former homogeneity of the Southern Athapaskan languages. Our inferences as to the later development of the Southern Athapaskan languages are not so clearly confirmed, however. This is probably due to the fact that the finals are more susceptible to change than are the initial consonants and are therefore the more likely to have been influenced by the dialectical borrowings incident to the recent contacts of the modern Southern Athapaskan speaking tribes.

33. Taking the total evidence into consideration, we may set up the following classification as representing the probable historical development of the Southern Athapaskan languages after their separation from the Athapaskan languages of the north.

I. The Western Group
  A. Navaho
  B. San Carlos-Chiricahua-Mescalero
    1. The San Carlos Group
      San Carlos proper, White Mountain, Cibecue, Southern Tonto, and Northern Tonto[13]
    2. Chiricahua-Mescalero
      a. Chiricahua
      b. Mescalero
II. The Eastern Group
  A. Jicarilla-Lipan
    1. Jicarilla
    2. Lipan
  B. Kiowa Apache

[13] These are the five ethnic divisions of the Western Apache established by Goodwin (see Grenville Goodwin: *The Social Divisions and Economic Life of the Western Apache*, American Anthropologist Vol. 37, pp. 55–64, 1935). I have linguistic material only on the San Carlos proper but I have been told that the languages of the other four groups differ only slightly from San Carlos and can be understood without difficulty by San Carlos speaking people.

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UNIVERSITY OF CHICAGO
CHICAGO, ILLINOIS

MAYA AND MEXICAN SWEAT HOUSES[1]

By FRANK M. CRESSON, JR.

THE question of whether the ancient Maya used sweat houses has been raised by excavations conducted by the University Museum, University of Pennsylvania, at Piedras Negras, Guatemala. Recent work at this Old Empire Maya ruin has brought to light a series of stone masonry buildings having a combination of unusual features and differing markedly from the temples and palaces found there. That the structures under consideration were used as sweat houses was first suggested by Dr Sylvanus G. Morley of the Carnegie Institution of Washington. The purpose of this paper is to confirm this identification by comparing these Piedras Negras buildings to actual sweat houses in the highlands of central Mexico, which are used by the Indians at the present time for steam baths. In spite of the distance between the two areas, both in space and in time, the similarities in a number of features indicate that these Maya buildings served the same purpose. Accounts from some of the early historians regarding the construction and use of sweat houses in highland Mexico show that they have changed very little since the coming of the white people, while more recent investigators report the occurrence of modern sweat houses in other parts of Mexico and the Maya area.

THE PIEDRAS NEGRAS BUILDINGS

At Piedras Negras, in the northwestern corner of Guatemala, eight buildings of the type in question have so far been identified. On the Museum's map of the ruins,[2] they are designated as Structures J-17 and N-1 in the West Group, O-4 and P-7 in the East Group, and R-13, S-2, S-4, and S-19 in the South Group. Only two of these, Structures P-7 and N-1, have been completely excavated, but two more, J-17 and S-2, have been partially cleared; and in the case of each of the remaining four, an excavation up to the front of the doorway has disclosed several of the most characteristic features.

In the article *An Unusual Type of Building in the Maya Old Empire* Satterthwaite summarizes our present knowledge of these buildings.[3] For

[1] Condensed from a Master's Thesis at the University of Pennsylvania. The writer is indebted to Mr Linton Satterthwaite, Jr for many helpful suggestions in the preparation of this paper; also to Dr J. Alden Mason for certain bibliographical references, and to Miss Tatiana Proskouriakoff for help in making the drawings.

[2] Mason and Satterthwaite, *Piedras Negras Preliminary Papers*, No. 1; also in Morley, *Thirty-nine Maps*, pl. 202.

[3] See bibliography; see also Satterthwaite, *Notes on Fourth and Fifth Expeditions*, where they are referred to as "Type X" buildings, and Mason, *Mexican and Mayan Sweat-Baths*.

this reason it will be necessary only to mention briefly their principal elements before describing the Mexican sweat houses.

Figure 1 is a plan of Structure N-1, excavated by Mr Satterthwaite and the writer. It is typical of the whole group and shows a small rectangular room, the "central chamber," surrounded on the sides and front by a large outer room. Plate 2A shows the front of the central chamber of Structure P-7, which is the best preserved of the eight buildings and the only one with the roof still standing. The central chamber is small and low with respect

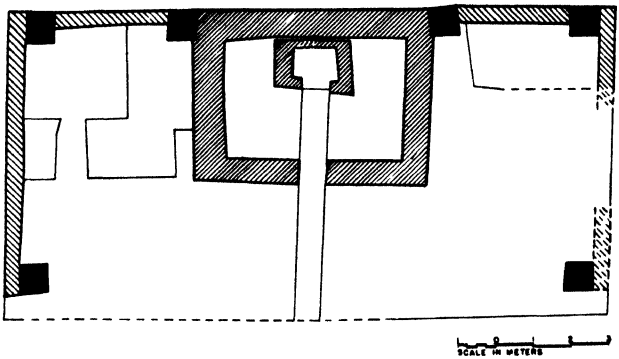


FIG. 1. Plan of Structure N-1, Piedras Negras, Guatemala.

to other buildings. Interior dimensions in the three known cases vary from 3.30 m. to 4.80 m. in length and from 2.15 m. to 3.20 m. in width. Although the corbel-vaulted roof of Structure P-7 reaches a height of 2.95 m. in the center, it begins its slope only 1.00 m. above the floor. The only doorway to the central chamber is always very low and narrow: from .90 m. to 1.13 m. high and from .70 m. to .89 m. wide. Each of the eight examples has a massive, uncarved, stone lintel, the dimensions of which average 1.50 m. by .76 m. by .34 m.

Against the rear wall of the central room is a rectangular construction showing evidences of fire. The stones are very soft, cracked, and scaled, while the mortar between them is unusually soft and disintegrated. This "fire chamber" in Structure N-1 has interior dimensions of about 1.15 m. by .90 m. Its doorway is .70 m. wide and .83 m. high and has a stone lintel and monolithic jambs. Across the back of the fire chamber stands a "wall" composed entirely of large, thick potsherds laid horizontally in mortar, with the face of the wall formed by evenly placed rim sherds. This is an ingenious device to protect the stones of the rear wall of the fire chamber, since the sherds are far more resistant to heat than are the limestone blocks.

The roof of the fire chamber is not preserved in any of the excavated cases. Although the central chamber must have become filled with smoke, no ventilator holes have been found, the only exit being the front door.

A passageway sunken below the floor level leads from the fire chamber through the front door and slopes slightly toward the front. It is always the same width as the door and in most cases continues with the same depth and width outside the central chamber across the floor of the outer room. Its depth varies in the different buildings from .20 m. to .55 m. In spite of the sunken passage, it is necessary to stoop to enter the central chamber.

The outer room consists of a large non-vaulted gallery. The roof was of perishable materials and may have covered the roof of the central chamber. Masonry benches have been found in the outer rooms of N-1 and P-7. Structure P-7 is unique in its elaboration of the outer room: it is divided into front and rear halves, with the rear half extending behind the central chamber; furthermore, its walls are very high and its roof was partially vaulted.[4]

The buildings stand on low platforms or terraces, locations which are decidedly not imposing when compared with the pyramid temples. Nor are their positions prominent with reference to the general plan of the city, for all except N-1 are outside the main ceremonial plazas. Each of the buildings, however, is near one of the long structures known as palaces and several stand on the same platform or terrace as the adjacent palace. This association may be of importance since the palaces may have served as dwellings for the priests or chiefs.

We have, then, from this brief sketch, a group of Old Empire Maya buildings, showing a similar combination of peculiar features, the function of which remains puzzling until they are compared to the modern Mexican sweat houses.

MODERN SWEAT HOUSES OF THE MEXICAN HIGHLANDS

In Spanish a sweat house is called a temazcal, from the Nahuatl word temazcalli, which in turn is made up of tema, "to bathe," and calli, "house."[5] The Molina Dictionary defines it in Spanish as "a small house like a stove, where people bathe themselves and sweat."[6] These buildings can be found in use today in many Indian villages of Mexico, changed very

[4] For plan and section of P-7 see Satterthwaite, *An Unusual Type of Building*, figs. 1 and 2, where it is incorrectly labelled J-7; also Satterthwaite, *Notes on the Fourth and Fifth Expeditions*, fig. 1.

[5] Wiener, *Mayan and Mexican Origins*, p. 38.

[6] Molina, *Vocabulario*, back of p. 97.

little since the Spanish conquest. The four examples presented here were measured and photographed by the writer during a short stay at Mexico City in July, 1936.

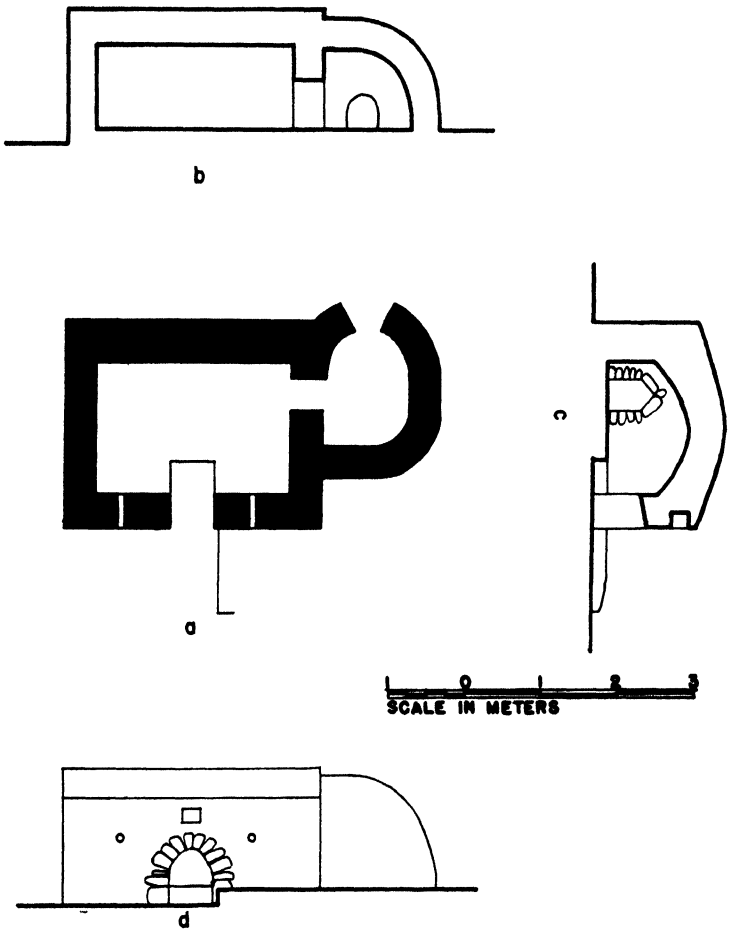


FIG. 2. Sweat house at San Francisco. a, Plan; b, Section through centers of steam room and fire chamber; c, Front to rear center section; d, Front elevation.

The sweat house shown in Figure 2 and Plate 2B is at the village of San Francisco, near the pyramids of San Juan Teotihuacán.[7] It is built of irregularly shaped stones laid in mud and consists of a small rectangular

[7] I am indebted to Dr Manuel Gamio for facilitating my study of sweat houses at San Francisco.

room with the addition of a rounded structure at one end. The latter is the fire chamber, with an entrance to the rear; while the former may be called the steam room, since it is here that the sweat bath is taken. A small doorway

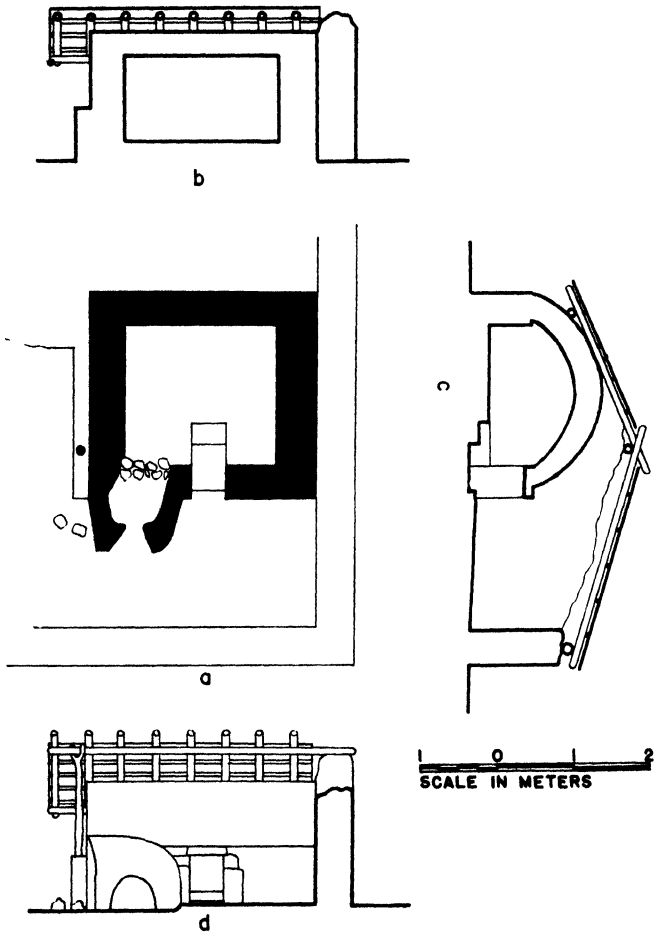
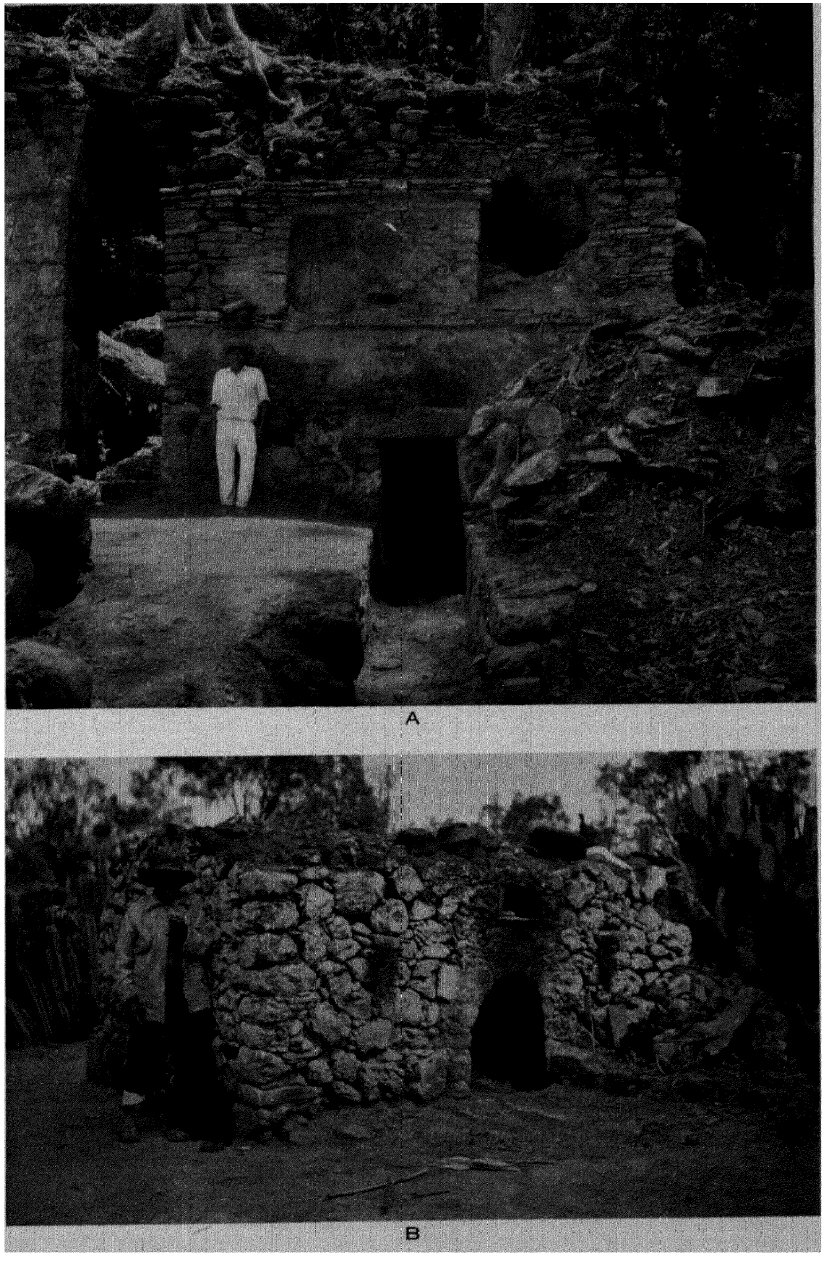
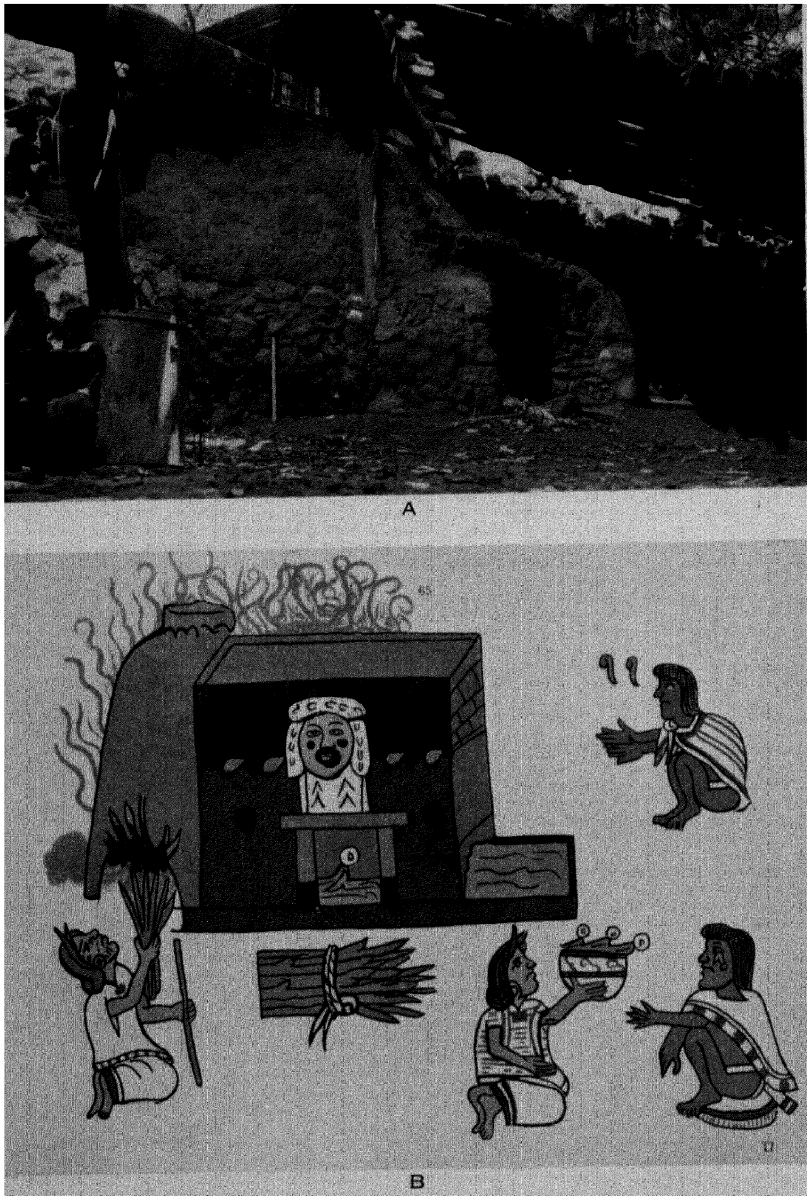


FIG. 3. Sweat house 1 at Milpa Alta. a, Plan; b, Side to side center section; c, Front to rear center section; d, Front elevation of steam room from under wooden roof.

connects the two. The entrance doorway of the steam room, spanned by a true arch, is very low and narrow, requiring a person to enter on hands and knees. On each side of the doorway a round ventilator hole helps to let out the smoke which passes through the steam room, and the rectangular niche above the door serves as a place in which to keep soap. In Plate 2B the



Sweat house structures. A, Central chamber of Structure P-7, Piedras Negras, Guatemala; B, Sweat house at San Francisco, near San Juan Teotihuacán, Mexico.



Sweat house structures. A, End view of Sweat house 1 at Milpa Alta, D. F., Mexico; B, Aztec sweat house from Codex Magliabecchi.

ventilators are plugged with grass. A sunken passage, the width of the door, extends a short distance within the steam room, the floor of the room and of the passage being paved with flat stones. These slabs and one side of the passage are continued outside of the steam room. Arreola shows photographs and a drawing of a very similar sweat house in the nearby village of San Martín of the Pyramids.[8] Its sunken passage, moreover, continues with the same width and depth for some distance outside the steam room, exactly as in the case of the buildings at Piedras Negras.

One of the sweat houses noted at the village of Milpa Alta, D.F., is shown in Figure 3 and Plate 3A.[9] The steam room is nearly square, with the fire chamber at one side of the front. Between the two is an irregular opening having a pile of stones on the floor. These are black porous volcanic rocks, called tezontle, on which water is thrown to make steam. The steam room has no ventilator holes, so that all smoke coming from the fire chamber has to go out the entrance doorway. Here the doorway is not arched but is spanned by a stone lintel resting on jambs of large squared blocks of tezontle stone.

Two steps inside the door form a short sunken passage, but there is no passage outside and the passage inside is blocked at the front of the door by several threshold stones. This sunken passage is a drain or sink hole for water, its lowest level consisting of dirt through which water can seep. Such a drain is necessary, not to carry off water used in making steam, but because the person taking a sweat bath also washes himself with hot water and soap. The water for this purpose is heated in a special outside fireplace, formed by several stones in the outer corner between the fire chamber and the steam room. Thus, the practice of actually bathing in the sweat house, which creates the need of getting rid of a large amount of water, gives a definite and important function to the sunken passage. The passage may be in the form of a sink hole, as in this case, or it may be simply a surface drain which carries the water out the door.

An additional feature of interest in this Milpa Alta sweat house is the wooden roof which covers the entire building. Rafters, supported by a ridge pole, rest at the back on the roof of the steam room and at the front on top of a stone wall. Horizontal poles lie on the rafters and are covered with shingles. As the stone wall at the front turns and borders the steam room on its "far" side, we have an enclosed and sheltered area analagous to the outer room of the Piedras Negras buildings.

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[8] Arreola, *Temazcal o Baño Mexicano*, pl. 6 and fig. 15, p. 32. One of the photographs may also be seen in Gamio, *Población del Valle de Teotihuacán*, Vol. 2, pl. 65 (a), opp. p. 240.

[9] I am indebted to Miss Bodil Christensen of Mexico City for facilitating my study of sweat houses at Milpa Alta and also for information regarding their use at this village.

A second sweat house at Milpa Alta of a different type is seen in Figure 4. Here the steam room is round with a domed roof. The fire chamber, also domed, is like the last example, having a rounded opening to the front and a pile of tezontle stones in the opening between it and the steam room. Both structures are built of stones of various shapes and sizes laid in mud. The steam room has no ventilators. Its door has a stone lintel placed on jambs made of several smoothed blocks. The drainage passage of well-cut stones

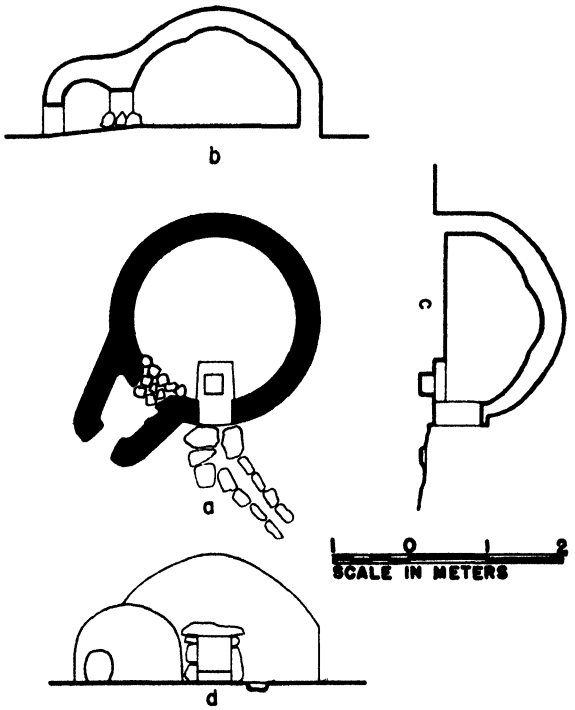


FIG. 4. Sweat house 2 at Milpa Alta. a, Plan; b, Center section through steam room and fire chamber; c, Front to rear center section; d, Front elevation.

is again of the sink hole type, being a square hole at the bottom of what would otherwise be a plain sunken passage. In addition, outside the steam room a narrow surface drainage channel runs across a paved court to carry off excess water which flows out the door. An outside fireplace for heating water for bathing stands against the wall of the nearby dwelling house.

Most of the sweat houses at Milpa Alta are of this round and domed type. They are of interest in the present discussion mainly to show the variety of forms which the buildings may take. Whether the ground plan

is round or rectangular, the essential features are a steam room which is small, a fire chamber, a small entrance doorway, and a drainage passage.

Figure 5 shows a sweat house at Tepoztlán, a village near Cuernavaca, Morelos. The steam room is nearly square and the stone walls are plastered with mud both inside and out. Its roof is not arched, as in the previous

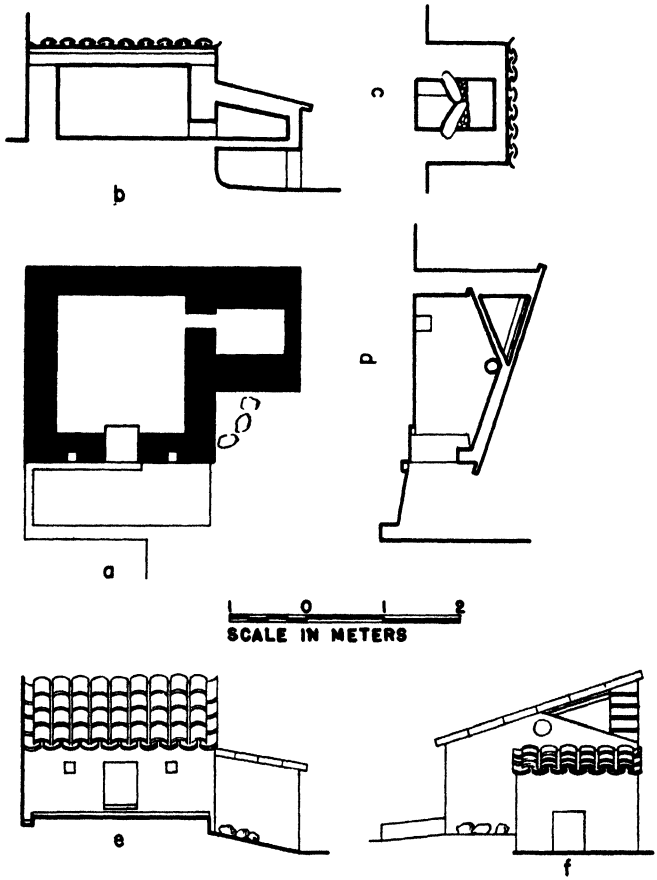


FIG. 5. Sweat house at Tepoztlán. a, Plan; b, Section through centers of steam room and fire chamber; c, Transverse section through fire chamber; d, Front to rear center section; e, Front elevation; f, Side elevation.

examples, but gabled, with a combination of wood and stone. A large ridge pole supports flat, closely placed rafters running to the front and rear walls. These are covered by a layer of stones and mud, which in turn is protected from the rain by a final covering of tile. The tile rests on the front half of

the stone roof and to the rear is continued upward on a framework of poles to a wall of adobe bricks standing on the rear edge of the building. The two square holes in the front wall, in positions where ventilators would be expected, do not go all the way through, but can be used as soap boxes. The doorway has a stone lintel. A very shallow sunken passage extends just inside the door, while outside, a narrow channel carries the water from the passage around three sides of a stone platform. An outside fireplace for heating water for bathing is formed by the stones in the corner between the steam room and the fire chamber.

The fire chamber of this sweat house is a more complex construction than the others. Rectangular in plan, it has two levels, the lower with a doorway to the outside and the upper with a small opening to the steam room. Two large blocks of tezontle leaning against each other divide the two levels. A fire is built in the lower space and when the volcanic stones above are sufficiently heated, water is thrown on them from the steam room to produce the steam.

Each of these sweat houses and others seen at the same villages stand near the dwelling houses of their owners. They may be to the front, side, or rear of the house, usually in some out-of-the-way corner of the yard. Most stand separately, but some, like the one studied at Tepoztlán, are built against the wall of the dwelling house.

COMPARISON OF PIEDRAS NEGRAS BUILDINGS AND MODERN MEXICAN SWEAT HOUSES

We may now summarize the distinguishing features found in both these sweat houses of highland Mexico and the structures excavated at Piedras Negras:

1. The central chamber at Piedras Negras corresponds to the steam room in Mexico. In both places it is rectangular, (except for the round type found at Milpa Alta), and in both it is small and low with respect to other buildings.

2. In both localities the steam room has only one exterior doorway, which is always low and narrow. It is in the center of the longer axis of the building and is spanned by a stone lintel (except where a true arch occurs in some modern Mexican examples).

3. There is always a passage or drain, sunken below floor level and of the same width as the doorway. It extends some distance within the steam room and in some cases continues outside.

4. Although the fire chamber is differently situated in the two areas, some construction for fire always occurs associated with the steam room.

5. The lack of ventilator holes in the Piedras Negras buildings does not argue against their being sweat houses because three of our four Mexican examples have no ventilators.

6. Although the outer room is lacking with three of the Mexican examples and with other sweat houses seen at the same villages, the case of Sweat House 1 at Milpa Alta provides an outside wooden roof forming a sheltered area comparable to the outer rooms at Piedras Negras.

7. Finally, the locations of the buildings in both regions are not imposing or prominent. Moreover, if the long palaces at Piedras Negras are considered as dwellings, then in both areas they stand adjacent to dwelling houses.

From this comparison, therefore, we have a number of similar features, which, when taken together, afford substantial evidence that the Piedras Negras buildings were also sweat houses.

SWEAT HOUSES IN THE AZTEC CODICES

That the Mexican sweat houses have changed hardly at all since the Spanish conquest is shown by representations of them in the native Aztec codices of that time. The best is the one reproduced (without colors) in Plate 3B from the Codex Magliabecchi[10] and described by Arreola.[11] Here we see a rectangular steam room with a flat roof and a fire chamber as an additional construction on one side, as in the present-day examples. The single doorway of the steam room appears low and narrow, spanned by a stone lintel resting on large jamb stones. On each side is a small round ventilator hole. At the bottom of the doorway the area marked by wavy lines is colored blue and surmounted by the symbol for water—undoubtedly the water from the steam bath collected in the drain. The drain is probably the familiar sunken passage, indicated by the lines across the door jambs, below which the color is darker than above.

The woman at the left is placing sticks in the fire chamber, and a bundle of wood lies in front of the building. Flames protrude from the door of the fire chamber, while tongues above the roof indicate the vibration of the heat. The man who is to take the sweat bath is at the lower right. The purpose is to cure some disease, for his sickness is indicated by the tear

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[10] Codex Magliabecchi, p. 77, front; shown in Nuttall, *Book of Life of Ancient Mexicans*, p. 65.

[11] Arreola, *op. cit.*, pp. 28–29. Arreola states (pp. 31–32) that the following are also representations of sweat houses: Codex Vaticano 3773, p. 32; Codex Borgiano, p. 13; Mapa de la Perigrinación de los Mexicanos, fig. 48; and Codex Aubin, p. 49. Some of these and several others may be seen in Krickeberg, *Beiträge*, p. 307.

in his eye, and a woman offers him a medicinal drink. Above these two a man offers prayers for the success of the bath, his speech being shown by two scrolls. He addresses himself to the image of a god, which is on the wall of the steam room just above the door. From this and from the descriptive note in Spanish which accompanies the drawing, it is clear that ceremonial practices went with the taking of a sweat bath. In the modern sweat houses perhaps the centrally placed niche over the door, as seen at San Francisco, is all that remains of the former place for the image.

METHOD OF USE OF SWEAT HOUSES AND PURPOSES OF STEAM BATHS

The writer did not have an opportunity of seeing a sweat house in use, but the main features in the procedure are described by several authors, both among modern writers and the early historians. Dr Gamio describes the method of use in recent years in the region of San Juan Teotihuacán, calling the stones between the fire chamber and the steam room a "screen" of tezontle. In translation, he says,

> When a bath is being prepared, the wood is gathered in the furnace in sufficient quantity to heat the screen of tezontle and the interior walls of the temazcal. When the smoke which passes through the screen of tezontle has escaped through the entrance door and through two or three small circular holes in the walls and in the vault, the person enters the interior, carrying with him a vessel of water, heated in the embers of the furnace, and large green branches. The entrance is closed with a mat, and the circular holes with plugs of plants. The bather, in a stooping position, shakes the green branches in the interior of the temazcal; the branches, called "hojeadores," are previously moistened and on touching the heated walls produce steam and drops of hot water. If the temperature goes down, from time to time a little water is thrown on the screen of tezontle, where the heat has been conserved, so that it is immediately transformed into steam.[12]

Before making the steam, but after the fire has burned down, the opening of the fire chamber to the exterior is closed with a large stone which is tightly sealed with mud, thus preventing the escape of the steam. An important part of the bath is the washing with hot water and soap, used with bunches of maguey fiber or pieces of dried grass. Clavigero describes one of the round sweat houses with a domed roof and gives the details of a steam-bath treatment for an ill man, which is nearly identical with present-

[12] Gamio, *op. cit.*, Vol. 2, p. 241.

In our example from this region at San Francisco a well-made doorway between the fire chamber and the steam room takes the place of the irregular opening filled with loose stones. In this case, steam could be produced by throwing water on the heated sides of this small doorway.

day usage.[13] He mentions that a servant accompanying the sick person wafts the vapour downward with a bunch of herbs and also beats the ill man gently with the herbs or leaves of maize. Afterwards, the bather must rest for some time to overcome the enervating effects of the sweating. Not every dwelling has a sweat house, for several neighboring families will share one together. At Tepoztlán, for example, about every fourth dwelling has a sweat house.[14]

As to the Piedras Negras sweat houses, all features suggest a similar method of use. Steam could have been produced by throwing water on the heated jamb stones or lintel of the fire chamber doorway, or perhaps on the roof of the fire chamber. The large size of the sunken passage indicates that washing as well as sweating was an important part of the bath. Finally, the outer rooms of the Maya sweat houses with their masonry benches would have served most conveniently as dressing rooms and as places for resting after the steam bath.

In modern Mexico sweat houses are used (1) for cleansing the body and (2) as a therapeutic treatment. They are used most extensively simply for cleanliness. At Milpa Alta, for example, it is customary for the inhabitants to take baths on Sunday. As a medicinal treatment, the steam bath is used by persons convalescing from certain diseases, such as typhoid fever and smallpox; by people suffering from rheumatism or skin ailments; and by women before and after childbirth. Sahagun, writing soon after the Conquest, lists a number of ailments for which the baths were beneficial.[15] He also describes the treatment for a pregnant woman,[16] but at present the bath is given especially after the child is born. Redfield describes the practice at Tepoztlán, where all the women and girls of the household bathe together with the new mother a week after the child's birth.[17] The therapeutic uses of the sweat house are often accompanied by ritualistic practices adding a certain religious aspect to the whole procedure.[18] Such religious practices, however, have been gradually dying out; the sweat house is now used more simply for cleanliness and its use as a medicinal treatment is becoming more secularized.[19]

It is reasonable to suppose that the purposes for which the Piedras

[13] Clavigero, *History of Mexico*, Vol. 1, pp. 429–30, and pl. 20.

[14] Redfield, *Tepoztlán*, p. 34.

[15] Sahagun, Libro XI, Capitulo VII, Parrafo VI; in Kingsborough, *Antiquities of Mexico*, Vol. 7, p. 390.

[16] Sahagun, Libro VI, Capitulo XXVII; in Kingsborough, *op. cit.*, Vol. 5, pp. 453–55.

[17] Redfield, *op. cit.*, p. 137.

[18] Gamio, *op. cit.*, Vol. 2, p. 242.

[19] Redfield, *op. cit.*, p. 169.

Negras sweat houses were used were similar to those of highland Mexico. It is likely that the ritualistic element was more highly developed at that time than at present, not only because of the recent trend to secularization but also because the Piedras Negras sweat houses are near the ceremonial center of the ruins, although not prominently placed in it. Furthermore, they are constructed of masonry, similar to that of the palaces and the temples; and their large size with respect to the modern Mexican examples indicates that they were buildings of some importance.

DISTRIBUTION OF SWEAT HOUSES

So far we have considered only the sweat houses near Mexico City, but a brief survey of other parts of Mexico and the Maya area will show that they exist also in other regions to the south and east, although not to the north. Beals states that the steam bath "has not been recorded for any north Mexican tribe" and adds that "if its absence is actual, it raises an interesting problem in distribution, since it occurs on both sides of the area."[20] Among the Tarascans, also, to the west of Mexico City, "there appear to be no temascals or sweat-bath-houses;"[21] but to the east and south, sweat houses occur both in the round and the rectangular forms, with some local variations in details. Among the Tlaxcalans, for example, Starr reports many round, domed sweat houses;[22] and in the vicinity of Cholula, Bandelier found sweat houses at almost every village.[23] He mentions that the bath was usually followed by immersion in cold water, a custom which often accompanies the use of sweat houses among tribes north of Mexico. In the Aztec villages of Vera Cruz there are rectangular sweat houses constructed of poles plastered over with mud.[24] In the state of Oaxaca sweat houses are used by both the Mixtecs and the Zapotecs. Those at the Mixtec town of Cuquila are rectangular, with stone walls and flat roofs of logs covered with mud.[25] Sweat houses are also noted at the town of Teposcolula.[26] The Zapotecs at Mitla have rectangular sweat houses built of rough stones laid in mud, and used only by the women after childbirth.[27]

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[20] Beals, *Comparative Ethnology*, p. 133.

The Tarahumara (Bennett and Zingg, *Tarahumara*, pp. 73–74, 261–62) have a hot-air bath, taken under a temporary covering of blankets, but without steam and without a permanent house of any kind.

[21] Starr, *Notes*, 1900, p. 10.

[22] Starr, *op. cit.*, p. 15; Starr, *In Indian Mexico*, pl. opp. p. 192.

[23] Bandelier, *Report*, p. 158; and figs. 2 and 3 of pl. 11.

[24] Starr, *Notes, Part II*, p. 6.

[25] Starr, *Notes*, 1900, p. 41.

[26] Seler, *Auf alten Wegen*, 1900, pp. 48–49.

[27] Parsons, *Mitla*, pp. 40, 78, and pl. 13.

Turning to the Maya country, sweat houses are found among the Tzeltal Indians in the state of Chiapas—at Tenango, Sivacá, and the Ococingo Valley.[28] The steam room is square, about a meter to a meter and a half on a side and the same in height, constructed of wattle thickly plastered with mud. Steam is made by water poured on hot stones inside. Above the steam room but separate from it is a thatch roof supported on posts, forming a shed over and around the sweat house proper. This is of special interest because of its similarity to the outer rooms of the Piedras Negras buildings. The Tzeltal sweat houses, moreover, are geographically the nearest examples to Piedras Negras. Sweat houses are apparently lacking among the Lacandon Maya of Chiapas and northwestern Guatemala, as well as among the Maya of northern Guatemala and British Honduras, but in the highlands of southern Guatemala they again appear. In the west, examples are found at San Miguel Acatán, where they are low rectangular structures with walls of stone and mud and gabled roofs of boards and mud.[29] There is sometimes a fireplace at the back, within the steam room, a location similar to that at Piedras Negras. Some of these buildings are also covered with a free-standing, thatched roof like those of the Tzeltal. At the Pokonchi village of Tactic, Stoll reports both dome-shaped and rectangular sweat houses.[30] Here again, the structures may have a separate gabled roof of thatch supported on wooden posts. For Indians near Guatemala City, Gage reported that: "There is scarce any house which hath not also in the yard a stew, wherein they bath themselves with hot water, which is their chief physick when they feel themselves distempered."[31] In this region the use of sweat houses has survived with some of the Maya groups around Lake Atitlan; for example, at the Zutugil town of Santiago Atitlan and the Cakchiquel town of Panajachel.[32]

In the Yucatan peninsula sweat houses apparently do not occur among the present-day Maya, but evidence that they existed formerly is found in the fact that the Maya dictionary of Motul includes a word "zumpulche," which means, translating the Spanish definition: "bath made thus, in which enter the recently delivered women and other sick persons in order to cast

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[28] Blom and La Farge, *Tribes and Temples*, Vol. 2, p. 342; and figs. 295, 296.

[29] La Farge and Byers, *Year Bearer's People*, p. 48 and fig. 15, p. 43.

[30] Stoll, *Guatemala*, pp. 162–63, fig. 3. I am indebted to Mr J. Eric Thompson for suggesting this reference.

[31] Gage, *New Survey*, p. 318.

[32] Lothrop, *Santiago Atitlan*, pp. 388, 390, fig. 97.

Since the completion of this paper, Mr Linton Satterthwaite, Jr informs me that he has seen sweat houses at Chichicastenango and Aguacatán.

out the cold which they have in their bodies."[33] This also indicates that the sweat house was used for the same purposes here as in the Mexican highlands. That sweat houses existed among the pre-Columbian Maya of Yucatan is shown by two examples excavated at the ruins of Chichen Itza by the Carnegie Institution of Washington.[34] These stone masonry buildings resemble both the Piedras Negras sweat houses and the rectangular ones in central Mexico. They are like the former in that the fire chamber stands at the center of the rear, with the sunken passage running all the way back to it. They resemble the latter in that the fire chamber is not within the steam room but forms a small rectangular addition to it. Instead of opening to the outside, however, as it does in the Mexican examples, the fire chamber opens only to the steam room, as at Piedras Negras. The sweat houses at Chichen Itza also have an outer room in the form of a long vaulted portico across the front of the steam room.

The distribution of sweat houses in Mexico and the Maya area raises some interesting problems, among them the direction of their spread within this area—whether from the ancient Maya to Mexico or vice versa. The sweat houses at Chichen Itza could be part of the architectural complex known to have been introduced from Mexico, but the occurrence of sweat houses at Piedras Negras places them among the Maya in Old Empire times. If they are also found at other sites in the southern Maya area, they may turn out to be a characteristic element of early Maya culture. That sweat houses like those at Piedras Negras have not as yet been found at other Old Empire ruins[35] does not necessarily preclude their existence, because the debris left by the fall of these buildings is slight and unimposing, little more than that of "house-mounds." Nevertheless, until examples are found in other parts of the area, sweat houses can hardly be called typical of the Old Empire Maya, because Piedras Negras stands on the western edge of the Maya territory. Possibly sweat houses were characteristic of

[33] Diccionario de Motul, Vol. 1, p. 328. I am indebted to Mr Frans Blom for suggesting this reference.

[34] Ruppert, *Caracol*, p. 270. The one here referred to as the T-House is shown in plan near the center of Figure 349 and the other is Structure 3 in Square E-3 of the general map of the ruins, Figure 350. Mr Ruppert has kindly given me permission to refer to these buildings as sweat houses and to point out their distinguishing features.

[35] Two constructions at Quirigua have been described as sweat houses (Morley, *Guide Book*, pp. 135–36, 141), but these are quite different from the buildings at Piedras Negras and the modern sweat houses of Mexico and Guatemala. They are not separate structures but are merely hollow masonry benches in two of the buildings on the Temple Plaza. In each a small opening at one end runs the length of the bench, allowing a person to crawl in. About a dozen large smoke-blackened stones were found in one; while the other led to a very small room.

the ancient Mexican tribes, but were known to the Old Empire Maya only along the western edge of their area, at the cities in closest contact with the Mexicans. This is further suggested by the distribution of sweat houses outside of Middle America, which shows them to be distinctly a northern institution. In various forms their use is very widespread in North America, as well as in parts of Asia and northern Europe.[36] On the other hand, sweat houses appear to be almost completely lacking in South America,[37] and also in Central America south of Guatemala. Thus, the sweat houses of Mexico and the Maya area lie at the southern extremity of the general sweat house distribution, and similar methods of use link them to the main area in the north. Further archaeological discoveries of sweat houses in Middle America should not only help to determine their antiquity in these southern regions but should also throw more light on early cultural contacts between the ancient Mexicans and the Maya.

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[36] Henshaw, *Sweating and Sweat Houses;* Johnson, *Sweat, Sweat-House;* Lowie, *Religious Ideas*, p. 188.

[37] Nordenskiöld (*Origin of Indian Civilizations*, p. 77) states that the only occurrence of sweat houses in South America known to him is among the Comechingones of Sierra Cordova in Argentina, where certain early Spanish writers described houses dug into the ground and used for steam baths. Nordenskiöld classes the sweat house as one of a number of culture elements which are widespread in North America and are also found in southern South America, but which do not exist in the intervening regions.

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UNIVERSITY MUSEUM
UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PA.

THE PROBLEM OF CROSS-COUSIN MARRIAGE AMONG THE HOPI[1]

By MISCHA TITIEV

THE question of whether or not the Hopi still practice or formerly practiced cross-cousin marriage has aroused a good deal of interest among ethnologists. In 1914, Freire-Marreco published an article on Tewa kinship in which she stated that the Tewa living at Hano on First Mesa of the Hopi reservation forbade marriages between the children of a brother and a sister. She then went on to say that "This last rule is cited by the Hano Tewa themselves as the chief difference in custom between themselves and the Hopi, since cross-cousin marriage . . . is occasional at Walpi and Sichomovi, and regular in all the other Hopi villages."[2] Lowie, who studied Hopi kinship on Second Mesa a short time later, was unable to verify this statement. Instead, he came to the conclusion that "On the whole . . . the evidence does not establish cross-cousin marriage in the narrowest sense of the term except as possibly of occasional occurrence."[3] Since then Parsons, who approached the problem from a somewhat different point of view, has twice expressed the opinion that the Hopi may have practiced cross-cousin marriage at some former period in their history.[4]

In each of the above statements the type of cross-cousin marriage under consideration is generally unilateral, dealing with the marriage of a male to his father's sister's daughter. On the basis of data secured at Oraibi on Third Mesa in 1933–1934,[5] it cannot be denied that in native theory the present-day Hopi are opposed to such unions; yet, when they do occur they arouse only mild disapprobation and are jokingly dismissed with the remark that a small lizard (mangyana) will bite the offenders.[6] This attitude may well be an indication that these marriages were once socially acceptable, as Dr Parsons has suggested. In fact, many patterns of Hopi behavior tend

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[1] The greater part of this article is based on a paper entitled "Cross-Cousin Marriage among the Hopi," which was read before the Central States Branch of the American Anthropological Association at Iowa City, April 16, 1937.

[2] B. Freire-Marreco, *Tewa Kinship Terms from the Pueblo of Hano, Arizona* (American Anthropologist, Vol. 16, 1914), p. 286.

[3] R. H. Lowie, *Hopi Kinship* (Anthropological Papers, American Museum of Natural History, Vol. 30, Part 6, 1929), p. 388.

[4] E. C. Parsons, *Getting Married on First Mesa, Arizona* (Scientific Monthly, Vol. 13, 1921), p. 265, fn. 18; *idem*, *A Pueblo Indian Journal* (Memoirs, American Anthropological Association, No. 32, 1925), p. 34, fn. 51.

[5] The field trip on which the data were gathered was made possible by a grant from the Division of Anthropology at Harvard University, to which grateful acknowledgement is hereby made.

[6] Compare the statement in Parsons, *Getting Married on First Mesa, loc. cit.*

to support her hypothesis, but inasmuch as the position of the paternal cross-cousin is not always clearly defined in the Hopi kinship system, we must attempt to clarify this point before presenting our evidence.

Among the Hopi my father's sister's daughter is called ikya'a, and the reciprocal term for my mother's brother's son, female speaking, is imuyi. The term ikya'a is not limited to the father's sister's daughter but is applied indiscriminately to all the women in the father's clan,[7] and is even extended to include all the clanswomen of a boy's sociological fathers such as his "ceremonial" or his "doctor" fathers. Of these classes of ikya'am, marriage is forbidden only with those who are women of a boy's own father's clan. However, since the terminology does not distinguish father's sister's daughter from other women in the father's clan, it is often impossible to tell if one is dealing with an instance of cross-cousin marriage or not.[8] Accordingly, it is futile to discuss the possibility of a former practice of cross-cousin marriage among the Hopi except as part of a larger problem which may be stated as follows: what evidence is there that the Hopi formerly permitted marriage between a man and a woman of his father's clan? It is to this problem that we now turn our attention.

From the very first days of his life a boy's relations with the women of his father's clan are exceptionally tender and affectionate. These women bathe him soon after he is born, and when his naming rites occur twenty days later, they bestow names on him which refer to their clan eponyms. Thus the child of a Bear clansman gets names associated with the bear, the child of a Sun clansman gets names referring to the sun, etc. As he grows up a baby boy receives numerous gifts from his ikya'am, and as soon as he is old enough to reciprocate he begins to bring them small game, fruits, and other dainties. When he takes part in a community hunt a boy never fails to give some of the spoils to his ikya'am, and on returning from a salt gathering expedition he always sees that they get a generous share of his portion. If an ikya'a is married, a boy quickly learns to play his part in a joking relationship with her husband. The latter will accuse the imuyi of being lazy, cowardly and niggardly, and the imuyi will retaliate by calling him worthless and unnecessary. In all such mock quarrels an ikya'a invariably sides with her imuyi, professing great love for him and telling her

[7] The term clan is used throughout this paper to designate the largest exogamic unit recognized by the Hopi. Parsons calls this unit a clan but other ethnologists often designate it as a phratry. In all Hopi villages membership in this unit is matrilineal.

[8] Lowie (*loc. cit.*) has also called attention to the fact that owing to the terminological confusion of biological and sociological ikya'am it is often difficult to tell if one is dealing with a forbidden or a proper marriage.

husband that she has absolutely no need of him as long as her darling imuyi is at hand.

As a lad grows up, an ikya'a frequently finds occasion to give public expression to her fondness for him by choosing him as a partner in such activities as Buffalo or Butterfly dances. It is the custom on these occasions for the favored imuyi to express his appreciation by presenting his ikya'a with a gift which she in turn repays at a later date. There is some reason to believe that the choice of dance partners and the exchange of gifts formerly had a sexual significance as the present custom seems to have developed out of a type of war dance which was marked by a good deal of sexual license.[9] Even today this element may still be noted, for it often happens that in the course of a Buffalo or Butterfly dance an older ikya'a will feign great jealousy of the particular ikya'a who is enjoying the pleasure of dancing with their imuyi; and not infrequently the older woman will break right into the action, elbowing her "rival" out of the line of dancers and going through her paces until another ikya'a, or the boy partner's mother or grandmother, pretends displeasure and drives the protesting intruder back among the spectators where she belongs.

A similar pattern prevails in another context. Whenever the women's societies give public performances the participants carry beautiful plaques which they wave in rhythm as they dance and sing. At the close of the ceremony they either give a plaque to an imuyi or readily permit him to snatch one. In such cases the lucky imuyi makes some sort of repayment, and in one instance I noticed a Mishongnovi man who brought a sack of natural salt to an Oraibi ikya'a whose plaque he had carried off.

In some of the men's ceremonies, when boys or young men act as clowns, they invariably single out their ikya'am for special attention, and the ikya'am in turn are expected to bring copious quantities of food to their clowning imuyim. Usually a good part of a clown's performance comprises various lewd and obscene acts, and it is noteworthy that the performers always select their ikya'am as partners. On one occasion I witnessed a clown performance in which a little boy of eight or nine pursued my housekeeper who was his ikya'a and pretended to copulate with her. Later, the little boy's mother continued the jest by telling me in the presence of my housekeeper that the latter was soon going to have a baby because her imuyi had "got into her."

There are other ceremonies in which the same situation is apparent. Among the Hopi katcinas there are several which are known as racing

[9] Parsons, *Getting Married on First Mesa, loc. cit.*

katcinas. If these overtake a man they usually subject him to some sort of indignity. One racer whips his defeated opponents, another smears them with filth, etc. Perhaps the most shunned of the racing katcinas is the one known as the Kokopelmana. This is a female impersonation, but the part is always played by a young man who is a swift runner. Kokopelmana is notoriously lascivious, and chases boys and men from one end of the pueblo to the other, knocking down whomever she catches and vigorously simulating the act of intercourse. Whenever a victim is caught by the Kokopelmana his ikya'am rush forth in a body and attempt to drive off the lewd katcina. "You leave our imuyi alone," they shout as they tug at the katcina impersonator. "We want him for ourselves." When the Kokopelmana has finished with her victim she hands him one or two packets of a food called somiviki, for it is a Hopi custom that all sex adventures imply some sort of payment, usually in the form of a voluntary gift.

In former times, when it was customary for men to run from Oraibi to Moenkopi on fairly frequent occasions, they would always stop on the way to perform a significant bit of ritual at a shrine called Hotatcomi (Arrow Hill). It was a very simple shrine, really nothing more than a small mound of earth, but every man would pause here, aim an arrow at the centre of the shrine, and call out the name of a favorite ikya'a as he discharged his weapon. The modern Hopi are not unaware of the symbolism involved, for the informant who revealed this custom to me voluntarily explained that it meant that the shooter had "got into" his ikya'a. If a woman had occasion to pass by the shrine she would pick up one of the arrows that were all about, and calling aloud the name of one of her imuyim she would plunge the arrow by hand into the mound.

Even more striking still is a custom that formed part of the regular ritual connected with the salt expeditions which the Hopi used to make annually.[10] Along the way to the salt deposits there was a shrine known as the Salt Woman. Here each expedition would pause while the leader threw a wedding robe over a rocky part of the shrine that contained a vulva-shaped cleft. Each man in the party was expected to crawl under the robe and to make a realistic pretense at sexual intercourse. He would then emerge from under the robe and announce that he had just had an affair with a particular ikya'a whom he named as his "partner." In keeping with the belief that a man must pay for his love affairs, each of the men would vow that when he was returning from the salt-gathering grounds he would leave a generous portion with the Salt Woman. Many stories are told to

[10] For a complete account of a salt expedition, see M. Titiev, *A Hopi Salt Expedition* (American Anthropologist, Vol. 39 pp. 244–58, 1937).

illustrate the disasters that befall all those who fail to keep their promise. Certainly it would be hard to account for a ritual activity in which a man crawled under a wedding robe to simulate cohabitation with a woman of his father's clan, unless we accepted the hypothesis that such relationships were at one time socially sanctioned.

There is no need to limit ourselves only to ritual practices, for in secular life too one hears frequent references to the love an ikya'a bears for her imuyi. At every large gathering, such as a feast, there is sure to be a joker present who will slyly nudge a man of any age and suggest in an audible tone that he sleep that night with some one of his ikya'am who is nearby. And in the same spirit, any ikya'a who overhears the conversation, no matter how staid she may normally be, will promptly express the hope that her imuyi will yield to the suggestion. Men frequently brag about their love affairs with various ikya'am, and a middle-aged man once offered to bet me that he had "got into" more ikya'am than ever I had. Furthermore, whenever an imuyi overhears an outsider bragging about a love affair with one of his ikya'am, he shouts, Anai! ("Ouch!"), grabs the braggart by the ear, and demands the payment of a rabbit in retribution. Such a behavior pattern clearly indicates that imuyim consider themselves to have exclusive rights to the affections of their ikya'am.

Throughout their lives, in public and in private, in sacred and in profane connections, ikya'am and imuyim find countless opportunities to express their interest in each other, but the culmination is reached at the time that a boy is about to be married. From the very onset of the wedding arrangements the ikya'am begin to grumble, arguing that imuyi does not need another woman and professing to find all manner of fault with the bride, calling her lazy, quarrelsome, and a bad housekeeper. Then, while the girl is grinding corn at the groom's house during the probationary part of the wedding ritual, the ikya'am spread word that some dire calamity is going to befall the household where their imuyi is to be married. On a given day they appear in a body and descend on the house where their imuyi's bride is being lodged, to attack his mother and sisters for having permitted the bride to have alienated their imuyi's affections.

I should like to describe an attack of this sort which I witnessed at Oraibi in November, 1933.[11] A boy from the Badger clan was being married and his ikya'am, who were from the Parrot clan, had gathered for the fray. While the men of the two clans concerned stood discreetly apart and tried not to be dragged into the mix-up,

[11] A similar event is described in Parsons, *Getting Married on First Mesa*, p. 264 *seq.*, and an account of Second Mesa procedure occurs in E. and P. Beaglehole, *Hopi of the Second Mesa* (Memoirs, American Anthropological Association, No. 44, 1935), p. 52.

the women began a rough and tumble battle which looked so realistic that the children of the participants began to cry and sob on their mothers' behalf. The favorite plan of action was to douse opponents with water, to smear them liberally with mud, and to pelt them with corn cobs, melon rinds, and other refuse. Throughout the scrimmage the combatants kept casting aspersions on each other, but an air of good-natured banter prevailed, and both sides stopped every now and then to rock with laughter over some particularly clever sally. When the rough and tumble had lasted for some time, the Parrot ikya'am began a concerted attack on the Badger mother of their imuyi. First they threw her into a convenient ditch, after which they laid a large wooden crucifix on the ground and tied her to it. Then one of the ikya'am produced a pair of scissors and snipping off a lock of hair from her prostrate enemy, began to do a mock war dance as she brandished weapon and trophy aloft. By now the women were all soaking wet and thoroughly coated with mud and filth, and the Parrot women, tired of active scrimmaging, forced their Badger opponents into the house where the bride was lodged, and wedged various objects into the doorway to prevent their emerging to resume the fight.

Now came a period devoted to verbal attacks. One of the Parrot ikya'am, using a disguised voice, announced that she was a former sweetheart of the groom who was coming to marry him instead of the bride. From within the house a Badger woman retaliated, saying that the first speaker was notoriously mean, and so skinny that none of the men cared to marry her—a remark that carried a particular sting inasmuch as the woman in question had just been deserted by her husband. The Parrot ikya'a was quite undaunted, however, and replied to the Badger insult that she did not need to marry anyone as the imuyi who was about to be married was in the habit of coming to sleep with her every night. So the exchange of compliments went until both sides grew weary and the Parrot women withdrew after smearing all the windows of the Badger house with a thick coating of adobe mud.

The behavior pattern we have just described can readily be explained if we accept the theory that men were formerly expected to marry their fathers' clanswomen. In that case the disturbance created by the ikya'am at the time of an imuyi's marriage could probably be interpreted as a formalized expression of resentment on the part of a group of women from among whom, under previous conditions, the groom might have been expected to select a wife. At the same time, an hypothesis of this sort would not only throw light on all the other customs discussed in this article, but would also explain why the Hopi so readily condone forbidden marriages between an imuyi and an ikya'a. For in spite of all tabus, Hopi men continue to choose many mistresses and some wives from among the women of their fathers' clans. In the marital records of about 400 men at Oraibi, I found no less than thirty-seven cases of such marriages; nor is it an insignificant detail that the late chief Lololoma, who ruled at Oraibi until the turn of the century, was himself married to an ikya'a.

In conclusion, I believe that the material presented in this paper has clearly demonstrated the likelihood that it was once customary for Hopi men to marry their fathers' clanswomen. Whether or not this implies a regular system of cross-cousin marriage, as Dr Parsons has suggested, cannot be proved because of terminological confusion. Nevertheless, if it were formerly the rule for a man to marry a woman of his father's clan, then it naturally follows in a matrilineal society that a fair proportion of marriages with the father's sister's daughter must have occurred.

UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

WHERE DID THE PLAINS INDIANS GET THEIR HORSES?

By FRANCIS HAINES

ALTHOUGH horses were unknown to the Indians of North America before the advent of the Spaniards, many of the tribes living in the great plains area were already in possession of these animals before the first explorers and traders reached them. This rapid diffusion of the horse well in advance of the on-coming white men proved an important factor in the subsequent history of the West and has caused a great deal of speculation concerning the details of such spread.

Because of the supposedly favorable environment for horses throughout most of the area west of the Mississippi, there has been little question that the natural increase of a comparatively small starting herd could have furnished an ample supply for the whole area in the course of a century or two, much as the herd of twelve in South America spread over the pampas there in a much shorter time. The chief difficulty has been to determine the place of origin of the original stock, and with it the date of starting. Once this had been determined, it would be easier to trace the resulting lines of distribution and to approximate the rate of spread.

Possibly the most detailed work on this topic has been done by Clark Wissler, who has written on the influence of the horse on the culture of the Plains Indian. He indicates that animals lost or abandoned by the DeSoto and Coronado expeditions in the period 1540–1542 probably furnished the parent stock. With such an early introduction, horses could have reached the limits of their natural range by 1600. He says ". . . for all we know, the Crow and Blackfoot, for instance, may have had horses for 150 years before their first mention in 1742 and 1751."[1] While few writers agree that the horses could have reached their northern limits so soon, many favor this theory that the strays from either or both of the expeditions multiplied rapidly on the plains and were adopted by the Indians before their next contacts with the whites.

Since this theory was so commonly accepted, it seemed that a careful search of source material should disclose a few items bearing on the subject which would, even though indirectly, substantiate such an explanation. The search for such items surprised me greatly. The evidence and deductions all indicated that the theory was highly improbable. The following argument is offered in support of this statement.

How many horses must have been lost or abandoned at one spot in

[1] Clark Wissler, *The Influence of the Horse in the Development of Plains Culture* (American Anthropologist, Vol. 16, pp. 1–25, 1914).

order to have established a herd? Obviously the minimum number under the most ideal conditions would have been two, and the chances of survival would have increased rapidly with an increase in numbers. The maximum number that could have been lost is not so easily determined. The limiting factor here is how many animals could be lost at one spot and the loss still remain too small to be noted by the chroniclers? When we consider how important horses were to the early Spaniards, how frequently they are mentioned in the various accounts, and how losses of two or three animals at a time were noted, we may be quite sure that no substantial loss of animals would have gone unrecorded.

It must be emphasized that the animals must have been lost at one spot. Strays separated by even one day's march would have slight chance of finding each other. If they were searching for companions they would have been much more likely to rejoin the main herd. These considerations would limit the possible starting size of such a herd of strays to eight or ten at the very most.

What are the chances for the survival of such a small herd? Mathematically, under ideal conditions, two animals could produce more than three hundred offspring in twenty years, but actually such a result would be impossible. Each mare would not obligingly have a colt each year, nor could all the colts reach maturity. They would be subject to drought, northers, starvation. During the first few years when they could least afford the losses is precisely the period in which the percentage of loss would be the greatest because they would be adjusting themselves to a new environment. This adjustment would be all the harder to make because they would be located in the poorer sections of the country. In fact, the probability of horses straying from the herd, or of horses being abandoned because they are worn out increases directly with the unsuitability of country for their needs, through lack of feed and water.

More important than this, though, is a factor frequently overlooked. In the sixteenth and seventeenth centuries the prairies and plains were not suitable for raising of stock because of large numbers of predators—buffalo or gray wolves, coyotes, pumas. It was not until the hunter and trapper had slaughtered most of these that either range horses or cattle could increase rapidly. Here is a case where a restrictive environmental factor has been overlooked because it is no longer present; but stockmen of even the present day, or the government hunters, will testify to the deadliness of such predators toward colts or bewildered strays.

Nor could the Indian of that period furnish the necessary care and protection to nullify this danger. With very few exceptions Indian tribes did

not develop into stock raisers until after they had been placed on reservations and had been instructed by the whites. They depended on horse stealing rather than horse raising for their supply of animals. It is hard to conceive of their spontaneously developing a method of horse raising only to abandon it before the approach of the whites, and when the horses were still too few for their wants. The tendency of the Indian to eat spare animals from the herd would also have hindered the growth of their herds.

Here let me offer a suggestion which might repay a little further study. Possibly much of this failure on the part of the Indian to raise stock can be attributed to his packs of fierce dogs, particularly deadly to the colts. Consider the case of the Nez Percé, one of the few tribes noted as horse raisers at the time of their first contact with the whites. They had few dogs, yet when their Indian Agent, Dr White, in 1842 discussed with them the advisability of adopting a code of laws against common offences, the one addition which the tribe made to the proposed code read:

"Those only may keep dogs who travel or live among the game. If a dog kill a lamb, calf or any domestic animal, the owner shall pay the damage and kill the dog."[2]

It is evident that the dogs were more of a nuisance because of the added herds of domestic animals, but it also indicates how such dogs, accustomed to help in running game, might easily develop into colt killers before they could be trained to let the new animals alone. And if dogs could be a serious problem in this tribe where there were comparatively few of the animals, think how much greater the problem would be in a camp of the Plains Indians with a dog pack of five hundred or more.

If the horses escaped all these dangers, where would they be found after a period of sixty years? Surely in the vicinity of the line of march of the expeditions. In the case of the DeSoto expedition, we need not consider the horses lost or abandoned east of the Mississippi, nor those lost in the river bottom on the west bank. Since the hostile Indians of the region killed horses at every opportunity, such strays would have perished long before they could have wandered by chance to the plains.

Could Francisco de Guzman, who left De Soto to live with the Indians, have cared for his own mounts and yet have lost these strays, thus establishing a herd? No, because he had no horses at the time of his desertion. He had just gambled away the last, a spirited black, a day or two before his departure with his Indian concubine to prevent the latter being claimed

[2] A. J. Allen, *Ten Years in Oregon: Travels and Adventures of Dr. E. White and Lady West of the Rocky Mountains* (Ithaca, N. Y., 1848).

in payment of his final debt.[3] Nor could he have rounded up the four or five turned loose many miles down the river when the survivors of the expedition butchered their mounts to secure a supply of meat for their voyage to Mexico, because the Indians of the vicinity shot them full of arrows even before the boats of the Spanish were out of sight,[4] and it is doubtful that any of them could have survived even to the next day.

No, if the DeSoto expedition furnished any horses to found the later Indian herds, it must have lost them on the march to the west, after DeSoto's death, in an attempt to reach New Spain overland. In such case the strays would have been left in north Texas somewhere near the Red River. The narrative of the trip mentions no horses lost except two killed by Indians.[5]

In the case of Coronado, we need not concern ourselves about any horses lost between Culiacan and Tiguex on either the outward or the return journey, for such strays would have been cut off from reaching the plains. Also we do not need to consider losses by Coronado and his body of picked troops on their way to Quivira and return. Since he took thirty picked horses for forty-two men, any losses would have been important enough for the record. There is no hint that even one horse was lost on the trip.[6]

It is true that Coronado suffered a serious loss of horses at Tiguex. There the Indians made a raid on the horse herd in retaliation for an attempted violation of an Indian woman by a Spaniard. While they were successful in securing a large number of animals, the evidence is against any of these being used later for breeding stock. "The next day Don Garcia Lopez de Cardenas went to see the villages and talk with the natives. He found the villages closed by palisades and a great noise inside, the horses being chased as in a bull fight and shot with arrows."[7] As the Spaniards captured the village soon after, it is evident that any horses surviving this merry little game were recovered.

This limits the possible loss of horses by Coronado to the territory covered by his army in its march east from the Pecos and return. It is interesting to note that this is the same area in which DeSoto's men might have lost horses the same year. If, then, either or both expeditions lost

[3] Theodore H. Lewis (ed.), *Narrative of the Expedition of Hernando de Soto by the Gentleman of Elvas* (in *Spanish Explorers in the Southern United States, 1528–1543*, J. F. Jameson, ed., Vol. 2, pp. 129–272, New York, 1907).

[4] Theodore Irving, *The Conquest of Florida* (New York, 1851), p. 420.

[5] Based on the route as given by Lewis, *op. cit.*

[6] George Parker Winship, *The Coronado Expedition, 1540–1542* (Fourteenth Annual Report, Bureau of American Ethnology, Part 1, pp. 339–613, 1896), p. 508 *et seq.*

[7] *Idem*, p. 496.

horses sufficient to found a herd but too few to be noted by the chroniclers of the expeditions, and if these horses succeeded in surviving and multiplying, for a good many years their center of distribution must have been a strip of land between the Canadian and Brazos Rivers. If such a herd increased rapidly enough to furnish an appreciable supply of horses to the Plains Indians, then this area should have been well stocked after a lapse of half a century.

Note that we are not interested here in the question, did any of the horses survive? The possible presence of an isolated band in a remote canyon has no bearing on the question, since we are discussing the probability of these horses furnishing a supply for the Plains Indians.

By 1600, then, when the Spaniards again explored this region, the horses would have had nearly sixty years to establish themselves. Their signs should have been visible at every watering hole, and bands of horses should have been sighted daily by the travellers, as they were throughout this same area at later times. Since the Indians in this vicinity had seen the Spaniards using horses, and since they had the finest opportunity of any of the tribes to capture horses, surely if any of the tribes had adopted horses by 1600 it would be those in this vicinity. But what are the actual conditions? Oñate's men traversed the area four times. They hunted game, surveyed the country, and observed the various kinds of plants and animals. They visited with and observed the Indians, reporting on their various methods of camping, hunting, use of dogs, and the like; yet in all this there is not a single mention of any horse, except the mounts of the Spaniards. When one considers the important part in the Spaniards' lives played by horses, and the many details of these animals included in the various accounts, he must conclude that the omission of Indian or wild horses from the reports can mean only that they did not see any horses or horse signs.[8]

For a more definite statement we may turn to the famous *Memorial* of Fray Alonzo de Benavides. He states specifically that Oñate found no horses in New Mexico on his arrival there. Writing in 1630, Benavides described in detail the Vaquero Apaches from the east who came in to the settlements of New Mexico to trade, carrying all their belongings and trade goods on travois drawn by dogs. The detailed description of their hunting buffalo shows that these Indians did not use horses for that purpose either.[9] Yet this is eighty-eight years after Coronado, and thirty years after horses might have reached the Crow and Blackfoot.

[8] Herbert E. Bolton (ed.), *Spanish Explorations in the Southwest, 1542–1706* (New York, 1916).

[9] Mrs Edward E. Ayer (tr.), *The Memorial of Fray Alonso de Benevides, 1630* (Chicago, 1916).

When the missionaries crossed to east Texas to minister to the Humanos Indians, they reported on various Indian customs and told of the various animals and plants in the country, but here again there is no mention of horses, either wild or tame, being found in any of the area traversed. In fact, it is not until the Mendoza-Lopez expedition to these same Indians in 1683–1684[10] that I find a specific mention of the Indians of Texas using horses. From this account, too, it would appear that horses were still scarce in the Texas country, indicating that they were rather recently introduced.

Is it not evident, then, that the chances of strays from the horse herds of either DeSoto or Coronado having furnished the horses of the Plains Indians is so remote that it should be discarded? Rather should we look for some white settlement with an increasing supply of stock which would furnish both the animals and the example of how they should be used. In contact with such a settlement the Indians would adopt the horse rather rapidly, and his equipment would be like that of the white man. The other theory would have us believe that after the Indians had seen one group of Spaniards for a few days, they would have been so versed in horse training and making of equipment that, years later, finding a few wild horses on the plains, they set about to capture and train these steeds, making equipment just like that of the whites. Then, after an interval of about a half-century they had surrendered all their horses to tribes further away, and had also disposed of all the wild herds.

Oñate's settlements, particularly Sante Fé, would furnish just the items necessary to encourage the adoption of horses by the Indians to the east—friendly contact through trade, ample supply of horses, and examples of the advantages of the new servants. From here the horses spread south, east, and north like a giant fan, reaching the southern and eastern limits rather rapidly because of the shorter distance to be covered. At the same time they were also spreading along the western slopes of the continental divide, but with a smaller area to fill; since much of the country was desert, they reached farther in a given time—but this topic is another problem.

The available evidence indicates then that the Plains Indians began acquiring horses some time after 1600, the center of distribution being Sante Fé. This development proceeded rather slowly; none of the tribes becoming horse Indians before 1630, and probably not until 1650.

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[10] Bolton, *op. cit.*, p. 330. There is a mention of an Apache raid on the horse herds in the upper Rio Grande country in 1659 in F. V. Scholes, *Troublous Times in New Mexico, 1659–1670* (New Mexico Historical Review, Vol. 12, pp. 134–74, 1937).

THE COAST SALISH OF CANADA[1]

By H. G. BARNETT

INTRODUCTION

WITH the exception of the Bella Coola, the adjective Canadian defines rather precisely that aspect of Coast Salish culture which provides the basis for this summary. The Puget Sound tribes, though Salish and immediately adjoining, are not included in it because of a lack of original information about them and because it is intended that this should be a digest of field data rather than a synthesis of existing material. The limitation is therefore an arbitrary one and not founded upon a cultural discontinuity; in fact there can be no doubt that the transition at the present international boundary was a more gradual one in prehistoric times than that between the Comox and Nanaimo, for example. Specifically the area under consideration lies on both sides of the Strait of Georgia, between Vancouver and Bute Inlet on the mainland, and from Victoria to Salmon River on Vancouver Island.

This is a region of extremes in environment and cultural specialization. In part, the latter has been stimulated by the Kwakiutl immediately to the north, themselves in a very similar habitat. For the rest, the Salish have made their own adjustments to a remarkable land and water configuration. The strait nowhere exceeds a breadth of twenty-five miles, and its waters are not subject to the violent storms which occur on the outer coast. A number of large and small islands are scattered just off shore and add to the irregularity of the land pattern. These features create a maximum of sea shore and become a significant factor in the culture-environment relationship. An extensive hunting ground emerges at low tide: mollusks and waterfowl abound on the mud flats. A pronounced tidal differential—a variation of well over ten feet is not uncommon—brings this feature into still greater prominence. The islands, natural refuges for man and animal, once harbored numerous birds and even deer. Porpoises were abundant; halibut banks were known on the southern part of Vancouver Island; and every river and creek once literally seethed with salmon in the spawning season.

These and other characteristic natural conditions are pertinent to a proper understanding of the cultural accents of this area. Among the Salish, as farther to the north, they have fostered a predominately fishing and sea hunting population. The rich assemblage of aquatic life was ex-

[1] Two three month periods were spent in collecting material for an ethnography of these people. The first season, in the summer of 1935, was financed mainly by the Fundusz Kultury Narodowej of Warsaw; funds for further study in 1936 were provided by the Department of Anthropology at the University of California.

ploited to the full, while an almost equally exuberant land fauna played a secondary role in the bill of fare. Protected harbors and inlets ramifying inland further favored the utilization of waterways. On the mainland especially, mountains descend abruptly into the water and are covered as elsewhere with a dense undergrowth topped by heavy stands of conifers. A variety of roots, berries, fibers, and workable timber was derived from these resources, but gainful penetration was difficult and foreign to the genius of the culture. Canoes were therefore indispensable; travel on foot was distinctly the exceptional mode. Habitation sites were almost exclusively on rocky beaches at the water's edge.

All of the area was ranged over and claimed in one fashion or another. This does not mean that the burden of population was critical: to judge by native accounts there was no want on the subsistence level, nor have I any record of contest over territorial claims. On the mainland at least boundary lines were rather well defined.

Occupational sites were of two kinds: permanent villages and temporary summer encampments. At the mouth of every river of any size there was a cluster of plank dwellings. These were the foci, the winter retreats, of semi-sedentary groups who counted and preserved their distinctness by reason of this habit of seasonal convergence. With the coming of spring the inhabitants of each center radiated over its acknowledged territory, setting up shelters at favored spots for clamming, egg gathering, and fishing. These groups are to be regarded as cultural units, homogeneous within themselves and differing to some degree from the others. Strictly speaking they should not be called tribes. Each was composed of from one to five named house clusters, often within shouting distance of one another, to which the term village is here applied. There were, for example, twelve named villages (an unusually large number) on the Cowichan River from Duncan to the mouth of the bay. Aboriginally the whole group, as at Cowichan Bay, had no inclusive name for itself, no head chief, and no coordinated political structure. Such unity as it achieved was founded upon a community of interests arising from near or remote degrees of kinship between its members, and a common traditional background.

Eleven of these ethnic groups have been investigated. (See map, Figure 1, for their location.) There is nothing to suggest an internal source for their names; in almost every case the names seem to have come from an outsider and are not the names of villages. Minor differences between any two groups are recognizable, but there are certain cultural cleavages which make it impossible to treat the area as a homogeneous one. A division into three sub-areas is indicated by the data.

The most aberrant group, from the Salish point of view, is that of the Comox proper (Vancouver Island). They show a decided bias toward the Kwakiutl, a fact which was long ago noted by Boas and is voluntarily remarked on by present day informants. With them go the Pentlatch. Their

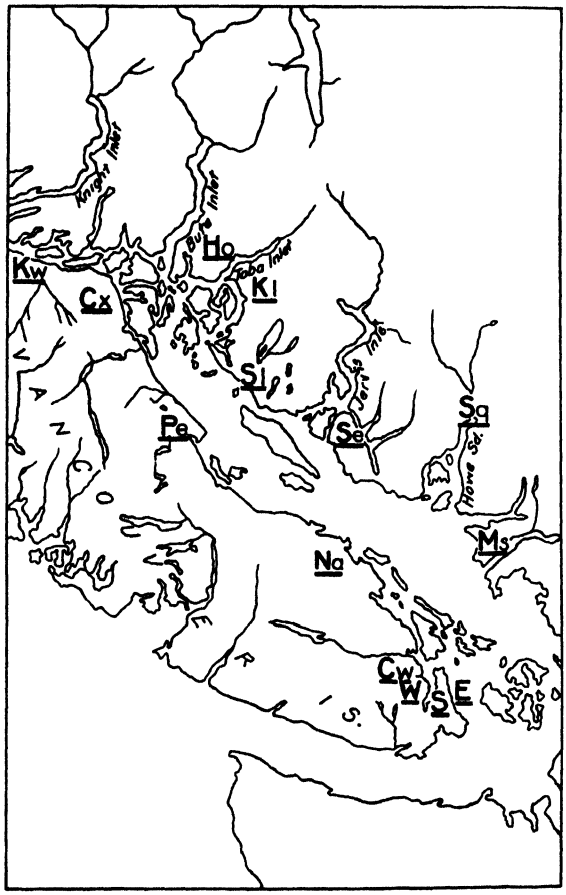


FIG. 1. Location of the Coast Salish of Canada. (Cw–Cowichan, Cx–Comox, Ho–Homalco, Kl–Klahuse, [Kw–Kwakiutl], Ms–Muskwium, Na–Nanaimo, Pe–Pentlatch, Se–Sechelt, Sl–Slaiämun, Sq–Squamish, W S E–West and East Sanetch.) For discussion of the identity of these ethnic groups see the final section of this article.

nearest linguistic congeners, the Homalco, Klahuse, and Slaiämun, form another, but less certainly defined, sub-area, having been only moderately (and lately ?) influenced from the north and exhibiting now and again

features suggesting interior contacts. Related to them, though not so intimately as they are to one another, are the Sechelt. Across the Strait, the Nanaimo, Cowichan, and Sanetch are in pronounced cultural agreement, except for a few traits which have filtered around the tip of Vancouver Island from the Nootka. In the same category perhaps should be placed the Point Grey group (Muskwium) and the Squamish. I am uncertain about their classification in terms of the outline given here, for while their social structure fits in well enough with the classification suggested here, their technologies reveal an up-river adaptation.

Linguistically the area is divided as follows: To the Comox dialect belong the Pentlatch, Homalco, Klahuse, and Sechelt. The Cowichan and Nanaimo speak another dialect differing only slightly from that of their nearest relatives on the Fraser River as far up as Yale. The Sanetch are most closely connected with the Sooke and Songish around Victoria and the Klallam in Washington. The Squamish are set apart as distinct from the other Salish dialects around them, their nearest affinity being the Nootsack of Washington.[2]

SUMMARY OF THE CULTURES

Salmon, the staple food, were commonly taken by means of weirs, nets, gaffs, and harpoons. Straight shanked hooks and cylindrical basketry traps were not used extensively. The various types of dams and enclosures were constructed of cedar laths and were in use whenever the depth and current of the streams permitted. Harpoons were of the two pronged variety known widely on the Pacific Coast; the detachable head consisting of a simple piercing point bound fast between two wings. They, like the long handled bag net, were operated from platforms standing alone or in connection with dams.

Fish netting was commonly made of nettle fiber. Gill nets were known on the southern part of Vancouver Island, but never attained the popularity of a distinctive variety of seine. Called a reef net, it was operated between two canoes near the mouths of favorable rivers.

Halibut and cod were caught on plain U-shaped hooks of bent hardwood. They were suspended in pairs and held almost everywhere by hand. Cod were also speared, lured upward by a spinning shuttle-cock device. Rock enclosures, and some of stakes, were so situated that at low tide they would effect the stranding of fish. Remains of these structures are still visible on many of the beaches.

[2] Taken chiefly from Edward S. Curtis, *The North American Indian* (Cambridge Mass., Vol. 9, 1913), pp. 31–32.

A herring rake—"comb" gives a better idea of the construction of this implement—was swept through waters teeming with these fish to impale them on its sharp teeth. During the spawning season roe was collected on submerged branches. Clams were everywhere a never failing source of food, except at the mouth of the Fraser and to some extent that of the Squamish, and while the epithet "clam-digger" had somewhat the same connotations as our own "peasant," the food itself was a part of the daily fare of every class. They were dug by means of a plain pointed stick (often pointed at both ends) identical with the one used for roots.

The hunting of sea mammals was a precarious and exacting pursuit. The common man did not engage in it since it involved certain traditional prerogatives, considerable training, and, at least theoretically, some supernatural sanction by way of a dream. Seals and porpoises were generally approached by canoes manned by two hunters. The man in the bow wielded a large scale replica of the salmon harpoon to which was attached a line and several inflated bladders.

The flesh of these animals was a prized delicacy. Their fat was rendered in wooden dishes by means of hot stones and stored, among the Comox, in distended kelp bulbs; over the rest of the area the animal's bladder was used for this purpose. The oil was a relish for dipping dried roe, berries, and roots before eating. Sea lions were also hunted sporadically and similarly utilized; their gut in particular served as cordage.

On the Fraser and Squamish Rivers sturgeon took the place of seals. A long shafted harpoon was used to probe the murky water, or a large pocket net was pulled through it between two canoes. Sockeye, scarce elsewhere, were plentiful on the Fraser, olachen (candle fish) ran on the Squamish, but neither of these places afforded opportunity for cod, halibut, or sea mammals. In fact, the people living on these rivers drew a distinction between themselves and the "salt water people," by which they meant mainly those on Vancouver Island.

Considerable traffic at one time took place between some of the groups, though there is some reason for doubting the antiquity of such free intercourse. All accounts agree that the West Sanetch had well established fishing privileges on Boundary Bay, inside of Point Robert, and regularly resorted there in summer; so did the Lummi. The Cowichan and Nanaimo frequently came to a camp on Lulu Island, either to fish for sturgeon and sockeye themselves or to bargain for them with dried clams. The Squamish in summer came out of Howe Sound, in part, it is said, to escape the mosquitoes. Some camped about Point Robert, others, so another report goes, congregated with the Sechelt and Cowichan at the head of Jervis Inlet.

There may have been some contact with the Lillooet in this direction, as there seem to have been inland connections between the Squamish and Sechelt.

In all probability the activities associated with land hunting were more developed in these inland going cultures than among those across the Strait. Certainly it was only on the upper reaches of the inlets that hunting expeditions set out, and these preponderantly in search of mountain goats. For the rest, large animals were plentiful and getting them was a matter of setting traps or of occasional excursions along the water's edge. The familiar pits, dead-falls, and slip-loop snares were universal for capturing elk, deer, and bear. Hunters generally set out alone, but there were some occasions for group drives.

Nets were a favorite device for entangling all kinds of animals. Depending upon the requirements of mesh and purpose, they were made of cedar withes, bark, or sinew. Deer were driven into strong webs set across their runways; circular ones, operated by a release, surrounded rocks frequented by seals. A characteristic Salish net was strung on high poles near marshes to emesh frightened waterfowl at dusk.

Night hunting developed a number of tricks with flares and blinds. Deer, coming down to drink, were shot when fascinated by a torch. Cod were attracted by the phosphorescence of stirred up water and by lights in canoes. Frequently a fire was built in front of a blind in the fore part of a canoe carrying two men. One of them quietly maneuvered the vessel among flocks of settled ducks while the other drew them in with a multi-pronged spear.

Dogs were valuable and were treated accordingly. Some of them—there are indications that they were of a different breed from those reared for their wool—were put through a course of training involving magical applications along with a more realistic regimen. They were taught to drive deer and elk into deep water and to raise mountain goats. They were well cared for in winter and put on small islands during the summer season.

A number of magical practises clustered about the taking of seal, goat, and to some extent bear, deer, and salmon. Some men were believed to be especially favored by a supernatural helper in acquiring the first two, in return for which, continence and ceremonial purification were requisite. The hunter must not comb his hair, nor could his wife engage in any activity while he was away. For success in sealing, especially, she was cautioned to remain inactive or to move gently. The bones of most animals, including the salmon, were carefully disposed of and never given to dogs. Special restrictions hedged about the treatment of goat heads and organs. An at-

tenuated bear ceremonialism existed among the Homalco, Klahuse, and Slaiämun in the form of speeches to the bear before or after death and ritual disposal of the head; with this was the common belief that it licks its paws during hibernation.

A young man never ate of the first animal he killed. It was always given to the old people, and he was ceremonially painted and sprinkled with down. The first salmon ceremony, a familiar feature on the Pacific Coast, was not performed by the Sechelt, Slaiämun, Klahuse, or Homalco. Within our restricted area this rite coincides rather closely with the distribution of sockeye, for which it was specifically reserved except at Squamish and Nanaimo.

Food was prepared in one of three ways: by roasting on a spit, by baking in an earth oven, or by stone boiling in wooden vessels. Salt seems not to have been in demand, for only the Comox and some of the northeastern groups made use of seaweed cakes. The mortar was unknown, as were other stone vessels. Cooking and serving utensils were of maple or alder with some abalone inlay decoration and conventionalized modeling to represent animals. The animal crest feasting dishes so dear to the Kwakiutl had spread only as far south as the Pentlatch and Slaiämun. Sheep horn ladles did not get beyond Comox, although the smaller black ones of goat horn were in use everywhere, the raw material being supplied by the mainland tribes. Water pails, chests, and other containers were made of cedar boards, steamed, bent, and sewed.

The importance of wood working helps to explain in some measure the secondary position of basketry. Information on this subject is confusing and difficult to get because of the specialized nature of the craft and its virtual non-existence today, but at least this much can be made out, that the forms, techniques, and uses of baskets were relatively few. The carrying basket for roots, berries, and clams was known universally in rectangular shape with the bottom smaller than the top. In the finer specimens the opening was constricted, giving a "parenthetical" aspect to the four corners. The technique was wrapped twine, the only one employed in rigid basketry except for two isolated reports of split warp and crossed warp variations of plain twining.[3] Soft rush bags in plain twine and/or checker prevailed on Vancouver Island, while most groups were familiar with the same sort of container using cedar bark and the checker-work technique.

Rectangular sewed baskets, imbricated and of the style referred to as Klikitat, were common all along the mainland. Individual specimens undoubtedly got across the Strait, but to judge from the earliest collections

[3] Sanetch and Pentlatch. They are open to doubt. For the terminology see O. T. Mason, *Technic of Aboriginal American Basketry* (American Anthropologist, Vol. 3, pp. 109–28, 1901).

and from two explicit denials by informants, it seems safe to infer that they were not made there. A variety of sewing, using rings instead of spiral coils, should also be noted.

Other fabrics were made of wool, cedar bark, and rushes. The twilled wool blanket came from the well known Salish roller loom. To the basic dog wool was added that of goats, if it was to be had, or some other fibrous substance such as cattail pappus or duck down. Associated with the loom was a large spindle, spun in the two hands with a tossing motion.

Another weaving complex, presumably derived from the Kwakiutl, included the suspended warp, twining, and a small spindle rolled on the shank. It had spread as far south as Pentlatch on the one side and Slaiämun on the other. If the somewhat ragged information can be trusted, checker-work cedar mats had the same distribution, as did a twined fabric of the same material. Over all the area, wall and floor mats were of rushes threaded together with a long needle.

The accent upon cedar, and vegetable fibers generally, carries over into articles of everyday dress. It was not uncommon for men, the older ones especially, to go naked, but when this was not the case they wore as an under garment a bark clout or fringe. Women wore a shredded bark or rush knee length skirt, usually of one piece. As a protection against the weather both sexes provided themselves with fur robes or woven blankets caught up over the left shoulder. Those who could afford it used wool. Basketry hats, of cedar root and of southern Kwakiutl design, had not reached lower Vancouver Island nor beyond Sechelt. Even there they were rather reserved for formal occasions.

Some departure from the above dress pattern is discernible on the mainland. Buckskin is more in evidence. Three descriptions of knee length trousers and one of a fitted shirt come from this side, but they may be late borrowings. Leggings and mittens formed a part of the hunter's outfit, as did two piece moccasins. Snowshoes with trailer and upturned toe must be set down as another trait not ordinarily associated with the coast Indian.

Body ornamentation involved a minor amount of tattooing, head deformation, and a piercing of the ear and nose. The mainland tribes avoided the first of these; the others occasionally striped the cheeks or chin of their women and assertedly drew more elaborate figures on the chests and thighs of the men. Both sexes of the well-to-do were given to wearing heavy abalone pendants from the ears and nose. A minimum of copper and some bone work adorned their necks, wrists, and ankles. Olivella shells were strung as beads in the southern part of the area, but, curiously, no group but the Sanetch knew the dentalium.

Canoe building, like sealing, was a specialized pursuit. The hereditary

element entered, but was not an indispensable prerequisite. Of more importance psychologically were certain sympathetic songs or incantations bestowed, in the first instance at least, in token of a personal contact with some supernatural assistant. Very often this was a woodpecker. The critical operations such as splitting or steaming were undertaken in privacy, at which time the personal ritual was used and several taboos observed by the man and his wife.

The preliminary shaping was accomplished with the aid of fire, wedges, and celt chisels. A spool-shaped hand maul served as a hammer, and practically the only one. The hull was usually burned out, finally to be smoothed down, inside and out, by adz work. The "D" adz was universal, but the Comox and northeastern groups made an elbow type as well.[4] The surface texture resembling hammered bronze resulting from these tools was valued in other woodwork, but the outer surface of canoes was further rubbed down with an abrasive such as dogfish skin for greater efficiency in the water.

There is no adequate treatment of canoe types for this region, nor can the matter be gone into here. Suffice it to say that there existed two well substantiated types and that these were mutually exclusive in their distributions. One was definitely mainland, the other belonged to Vancouver Island. One and all recognize the so-called "West Coast" (Nootka) form as intrusive, as they do for a Kwakiutl model or two which had found its way to some of the northern groups. Indigenous types were hewn from half logs, which put a considerable limitation on their size and made them relatively low at bow and stern. Improvised canoes of folded bark were regularly made for lake travel by the northern mainlanders, and the Homalco made a river canoe of cottonwood. The latter was called a "shovel nose" but any genetic connection with the typical shovel nose of Puget Sound is doubtful in view of its specific non-occurrence elsewhere.

Paddles were of maple, yellow cedar, and yew. Those of men and women differed in shape and coloration, and despite a variety of forms a distinctive Salish pattern for each sex can be made out. Bailers were of bark. Sails were improvised of boughs or house boards, but matting and thin boards (in the north) were commonly put to this use.

There is some justification for the generally accepted notion that the Coast Salish we are considering lived in very long plank houses with single sloped roofs, the high side facing the water. This association dates from the observations of Fraser, Kane, and other early travelers to their country; and, indeed, it is true that the tribes living on the lower course of the Fraser, and the Squamish as well, knew no other kind. Furthermore, it was the

[4] For types see R. L. Olson, *Adze, Canoe, and House Types of the Northwest Coast* (University of Washington Publications in Anthropology, Vol. 2, No. 1, 1927), pp. 13–17.

prevailing type around Victoria and Cowichan Bay and rivaled the gable roofed structure at Pender Harbor (Sechelt). Elsewhere it was regarded as indicating inferior means or ambitions, though the rich sometimes set them up at summer locations. Their distribution was therefore coincident with the Salish, but their importance faded away to the north and northeast in favor of another very nearly universal type. Consequently, it would appear that in this respect two historically diverse impulses have permeated and fused in Salish territory, one spreading from the outlet of the Fraser, the other seeping down from the Kwakiutl in a characteristic pattern relative to Vancouver Island and the mainland coast.[5]

A second impression which has gained currency from the same reports is that these dwellings, in places said to exceed five hundred and more feet over all, were unsegmented units with a broad unobstructed avenue running the entire length. Actually, each was composed of a series of individually constructed units—houses in fact—formed by as many cross-wise plank partitions. Each house then averaged a twenty-foot frontage and a fifty-foot depth with family quarters around its four walls, a "long house" in itself with roof sloping from front to back. The partition served as a common wall for two houses and indicates at once the economy which dictated the successive additions and ultimate great length. The character of the terrain was undoubtedly a factor as well, for in most places the division was complete and the units became separate structures with an increased frontage. A unique resolution of difficulties was achieved by the largest village at Point Grey. It was circular in ground plan and comprised seventy-six segments or houses.

In all plank dwellings, gabled and shed alike, the pitch of the roof was never great. The roof planks were bracket-shape in cross section and overlapped like tiles. They lay in place by their own weight and could be shifted aside for light or ventilation. The structure which supported them was not relied upon for the support of the walls so much as were secondary uprights between which the horizontal wall boards were clamped. Around all four walls there was a low bed platform, and above it at the height of a few feet a mat, or in the north, a plank canopy. Varying stretches of it were reserved for the individual families and the divisions were marked by mat or board screens. Smoking and drying racks were suspended over the several fires, although separate outside structures were sometimes built for this purpose. The custom prevailed of naming individual houses after some aspect of their locations, as "across the creek."

Several features relative to houses belong only to the Comox, Pentlatch,

[5] This is my interpretation in spite of a native explanation to the effect that the shed type is just half a gabled one, and hence less costly and pretentious.

and the three northeastern groups, Homalco, Klahuse, and Slaiämun. Among them are completely enclosed family compartments, floor excavation—sometimes to more than one level, with a resultant increase in seating capacity for festive occasions—and a greater and lesser development—or borrowing—of the crest motif. In this last respect mainland informants clearly recognize their indebtedness to the north, and in fact date it from the time when the white man put a stop to their inter-tribal wars. The Comox, on the other hand, were thoroughly saturated and at home with it. All of these groups had some zoomorphic dishes (Kwakiutl "house dishes"), made doors to represent animal mouths, and carved their interior house posts into human figures. Some crude painting was done on the house fronts. Projecting beam ends were carved into heads, and the impressive fact is that these and the dishes, even among the Comox, so consistently portrayed only the seal and the sea lion. A few memorial shafts with a small human figure at top and bottom were erected by the Klahuse. It is an evidence of the degenerated nature of these "crests" that Kwakiutl carvers were hired to do them by anybody who wanted to and could afford it, without any pretensions to a traditional right to the particular figure.

The custom of carving anthropomorphic roof supports and also beam ends carried on to the Sechelt and Squamish. Even the Muskwium observed the first of these and added yet another characteristic figure to grave box ornamentation. Here it is entirely possible that we have to do with a second set of influences of up river origin. They barely touched the Sanetch, and the Cowichan and Nanaimo not at all, for the carvings which exist at these places at the present day are repudiated by the better informed natives as alien to their culture.

A few other structures deserve brief mention. The summer shelters were of the sort constructed by the Puget Sound tribes: a lean-to or a four post frame covered over with mats, bark, or sometimes planks. "Pup tent" structures, for the accomodation of one person at a time, were dug out, covered with bark and earth, and used for steam sweating by the tribes on the mainland. For the same purpose the Vancouver Island groups[6] improvised an individual wickiup of branches and mats, or simply steamed themselves under a blanket covering. Of distinct interest from a wider point of view is the presence of semi-subterranean retreats west of the Coast Range. They were known from Howe Sound to Bute Inlet and were used as refuges in time of war. Furthermore, the Muskwium on Point Grey built underground dwellings of exactly the same type as those farther up the valley.

[6] They resorted to it only for minor ailments, however, while the former set of tribes used it also for ceremonial purification.

They existed side by side with the plank shed roofed habitations already described, and were a luxury for those who could afford them.

Plank houses were built by the cooperative efforts of the occupants. Specific data from which to draw generalizations cannot be obtained beyond the grandparental generation of the oldest informants, but to judge from these, the house building and owning nucleus comprised a man and his sons, or several brothers. Paternal cousins and at times sons-in-law were included. Each retained such equity for himself and his descendants as was accorded him on the basis of labor and materials contributed. An instance is recorded of a quarrel between two brothers at Comox which resulted in the removal of one who stripped his half of the house bare of its walls and roof to set up an independent household with his son-in-law. This was the recourse of a man of means; others could not afford to be so sensitive and preferred for many reasons to maintain their brotherly affiliations. Nevertheless this process of segmentation of the extended family within a village must be looked upon as the ordinary mechanism of its growth. Not infrequently brothers or cousins owned adjacent houses, and in all probability the principle of kinship through males governed the formation of villages and even the aggregates of villages as at Cowichan Bay.

Residence, with few exceptions, was patrilocal, which brought it about that a man and his brothers, with their extended families in the male line, lived under one roof. Slaves, widows, orphans, and other dependants made up the remainder. One of the men, usually the eldest in the direct line of the founder, was looked to for guidance and protection by the rest of the house mates. He was granted their respect and allegiance on the score of his prestige and influence. By virtue of his aristocratic birth he owned or exercised a controlling interest in certain property rights and ceremonial privileges. His brothers and house mates were not entirely excluded from them and in order to validate his birth right he was expected to improve upon it by industry, generosity, and dignified behavior. Through an intelligent exercise of these qualities he was able to maintain an appreciable control over his retainers. It was power of an informal sort, implicit in the kinship bond which linked him in some way with almost every member of his extended household.

To sum up, we may say that the house governor's authority was founded upon and defined by his rights as an influential relative and property owner. In return for his patronage he expected and received the support and cooperation of his adherents. He could not afford to abuse their dependence, nor could they risk his disfavor. There are stories of tyrants and bullies, but they are rare and recited with disapproval. If the situation became unbear-

able a man could always move into the house of another powerful relative, especially one on the maternal side. Some men, to avoid embarassment in difficult domestic situations, preferred to set up a nearby shack of their own rather than insist upon a remote claim within the big house. On the whole the arrangement was beneficial to all concerned: service and deference were traded for economic security and vicarious glory. Outside his house group the governor had no real authority and was able to achieve only as much precedence among his peers as his prestige and influence warranted. Political power was coincident with social status.

These head men are commonly called chiefs by observers on the Northwest Coast. It is important to note, however, that the Coast Salish disavow the implications of the term as they have come to know them through government administration. They say that they had no chiefs, and rightly too, if by that we mean the incumbent of an office. The notion of an office, in the sense of a functionally defined position, was almost nonexistent by comparison with that concept among the Nootka and Kwakiutl. There was no feeling that a house implied a chieftainship as we feel that a state implies a ruler; depending upon their personal attributes, several men—two, three, or four—in the same house might be entitled to the honorific hegus or siɛm. For convenience we may translate this as chief; the natives make shift with such equivalents as "gentlemen," "hightone men," "smart men," and "real men."

Property, the outward symbol of rank and status, was recognized in material goods and ritual privileges. Incorporeal property rights will be discussed more fully under rituals, but the same rules of ownership and transmission applied to them as to other valuable possessions. Apart from houses and their furnishings, corporeal property consisted mainly of hunting and fishing lands and appliances. Nets of all sorts were owned, as were pitfalls, deadfalls, fishing and sealing sites. On the mainland goat hunting lands were divided up among a comparatively few families. All of these possessions were expensive and restricted. They were in the hands of the chiefs who shared their produce with their henchmen and retainers. Clamming places were free to all, but root plots were held in severalty by families. Weapons, canoes, and wool blankets were individually owned and highly prized for their potlatching value. Only the Comox traded upon the fictitious values of copper plates derived from the north.

Descent and inheritance were reckoned bilaterally with a decided preference for the patrilineal. There is no reason for believing that a feeling of nearer kinship with the father's people is responsible for this bias, as the bilateral transmission of names and the kinship nomenclature will testify.

As a part of the dowry or bride price return, the son-in-law was sometimes given custody of a certain masked dance to be held in trust for his son. The Salish share this mode of transmission with the Kwakiutl, but for the former at least the evidence seems to favor an interpretation in terms of a bilateral acknowledgement of kin coupled with a development of return giving, rather than as an infiltration of northern matrilineal principles into a purely patrilineal complex.

Primogeniture was the rule, but was not insisted upon as an inflexible principle. Daughters, for example, could inherit important property only exceptionally, and personal aptitudes were a noteworthy consideration in passing along hunting, technical, and ritual property. Sons received from fathers in preference to brothers unless other factors of age and fitness entered. Very much depended upon the circumstances. In the ordinary course of events the most desirable acquisitions clustered about and descended in the lineal strain of eldest sons. From this nucleus there was a more or less gradual shading off into the trivial, and the more so the greater the number of generations, so that the youngest son of a youngest son received precious little of the original patrimony. It must have been extremely difficult for him to improve upon this situation in aboriginal times within the closed system of a well regulated economy. A possible way out was by a fortunate marriage, of which there are traditions and some historic accounts.

From the above it should be clear why the word caste conveys a misunderstanding of class differentiation as it existed among the Coast Salish. Between the highest and the lowest there was a wide gap, but they were intimately connected by a blended scale of free men. In a sense there were noble families (those of first sons), but own cousins of these might be commoners. Hence, the ever reiterated attitude of nobles to commoners was one of tolerance and encouragement. The only class of despised men—and this was a personal matter—were those referred to as "lazy men," those without ambition as it was conceived by the Salish. A Comox man who could once "hold the people" (potlatch) became a real man, though not so "real" as one who had accomplished it several times or more grandly. Commoners who could not achieve this distinction in their own right hunted and worked for their aristocratic kinsmen and were compensated by public acknowledgement of their contribution, by repayment in other goods, or by good will feasts and entertainments.[7]

[7] This is not an attempt to fuse the extremes of status, for very real differences separated the behavior and degree of participation proper to them. On the other hand, it is important to bear in mind the non-categorical implications of the catchwords "nobles" and "commoners."

Slaves were a class apart, totally subservient, but not tortured or physically abused. They were taken on war raids and to own two or three was a distinction given only to men who were in a position either to buy or to capture them. Usually they were taken as children, then reared as menials in the houses of their masters. The dishonor attaching to their station was hereditary; therefore intermarriage with them, except by the lowest of freemen, was unthinkable. There are some indications that the stigma, in the exceptional case, could be lifted by a formal distribution of property but a slave ancestor was always a vulnerable point for the malicious thrusts of an enemy.

As would be expected, the majority of marriages were contracted between social equals. Varying degrees of pomp and ceremony, depending upon the standing of the two families, signalized the union. To add quality to the occasion a fiction of non-acceptance was acted out which recalls the war-like formalities of the Kwakiutl. The groom's party approached the girl's house by canoe even within the same village. The door was barred to them and they had to pay influential sympathizers to "break it down." This consisted of speeches by resident relatives or by the several chiefs accompanying the boy, his father, and his mother as formal representatives. Once admitted, the boy sat humbly near the door for days, saying nothing and eating little of the food which his people were allowed to prepare for themselves. Sometimes they left him alone and stayed with relatives in another house. Each day his father's speakers harangued the girl's people upon the desirability of the match. At length they relented and the two families ate together. Finally, the whole village was called in to witness the union and the exchange of goods.

This ceremony was costly, for every step in the procedure called for a payment. Each speaker was honored with a blanket or two for his "good words." The groom's party always brought a great amount of food, which was divided equally among all those present on the last day; when they left they were given food to be similarly distributed when they got home. The bride price in blankets was turned over to the girl's father who apportioned it immediately among his nearest responsible relatives. It was incumbent upon them to return it with ceremony at some future date, usually at a visit the following winter. In the southern part of the area the return was in equivalence; in the north, on both sides of the Strait, it was more often double.

The exchange of sisters in marriage was common, as was child betrothal. Sometimes an industrious youth without means was taken into the household of a wealthy man as the husband of a younger daughter, but in this,

as in every other case, some payment had to be made to legitimatize the union. This was true even of the sororate and levirate, which, by the way, were entirely optional and not more frequent than other forms of remarriage. They were possibilities only; a fact probably to be correlated with institutionalized bride price return.

The Comox aristocrats performed a travesty of marriage without a bride for the sole purpose of acquiring privileges in the exchange. This was their chief concern and consequently marriages were unstable. Over the rest of the area the most important consideration was the consolidation of one's social position through connections with important kin groups in other houses or villages.

There were no preferred mates within the kinship nexus. First and second cousins were not acceptable, third cousins on either side were. This meant that marriages between house mates as well as village members was permissible, though for reasons given above inter-village alliances were sought after.

The kinship system reveals several points of interest. Separate terms were used for father, mother, sister (Comox dialect), husband and wife, but apart from these no distinction was made between male and female relatives. Furthermore, relatives in the same degree of relationship, whether through males or females, were called by the same term. With few exceptions the sex of the speaker made no difference. This brings it about that each of the following sets of relatives was designated by one term: siblings; youngest sibling; oldest sibling(?); older sibling and parent's older sibling's child; younger sibling and parent's younger sibling's child; parent's siblings; sibling's child; child; grandchild and sibling's grandchild; grandparent and grandparent's siblings; step-parent; step-grandparent; husband's brother, brother's wife (♂ speaking), wife's sister, and sister's husband (♀ speaking); husband's sister and brother's wife (♀ speaking); wife's brother and parent-in-law; sister's husband (♂ speaking) and child's spouse.[8]

A reciprocal term also existed for relations through spouses (parent-in-law to parent-in-law and extending to the whole group). After the death of

[8] Summarized from a Sanetch list. To judge from the reports of Boas on the Squamish (British Association for the Advancement of Science, 1890, p. 688) and Hill-Tout on the Sechelt (Journal, Royal Anthropological Institute, Vol. 34, 1904, p. 81) there was some variation and elaboration in the sibling-cousin terminology. Boas also gives a common term for all siblings-in-law and another single one for parents- and children-in-law (reciprocal). This does not appear on Vancouver Island, though there is some indication of the same thing in the Hill-Tout list.

a spouse another term replaced throughout the one which had been used by the relatives through marriage. No avoidance patterns of any sort were practiced. Terms for parent generations back to the sixth were known to the Sanetch, who used the last one to designate an hereditary privilege.

The critical periods in the individual life cycle were heavily laden with ritual forms, the most striking feature of which was the regularity of their reappearance on several diverse occasions. Within the limits of a summary it is not feasible to go into all their details, so that only a few of the more important can therefore be touched upon.

The most elaborate and important rituals were associated with the death of a spouse (of either sex), with girls' puberty, and with the dancer initiation. At the death of a parent less care had to be taken, and still less for the death of a child. The information is not consistent from one group to another, but it seems fairly clear that upon the birth of a first child the parents, in one way or another, had to refrain from their ordinary habits for four days. The birth of twins greatly altered their behavior, for they were required to live apart in the woods for a year or more. Friends and relatives aided them in getting food, while they carefully sought some supernatural favor prompted by a touch of the sacred as it surrounded them at this time. The twins themselves had a certain amount of supernatural power, and were good fishers, since they were related to the salmon.

Girls at puberty and women at childbirth were secluded behind mat partitions in the living house and at times in huts outside (mainland).[9] The dancer initiate was also kept behind a screen. The drinking tube and scratcher are prominent features on most of these occasions, one or both even being prescribed for the initiate and the boy pubescent. Few other formal observances applied to the latter but the significant fact is that there was any recognition at all beyond the usual informal Spartan training for manhood. Some other restrictions had an obvious social significance, being designed to induce a decorous and becoming behavior in later life. More of them had a religious import.

With some local exceptions, a consistent pattern which appears at first childbirth (for the father), puberty, initiation, and at the spouse's death is a ceremonial feeding at the end of four or eight days, and for the man a re-introduction into the fundamental daily occupations. Specific trait associations which occur again and again are those which have to do with the

[9] In the south at least (Sanetch, Sechelt, Nanaimo) an aristocratic girl was sometimes kept in complete seclusion and inactivity until the day of her marriage. Her untouchability and the mystery surrounding her very existence enhanced the possibilities of a favorable match.

importance of wool, bark, down, daylight, the east, hair combing, bathing, fasting, red paint, etc. Most of the life crises were regarded as dangerous situations during which the individual was at once empowered and contaminated by the supernatural. From these influences he had to be relieved by a ceremonial purification after a regular period. Above Nanaimo and Squamish this could be done by the individual himself, coached by an older person, but for the others an hereditary functionary was employed for the service. In fact, there flourished in this southern section a variety of privileged performances which had no other function than to "wash" the dancer novice, the pubescent, and the corpse awaiting burial. They were expensive demonstrations, dances, tricks—shows in effect—which had nothing intrinsically to do with cleansing, but capitalized upon this aspect of crisis rites for their elaboration. The real purificationist (siwɨn) operated less spectacularly with more esoteric lore.

All of these events, as well as any other which marked a new relationship between the individual and his group, were celebrated by a distribution of property. That was the recognized mechanism by which any public announcement could be made and it was the only one, so that the person without property had no means of asserting status in his society. An institution existed whereby an individual in anticipation of such a distribution was "helped" or loaned blankets by others, while he at the same time called in those which he had previously loaned out. The return among the Comox, Homalco, Klahuse, and Slaiämun was double (100 percent interest) so that it was wholly to a man's advantage to put himself in the position of a universal creditor in advance of his proposed distribution. It might take place any time during the year, but the grand inter-tribal affairs were held in the spring. One man, perhaps two or three, took the responsibility for the calling, but anyone could take advantage of the congregation to give a "cry song" for his dead, name his child, etc.

Crisis periods were auspicious occasions for the seeking of supernatural helpers. The susceptibility of parents at the birth of twins has already been noted. A bereaved spouse was sent into the woods daily and often received a visitation in his or her exhausted half hysterical condition. Puberty was the time par excellence for seeking, though for girls the procedure was milder and offered less reward than for their brothers. The boy stayed in lonely places, fasted, took emetics, and scrubbed himself with boughs. An essential part of his quest involved swimming and diving, often to the point of exhaustion or unconsciousness, in which state he received a vision, a song, a spirit cry, and promise of help according to the nature of his wishes. Otherwise his experience came in a dream. Frequently some startling real

occurrence induced the dream; on the mainland the dreamer had a foreboding of a real encounter which knocked him unconscious and replaced the underwater ordeal. Dreams had to recur to be valid. Everyone sought them, since they gave luck in hunting, in acquiring wealth, in fighting, in doctoring. Powers were not inherited and their acquisition was kept strictly secret; hence no image or representation was made to proclaim them. They were almost exclusively from birds, animals, and fabulous spirits or monsters. There were no restrictions on killing such an animal. On the contrary, that very favor was bestowed on the hunting man.

The shaman's quest was exactly like that of any other person but was more intense, was psychologically conditioned for that end, and ceased only with the acquisition of several powers instead of one. Some spirits were deemed ineffectual for curing purposes, and others, such as the double-headed serpent, were tremendously powerful and dangerous. The most potent spirits caused a man to bleed from all the apertures of his body at the time their power struck and entered it. There they resided henceforth, to be summoned into activity by singing to do the work of curing. Ordinary individuals also were known to appeal to their spirit helpers in time of stress. There was no initiation or induction ceremony for the shaman, and no societies.

Sickness was caused by soul loss, intrusion of a foreign object or a spirit, contamination, and by magic. There were two souls; one in head, the other in the heart. They could wander off in sleep, be abducted by shamans and ghosts, or be displaced by a sudden fright. It was the duty of the shaman as defined above to send his powers in search of the soul, or, according to some, to send his own soul. A material object such as hair or a piece of bone was removed by sucking, and an intruded spirit by manual manipulations. Destruction of either of these was harmful or fatal to the sender.

At a curing the shaman sang with the aid of his wife and others. He had no drum, rattle, nor any appurtenance other than a bowl of water which reflected the universe, and some down or bark on which to catch the soul. On the mainland he shook or "danced" in a semi-possessed state; elsewhere he sat with an arm over his eyes.

Two other professional dealers in the supernatural require mention. The first (siŭwŭ) was but a specialized shaman who had received his power from the dead and who functioned as a clairvoyant and treated those afflicted by ghosts. The second class had no connection with dream experiences or spirits but had come by their secret knowledge through instruction. They were called siwɪn from the private word formulæ which they possessed and jealously guarded. Some were well disposed and acted as purifiers

and in a ritual capacity, as at the first salmon rite. Others were workers of contagious magic. The siwɑn was not known to the Sechelt, Slaiämun, Klahuse, or Homalco.

The winter ceremonies of the Coast Salish reveal more clearly than anything else a tri-partite division of the area along the lines suggested in the introduction. It would be futile to dwell upon the complexity of the subject, but there is some point in calling attention to the modification and mutation of pattern within this narrow, restricted territory. If affords another good example of the rather abrupt shifts and re-associations which mark the diffusion of ceremonial complexes on the Northwest Coast. Nothing more than an outline can be attempted in this place, and for the reason given, the characterizations will gain in clarity by sub-areal descriptions.

Sanetch—Cowichan—Nanaimo—Squamish—Muskwium: Participation in the winter dances of this group was conditioned by the individual acquisition of a dreamed power, that is, a guardian spirit of the order described above. Lesser animal spirits of all sorts counted for this requirement, along with the powerful ones for hunting and fighting, and a very few nature spirits. They were not inherited, but the important point is that the dancing group was a closed organization requiring a formal initiation. Anyone could join regardless of whether his parents belonged, and regardless of whether he had received a vision. In fact, it was the function of the initiation to instill a power into the novice; if he already had one, it might come through the ordeal or be smothered and replaced by a wholly artificially induced one. This was no less true for a shaman than any other person who danced in the winter ceremony.

The induction was accomplished by a surprise attack upon the boy or girl at the instigation of some relative who was to pay for the four day ritual of initiation. The novice (hɔsɔlkʷ) was beaten, smothered, and choked until he was unconscious—"dead" they say—by his attackers, who were of course already members and his constant attendants for the remainder of the season. Immediately he was placed behind a screen in a corner of the big house and an established morning and evening public ritual inaugurated over his exhausted body. Attendants hovered over him using every means to "bring out" the song of his power. At length it welled up, or one was framed for him and drummed into him. On the fourth day he made a circuit of the village, singing and dancing. Throughout this period and for the remainder of the winter season the attributes and accessories of the novice strongly recall the hamatsa and other dancers to the north.

Members danced singly, assisted by the singing and drumming of all the others. Their song revealed the nature of their power, and they wore

head dresses of bark and down, but no wooden masks. They were often in an uncontrollable ecstatic state. The only mask known to this group of tribes was the so-called swaixwe,[10] not of northern origin but probably coming from the Fraser River. It was not used for the winter dancing. It was one of the privileged exhibitions already spoken of in connection with crisis rites; an interesting accent which applies with complete regularity to the other inherited privileges, most of which can be recognized by their association with an hereditary song and a rattle.

Comox—Pentlatch: The dancing complex just described was also known to these two tribes, but it was almost entirely submerged under a more highly regarded formal winter ceremonial taken over bodily from the Kwakiutl. Dream singing and possessed dancers were viewed rather condescendingly, as were most things Cowichan. Non-members provoked them into an ecstasy (as they did also to the south) while the members of the masked dancing society looked stolidly on. In reality the latter were actors given to playing out a hollow caricature of this same spirit possession of which they disapproved.

The completely formal overlay had not suppressed spirit seeking for the requisite supernatural aid in hunting, curing, etc., but it had given an overweening importance to transferable spirits as they were represented in masked dances. It is not necessary to describe them, nor the initiation by abduction and seclusion, for the facts do not differ appreciably from those published for the Kwakiutl.[11] The same masks, and the same dancers appear with northern names: hamatsa, hawinɔL, tohwŭt, etc.

Homalco—Klahuse—Slaiämun—Sechelt: With these groups it is difficult to be certain of some of the major patterns in terms of those known to their neighbors. Part of this difficulty lies, I feel sure, in their own misconceptions and confusions over their borrowed traits. The feature which appears to have been basic, and in all probability represents an original winter dance pattern of all the Coast Salish, was an individual performance imitating some animal. Very likely it was connected with a guardian spirit but it seems to have involved more mimicry than similar dances on Vancouver Island. Some dances may have been without a song; most of them certainly

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[10] A partial exception involves only the Sanetch who shared the xūnxani'te with the Klallam. See E. Gunther, *Klallam Ethnography* (University of Washington Publications in Anthropology, Vol. 1, No. 5, 1927), pp. 281–88. For swaixwe refer to F. Boas, *The Indian Tribes of the Lower Fraser River* (Sixty-fourth Meeting, British Association for the Advancement of Science [for] 1894, pp. 453–563, 1894), p. 455.

[11] F. Boas, *Social Organization and Secret Societies of the Kwakiutl Indians* (Report, United States National Museum for 1895, pp. 311–738, 1897).

were not. The actors did not form a society, and there was no initiation. A person began to dance when he felt secure in his power and after he had taught the professional song leader his song—and when he had accumulated enough for a few presents. These dancers contributed the bulk of the exhibition and were called by a term which signified "shaman." Furthermore, true curing shamans also danced in that capacity, showing off their powers with demonstrations of death and resurrection, decapitation, fire walking, etc. Doctors, as such, did not perform in the winter dances of the other two areas. Their feats were usually shocking and fearful, and the people did not like them.

Along with these unorganized dances, a distinct group was created by a formal initiation requiring a four day secret retirement in the woods. Returning clad in branches, the novice (hausaulk) danced publicly, and without further ceremony was relieved of his covering. The ritual care so prominent elsewhere was reduced to a minimum, and little prestige seems to have been derived from the perfunctory "initiation." At Sechelt it was so restricted in scope as to be associated with only one of the dozens of dance spirits. The same distinction of an initiated group within a larger unorganized body of dancers characterized the Squamish.

Still a third winter dance pattern gave expression to a stronger interest in hereditary privileges. Its elements were indicative of professional specialization, and theoretically were the property of families with an enviable reputation for hunting or fighting. They were entertaining, and generally took the form of brief dramatic scenes with realistic costumes and effects. It is not unlikely that they had crystallized out of spirit impersonations, but, like the Comox masked performances, they could be used in the profane season as well, any distribution of property justifying their display. To the same category belongs the only mask of certain occurrence north of Squamish. The Sechelt lacked it, but the three other tribes were familiar with the right to display, by inheritance or outright purchase, a modified Dzonoqwa mask, whose northern provenience and equivalent they recognized. Two others, of uncertain identity, may have been used by these same groups.

Identification of the Ethnic Groups

Formerly the Comox claimed the territory between Campbell River and Salmon River, and it was only after the establishment of a Hudson's Bay post near the present-day town of Comox that they moved southward to that point to take up residence on the front doorstep of the Pentlatch. Their aboriginal homeland was decidedly to the north of this. Following upon their heels the Kwakiutl moved into the evacuated territory and today hold Campbell River and Cape Mudge.

The Nanaimo maintained three seasonal sites in the near vicinity of the town by that name, including Departure Bay, Nanaimo River, and Gabriola Island. The Cowichan held Cowichan Bay with a number of villages up the river as far as Duncan. The West and East Sanetch were separated by the width of the peninsula which today bears their name. Each was a distinctly autonomous group, and there were still others, as at Patricia Bay and Malahat, but the inhabitants of all are referred to by informants as Sanetch people.

The Muskwium lived on the receding shore of Point Grey at the mouth of the north arm of Frazer River. Nearby, at Capilano Creek close to North Vancouver, there are at present some Squamish, but it is doubtful whether this group originally had any real claims anywhere on Burrard Inlet. Their home was at the head of Howe Sound and for some miles up the two rivers emptying therein.

The Sechelt were well established over the entire area surrounding the peninsula named after one of their villages, and far up to the head of Jervis Inlet. Their winter village was at Pender Harbor. The Slaiämun adjoined them to the north and extended their claims to include Cortes Island. Their principal village was on Malaspina Inlet; at present their reserve is near Powell River.

The Klahuse and Homalco were at home on Toba and Bute Inlets respectively, and did not venture out of these protected channels until a comparatively late date. Settlements were restricted to a few favorable locations along their shores and to the rivers in the back country.

The group names employed are those which the natives now use in referring to themselves and to one another. It was thought best to forego accurate phonetic renditions in favor of more common spellings which often appear as place names on maps and are more familiar to the general reader.

Boas in the *First General Report on the Indians of British Columbia*[12] calls the Comox Çatlō'tq or K·ō'moks. My Kwakiutl, insofar as it is considered, derives from the southernmost group, the Yukwiltaw, which he writes Lē'kwiltok. Sechelt is the same as his Sī'ciatl. His other transcriptions are P·E'ntlatc for Pentlatch, Sk·qō'mic for Squamish, and K·au'itcin for Cowichan. In the *Second General Report*[13] he refers to the Qsā'nitc (Sanetch) as close linguistic relatives of the Lku'ngEn (Songish). The Snanaimuq[14] are my Nanaimo.

References to the other groups are few and not very illuminating. Sapir[15] alludes to the L!ọ'họs dialect, spoken on the British Columbian mainland, with which Comox proper "was stated to be identical." This must be the Klahuse who, with

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[12] Report, Fifty-ninth Meeting, British Association for the Advancement of Science [for] 1889, pp. 801–99, 1890, p. 806.

[13] F. Boas, *Second General Report on the Indians of British Columbia* (Report, Sixtieth Meeting, British Association for the Advancement of Science [for] 1890, pp. 562–715, 1891), p. 563.

[14] F. Boas, *Notes on the Snanaimuq* (American Anthropologist, Vol. 2, pp. 321–28, 1889).

[15] E. Sapir, *Noun Reduplication in Comox, a Salish Language of Vancouver Island* (Memoir, Geological Survey, Canada Department of Mines, No. 63, 1915), p. 2.

the Homalco, Slaiämun, and Sechelt, are closely related linguistically to the Comox. For these others too I find only the names mentioned. Curtis[16] gives Huma'ĥlkyu, Hlaa'mĭn, and Tlăkyu's, with which I equate Homalco, Slaiämun, and Klahuse. Boas,[17] in discussing the Salish dialects, refers to "the Claamen of Toba Inlet," which I construe to be a misplacement of the Slaiämun. In the report upon *The Indian Tribes of the Lower Frazer River*[18] he lists the QmE'çkoyim, corresponding to my Muskwium, and to the Musqueam of the *Handbook of American Indians*. The other listings in the latter publication[19] are also in more obvious agreement with the orthography used in the preceding pages.

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[16] Curtis, *North American Indian*, Vol. 9, p. 32.

[17] *The Indian Languages of Canada* (Annual Archaeological Report, 1905, pp. 88–106, Toronto, 1906), p. 98.

[18] Report, Sixty-fourth Meeting, British Association for the Advancement of Science [for] 1894, pp. 454–63, 1894, p. 454.

[19] F. W. Hodge, ed., *Handbook of American Indians North of Mexico* (Bulletin, Bureau of American Ethnology, No. 30, 1907–10), Part 2, p. 417.

BOOK REVIEWS

GENERAL

Handbuch der Methode der kulturhistorischen Ethnologie. WILHELM SCHMIDT. (xvi, 338 pp. RM 5.70. Münster, Westfalen: Aschendorff, 1937.)

This book, to which Father Koppers has contributed pp. 13–19 and 81–127, purports to bring Graebner's *Methode der Ethnologie* (1911) up to date and to dispel misunderstandings due to his involved exposition. This aim does not exclude strictures on its model, for Father Schmidt has never been a mere disciple.

Like the corresponding treatises by Graebner, Pinard de la Boullaye, and Sapir, the *Handbuch* is a serious intellectual effort, but hardly a vademecum for the ethnological wayfarer harassed at particular crossroads. Syllogisms do not create scientific discoveries; Aristotle's rules cannot produce great tragedies; and historians cannot reconstruct the past by recipe. *Logic* profits from the keen analyses here offered, but the ethnological practitioner at best learns to avoid certain errors.

The trouble with all our logicians is misplaced emphasis; they misconceive our practical difficulties. No one quarrels with the "qualitative criterion" (pp. 136, 139): traits from different areas evidently should not be treated as alike unless they exhibit typical similarities; and the resemblance betokens genetic relation only if not rooted in the very nature of the object or custom. The issue is, *when* these conditions are fulfilled. Perry, e.g., scents moieties whenever the number 2 figures prominently, an identification most of us reject. Father Schmidt subsumes the planting of cereals and root-crops under one head (p. 305), while to me the ideas are as diverse as reindeer-breeding and bee-keeping. And on this vital point, whether two phenomena are really alike, the *Handbuch*, like its predecessors, fails to offer objective criteria.

Methodologically, I should prefer to see a *detailed* justification of several proposed sequences emanating from different schools. Father Schmidt's theory of matrilineal developments and Laufer's ideas on the rise of plate armor would lend themselves admirably to this purpose. Such insight into the historian's mental processes, step by step, would be more helpful than the listing of abstract rules, however sound.

Nevertheless, the *Handbuch* is of the greatest interest in registering Father Schmidt's reactions to various writers who have dealt with chronological problems; and still more in exploding inveterate misconceptions as to his and Graebner's principles. The critical commentary suffers from paying too much attention to what the authors under consideration say and too little to what they do. Thus, on the strength of *The Method and Theory of Ethnology* Radin quite intelligibly figures as opposed to all reconstruction of major scope. Yet, for better or worse, *The Story of the American Indian*,[1] with its acceptance of an Australian, a Melanesian, and a Mongoloid layer in America, cannot be reproached for this particular deficiency.

A rather serious criticism must also be leveled against the treatment of Tylor.

[1] New York, 1927.

Has the author's interest in Tylor's animistic theories blurred his memory of the *Researches into the Early History of Mankind?* And has Tylor's discussion of the patolli game, with its clear formulation of the quantitative criterion[2] wholly escaped his notice? Tylor may be criticised for keeping evolutionism and diffusionism in separate compartments, but he was very far from ignoring historical considerations.

But it is more important to turn to the clarification of the Graebner-Schmidt doctrine. In the first place, the author deprecates the notion that the *Kulturhistoriker* consider only isolated items; they insist on an organic tie linking the traits into a higher unity and explicitly contrast this concept of a *Kulturkreis* with the merely empirical juxtaposition of features within a "culture area" (p. 175). Secondly, there is no antagonism to a psychological approach, which even Graebner admitted on principle, while Schmidt has consistently stressed individual differences (pp. 16, 230). Finally, evolution is expressly accepted (pp. vii, 10 f., 207); Schmidt, with most modern writers, merely spurns "evolutionism," i.e., a uniform progression from lower to higher stages.

In other words, the historians accept functionalism, psychology, and evolution. On the other hand, Professor Malinowski latterly reconstructs the development of Trobriand agriculture[3] and Professor Radcliffe-Brown propounds certain sequences of Australian social structure. The old quarrel thus reduces itself to a legitimate difference of interest as to the degree to which undocumented reconstruction is profitable.

To the reviewer Schmidt's grandiose scheme of a universal culture history is an impressive attempt to weld together ethnography and prehistory. In principle such a synthesis is not only admissible but indispensable. My objections, past and present, fall under two heads. Like other diffusionists, the *Kulturhistoriker* are too prone to identify phenomena without sane application of the qualitative criterion (see above); and they prematurely equate layers of distinct continents. We must observe the geologist's caution in comparable situations. Let us first work out the chronology of each of our major units independently of one another, not lightly transfer a conjectural stratigraphy from Oceania to America. When our several chronologies are thus naïvely determined—without reference to any scheme—we may then synthesize all the results as best we may. On the other hand, the heuristic value of Schmidt's scheme, varying in its segments, becomes potentially very high when combined with universally conceded facts. Thus, the earliest immigrants into the New World must be credited with an Asiatic culture which subsequently spread and diverged in its Old World and its American branch (p. 51). The search for its survivals in Australia and Fuegia, respectively, is therefore *a priori* legitimate, as Davidson has recently admitted.[4] I concur in his opinion that the criteria hitherto proposed as proofs of this ancient connection largely lack cogency, but regard complete negativism as premature. Nordenskiöld's and Krickeberg's attempts to link North and South America are similarly deficient in rigor, but when the dross is

[2] Internationales Archiv für Ethnographie, Vol. 9, 1896, p. 55 sq.

[3] *Coral Gardens and their Magic* (New York, 1935), p. 459.

[4] American Anthropologist, Vol. 39, pp. 229–43, 1937.

removed some valuable results remain. Extending the pan-American comparison systematically and with constant conceptual purging to Asia may yet yield important conclusions.

In any case, it should be understood that the Graebnerians are not merely diffusionists like Elliot Smith or Rivet, whose respective doctrines are explicitly repudiated (pp. 70, 147, 298). They are the only scholars today who give evidence of trying to see culture history as the continuous whole it undoubtedly is.

ROBERT H. LOWIE

UNIVERSITY OF CALIFORNIA

Primitive Behavior: An Introduction to the Social Sciences. WILLIAM I. THOMAS. (ix, 847 pp., 12 figs. $4.00. New York and London: McGraw-Hill, 1937.)

Probably no sociologist in the world—certainly none of English speech—has so systematically kept abreast of ethnological progress as Dr Thomas. This latest outcome of his ripe scholarship, then, reflects with remarkable accuracy the viewpoints of cultural anthropology so far as they relate to a generic social science. Specifically, there emerge from his treatise the generalizations he has himself summarized at the beginning (p. 7): the impotence of either racial or geographical factors to account for culture; the improbability of parallelism on a large scale; the moulding power of specific experiences, leading to individual behavior patterns and standards for each society; the tendency for such idea-systems to spread, so that culture areas are recognizable in place of so many discrete tribal cultures.

However, Dr Thomas is much more than a purveyor of accepted anthropological tenets. For one thing he connects ethnology with psychology, showing by a magnificent array of instances how the established cultural order conditions individual response to a given situation. Moreover, his wide sociological experience and his equally impressive reading enable him to set many facts in a new light and to adduce many that commonly elude the professional ethnographer. Cases in point are the discussion of virtuosity as a goal (p. 42); of the Swedish taboo against the pronoun *ni* (p. 94 ff.); of the mother-in-law as "a perseverative" ("stepping up") application of a device for denoting relationship (pp. 214, 221 f.); of indigenously evolved Negro kingdoms (p. 425); of the alphabet as the achievement of the people rather than of an élite (p. 625).

A very large part of the work consists of verbatim quotations documenting the points made. It is, indeed, an incomparable source book—one that I should set above all other productions of this category. First of all, it embraces in principle all epochs and all areas. Secondly, the selections both illustrate the points made and are intrinsically worth while. Finally, the theoretical and descriptive literature has been ransacked from the most catholic point of view. There are old classics like Tylor and Dobrizhoffer; but we also find the most recent theorists and observers—Gayton, Evans-Pritchard, Gusinde, Mead, Gifford. No student of the social sciences will fail to enlarge his insight and factual grasp by consulting this monumental treatise.

ROBERT H. LOWIE

UNIVERSITY OF CALIFORNIA

The Contribution of Psychiatry to the Understanding of Human Society. ERNEST W. BURGESS (ed.). (American Journal of Sociology, Vol. 42, No. 6, May, 1937.)

This issue of the *American Journal of Sociology* is a symposium on "The Contribution of Psychiatry to the Understanding of Human Society." The first seven articles are by psychiatrists who appreciate the implications of sociological and anthropological viewpoints for their own field of specialization. I stress viewpoints, because their concern is rather with these than with data. The only anthropologist represented is Dr Sapir, who summarizes the first seven articles with his customary sophistication and verbal felicity. Dr Herbert Blumer speaks for the social psychologists. He sums up the psychiatric orientation expressed in the seven papers somewhat as follows. Social disorganization is an extension and accumulation of individual disorganization which originates primarily in early childhood experience. It must, therefore, be dealt with through education. Dr Blumer realizes that he has not done full justice to the range and subtlety of psychiatric opinion, but he is undoubtedly correct in seeing this sequence as the major trend in several of the articles. In contrast to this trend of thought, Dr Blumer insists that social disorganization may crop up quite independently from the cumulative influence of "neurotics" and that it may actually produce individual disorganization.

It is undoubtedly significant that the whole discussion ends at the original impass between those two realms of abstraction—the psychological and the cultural. The degree of sophistication of each writer is evinced by the extent to which he attempts to avoid using that kind of antithesis. This is a realm in which one can operate profitably neither with the concepts formulated for the abstracted individual nor with those deriving from the abstraction called culture. The raw material of both realms will prove useful in this intermediate zone, but the theories will be largely irrelevant.

The issue of the *American Journal of Sociology* which is under review represents considerable effort on the part of both the editors and the contributors. Probably as good a job has been done as can be done in terms of our present knowledge concerning the interplay between the individual and what we call society. However, there still remains the uneasy feeling that a great deal of all this is mere verbiage. For the anthropologist, and especially the less psychologically inclined anthropologist, only specific studies in this area will bear weight or carry conviction. Talking has proceeded as far as it can. Data with which to operate are now essential. The anthropologist who professes to study personality must do two tasks. First, he must understand both the formalized and unformalized aspects of the culture he studies. Secondly, he must gain some insight into the manner in which strategically selected individuals within a group have come to be the persons they are. The real problem then lies in discovering how far these two bodies of observations can be correlated. There is no question of imposing the generalizations from one field upon a body of data from another field.

Both psychologists and anthropologists will assert that this kind of investigation is neither fish nor fowl. They will be quite right. The problems of "pure" psychology

and "pure" anthropology are different, will require different data (in part, at least), and will use different techniques. However, the two well established disciplines stand to lose nothing and to gain much by having their margins more sharply explored.

CORA DU BOIS

NEW YORK CITY

NORTH AMERICA

Contributions to the Ethnography of the Kutchin. CORNELIUS OSGOOD. (Yale University Publications in Anthropology, No. 14. 189 pp., 30 figs., 10 pls. $2.50 New Haven: Yale University Press, 1936.)

The northern Athapaskans have long been more or less neglected by ethnology, probably because their rather primitive culture, still more impoverished through two centuries of contact with white trappers and fur dealers, seemed little attractive to students in general. However, this somewhat supercilious view does not agree with the important role which, in all probability, fell to their lot in the early history of North American culture. We have good reasons for believing that they were the first bearers of the snowshoe complex in this continent, and as such gave the impetus to extensive migrations even outside the northern woodlands.

Under these circumstances we must be grateful for the attention which Dr Osgood has paid to this group in the last few years. The present work deals with one of the most important nations, the Kutchin, whose territory roughly comprises the country between the great bend of the Yukon and the lower Mackenzie. Most of the material was collected in the field during the summer of 1932, but in addition all the available literature has been taken into consideration, so that he has really succeeded in giving as full a description of Kutchin life as can be had at the present day—for unfortunately for science Kutchin culture ceased to function as a complex long ago, and in most cases the ethnologist has to rely upon the fragmentary recollections of the native informants.

The greatest amount of material was secured among the Peel and Crow River tribes, for which reason each chapter begins with descriptions of these groups and continues with an account of the conditions of other tribes as far as our scanty knowledge permits. We find among the Kutchin the principal characteristics of the snowshoe culture as it appears, e.g., among the Chipewyan, although somewhat modified, probably as a result of their geographical situation near one of the cultural highways between the Old and the New World. This is, perhaps, most marked in the social organization with its peculiar three clan system, but it also appears in material culture. The description is concluded with a chapter on the cultural changes due to historical influences and a very valuable tabulation of aboriginal culture traits, which permits a rapid comparison between the Kutchin tribes themselves and also with those of other ethnic units.

Dr Osgood's work is purely descriptive, but he promises that, together with his other accounts of Athapaskan culture, it is destined to form a background for a complete study of the northern division of the Athapaskan stock as a whole. There

can be no doubt that his profound knowledge of this group entitles him to such a task as a matter of course, and every student of circumpolar culture will look forward to its publication with impatience.

KAJ BIRKET-SMITH

NATIONAL MUSEUM, COPENHAGEN

History of Hawikuh, New Mexico: One of the So-Called Cities of Cíbola. FREDERICK WEBB HODGE. (Publications, Frederick Webb Hodge Anniversary Publication Fund, Vol. 1. xviii, 155 pp., 28 illus. $3.50. Los Angeles: Southwest Museum, 1937.)

Hodge's *History of Hawikuh*, a study long expected, is the result of a lifetime's work. In the decade of the 'eighties, when the Hemenway Expedition was in progress, Hodge became interested in this ruin in western New Mexico. Opportunity to excavate it did not arise until 1917, but the work then begun was carried on until 1923. The author has, in other words, pursued the study of this region for many years, and the volume here reviewed is the first of a series which it is proposed will cover all phases of the research relating to Hawikuh.

The volume begins with a general treatment of Spanish expansion north from Mexico City to Zuñi, New Mexico. Appropriately, the author introduces his story with a brief reference to the ancient legend of the "seven cities" founded by the Portuguese on the Island of Antilla, but he soon turns to Nuño de Guzmán and Cabeza de Vaca, and then launches into a discourse on Fray Marcos de Niza and the negro Estevan, who are generally supposed to have gone as far as Zuñi on their reconnaissance of 1539. The story of Fray Marcos de Niza is followed by a summary of the Coronado expedition, 1540–42, with which the friar went as guide and spiritual adviser, and which admittedly reached Hawikuh and conquered the surrounding pueblos.

Dr Hodge accepts the long-established interpretation of Niza's route and ignores the recent attack on the friar by Sauer and Wagner, and thus rejects their assumption that he never got farther north than southern Arizona. Hodge bolsters his narrative with a wealth of proof, relying always on contemporary documentary evidence and presenting exhaustive arguments to demonstrate the identity of the Cíbola "cities" with the Zuñi pueblos. He concludes: "It would be difficult to imagine, in the light of such incontrovertible testimony, how by any possibility the province of Cíbola could have been other than the Zuñi pueblos of the sixteenth and seventeenth centuries."

Less controversial is the description of the Zuñi pueblos and the account of the early Spanish expeditions, the Rodríguez-Chamuscado, Espejo, and Oñate entradas. In 1629 a mission was founded at Hawikuh, but tragedy overcame it three years later when the Indians rose and killed their missionaries. The *History* continues through the Pueblo revolt of 1680 and the reconquest by Vargas in 1692.

The book is Volume 1 of the Frederick Webb Hodge Publication Fund, which was established to honor Dr Hodge's fifty years of service in the field of American

anthropology. The cost of this first volume was borne by the Museum of the American Indian, Heye Foundation, New York, with which Dr Hodge was associated for a number of years.

The *History of Hawikuh* is a handsome volume, printed on high grade paper and profusely illustrated. It contains an extensive bibliography, is adequately annotated, and has a good index. It is the finest work on the subject.

GEORGE P. HAMMOND

UNIVERSITY OF NEW MEXICO

Chapters in Nebraska Archaeology: Vol. I, Nos. I–VI. EARL H. BELL (ed.). (427 pp., 53 figs., 78 pls. $2.50. Lincoln: University of Nebraska Press, 1936.)

This series of six papers by Dr Bell and his co-authors show a certain degree of homogeneity in the presentation of the data, although the individual co-authors seem to be largely responsible for the exact form of each paper. Thirteen sites are described in the central and eastern parts of the state, and seven rock shelters and one "ancient" site in the western part. The book stands as an excellent first volume on the results of the field work of the University of Nebraska's anthropological staff. Few typographical errors appear and the papers are unusually well illustrated. It is a welcome addition to our knowledge of Nebraska, and along with the archaeological numbers of the Nebraska History Magazine and Strong's *Introduction to Nebraska Archeology*, places the state well in the foreground in the Plains area.

Cooper's paper on the Wiseman, Radke, and Schulte sites is a compact discussion of the physical and cultural features, and gives rather full data on the artifacts. His conclusion is especially valuable as it presents a cultural analysis showing objectively why these three sites belong to a single focus. The reviewer agrees that the St. Helena Focus probably belongs in the Upper Republican Aspect. The concept of decorating the shoulder area, as exemplified on sherds 2 and 4 of Plate XIII, is probably the result of cultural contact with the Oneota Aspect peoples as represented on sherds 1 and 3 of the same plate.

Dunlevy's paper on the Burkett and Gray-Wolfe sites has an unusually full analysis of the pottery and a somewhat less complete discussion of the other artifacts. She has demonstrated that these sites can be grouped together as a focus. The author disagrees with the opinion that these sites are Proto-historic Pawnee or, at least, that this view can be regarded as established at present. While I am inclined to agree with Miss Dunlevy on this point, her tendency to include the focus within the Upper Mississippi Phase is somewhat questionable.

The analysis of the Sweetwater site by Champe identifies it as a distinct focus of the Upper Republican Aspect. The paper on the Nehawka and Table Rock foci written by Bell points out that five of these incompletely excavated sites can be considered as one focus, while the Table Rock site probably belongs in a separate focus. That these foci belong in the Nebraska Aspect seems evident. The paper devoted to an analysis of "The Rock Shelters of Western Nebraska" indicates the use of some of them as temporary habitations by peoples possessing many of the cul-

tural traits of the Upper Republican Aspect. A somewhat different assemblage from a few sites is associated with the Dismal River Group. The final paper by Van Royen is a brief review of the geological problems involved in the determination of the age of an artifact-bearing stratum at the Cape site. The authors suggest that the artifacts are probably early Post-Pleistocene.

These papers were issued primarily to place at the disposal of anthropologists an analysis of the characteristics of the various sites. Cultural comparisons on a broad scale were withheld until the various regional groups have been analyzed and digested to a more satisfactory degree. At the same time, the authors have not hesitated to point out cultural similarities where the evidence warrants, nor to indicate problems for the future. The book is of value to archaeologists for the material available for comparative study, and as a method for the presentation of cultural data. Anthropologists will recognize in the growing body of Nebraskan publications interesting information on cultural change and shifts of emphasis from the historic to the completely prehistoric sites.

While these studies are excellently done, a number of them, because of uncontrollable circumstances, were not written by the individuals who did the field work. This is to be regretted in any publication. Certainly by this time, the main outlines of Nebraska archaeology have been ascertained, and it seems necessary to shift the emphasis from the sampling of many sites in various parts of the state to the more complete excavation of key sites whose artifacts will elucidate definitely defined cultural and historical problems.

JAMES B. GRIFFIN

UNIVERSITY OF MICHIGAN

SOUTH AMERICA

The Metallurgy and Technology of Gold and Platinum among the Pre-Columbian Indians. PAUL BERGSØE. (Ingeniørsvidenskabelige Skrifter, No. A, 44. 44 pp., 4 pls., 2 figs. Kr. 2. Copenhagen: Danmarks Naturvidenskabelige Samfund, 1937.)

The material on which Mr Bergsøe, who is a civil engineer, bases his investigation consists of a collection of metal objects from La Tolita, Atacames, and the coastland of the province of Esmeraldas, in Ecuador. The rivers of the provinces of Esmeraldas carry alluvial gold, in the washing of which the objects examined by Bergsøe were also recovered. They are characterized by their diminutive size, which in many cases is almost microscopic. The material of which they are composed consists of an alloy of gold, silver, copper, and platinum. These components do not, however, occur in standardized proportions. As a detailed review of Bergsøe's investigations would require far more space than I have at my disposal, I shall limit myself to mentioning only a few interesting details.

As is well known, the fusing point of platinum lies so high that greater technical resources than those possessed by the Indians are required for melting it down by any direct method. From analyses of the metal finds in question Bergsøe has, however, succeeded in discovering how the Indians produced an alloy containing plati-

num in spite of their being unable to bring about the necessary temperature of fusion. This process he describes as follows:

> The small grains of platinum were mixed with a little gold dust and small portions placed upon a piece of wood-charcoal. When the gold runs it will coat the grains of platinum with gold. The grains are simply "soldered" together. If the piece is now further heated by means of the blow-pipe, let us say, the following will take place: a portion of the fused gold permeates the platinum and simultaneously a little of the latter is dissolved in the molten gold. This mixture of gold and platinum can now withstand a light blow of the hammer, especially when hot. By alternately forging and heating it is possible gradually to build up an homogeneous mixture.

Attempts at smelting platinum by a method recalling the one here described were made in Europe in the 18th century, although they did not meet with much success, and it was precisely this inability to smelt platinum that so long delayed our putting this metal to practical account. In this connection Bergsøe says:

> Had the Spaniards known the Indian method, it would have been easy for them with the help of crucibles and furnaces to have obtained the same results by using metals other than gold, and they would thus have been able to produce platinum in a coherent form, perhaps with silver or copper as a medium, and the whole use of platinum in Europe might have taken a different turn.

Thus we here find an instance of Indian knowledge and skill surpassing that of the Europeans at the same period.

Other objects also evidencing the skill possessed by the Indians in the working of metals are the exceedingly minute beads that Bergsøe examined, made of tiny metal balls joined together. This has been done without having recourse to the method of soldering. Welding must be regarded as the only process employed, which implies an almost incredibly high degree of craftsmanship on the part of those by whom these beads were manufactured.

Even wire-drawing is here represented. Also in this case Bergsøe has been successful in reconstructing the method employed, on the basis of the finds examined by him.

Bergsøe points out that some of the alloys in the Esmeraldas district are the very hardest metal ever found in America from the pre-Columbian period. All of the objects published by Bergsøe are ornaments, with the exception of two needles.

Nordenskiöld has shown that the alloy of gold, silver, and copper which in Colombia was used in the manufacture of bodkins, axe-blades, etc., possesses the advantage of being harder than the ordinary Peruvian bronze containing a 10 per-cent proportion of tin. The absence of implements such as bodkins and axe-blades among the material examined by Bergsøe I interpret as indicating that the manufacturers of these objects were unaware of the above mentioned advantages possessed by the alloy of which they made use. As already mentioned, the objects are of a very diminutive size. Bergsøe supposes that this fact is connected with the high percentage of platinum in the gold dust collected by the Indians and the difficulties thereby involved in the smelting operations. Scarcity of metals is not in itself sufficient to explain the absence of working implements.

Of great interest is the object that Bergsøe shows as Figure 12. As he points out, this object represents the hitherto earliest known attempt at producing an equivalent to our safety-pin. Some of the finds published by Bergsøe are, as he points out, no doubt manufactured under European influence. Not improbably this primitive safety-pin is ascribable to some such influence.

The above cited details, which have been excerpted at random from Bergsøe's essay, unfortunately fall very short of conveying an adequate idea of this interesting publication. The exquisite working methods that here are revealed arouses the reader's admiration for the craftsmanship of the Indians.

STIG RYDÉN

GÖTEBORGS MUSEUM

Atiko y: Meine Erlebnisse bei den Indianern des Guaporé. E. HEINRICH SNETHLAGE. (180 pp., 66 illus. RM. 6.30. Berlin: Klinthardt and Biermann, 1937.)

In *Atiko y* Snethlage gives in a popular form an account of his research expedition to the region surrounding Rio Guaporé, the border between Bolivia and Brazil. This is the author's second expedition to South America. His first, in northeastern Brazil (1923–1926), had zoological collecting for its main object. Such observations of Indian culture as Dr Snethlage was able to record during his first expedition were published under the title *Unter nordostbrasilianischen Indianern.*[1]

Dr Snethlage has been attached to the Museum für Völkerkunde in Berlin for many years, and his latest expedition was, in contradistinction to his earlier one, exclusively devoted to ethnographical and archaeological investigations in the Guaporé region. Previously (1913–1914) Professor Erland Nordenskiöld visited the forest region of northeastern Bolivia, extending his travels to the tribes inhabiting the Brazilian bank of the Guaporé. Of this expedition Nordenskiöld has given an account in his book *Forskningar och Äventyr.*[2]

In comparing Snethlage's book with that of Nordenskiöld, what immediately strikes one is how very little the Indians have been decultured in the interval between their visits. Were rubber collecting in the present day as lucrative an industry as it was at the time of Nordenskiöld's expedition, Snethlage would most certainly not have reaped such rich results as he did.

A countryman of Dr Snethlage's is the owner of a newly established hacienda near the junction of the rivers Mamoré and Guaporé. This is not a very advantageous situation for a new settlement inasmuch as its neighbors—the Indians—habitually make marauding attacks on both the dwelling house and the river transports. But as the starting point for an ethnographical expedition, this only makes the place more suitable. What Snethlage first of all had to do was to get on a friendly footing with the Indians—the Moré and Itoreauhip tribes. By degrees he succeeded in this, gained their entire confidence, moved over to their villages, and lived among them as their guest. The section dealing with the Moré and Itoreauhip forms the

[1] Zeitschrift für Ethnologie, Vol. 62, pp. 112–205, 1930.

[2] Stockholm, 1915 (German edition: *Forschungen und Abenteuer*, Stuttgart, 1924).

introductory first third of the book. The rest is devoted to the voyages on the Guaporé and excursions away from the river to the Indian tribes that are settled in the region about the sources of the tributaries derived from Brazilian territory. Thirteen different Indian tribes were visited by Dr Snethlage, many hitherto unknown to science even by name.

Of the Indian culture objects that Nordenskiöld discovered, and which, strangely enough, are found in use even at the present time, the most important are the withy-hafted stone celt and the trumpet made from a human femur. That objects of this kind are still to be collected shows to what high degree the Indian culture has maintained its independence during the last twenty years, outside the highway trafficked by the whites, Rio Guaporé.

Among the ethnographical novelties published by Snethlage, special mention may be made of the musical instrument that he calls "Taran-Taktschläger," consisting of a calabash which is slid up and down a stick, and which, when it strikes the handle at the bottom of the stick, emits the time-marking sound. Another newly discovered instrument is the friction idiophone of gourd shell, smeared with wax, a parallel of the friction idiophone of tortoise shell. Among other new discoveries may also be mentioned the ritual wound-scratcher used by the medicinemen of the Huanyam, consisting of a wooden handle fitted with three venomous snake's teeth; the dance-masks and ritual snuffing (by means of snuffing tubes) of ground tobacco mixed with angila powder of the Guaratägaja; the mat altar of the Makurap; special sleeping huts constructed with a view to keeping out mosquitoes, etc. Dr Snethlage also carried out archaeological excavations on his expedition, but the results of these he only refers to in passing.

Atiko y is a travel account intended for a wide circle of readers, and matters of a purely scientific character are thus naturally left in the background, but the large number of geographical novelties that he nevertheless discloses causes one to look forward with great expectation to the scientific publications of this expedition.

GÖTEBORGS MUSEUM STIG RYDÉN

El Paraná y sus Tributarios. FRANCISCO DE APARICIO. (Historia de la Nación Argentina, Vol. 1, Ch. 7, editada por la Junta de Historia y Numismatica America, Buenos Aires, 1936.)

Viaje Preliminar de Exploración en el Territorio del Neuquén.

Viaje Preliminar de Exploración en el Territorio de Santa Cruz.

Grabados Rupestres en el Territorio del Nequén. FRANCISCO DE APARICIO. (Publicaciones, Museo Antropologico y Etnografico de la Facultad de Filosofia y Letras, Série A, Vol. 3, Buenos Aires, 1935.)

The steady stream of archaeological publications from the Argentine has Francisco de Aparicio as one of the principal tributaries. A few of his recent works are cited above. The first paper mentioned is a résumé of the archaeology of the Paraná

Delta in the northern Argentine; the other three describe explorations in the eastern and western borders of his country toward its southern extremities.

One is struck by the geographical difficulties to be overcome in conducting a survey of Argentina archaeology. Even more baffling to the student of cultural evolution and contact is the extreme simplicity of the material remains of the ancient peoples. Distinctive styles seem absent; stratigraphy appears as nebulous as a Messianic hope; and even the archaeology lurks furtively, where only diligent search can locate it.

One sympathizes with the patient courage and sense of moral responsibility that impel men such as Mr Aparicio to devote themselves to analyzing the prehistory of the Argentine. They are adding substantially to our knowledge of the New World and, once their surveys are completed, they will achieve through comparative studies the historical depth that we need for the southern part of South America. Mr Aparicio and his colleagues are earnestly to be congratulated on the firm foundation they are laying for South American archaeology.

GEORGE C. VAILLANT

AMERICAN MUSEUM OF NATURAL HISTORY

AFRICA

Eingeborenenkulturen in Südwest- und Südafrika. Wissenschaftliche Ergebnisse einer Forschungsreise nach Süd- und Südwestafrika in den Jahren 1926–1928. VIKTOR LEBZELTER. (306 pp., 111 figs., 26 pls., Leipzig, 1934.)

This is the second volume resulting from Dr Lebzelter's expedition to South Africa.[1] Although archaeology has been the author's major interest, the amount and variety of his ethnographic notes is considerable. The book is to be regarded as a pure source book, a treatment of various problems of South African anthropology being reserved for a third volume.

Since the information was gathered in comparatively short time over a wide territory, much of it is bound to be spotty or superficial. The best rounded sections are those on some Bushman groups (!Kung, Nogau), the Bergdama, and the Ovambo; the material is the more welcome since the literature is none too rich for any of these groups.[2] In some respects the !Kung were found to be still comparatively untouched. The description of the life cycle is of especial interest, and there are data—in part new—on religion, beliefs, the initiation of medicine men, etc. In the Ovambo section the treatments of material culture and technics are particularly useful and extensive. The section on the Bergdama contributes a good many details to the picture Vedder has given of this tribe with Hottentot culture.[3] It is somewhat awkward, however, that at times one is not sure whether the older literature is being quoted, confirmed, or supplemented.

[1] See *Die Vorgeschichte von Süd- und Südwest Afrika* (Leipzig, 1930).

[2] See for instance H. Tönjes, *Ovamboland* (Berlin, 1911).

[3] H. Vedder, *Die Bergdama* (Hamburg, 1923), and *The Berg Damara* (The Native Tribes of South-West Africa, pp. 37–78, 1928).

Lebzelter refers to the fact that, in trying to construct a picture of the "original" culture, anthropologists have only too often disregarded the presence of the effects of contact with European civilization. While he does not attempt any systematic discussion of acculturation, there are scattered through his notes abundant references to various aspects of the violent changes to which South African native cultures were and are exposed. He feels that the reaction of native culture to Western civilization furnishes a valuable perspective into the history of the tribe. When, however, he equates the behavior of the culture with the behavior and "mentality" of the people themselves, he seems to be on weak ground and is led to speak of things such as the "ungenerosity," etc., of the Bushmen.

The use of some terms is at times not judicious, because they are left undefined. This is the case with the term sib ("Sippe"). In connection with the Bushmen, for whom no clear-cut sibs have as yet been established (and for whom he quotes Dornan,[4] an inferior source), this is especially disturbing. He speaks, somewhat hypothetically, of "age-classes" among the Bergdama. But the description of initiation ceremonies (pp. 137–39) parallels the Hottentot *rites de passage* so closely that it appears inadvisable to employ a simple "age-class" concept here.

Anecdotal material occupies a large place in the book, and some of the anecdotes are very telling. There are numerous illustrations, including excellent pictures of different types of Bushman dwellings. The usefulness of the volume would be enhanced if Schapera's excellent résumé of the Bushman and Hottentot material[5] had been taken into account. As it is, in conjunction with the other literature its data can be put to good use; they are often stimulating and include occasional items not in the usual vein of the orthodox ethnographic monograph.

GEORGE HERZOG

COLUMBIA UNIVERSITY

An Introduction to the Ibo Language. IDA C. WARD. (xiii, 215 pp. 6s. Cambridge: W. Heffer and Sons, 1936.)

Work on "tone languages" of West Africa and elsewhere is still in the pioneering stage. In this book as in her earlier studies on African languages, Ward has dealt skilfully with the problem of tonal configurations, and has demonstrated the importance of tonal analyses in an understanding of the language. The present work is an introduction to Ibo, and only the simpler tonal problems are adequately described. The author realizes that there is much remaining to be done and it is to be hoped she will follow this with a more detailed study.

Miss Ward does not purport to write a grammar. Her aim is twofold: (1) to present the results of research into the tones and tonal behavior of Ibo, and (2) ". . . to introduce the learner to the difficulties of the language gradually. . . ." She meets these requirements admirably.

Although the book is primarily designed for individuals who wish to learn to

[4] S. S. Dornan, *Pygmies and Bushmen of the Kalahari* (London, 1925).

[5] I. Schapera, *The Khoisan Peoples of South Africa* (London, 1930).

speak Ibo, Miss Ward frequently brings in information on the methodology which she followed in her research. This methodological discussion is of interest chiefly to the scientist, but is distracting to those desiring simply a speaking or reading use of Ibo. It might have been wiser to have kept these two features separate to a greater degree than she did, since they have no direct bearing on each other.

Part I presents the main simple constructions of the sentence; Part II the more complex sentence structure and in addition, narrative, description, and conversation.

Miss Ward advises the reader to consult Adams' *A Modern Ibo Grammar* (Oxford University Press) for a fuller explanation of the grammar and for the orthography, from which she deviates in some respects for the purpose of clarification.

"Five degrees of height" (tonal levels) are indicated by means of short lines representing the relative pitch of each syllable. Sloping lines indicate rising and falling tones. These tonal indicators are placed in brackets after or above the words.

The data was collected from ten dialects. The writing up and checking of the material was done in London with the aid of an Onitsha informant. (Onitsha was one of the dialects studied in the field.) This would suggest many possible errors or inconsistencies in the results. However, Ward explains that the tones of the various Ibo dialects are the most uniform parts of the language, and since the tones are the major part of the present work, she feels that the error is not so great.

Some dialectal differences in vowels and consonants are noted, but not in very great detail. There are good discussions of the noun and verb. The classifications of these according to tonal patterns are well demonstrated. The adjective is described in less detail, and the pronoun is treated very briefly. There are no detailed discussions of grammar. Only such grammatical matters as hinge on the behavior of tonal groups within themselves and their effects on one another are presented.

ETHEL G. AGINSKY

COLUMBIA UNIVERSITY

EUROPE AND ASIA

Hällristningarnas skeppsbilder [*Rock-cut Ship Pictures*]. P. DAHLGREN. (88 pp., 97 figs. Kr. 3.75. Göteborg: Erlanders Boktryckeri, 1934.)

This is the second paper by Commodore Dahlgren dealing with Bronze Age rock-carved ship pictures as found chiefly in the Swedish provinces of Bohusland and Eastgothland, and is based upon illustrations derived from various archaeological publications. Writing expressly as a naval expert and not as an archaeologist, the author seeks first to define and to analyze the different types of more or less crudely pictured water-going craft. Next an effort is made through an examination, partly of supposedly contemporary rock pictures of axes, spears, swords, shields, swastikas, etc., but mainly of such actual vessel accessories as swan-necked and animal-headed (mostly horse) prows, ships' crews, steering apparatus, and conventional ornamentation, to determine the relative dates of the various crafts or, in other words, to link their succession to the six archaeologically recognizable

Swedish Bronze Age periods. This correlation is considerably strengthened by the fact that ship pictures are found depicted also on some of the contemporary bronze implements and some bronze razors are actually made in the form of ships. Lastly with a view to developing an independent approach to an absolute chronology for the Swedish rock pictures, consideration is given to the proto-historic and early historic developments of sailing craft in the Mediterranean area. The conclusion is that the Swedish Bronze Age complex, petroglyphs and all, was derived in the main directly or indirectly from that quarter, by way of the Atlantic, beginning with Mediterranean expansion of commerce about 1500 B.C.

Coming down to particulars, we are informed that the petroglyphs dealt with are most of them situated fairly close to the sea, but not directly by the open waters. This disposition is regarded as due mainly to a recent rise of land and the inference is that the artists were mostly seafarers. Oddly enough, however, the ship pictures indicate no special sea activities, such as fishing or fighting. But other delineations, including those of domestic animals, occur actually at a considerable distance inland, suggesting that at least some of the artists were farmers as well as sailors, as is still the case, for example, in parts of Norway. The ship pictures appear, however, to outnumber all other representations, and from the added fact that they are frequently incised also on bronze implements, it seems clear that ships held an important place in the artist's world view. Nevertheless, the significance of the varied pictographic inscriptions, whether religious, commemorative, or purely esthetic, eludes precise determination.

The Swedish petroglyphs were mostly pecked or chiseled, rather than cut or incised, on hard rock surfaces. In some instances metal tools appear to have been employed for the purpose. As works of art the ship pictures are notably stylized or expressionless and consequently difficult to decipher. Such details as sails, oars, and rudders are seldom or never indicated. Yet, though much abbreviated, a variety of vessels is indicated and their approximate order of evolution apparent both as works of art and as seagoing crafts. Disregarding the author's assumption that kayaks and bark boats were once used in northwestern Europe, we may concentrate on his four alleged stages of ship development as actually pictured on the rocks. The first stage, ranging from the first to the third Bronze Age period, or from about 1500 B.C., is represented by simple tub-shaped vessels, thought to have been wicker forms covered with skins, resembling the Irish coracle. Contemporary with this, but lasting on apparently for a long time, were also dugout canoes with straight bottom and more or less vertical ends, as well as simple low-riding plank-built boats. All of these three types are represented by a single contour line and are often manned; the occupants being indicated by vertical incisions. The second stage, contemporary with the third and fourth Bronze Age periods, is characterized by more elaborate plank boats, represented by two contour lines, and further differentiated as having either a straight keel with broad sled-like prow, or a more or less uniformly curving keel, rising at both prow and stern, like the base portion of a rocking chair. Others had a pointed prow like a gig. Thus far all the vessels were of the rowboat or galley type, with or without a drag rudder, and are usually repre-

sented as manned by a crew, presumably for rowing. The third stage, corresponding in time to the fifth and sixth Bronze Age periods, is marked by more elaborate high-riding vessels, unique in having what seems to be a double prow (sometimes also a double stern) such as is still to be seen in Africa. The rudder makes its first appearance and probably, as the crew is not always indicated, sails were sometimes used though not actually pictured. The innermost prow beam rises high above the vessel rail and is topped off with a bird or animal figurehead. Conventional ornamentation in the form of spirals, etc., also appears. The fourth and last vessel stage, covering the period of transition from the Bronze to the Iron Age, around 500 B.C., continues the realistic and ornamental traditions previously established. The characteristic ships are now presumably seagoing sailing vessels, for the crews are no longer indicated.

As an independent detailed study of Swedish rock-cut ship pictures the reviewer finds it a valuable contribution. But with only a partial command of Swedish, some important points may have been missed. Also he would have found his task easier if the illustrations had been grouped chronologically. The author is inclined to take issue with the school archaeologists, partly because of their comparative neglect of the ship pictures and partly also as regards their chronological determinations. Commodore Dahlgren's proposal to shorten the Swedish Bronze Age by 300 years, i.e., from 1800 to 1500 B.C., is however in keeping with present tendencies and it will be interesting to see the reactions on the part of all the Scandinavian archaeologists.

N. C. NELSON

AMERICAN MUSEUM OF NATURAL HISTORY

The Mountain Tadjiks: Materials on the Anthropology of the Tadjiks of Karateghin and Davraz. V. V. GINSBURG. (Transactions, Institute of Anthropology, Ethnography and Archaeology, Vol. 16, Anthropological Series 2. 470 pp., 21 figs., 20 pls., 229 tables, map. 18 rubles. Moscow and Leningrad: Academy of Sciences, 1937. In Russian with English summary.)

Along with titles of military rank, academic degrees have recently been re-established in the Soviet Union. The present work is a dissertation presented to the Academy of Sciences for the degree of Candidate, one grade below that of Doctor. Soviet scientists anticipate that these degrees will be based upon higher standards and represent more significant contributions to knowledge than those awarded elsewhere. Of this it is difficult to judge since few doctorates have as yet been granted. Certainly, however, this volume impresses the reviewer, who admittedly is not a specialist in physical anthropology, as a competent piece of work, thorough in its observations and restrained in its conclusions. It is, as the subtitle indicates, essentially a collection of source material.

The data were gathered in 1932–33 from three districts in the mountainous Pamir region of Tadjikistan. In all 1196 subjects were examined, for most of whom 113 anthropometric measurements or physiological observations were recorded. Of the total number of subjects seventy percent were adult males, the discussion of whose physical traits occupies the greater part of the report. The much smaller

number of observations on women are treated separately. Special sections are devoted to material on the growth of children and to blood groupings.

Although there is a marked tendency to regional variations in particular characters which is encouraged by isolation and consequent inbreeding, it was possible to establish a general physical type for the mountain Tadjiks. This type becomes more clearly defined as one proceeds from the plains toward the mountains, from the north and west to the south and east. In spite of this fact, however, the author indicates that the Tadjiks bear a greater general similarity to the Central Asian groups on the north (Usbegs, Karakalpaks and, in part, Kirghiz) than to the Persians and Afghans. This conclusion is of considerable interest, inasmuch as the opposite has usually been considered the case. It is readily conceded, however, that further work in adjacent regions is desirable in order to clarify the position of the Pamir population.

Blood groupings among the mountain Tadjiks were distributed as follows: O-36.91 percent, A-32.06 percent, B-24.52 percent and AB-6.50 percent. The group O increases as one approaches the mountains.

Two points of methodology arise. In a discussion of Joyce's use of Stein's material from the Pamirs, the reader is somewhat alarmed at a criticism of the "mechanical summary of coefficients of racial similarity." If summaries are not to be "mechanical," the way would seem open for any kind of statistical juggling. It appears, however, that the author's protest is directed against comparisons based on observations of an insignificant number of individuals. With this no one would quarrel. A more troublesome point is the statement that in determining sub-types the absolute dimensions of the head were of greater value than relative indices. Here the logic of applying flexible criteria may seem somewhat dubious. In any case, however, the source material is presented for others to use as they wish.

The ethnographer will find a certain amount of information on demography, dwellings, agriculture, and domestic economy in an introductory section. There is also considerable medico-statistical material on menstruation, hygienic conditions, and endemic disease, especially goitre. An extensive review of previous anthropometric work among the Tadjiks is included.

Earlier Soviet publications have frequently been remarkable for their illegible type, precarious bindings, and the absorbent quality of their paper. It is pleasant to observe the consistent recent improvement of these features.

ALFRED E. HUDSON

YALE UNIVERSITY

L'écriture et les manuscrits Lolos. CHING-CHI YOUNG. (70 pp., 7 figs., 4 pls. Geneva: Imprimerie et Editions Union S.A., 1935.)

Dr Young, of Sun Yat Sen University in Canton, spent the two years 1928–30 among the Lolo of Ta-liang Chan in the mountains of Szechuan. During his sojourn in this remote region of south China, he investigated the culture of these "internally peripheral" people, and assiduously collected manuscripts written in the native characters. He was able to gather more than 130 original specimens, the largest

extant collection of these rare documents, most of which are now deposited in the University at Canton. The present volume describes, analyzes, and classifies the manuscripts, and contains several facsimiles of the script. It represents a preliminary report, which the author promises to expand later into a comprehensive work on Lolo chirography.

RAYMOND KENNEDY

YALE UNIVERSITY

La civilisation Aïnou et les cultures arctiques. GEORGE MONTANDON. (272 pp., 110 figs., 48 pls., 10 maps. 40 fr. Paris: Payot, 1937.)

This volume has two objectives: a summary of existing knowledge on the Ainu and the determination of their cultural position in the circumpolar zone. The descriptive material (Part I) is culled from the literature, supplemented by the author's investigations in six villages in Hokkaido. Most data concern tangible culture (artifacts, industries, art, etc.), since relatively little satisfactory information on social, religious, and other non-material aspects of Ainu life is available and it is now too late to secure much additional evidence by field studies.

The basic thesis of the author is that the Ainu represent the vestige of an old Eurasiatic race. To this end he rejects Sternberg's theory of an Indonesian derivation by attributing to diffusion the southern traits in Ainu culture, most of which are shared by neighboring mainland peoples, among whom they often are of much greater importance. He agrees with Sternberg that many prominent Ainu traits have spread to them from northern centers in relatively recent times but feels that fundamentally Ainu culture is allied with northern cultures. It seems obvious that neither theory solves the problem of racial derivation.

The question of the basic relationship with circumpolar cultures is considered in Part II. The author divides northern cultures into ten *faciès* (Lapp, Ostiak-Samoyed, Altai-Tungus, Yakut, Yukaghir, Koryak-Chukchee, Kamchadal, Gilyak, Eskimo, and Ainu) and attempts to arrange them into Pastoral and Arctic Cultures. However, his methods of evaluation and interpretation are confusing, hence his conclusions are not convincing. The material is not well organized for ready comparison; often is superficial and irrelevant; and in many instances the types of traits listed for one or more tribes are not mentioned for the others. By far the greatest attention is devoted to reindeer herding and associated traits, dog driving, types of sledges, etc., and many interesting and important data are discussed, although the inquiry is by no means exhaustive. The author presupposes on a *Kulturkreis* basis that reindeer herding and associated traits constitute the core complex of Pastoral Culture and thereby feels that he has demonstrated the existence of Pastoral Culture, as preconceived, in all regions where reindeer are domesticated. However, the attempt to correlate with these data other traits assigned to Pastoral Culture is decidedly weak, for no strict lines of demarcation between Pastoral Culture, as conceived, and the chronologically earlier Arctic Culture, as conceived, is supported by the evidence presented. To the reviewer, the author's interesting data indicate that a conception of domestication of reindeer spread through the northern regions;

that there became associated with it in different areas various methods of using, harnessing, and killing these animals, different types of sledges, etc., each of which has undergone its own historical development from roots which either antedate reindeer domestication in local areas or had their beginnings in reindeer use. For instance it seems not unlikely that certain methods of harnessing reindeer may have been previously employed in some areas with dogs, or even by human beings for drawing small or crude "proto-sledges." Even though some of these traits may now appear to act as a unit, and this has not been demonstrated, we have no right to assume that they originated as a complex or have acted as such throughout the period of their use or uses. The indications are similar for the other traits assigned to Pastoral Culture which have no immediate association with reindeer herding.

In respect to many details in Ainu culture the author's work is characterized by a most careful and judicious use of comparative material from neighboring areas. However, when he treats with distant appearances his comparisons are inclined to be quite uncritical. For instance, without reservation he assigns the origin of the ski to the Lapps, the "raquette" type of snowshoe to the Huron; he accepts the possibility of a southern derivation of the Ainu ladder-like cradle (without noting that it is not obviously the same as the cradle in the Celebes with which it is compared) and mentions the appearances in the Andine-Patagonian region (apparently implying trans-Pacific connections) but says nothing of the prominent uses of ladder-like cradles in North America or of the implications involved thereby which would support his own thesis. Scalping among Ostiak, Samoyed, Vogul, ancient Sythians, certain North American Indians, and Indians of the Chaco is summarily dismissed with the assumption that it is a prominent trait which binds the cultures of the New and Old Worlds.

Finding no traces of Totemistic Culture, only slight suggestions of Two Class Culture (women are regarded as having a higher status among Ainu than among their neighbors in their exercise of some choice in marriage and in the lack of marriage by purchase), only a trace of Bow Culture (pottery in old deposits in Japan), no indication of Pastoral Culture (lack of reindeer), and no trace of late Arctic Culture (lack of dog driving), the author concludes that basic Ainu culture represents *un faciès arctico-primitif fruste*, the substratum of all northern cultures from the Lapps to the Eskimo. Emphasis is placed on the suggestion that the Ainu bear cult is derived from bear ceremonies implied for Palaeolithic Europe.

The volume contains a good bibliography on the Ainu and is well illustrated and indexed.

D. S. DAVIDSON

UNIVERSITY OF PENNSYLVANIA

The Birth of China. HERRLEE GLESSNER CREEL. (396 pp., 2 figs., 15 pls., map. $3.75. New York: John Day and Co.; London: Jonathan Cape, 1936.)

This compact and meaty volume will make an instantaneous appeal to all anthropologists with Asiatic interests, not only for its subject matter but for the method by which this is presented. It is an excellent study of the culture history of

the years 1400–600 B.C.—roughly, the Chinese Bronze Age—a period which Chinese tradition has long regarded as a fundamental one in the development of their culture. Dr Creel's present study combines a critical synthesis of the literary and historical sources, with four years of research in China upon the texts and the cultural products of the Shang and Chou periods. The modesty and clear simplicity, with which are presented all the ascertainable facts bearing upon the life and times of this important part of Chinese history, mask but do not conceal the remarkable scholarship which has been required in the production of the present volume.

It is difficult to believe at first that the archaeological investigation of China's past, along lines that are now so familiar in the eastern Mediterranean, is barely ten years old. The excavation of Anyang, the capital of the Shangs, was begun in 1928 by the National Research Institute of History and Philology. Since that time the artistic and cultural achievements of the people of this period have been greeted with a swiftly increasing appreciation by an ever-growing number of both the lay and scientific public. That this is true is witnessed by the great interest in the painted pottery, the bronzes, and the other objects of the early periods shown not long ago at the Chinese Exhibition in London.

The amount of concrete detail which Dr Creel presents in his descriptions of every-day life, of religious practice, social observances, of handicrafts and the arts, to mention but a few items, is nevertheless likely to appear surprising at first. The answer to this is, in part, due to the fact that the Chinese have long enjoyed writing about themselves, their culture and its origins. The reverence paid to the ancestors has encouraged antiquarian interests. This considerable body of material, for obvious reasons, has been known to relatively few Occidentals, and both the historical and the cultural data frequently seemed to be the product of unsubstantiated tradition, if not the imaginative efforts of later scholars. In addition, the greater familiarity and growing preoccupation of Western historians with their own ancient past has had something to do with this attitude; then too, it was conditioned by the insistence of the Chinese on the purely autochthonous character of the whole of Chinese civilization. Dr Creel's great service, in providing us with a fuller answer to the question regarding China's birth and early development, lies in the skillful blending of the new archaeological data with the older information from literary sources. The hundreds of oracle bones recovered from Anyang, the newly excavated exquisite bronze vessels of the period (many of them with inscriptions), the despoiled magnificence of the Shang tombs, all these create a new perspective of the early cultural status of northeast China. It makes possible, also, the objective confirmation of the information embodied in the "Book of Poetry," the "Book of Changes," to mention but two of the documentary sources. The finds at Anyang, in Hsün Hsien, are of inestimable value in themselves, but equally important is their role as a touchstone in transforming our ideas regarding the relative worth of the extant knowledge of ancient Chinese culture.

To the many, first hand knowledge of Chinese history, life, and thought will probably never be available. Of the limited number of Western scholars and scientists of whom this has not been true, only a very few have had the inclination

or the flair for interpretation—the kind of interpretation that makes intelligible a culture which has few homologies and not so many analogies with our own. The late Dr Berthold Laufer and Mr Carl Bishop are two names which come to mind in this connection. The author of the present volume must certainly be included in this select company.

THEODORE D. McCOWN

DOWNE, KENT, ENGLAND

OCEANIA

Totenkult und Lebensglaube bei den Völkern Ost-Indonesiens. THEO KÖRNER. (Studien zur Völkerkunde, Vol. 10. XV, 207 pp. Leipzig: Jordan and Gramberg, 1936.)

Eastern Indonesia, one of the areas most neglected by ethnology, undoubtedly contains the clues to many of the yet unsolved problems of Oceanic culture history. Dr Körner, in his doctoral dissertation, presents an exhaustive analysis of the published material dealing with the funerary practices and the prevalent ideas of life and death among the peoples of these islands. The entire work, including the extensive bibliographical appendix, bears witness to the author's industry and conscientiousness in seeking out and collating all the available sources. Moreover, very few errors of fact appear. The author sacrifices functional integration of the chapters describing the mortuary rituals of the several groups to what is perhaps overmeticulous analytical dissection of the ceremonial procedures, but this is a danger inevitably incurred in all "trait distribution" studies. Nevertheless, while this method devitalizes the descriptive presentation and even causes occasional confusion in the mind of the reader, and while the interpretative conclusions regarding the psychological and historical genesis of the eschatological concepts and practices in the area may be challenged by some, the work as a whole is a valuable compendium of information on a particular segment of culture in a little known region of the world. A map of Eastern Indonesia should have been included in the book for the convenience of readers unfamiliar with the area. Also regrettable is the omission of an index.

RAYMOND KENNEDY

YALE UNIVERSITY

Huwverbod op Grond van Verwantschapsposities in Middel-Java. C. TJ. BERTLING. (Indisch Tijdschrift van het Recht, Vol. 143, No. 2, pp. 119–33, 1936.)

The author of this article advances the theory that in ancient (pre-Hindu) times the Javanese possessed a system of exogamous patrilineal marriage classes with reciprocal spouse exchange, similar to the classic central Australian Arunta arrangement. He derives this inference from : (a) the occurrence in central Java of certain survivalistic marital taboos between specific grades of relationship; (b) numerous present-day indications of an underlying basis of reciprocity in various aspects of the Javanese social scheme, including marriage; and (c) some mythological evidence. Moreover, he points to the existence of more or less well defined reciprocating

marriage classes in parts of Sumatra and Eastern Indonesia, which he regards as peripheral survivals of a system formerly widespread over the entire chain of islands reaching from Sumatra to New Guinea. He suggests the possibility that the diffusion of Hindu culture to Java caused the change to the bilateral, sibless organization now prevalent in the island. Although the argument of the essay is tenuous and fails to carry conviction at certain crucial points, it is stimulating and suggestive of numerous unexploited implications in Javanese marital regulations.

RAYMOND KENNEDY

YALE UNIVERSITY

Die Frau im öffentlichen Leben in Melanesien. JOACHIM HENNING. (Studien zur Völkerkunde, Vol. 12. 171 pp. Leipzig, 1936.)

This recent dissertation presented at Leipzig is a comparative study of certain aspects of the lives of women in New Guinea and Melanesia. In two contributions which are to follow, the author will discuss (1) family life of women: betrothal, marriage, menstruation, sexual life, mourning, widowhood, etc.; (2) women's property and inheritance rights. The present volume summarizes tribe by tribe women's part in the ceremonies of secret societies, in fertility rites, in cannibalistic feasts and war preparations; women's part in economic life; prostitution; and rank as it affects women. As the author often remarks, the subject of his study is often not considered in the monographs upon which he relies or is referred to only casually. Nevertheless this regional survey is useful, particularly to those who know the cultural background of the tribes considered. The author makes no theoretical points and attempts no plotting of migrations or of areas of distribution.

It seems probable that the striking omissions in the author's extensive bibliography are due to the lack of the necessary volumes in the Leipzig library, but the handicap is serious. There is no reference to *Oceania*, and Williams' two volumes on the Orokaiva are not mentioned. The Mailu are discussed with no reference to Malinowski and the only volume used for the Trobriands is *The Sexual Life* in German translation. The author does not know of Mead's volumes, nor of Fortune's nor of Deacon's. It is saddening to realize that international science is hampered to this extent even in such an honest and painstaking study as Dr Henning's.

RUTH BENEDICT

COLUMBIA UNIVERSITY

Aboriginal Australian and Tasmanian Rock Carvings and Paintings. DANIEL SUTHERLAND DAVIDSON. (Memoirs, American Philosophical Society, Vol. 5. xi, 151 pp., 6 pls., 62 figs. $2.00. Philadelphia: American Philosophical Society, 1936.)

In collecting under one cover for the first time the many scattered references to the rupestrian arts of aboriginal Australia and Tasmania, Dr Davidson has provided a welcome addition to his useful series of distributional studies of culture traits in this area. The body of the monograph is devoted to a classified description

of all reported rock carving and rock painting sites, the material being presented critically in as great detail as available data allow and with numerous illustrations in black and white or color. Appendices give a summary catalogue of sites and source materials for both carvings and paintings and the work is concluded with a full bibliography to date.

An introductory section presents a general discussion of motifs, styles, techniques of application, and problems arising in connection with the distribition and antiquity of these mural arts. Rock carvings are found in Tasmania; both carvings and paintings are widely distributed throughout the continent. Because there is no evidence that rock carving is still practiced, and because no paintings have so far been reported for the marginal area of Tasmania, the author suggests it might be concluded, in the absence of stratigraphic data, that the latter art is of more recent origin. However, since there exist large areas for which no information is as yet available, Dr Davidson wisely refrains from any elaborate attempt to translate spatial distributions into temporal terms of historical development, showing thereby a commendable restraint not always exemplified in studies dealing with the still hiatus-full ethonography of Australia.

Rock art throughout the area, as far as it is known, appears to be fundamentally of one school, both in subject matter and in the manner of portrayal, which might be termed an unrealistic naturalism. As in other aspects of aboriginal culture, within the general continental pattern of form and content particular art styles and interests have developed on the basis of variant local emphases. Chiefly for want of source material, the relation of these special developments to local situations is hardly touched upon except in respect to obvious influences of the physical environment. For the same reason, the author has been able to devote little space to the symbolism or meaning of aboriginal mural art, although he states that only in Australia is it still possible "to study the psychological factors so important in any attempt to understand the significance" of this art to the living artists responsible for it. Further studies of native art in relation to its sociological setting, of the sort begun by the author for one section of North Australia, by Elkin for the West Kimberley region, and by others, will doubtless be forthcoming. In the meantime, those interested in the comparative study of primitive art forms, subjects and techniques, who have hitherto been at a great disadvantage in regard to Australian materials, will find the present monograph extremely useful.

LAURISTON SHARP

CORNELL UNIVERSITY

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BRIEF COMMUNICATIONS

THE EMERGENCE HOLE AND THE FOOT DRUM

In the Hopi Winter Solstice ceremony a small pit (about a foot square) in the kiva floor is covered with a wooden slab, five or six feet in length, perforated over the pit, the opening being closed or opened by means of a plug. Performers step on this board and "move in a gliding step from end to end of the plank" or stamp or posture on it. The hole—sipapü—symbolizes the mythical place of emergence and figures conspicuously in other rites, as when the plank is rapped with a plug in the Niman Kachina or set before the cottonwood bower of the Snake dance to be stepped on by the Snake fraternity.[1]

As Dr Parsons has pointed out to me, the Zuñi Scalp ceremonial involves similar dancing on two planks—"the door for the people inside the earth"—by the two Snake girls; and by analogy with modern Acoma practice, a rectangular pit in a prehistoric Zuñi village dating back to about 1000 A.D. has been interpreted as having possibly served to support corresponding planks by means of its slight terminal depressions.[2]

This Pueblo device recalls the Californian foot-drum. The Northern Maidu dug a pit, covered it with a sheet of bark or a section of a log, either variety being "beaten with the bare feet of the performers who stood on the drum and stamped." I am not aware of a specific connection with emergence tales, but a definitely ritualistic context is established. The slab placed over a shallow excavation in the rear of Californian earth-houses to be stamped on by the dancers was held very sacred and occurs only among tribes practising the Kuksu cult, i.e. a ceremonial characterized by initiation and spirit impersonations.[3]

Professor Kroeber calls my attention to a parallel from Tiburon Island, Sonora. Here, too, a plank is laid over a shallow pit, and a solo dancer will perform on it for scarcely three minutes, the step being "a quick double shuffle with alternate feet."[4]

It is difficult to avoid the inference that these occurrences represent a single historical origin. The Californian-Pueblo parallel seems especially significant in view of other suggestions of connection.

ROBERT H. LOWIE

UNIVERSITY OF CALIFORNIA

[1] E. C. Parsons (ed.), *Hopi Journal of Alexander M. Stephen* (Columbia University Contributions to Anthropology, Vol. 23, 1936), pp. 10, 17 sq., 514, 704 f.

[2] Elsie Clews Parsons, *The Scalp Ceremonial of Zuñi* (Memoirs, American Anthropological Association, No. 31, 1924), p. 21; Frank H. H. Roberts, Jr., *The Village of the Great Kivas on the Zuñi Reservation, New Mexico* (Bulletin, Bureau of American Ethnology, No. 111, 1932), pp. 59, 156, plate 11.

[3] R. B. Dixon, *The Northern Maidu* (Bulletin, American Museum of Natural History, Vol. 17, Part 3, 1905), p. 221; A. L. Kroeber, *Handbook of the Indians of California* (Bulletin, Bureau of American Ethnology, No. 78, 1925), pp. 365, 824.

[4] A. L. Kroeber, *The Seri* (Southwest Museum Papers, No. 6, 1931), p. 14.

THE INFLUENCE OF HYMNS ON THE FORM OF INDIAN SONGS

A connection between religion and song is general among the American Indians. Rhythm in the form of song was a means by which the medicinemen put forth their power, and song was believed to be a means by which they could summon supernatural aid in any undertaking. Music, among the Indians, lay in a wholly different field of psychology from that of our own race.

In their earliest contacts with the white men, it was natural for the Indians to look for the source of white "medicine" or unknown power. Probably the hymns and chants of missionaries were given a significance quite alien to the beliefs of the singers. Time passed, and the response to Christianity was far from unanimous on the part of the Indians. They protested against the white man, his customs and his religion, devising two distinct religions of their own—the Ghost Dance, and the Peyote Cult, which has been incorporated as the Native American Church. By this time they were accustomed to the melodic form of hymns. In studying the songs of these two religious movements we find interesting similarities to the simple hymns that were in use by missionaries. The Indians heard the miracles related by missionaries and adopted them into their native religion. Incidents of the New Testament were related to me as belonging to the Grand Medicine Society (Midewiwin) of the Chippewa, and miracles of Jesus Christ were attributed to the East Manido.[1] The simple framework of Chippewa songs may be attributed to early contacts with the music of missionaries, but paired phrases do not characterize the 340 Chippewa songs that have been analyzed. About half these songs are based on the familiar major and minor pentatonic scales and on a major or minor triad with one additional tone.[2]

In the songs of both the Ghost Dance and the Native American Church (Peyote Cult) we find paired phrases as a characteristic. This term is applied to successive phrases with the same rhythm, not to a recurrence of a short rhythmic pattern at intervals during a song. A familiar example of such a pattern occurs in the melody of "America" and in the hymn "My faith looks up to Thee."

We turn first to the study of the Ghost Dance by James Mooney and find this melodic pattern characterizing each of the five songs he presents in notation.[3] It characterizes a group of ten Ghost Dance songs recorded among the Pawnee by the present writer,[4] but is found in only one song of a group of three recently recorded among the Arapaho.[5] This is the opening song of the dance and is probably the

[1] Frances Densmore, *Chippewa Music* (Bulletin, Bureau of American Ethnology, No. 45, 1910), pp. 21–23.

[2] Frances Densmore, *Chippewa Music—II* (Bulletin, Bureau of American Ethnology, No. 53, 1913), pp. 21, 22.

[3] James Mooney, *The Ghost-Dance Religion and the Sioux Outbreak of 1890* (Fourteenth Annual Report, Bureau of American Ethnology, Part 2, 1896), pp. 965–96.

[4] Frances Densmore, *Pawnee Music* (Bulletin, Bureau of American Ethnology, No. 93, 1929), pp. 71–86.

[5] Frances Densmore, *Cheyenne and Arapaho Music* (Southwest Museum Papers, No. 10, 1936), pp. 82–93.

oldest song of the group. It consists of four pairs of phrases. New songs are being composed, and the other songs of the group have peculiarities that suggest a different influence. The Hand Game is closely associated with the Ghost Dance, and paired phrases occur in each of eleven songs of this game recorded among the Pawnee, where the playing of the game was witnessed by the writer and a woman suffered from what was called a "Ghost Dance fit."

Concerning the songs of the Ghost Dance, Dr George Herzog says,

> The Ghost Dance was an Indian religious movement of the late 19th century. Its rise and quick spread were due to two factors, the extinction of the buffalo and the increasing pressure of white settlement and domination. Out of this crisis for which the old Indian religious concepts could neither account nor offer remedy, sprang messianic movements with prophets, new tenets, rituals and songs .... Christian teachings were not unknown to this prophet Wovoka and to some of his predecessors and followers .... The musical features of the Ghost Dance ... are consistent, quite rare in other songs on the Plains, but increasingly common in the West .... White influence has perhaps added to the original simplicity and regularity of the songs. The song texts and the ritual display of blend of Indian and White elements, and a similar blending seems to have taken place in the music.[6]

In his personal study of 33 Ghost Dance songs, Dr Herzog finds the paired phrase pattern in 29 songs, while the remaining four "employ it with modifications."

In the Native American Church the Indian has incorporated what he liked best in the white man's religion, together with the native use of peyote. In a study of this subject among the Winnebago in Wisconsin I recorded the ceremonial songs from the leader in each branch of the cult—that which follows Jesse Clay and that which follows John Rave—as well as songs from members of the organization in high standing. Twenty-two songs were transcribed and others studied, and among the transcribed songs thirteen have the paired phrase pattern, six have it in a modified form, and it is absent in only three songs (unpublished material at the Bureau of American Ethnology). Peyote songs were also recorded among the Cheyenne, the singer being a leader of the ceremonies. He recorded five songs, four being the opening songs of series used at the four portions of the night, and the fifth being a modern song of the cult. Paired phrases did not occur in the modern song but were in three of the others. Hand Game songs were also recorded among the Cheyenne and the game was attended. Paired phrases occur in two of the four recorded songs of this game.[7]

A comparison with the total number of recorded and transcribed songs in all tribes has not been made, but the occurrence of paired phrases as a characteristic in these groups of songs is an interesting observation.

The question may be raised as to why the early religious contacts of the Chippewa might have produced a different result from that in tribes that developed the Ghost Dance and the Native American Church. Without entering into this complex

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[6] George Herzog, *Special Song Types of North American Indian Music* (Zeitschrift für vergleichende Musikwissenschaft, Vol. 3, Nos. 1–2, 1935).

[7] *Cheyenne and Arapaho Music*, pp. 68–78, 82–93.

matter, it may be stated that the early influence among the Chippewa was that of the Roman Catholic Church with its simple, flowing melodies. I recorded songs in British Columbia that were very simple, melodic tunes, and when I asked their origin the Indian said, "We made them up, and sing them when we take the priest from place to place in a canoe." The rhythmic pattern of the songs with paired phrases is reminiscent of a different type of melody, allied to what is commonly known as the Gospel Hymns, which had a wide use in the Middle West, some years ago, and are a general type still used in Protestant missions. It is my opinion, from descriptions of the Native American Church given me by Indians and from a study of both these and the Ghost Dance songs, that the paired phrase pattern is derived from the hymns of the white missionary.

The interlocking of modern religious systems of the Indian and the white man, with their songs, is an interesting subject that awaits the student of Indian music.

FRANCES DENSMORE

RED WING, MINNESOTA

SOL TAX ON THE SOCIAL ORGANIZATION OF THE FOX INDIANS

In *Social Anthropology of North American Tribes* (pp. 243–82)[1] Dr Sol Tax has described the social organization of the Fox Indians, and in many ways the description is accurate and attractively presented. Naturally I am much pleased that the general rules of membership in the dual divisions are given exactly as I gave them years ago.[2] However, I regret to say, there are a number of sins of commission as well as of omission; and some contradictions, and one (unintentional) misstatement on Indian transcription.

On p. 252 we are told that nemise (Table 1) means older sibling of the opposite sex (o br [m.s.]; o sis [w.s.]). The published Sauk, Kickapoo, Shawnee, Menomini, Cree, Ottawa, Potawatomi, Algonkin, Ojibwa, Miami, and other schedules (and I have previously pointed out that the Sauk and Fox systems of consanguinity are the same) have cognates with the meaning older sister, irrespective of the sex of the speaker. Again, nesese is given with the meaning older sibling of the same sex (o br [m.s.]; o sis [w.s.]). The collective published schedules of the same languages, with the exception of Sauk (where Morgan in error has given the Sauk word for younger sibling), indicate the word means older brother irrespective of the sex of the speaker. And note the contradiction with "a man calls his older brother *nesese*, a woman calls her older sister *nemise*" (pp. 248, 252). A study of the kinship terms contained in Jones's *Fox Texts*[3] coupled with those in my own publications as well

[1] Fred Eggan (ed.), *Social Anthropology of North American Tribes* (University of Chicago Publications in Anthropology, Social Anthropology Series, 1937).

[2] See Current Anthropological Literature, Vol. 2, 1913, p. 236; American Anthropologist, Vol. 15, 1913, p. 692; same series, Vol. 26, 1924, p. 97, cf. also p. 98; cf also notes in T. Michelson, *The Mythical Origin of the White Buffalo Dance of the Fox Indians* (Fortieth Annual Report, Bureau of American Ethnology, pp. 23–289, 1925), p. 35.

[3] William Jones, *Fox Texts* (Publications, American Ethnological Society, Vol. 1, 1907). For the theoretical position see T. M. Durlach, *The Relationship Systems of the Tlingit, Haida*

as some discussion of them, would have saved Dr Tax from these errors and contradictions. Note umisähAN (Jones, p. 146, lines 21, 23), her elder sister; kemisähenān (p. 146.17, 18), our (inclusive) elder sister (said by male to a female); usesähAN (p. 146.22), usesähAN^{i} (p. 190.17), her elder brother. Note similarly in Bloomfield's *Menomini Texts*[4] nane' (p. 436; vocative; female speaker), elder brother; u'nä'hsAn, her elder brother (*ibidem*); umē'hsAn (pp. 440, 578), her elder sisters; nī's umēh'simawAk (p. 440), the two elder sisters. (Knowledge of the fundamental principles of Algonquian phonology as expounded by Bloomfield is presupposed.)

On page 252 of Tax's paper nita·gw^{a} is given with the meaning sibling-in-law of the same sex (br-in-l [m.s.]; sis-in-l [w.s.]). Again the collective evidence of the published schedules (save Morgan's Kickapoo ones which are unclear to me) indicate that it does not mean brother-in-law with male speaker; and here again Jones's *Fox Texts* supply the need: nī'tā''^{i}, Oh, my little brother-in-law! (see p. 104.15; male speaker); uwī'tāwAn^{i}, his brother-in-law (see p. 104.15; cf. Menomini nē'taw,[5] my sister's husband, said by male); kī'tāw^{a}, your (sing.) brother-in-law (see p. 106.15; said by female to a male; at p. 200.14 the word is said by a male to a male); kī'tāwAg, your (sing.) brothers-in-law (see p. 200.16; said by male to a male).[6] Note that on the top of this page we read negi·^{ha} ("father's [or "mother's"] sister"). Observe the contradiction with the data under negi·^{ha} and nes'egwis^{a} in Table 1.[7] At the foot of the table it is stated that the orthography of the kinship terms follows my orthography. In reality the orthography seems to be a mixture of mine, API, Jones' and some other system. It may be remarked that the terms given are in non-vocative form, save ne'me'co which is a vocative.

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and Tsimshian (same series, Vol. 11, 1928), pp. 14, 15; not in the bibliography of the book in question. Jones' symbol for the *spiritus asper* and Bloomfield's for the glottal stop have been replaced.

[4] Leonard Bloomfield, *Menomini Texts* (Publications, American Ethnological Society, Vol. 12, 1928).

[5] Bloomfield, *op. cit.*, p. 480.

[6] See William Jones, *Kickapoo Texts* (Publications, American Ethnological Society, Vol. 9, 1915), pp. 60, 62, and his *Ojibwa Texts* (same series, Vol. 7, 2 parts, 1917, 1919), especially Part 2, pp. 442. 19; 456.20; 458.8; 460.24, 26; 462.1, 4; 462.24; 464.7; 464.11 for some confirmatory evidence on these points.

I have used only the published data of the languages named to establish the points at issue, as a matter of convenience. It would be possible to utilize the published data of other Algonquian languages at least in part; but it would take considerable space to show what innovations have taken place. So I will merely add that Escoumains Montagnais, Penobscot, Malecite, Micmac, Passamaquoddy, and Shawnee can be used to substantiate what I have said about "elder brother" and "elder sister," for they have terms cognate with those of the languages mentioned above; and point out that if Morgan's schedules are correct, in Shawnee the term for brother-in-law with male speaker is an extension of the term for brother's wife with female speaker. (The Shawnee term for husband's wife with female speaker apparently is lacking in Morgan's schedules.) The collective evidence of many Algonquian languages shows it is historically the term for sister-in-law with female speaker.

[7] See page 246 for a contradiction as to the disposal of a dead person's horses.

Dr Tax on p. 255 *et seq.* describes the kinship behavior pattern. I see no mention of the fact that in many cases the personal names of certain relatives are not pronounced by others; nor is the subtle distinction between ne'sīmä'A and ne'sīmA explained.

Dr Tax (p. 265) is apparently of the opinion that real exogamy of gentes never existed. I may mention here that my former student Dr M. W. Fisher, by an examination of the tribal rolls of the early 'eighties, etc., has proved true exogamy formerly existed. I quite agree with Dr Tax in believing that the groups of sacred packs is the great thing of Fox society today. But it is obvious that he is hostile to beliefs in historical changes. Yet Fox society today is not what it was three hundred years ago when the Fox lived in palisaded villages. When the Jesuit Relations mention a number of "tribes" near the Fox, which are duly noted in the *Handbook of American Indians*,[8] and which bear the names of living Fox gentes and which "tribes" subsequently disappear from history, it is a fair surmise (though no more) that the former organization of the Fox may have been of the order of Winnebago society of 1829 as given by Atwater.[9] Note that a Sioux word occurs as the designation of any member of one of the tribal moieties. And Fox kinship terms present historical problems. For it is abundantly clear from a linguistic technique that not all of the Fox kinship terms are equally old. Thus for example, though nō'ci'semA, my grandchild, seems old, it is clear that this makes the m-possessive occur in the wrong position (the historically correct position is shown in nō'kume'sA, my grandmother); the proto-Algonquian word was *nōhcihsa in Bloomfield's transcription. Or again, in *necēθehsa, my father-in-law, demanded at least by Algonkin, Arapaho, Atsina, Menomini, and Ojibwa, it has been replaced. So too Fox nenegwā'A, my cross-nephew, is a hypocoristic formation; the older term nenegwAne'sA survives ceremonially. So too, it is very evident many old Algonquian kinship terms have been replaced in Menomini.[10] Note, again, Fox and Ojibwa share a number of kinship terms (with the appropriate phonetic differences) but do not use them precisely the same way; hence innovation is patent. Here then is history. In short, a fruitful study of any kinship terms of any Algonquian tribe must include the cognates in the related languages. This is essentially the position I stated in the Proceedings of the National Academy of Sciences,[11] twenty-one years ago; minor changes in this paper may be necessary, but the main thesis still stands.[12]

TRUMAN MICHELSON

BUREAU OF AMERICAN ETHNOLOGY
WASHINGTON, D. C.

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[8] F. W. Hodge (ed.), *Handbook of the American Indians North of Mexico* (Bulletin, Bureau of American Ethnology, No. 30, 2 parts, 1907, 1910).

[9] See American Anthropologist, Vol. 37, pp 446 *et seq.*, 1935.

[10] It is fitting here to mention Professor Hallowell's researches on changes in kinship terms, without endorsing his conclusions in every given instance.

[11] Vol. 2, pp. 297–300

[12] Published with permission of the Smithsonian Institution

NOTES AND NEWS

CONGRÈS INTERNATIONAL DES SCIENCES ANTHROPOLOGIQUES ET ETHNOLOGIQUES

Announcement is made of the Second Session of the Congrès International des Sciences Anthropologiques et Ethnologiques, meeting at Copenhagen, August 1st–6th, 1938 under the presidency of Thomas Thomsen. Sectional meetings will be held for physical anthropology, psychology, demography, ethnology, ethnography, sociology and religion, linguistics and script. Membership subscription is 30 Danish crowns, payable to the Treasurer of the Congrès, Nationalmuseet, 10 Ny Vestergade, Copenhagen K.

MATERIAL CULTURE NOTES

A new series, *Material Culture Notes*, has been inaugurated by the Ethnographic Laboratory of the Denver Art Museum. Faced with the scant attention now given to studies of material culture, it is announced that "Our plan is to prepare complete objective descriptions of types of Indian material culture which have received little or no attention in print. Unique or exceptional specimens will not be discussed." The four leaflets issued to date, in looseleaf form with detailed descriptions and illustrations, have been prepared by Frederic H. Douglas and collaborators.

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THE CULTURE HISTORY OF THE LAU ISLANDS, FIJI[1]

By LAURA THOMPSON

THE Lau Islands form the eastern border of Fiji. Lakemba in the center of the Lau group was formerly an independent chiefdom, holding all the central and southern islands in tributary relationship. The southern islands, partly of volcanic formation,[2] partly of coral limestone,[3] comprised the chiefdom's rich hinterland. Most of them lack garden land but they produce raw materials used in making important articles of exchange. Outstanding are the hardwoods[4] used for large sailing canoes. Southern Lau supplied all Fiji and also Tonga with these vessels. The type of paper mulberry[5] used for the best barkcloth and pandanus[6] used for the finest mats are also found here, and coconut of excellent quality for oil grows on all the southern islands. Based on these resources, specialized crafts have developed on the islands, which produce the finest canoes, barkcloth, and mats in Fiji. These commodities were traded with Tonga and also collected regularly as tribute to the high chief of Lakemba, who distributed part of them to other chiefdoms in Fiji through a system of gift exchange.

Although of great importance in native economy, the southern islands have offered little to attract the white man on account of their lack of

[1] The following study is a translation of a lecture delivered to the Ethnological Colloquium of the University of Berlin in March, 1937. In its original form this has appeared in Archiv für Anthropologie, Vol. 24, No. 2, 1937. It is part of the results of nine months field work in Fiji under a Yale University-Bishop Museum fellowship. A description of the ethnographic results of the field trip are being published as a Bishop Museum bulletin. The spelling of native words follows David Hazelwood, *A Feejeean and English Dictionary* (Vewa, Fiji, 1850). Place names follow British Admiralty charts.

I express sincere appreciation to Bernhard J. Tüting for assistance in the field and particularly for his work on the native religion.

[2] Mothe and Komo Islands.

[3] Kambara (which has a volcanic outcrop), Namuka, Oneate, Fulanga, and Ongea Islands. (Also Ono and Vatoa, the southernmost islands, which are not included in this study.)

[4] Especially vesi, called greenheart of India (*Intsia bijuga* [Colebr.] Ktze.), also mbau (probably *Pittorporum* Brackenridge).

[5] Masi, masi ntchina, and ndrauthoka, forms of the paper mulberry (*Broussonetia papyrifera* Vent.). The paper mulberry is found on every island but the best quality grows only on Namuka.

[6] On Fulanga, Ongea, and Wangava.

fertile soil. Here a relatively large amount of the old life survives. Hence southern Lau provides a good field for the ethnographer interested in understanding a functioning culture of Fiji in its historic background.

Like other South Sea peoples, the Lauans lack written records. Only a few documents, written by early navigators, missionaries, and government officials[7] are available for this region. Besides these, in reconstructing the history I have relied chiefly on internal evidence such as genealogies,[8] folklore, ceremonies, social structure, property rights, and technology. Archaeological data[9] and selected statements of reliable native informants have been used as supplementary evidence.

The history of the Lau Islands may be divided into five periods: (1) the early period; (2) the period of cultural adaptation following the arrival of immigrants from the west (about ten generations ago); (3) the Tongan period (reaching its height in the middle of the nineteenth century); (4) the European period (beginning about 1835); (5) the period of readjustment.

PERIOD 1

The earliest known inhabitants of the Lau Islands are called kai vanua, "people of the land."[10] They had a simple social organization. They lived in scattered hamlets, called tokatoka, usually located near garden lands or in clearings in the bush.[11] Each hamlet consisted of a sib[12] led by a

[7] There is also an account of the culture on Lakemba Island twenty years ago by A. M. Hocart (*The Lau islands, Fiji*, Bulletin, Bishop Museum, No. 62, Honolulu, 1929).

[8] Genealogies of thirty-nine sibs, extending from five to ten generations, were recorded.

[9] To check the culture history, archaeological sites (including hamlet and village sites, hill fortresses, burial and fortified caves, gaming grounds, cemeteries, and temple sites) were examined on Kambara, Wangava, Namuka, Mothe, Fulanga, and Ongea No excavating was done.

[10] Descendants of these early inhabitants are still called kai vanua. They have retained their sib units and sib dieties, and form one of the two main social divisions into which the Lauans are grouped. The descendants of the immigrants of Period 2 form the other division. This two-fold division has been obscured on many islands, especially on Lakemba and Mothe, due to Tongan and European influences, and on Namuka and Komo where the early population was destroyed and the islands were repopulated by colonists chiefly from Kambara and Wangava. It was worked out on Kambara by means of the sib genealogies, totems, dieties, holy places, hamlet sites, sketch maps of each village, legends, ceremonies, and the statements of old informants. Archaeological excavations should yield further information concerning Period 1.

[11] The natives know which hamlet sites belonged to the land people; for example, Vakawangga, Nawi, old Lomatchi, and Korokoroilulu on Kambara, and Nggilo, Tawali, and Toka on Fulanga.

[12] Each tokatoka was apparently composed of one sib. The tokatoka still retain their local unity though they are now consolidated into coast villages. They are called matanggali (sibs) and are divided into subsibs, called mbatchi ni lovo. The subsibs are composed of vuvale (households). Many sibs today are called by the place names of their old tokatoka.

headman and from these groups have descended the patrilineal sibs of the yavusa vanua (land group) in Lau today. Political power was in the hands of the old men.[13] The land people had little interest in pedigrees[14] and chieftainship was absent. Their traditions contain no reference to warfare and there was apparently little rivalry between groups or individuals.

The land people believed in a great spiritual being or mana-giver, the kalou.[15] Each hamlet had also its own spiritual being, called kalou vu. The names of most of these hamlet dieties have been lost but those recorded are spirits rather than ghosts.[16] The dieties were worshipped by "priests"[17] in sacred places[18] such as caves. They were propitiated with offerings in times of trouble, such as hurricane or drought.[19] The land people had first fruits' and probably boys' initiation[20] rites. Their ceremonies centered in their religious life.

The early inhabitants of each island believed that they originated locally from some natural object such as a tree or an animal which was their vu (forefather). For instance, the people of Kambara believed that they originated from the ngingia tree.[21] There is only one ngingia tree on Kambara.[22] It is located near the beach north of Undu village, which is com-

[13] The title turanga which (according to A. M. Hocart, Man, No. 80, 1913) formerly meant "old man" and now means "noble, senior, father, old man," may have been applied to these old men. A form of gerontocracy is found in parts of Viti Levu.

[14] The land people remember not more than five generations of their sib genealogies.

[15] Information concerning the great kalou was derived from Moto of Undu. He was the oldest inhabitant on Kambara and a member of the land group. He says he was born shortly after Christianity was introduced to the island.

[16] The following kalou vu of the land people were obtained from informants of this group: Mberawalaki (Nangara sib, Kambara), Tutumatua (Matasoata sib, Kambara), Iri Mbuli (Tonganiuthi sib, Kambara), Nainggilo (Nggilo sib, Fulanga), Rongoua (Nasava sib, Fulanga). Informants say that the above kalou vu are spirits, not ghosts.

[17] The "priest" was a sort of possessional shaman. Organized priesthood was apparently absent.

[18] Called na sava like Nggara Kalou, a sacred cave on Kambara, and Kalou, a sacred stone at Toka, Fulanga. I do not know whether the land people had mbure kalou (houses of the gods; see footnote 43) in Period 1, but they had them when the missionaries came, according to informants and to the archaeology.

[19] According to native informants of the land people.

[20] According to Moto, the land people had a secret society called Nanga. Lorimer Fison (*The Nanga, or Sacred Stone Enclosures of Wainimala, Fiji*, Journal, Royal Anthropological Institute, Vol. 14, pp. 14–30, 1884) describes the Nanga of western Viti Levu as a secret society consisting of three age groups, into which all the males of the community were initiated. The purpose of the society was the induction of the men into full tribal membership. The rites took place in a sacred rectangular enclosure, and consisted of offerings to ancestral spirits, circumcision, ordeals, dancing, license, and the distribution of wealth. In 1884 the Nanga ceremonies were no longer performed. Such enclosures were not seen in Lau.

[21] Informant, Moto of Undu. [22] According to native informants.

posed of sibs descending from the early inhabitants of the island. Men of Undu still offer food and kava here in times of distress. According to the natives, the ceremony was last performed in 1929 when a severe drought threatened the food supply on the island. The wanggawangga ni vu (shrine of the forefather) of Kambara is the red shark, called by the title tui natakala or simply ratu. The red shark is the guardian of the land people, and it is still strictly tabu for a descendant of this group to kill, harm, or eat the red shark, or to defend himself against it. The shark is still propitiated with offerings on the beach or on a canoe at sea. Its appearance is considered to be a good omen. The land people of Fulanga believed that they originated from a hen, those of Mothe from an ivi[23] tree, and those of Namuka from a white dog.

The early inhabitants believed in a local abode of the soul after death. The traditional abode of the ghosts of the Kambara land people is Nggara Levu (great cave),[24] a burial cave located near the ngingia tree. The natives say that when a Kambara man died his soul went with a hissing sound to this cave. There is a story that from Nggara Levu the soul went to a high, roof-shaped rock on the reef of the island. The dead of the land people were buried in caves.

The early inhabitants subsisted chiefly by fishing and collecting tubers, fruits, and nuts from the bush.[25] Gardens were much smaller than they are today. Manioc[26] and sweet potato,[27] the main garden products today,[28] found their way into Lau during historic times.

Little definite information was obtained about the technology of the early inhabitants. Probably they lived in caves[29] and in small huts. We found no evidence of pottery or the tapa craft before Period 2.

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[23] *Inocarpus edulis*, Forst.

[24] Also called Nggara-ni-mate (cave of the dead).

[25] On Kambara the chief food besides fish was the wangiri (unidentified) nut, which was preserved by fermentation in salt water. Other bush foods were probably the ivi (*Inocarpus edulis* Forst.), ndawa (*Pometia pinnata* Forst.), aumitha (*Malaisia scandens* Lour. Pl.), mbawaki (unidentified), and wild yam. On Fulanga the chief food was yambia (*Tacca pinnatifida* Forst.).

[26] Forms of the cultivated manihot. [27] *Ipomoea batatas*.

[28] Uvi (yam, *Dioscorea sp.*) and ndalo (taro, *Colocasia antiquorum* Schott) do not grow well on the southern islands. We do not know whether the land people of the fertile volcanic islands (where these tubers grow today) raised them in Period 1, but the number of varieties of each in Lau indicate that the plants have not been introduced recently. (See C. H. Wright, *A List of Fijian Plant Names*, Bulletin, Department of Agriculture, Fiji, No. 10, Suva, 1918.) Kawai (sweet yam, a form of *Dioscorea sp.*), was probably cultivated.

[29] According to informants. We found adz blades, fire holes, shell heaps, potsherds, house-posts, and canoe hulls in caves which they said had been inhabited.

PERIOD 2

About ten generations ago, according to the genealogies of high ranking sibs, a group of warrior immigrants arrived in Lau. The folklore says that these people came from Nakauvandra in northeast Viti Levu, the largest island of the Fiji group. Nakauvandra is the traditional home of Ndengei,[30] the great ancestral god of Fiji. The immigrants worshipped Ndengei as their first forefather. They were led by the warrior hero, Ndaunisai, who came with his brothers in two large double canoes. Ndaunisai landed on Kambara Island. From here the immigrants spread through southern and central Lau and established themselves as the dominant social group. Although the newcomers were warriors, settlement was not necessarily by force. They were accepted as bringing rarama (light) to the inhabitants who had been living in mbutombuto (darkness).[31]

Upon the basic sib unit of the early inhabitants, the immigrants imposed a complicated system of rank, by which every sib stood in definite relationship to every other sib. The ranking system was founded mainly on seniority in relationship to the leader, Ndaunisai, and on success in warfare. Hence sib genealogies were important. Rank was expressed in hereditary sib titles[32] depending on an historical division of sibs. Sibs descended from the immigrants formed the yavusa turanga (chief group). Sibs descended from the early inhabitants formed the yavusa vanua (land group).

The highest rank was held by the high chief, Tui Naiau,[33] who was directly descended in the first born line from the most powerful immigrant, Ndaunisai. The high chief was sacred. His person was protected by many tabus and to break one of these meant death. He was surrounded by strict etiquette and elaborate ceremonial. The head of the chief, his headrest, and his comb were tabu. The head of the pig and the sea turtle were reserved for him. He was addressed by a special phraseology.[34] His birth, circumcision, betrothal, marriage, and death were celebrated by all his

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[30] For further information concerning Ndengei see: Charles Wilkes, *Narrative of the United States' Exploring Expedition, 1838–1842* (Philadelphia, 1845), Vol. 3, p. 83; A. B. Brewster *The Hill Tribes of Fiji* (London, 1922), pp. 81–82, 85.

[31] According to informants.

[32] Such as mata ni vanua (eye or face of the land), the chief's herald; ndau ni nggoli (master fisherman); vaka vanua (chief of crops). Sib titles are held by the sib headman.

[33] For a legend concerning the first Tui Naiau see: G. M. Hennings, *The Murder of the First Tui Naiau* (Transactions, Fijian Society, 1917), pp. 33–37.

[34] This phraseology was in the Mbauan dialect. See Thomas Williams and J. Calvert, *Fiji and the Fijians* (London, 1858), Vol. 1, pp. 37–38.

people with ceremonial presentations of tribute, formal dances,[35] and kava[36] drinking customs with carefully prescribed rituals and precedence.[37] He had one chief wife and many secondary wives.[38] At his death some of these were strangled.[39] The chiefly ceremonial pattern was duplicated less ostentatiously for other members of the group, depending on rank and wealth.

The ranking system was interrelated with a hierarchy of sib ancestor gods called kalou vu. At the top of the hierarchy stood Ndaunisai and his ancestors. The position of each god was determined by his mana, expressed by success in warfare while on earth and by success of his living descendants. In other words, his rank was determined by his pre-mortem and post-mortem prestige.

The stress on rank and its supplement in ancestor worship threw the emphasis in religion from the spiritual "high god" concept of the early inhabitants to the sib ancestor gods of the newcomers.[40] However, although the newcomers worshipped their ancestral gods as sib dieties, the descendants of the early inhabitants retained their sib gods as well as their sib units.

The ancestor god of each sib was embodied in a species of animal or plant which was sacred to the sib. Although much knowledge of sib totems has been lost, at least half of the thirty-seven sibs studied possessed three totems: a species of fish, a species of bird, and a species of tree. The totems were propitiated with ceremonial offerings of food and kava. Each species had a title and its generic name was tabu to members of other sibs in the presence of the owners. The Vuanikathu sib on Kambara, which traces its genealogy ten generations directly to Ndaunisai, owns the mavinda[41] tree, the ongo fish, and the kaisevou bird.[42] Even today the mavinda trees of

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[35] Called meke, especially war dances for men and sitting dances for women.

[36] Yanggona (*Piper methysticum* Forst.).

[37] According to the so-called Fijian custom, which is characterized by great formality, hand clapping, and kava meke singing. The old men told Williams (*op. cit.*, Vol. 1, p. 141) that the true Fijian mode was characterized by the grating of the root on a piece of fine coral.

[38] Williams (*op. cit.*, Vol. 1, pp. 32–33) states that the chief had from ten to fifty or one hundred wives.

[39] As described by informants, by Wilkes (*op. cit.*, Vol. 3, pp. 98–100), and by Williams (*op. cit.*, Vol. 1, pp. 189, 200–201).

[40] The interest of the early population, expressed in their mystical outlook on life and religious ritual, was focused on the inner content of life, while that of the immigrants, expressed in the rank system, ancestor worship, and social ceremonial, was focused on outer form. Even today the land people are less restricted in daily life by formalities and jealousy than the chief group. They seem to be more modest and liberal and to have more sense of humor than members of the chief group.

[41] *Erythrospermum polyandrum* Oliver.

[42] Information concerning the Vuanikathu sib totems was obtained from the sib headman. It is tabu for other members of the sib to discuss them.

the island are cared for by the sib and their fragrant flowers may not be picked. It is tabu for members of the sib to catch or eat the ongo fish. Kaisevou birds, caught by sib members, are rubbed with perfumed oil and released. The ancestor god and his totems were propitiated for mana in order to enhance the social prestige of the sib, the highest social value of the immigrants. They were worshipped by hereditary priests in small temples called mbure kalou.[43] Frequently the priests used their power to enhance the power of the chiefs.[44]

When a man from the immigrant group died, his soul went to Nai Thimbathimba, a jumping-off place on or near each island. Nai Thimbathimba usually faced the west or northwest. In this direction lies Nai Thombothombo, the land of souls, located on the Mbua coast, Vanua Levu, one of the two large islands of Fiji. From Nai Thimbathimba the soul was ferried by canoe to Nai Thombothombo. Members of the yavusa turanga (chief group) today are not aware that the early inhabitants had a local abode of the dead. They believe that the land people also go after death to Nai Thombothombo, but whereas ghosts of the chief group board a hardwood or chiefly canoe, those of the land group journey by a softwood or inferior one into eternity.[45]

The immigrants married women of the land people[46] and since these

[43] House of the god. According to statements and drawings in historical sources, to archaeological sites, and to native informants, the mbure kalou in Lau consisted of a small, oval or rectangular building with a disproportionately high, thatched, gabled roof. The building was raised on a foundation mound, usually oval or round. Fragant plants grew around it and still grow on the old sites, and ceremonial and other weapons were kept in it. See Wilkes, *op. cit.*, Vol. 3, p. 86; J. E. Erskine, *Journal of a Cruise among the Islands of the Western Pacific* (London, 1853), p. 168; Williams and Calvert, *op. cit.*, Vol. 1, pp. 215, 222–23.

[44] On account of his direct contact with the ancestor gods, the priest had considerable power. He presented offerings from the people to the gods before a raid and in times of trouble. He was possessed by the kalou vu. This information was obtained from many informants and checked by the sources. See Wilkes, *op. cit.*, Vol. 3, pp. 86–90, 209; Williams and Calvert, *op. cit.*, Vol. 1, pp. 223–37; Transactions, Fijian Society, 1925–26, p. 30.

[45] This is a general belief in Lau. It is also found in Fiji proper. The belief that souls of the departed go to Nai Thombothombo on Vanua Levu was reported in the nineteenth century from other parts of Fiji, and these reports state that from here the soul was believed to go to Nakauvandra, the abode of Ndengei, the great ancestor god in northeast Viti Levu (Wilkes, *op. cit.*, Vol. 3, p. 85; Erskine, *op. cit.*, p. 225). It is probable that this belief of a return of the soul to Nakauvandra, the land of origin, also formerly existed among the immigrants of Lau.

[46] Today the two groups are mixed physically. However, since the immigrants founded their own sibs and the land people kept theirs, the two groups have maintained their identity through patrilineal descent. Moreover, in spite of the intermarriage between them, the natives claim to be able to see to which group a man belongs by his bearing, manners, and physical

brought land as dowry,[47] the immigrants also became land holders. During the last two generations land has not been transferred from sib to sib.[48] Cross-cousin marriage[49] is the rule. Sibs of the land people still own most of the land, including the larger part of the fertile patches.[50] They take more interest in their gardens than the immigrants, but the latter are by far the better sailors and are also expert fish spearers.

Although fishing, collecting, and gardening[51] continued to furnish the basis for subsistence, production was organized under the immigrants and industry developed a high degree of skill. The chiefs stimulated craftsmanship by attaching specialists, particularly carpenters[52] and fishermen, to their courts and extracting heavy tribute in the form of trade articles from their subjects. Lau became known in Tonga and Fiji for the quality of her materials and workmanship.[53] A lively interisland trade grew up between the coral limestone islands and those of volcanic formation. The fertile volcanic islands exchanged food for manufactured articles such as canoes, woodwork, tapa, and mats from the infertile islands, since the former lacked the natural resources and specialized skills necessary for these crafts.

In the latter part of Period 2 the Levuka people,[54] a group of sailors and potters, were expelled from Mbau. Some of them fled to Levuka, Lakemba, which became a pottery-making center. The Levuka women traveled through the southern islands and made pots wherever they could find potter's clay[55] and a market. They used the lump technic.[56]

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features (see footnote 81). Most villages today are composed of sibs from both groups but tend to be predominantly (80–20%) either one or the other. A few villages are composed of sibs from the land group only. No villages composed entirely of sibs from the chief group were found.

[47] The land was called sovisovi ni ndraundrau (place to collect leaves), for the women are responsible for collecting edible green leaves daily.

[48] These statements were checked by the genealogies and the distribution of garden land. [49] In the classificatory sense. [50] Checked by plans of garden land.

[51] A digging stick was used. Garden tools are described by Williams (Williams and Calvert, *op. cit.*, Vol. 1, pp. 63–64). [52] See footnote 89.

[53] Extracts from Cook (p. 115), Wilson (p. 210), and Bellinghausen (pp. 231–32) in G. C. Henderson, *The Discoverers of the Fiji Islands* (London, 1933).

[54] For information concerning the Levuka group see: Wilkes, *op. cit.*, Vol. 3, pp. 61, 63, 175; Williams and Calvert, *op. cit.*, Vol. 2, pp. 133–34; Transactions, Fijian Society, 1925, p. 24; Hocart, *op. cit.*, 1929, pp. 18–19. [55] I.e. on Kambara and Oneate.

[56] According to Levuka women who have witnessed the process. The art is now lost. Formerly cooking was done by the men, either by steaming in the earth oven, by roasting, or by stone boiling. After the introduction of pottery the women took over a share of the cooking. Daily the men secured, prepared, and steamed the garden produce while the women gathered, prepared, and boiled the fish, jungle greens, and coconut cream mixture, which is part of the daily diet. Food was frequently cooked twice a day in pots instead of once in the earth oven. (See Williams and Calvert, *op. cit.*, Vol. 1, p. 139.)

Rivalry between the high ranking social groups led to strife, and fortifications were built on every island.[57] Natural defences, situated on the edge of coral limestone plateaux or at the summit of volcanic hills, were reinforced by stone walls or by a series of ramparts of earth, surmounted in times of war by fences of reeds and often by a moat. Inside the walls were houses used only in times of danger by the inhabitants of neighboring hamlets. Clubs, spears, bows, and slings were the principal weapons.[58]

Gradually the small, poor islands became dependent upon the larger ones.[59] There arose small chiefdoms like Kambara, which held Namuka, Komo, Wangava, Marambo, and perhaps at one time Fulanga, in tributary relationship. Finally Kambara was absorbed by Lakemba, which became the most powerful chiefdom in Lau.[60]

PERIODS 3 AND 4

The periods of Tongan and European influence, which overlap historically, will be discussed in one section because it is impossible to understand one without the other.

In the early nineteenth century European traders began to visit the main islands of the Fiji group, chiefly to collect sandalwood and bêche-de-mer.[61] At this time there were a number of hostile, independent chiefdoms like Lakemba in Fiji. The most powerful were Mbau and Rewa in southeastern Viti Levu, and Somosomo, Mathuata, and Mbua in east, north and west Vanua Levu respectively. Perhaps the most far-reaching effect of early contact with western civilization was the introduction of firearms

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[57] The following fortresses were examined: on Kambara—Nakorovusa, Naisevou, Nakoroyangai, Nakaka, Nakoro, Matai-Undu, Thaukenaloa; on Wangava—Ndengei, Korombalavu, Nambakua; on Mothe—Ndelaimakotu, Ndelaimothe; on Fulanga—Nauluvatu, Tchinambua.

[58] For the fortifications of the chief's village on Lakemba see Erskine, *op. cit.*, p. 168. For general information concerning fortifications and arms see: Wilkes, *op. cit.*, Vol. 3, pp. 78–81; Williams and Calvert, *op. cit.*, Vol. 1, pp. 43–59, 76; extracts from Cook (p. 108), Bligh (pp. 163–64), and Wilson (p. 210) in Henderson, *op. cit.*

[59] There were three grades of dependency between groups: mbatchi, nggali, and kaisi. The mbatchi included those groups which were compelled to respond when the chief called for help in warfare; the nggali included conquered groups from whom the chief extracted regular tribute in food and industrial produce; and the kaisi included defeated groups reduced to slavery.

[60] The tributary relationships in southern Lau cannot be reconstructed in detail with the available evidence until the islands came under the supremacy of Lakemba.

[61] Williams and Calvert, *op. cit.*, Vol. 1, p. 95; Erskine, *op. cit.*, p. 235; Berthold Seemann, *Viti, an Account of a Government Mission to the Vitian or Fijian Islands in the Years 1860–61* (London, 1862), p. 405; *Journal of William Lockerby, 1808–09* (Hakluyt Society, Ser. 2, No. 52, 1925), p. ix.

and western military tactics into Fiji.[62] This intensified the struggle between the leading chiefdoms and led to the centralization of political power.[63] Larger war forces were used, and cannibalism and human sacrifice increased. Thus it was possible for the chiefdom of Mbau to become dominant in Fiji in the first half of the century.[64]

The centralization of power had another important result. It prepared the way for the penetration of the Tongans into Fiji. Contact of the Fiji islands with Tonga[65] began before the eighteenth century. The missionary Williams[66] states that the recollection of the first voyage from Tonga was lost more than a hundred years before his time. Gradually economic exchange grew up between Tonga and Fiji. It was initiated and carried on by the Tongans,[67] mainly on account of the hardwood of southern Lau. They remained months and even years in Lau while they built large double canoes, far superior to their own.[68] They also visited Mbua for sandalwood,[69] which they used to perfume their oil, and Taveuni for red paroquet[70] feathers, which they traded to Samoa for decorating fine mats.[71] They gave in return Tongan articles such as whales' teeth, barkcloth, and inlaid clubs. They also paid in services, such as the loan of their women and help in warfare.[72] Since the art of warfare was more highly developed in Fiji than in Tonga, young Tongan noblemen often spent a few years in the service of Fijian chiefs in order to learn it.[73] In return for services in warfare the Tongan warriors were given land occasionally, and colonies of Tongans grew up in Lau, Vanua Levu, and the islands of the Koro Sea.[74]

[62] Wilkes, *op. cit.*, Vol. 3, p. 62; Erskine, *op. cit.*, p. 457 footnote; Williams and Calvert, *op. cit.*, Vol. 1, p. 3. [63] Erskine, *op. cit.*, p. 272. [64] Wilkes, *op. cit.*, Vol. 3, pp. 61–65.

[65] The voyage to Tonga took two to four days (Williams and Calvert, *op. cit.*, Vol. 2, p. 3). [66] Williams and Calvert, *op. cit.*, Vol. 1, p. 3.

[67] The Tongans were more daring sailors than the Lauans, who seldom ventured with their canoes out of sight of land. However, they did accompany the Tongans to Tonga occasionally (William Mariner, *An Account of the Natives of the Tonga Islands*, 2nd ed., London, 1818, Vol. 2, pp. 263–64). Cook met Fijians at Tongatabu on his third voyage (Henderson, *op. cit.*, p. 112).

[68] Wilkes, *op. cit.*, Vol. 3, p. 167; Seemann, *op. cit.*, pp. 239–40; Mariner, *op. cit.*, Vol. 2, p. 265. The Tongans learned a great deal about canoe building from the Lauans (*ibid.*, Vol. Vol. 2, p. 263). [69] Yasi (*Santalum yasi* Seem.).

[70] Kula (*Coriphilus solitarius* Latham), Seemann, *op. cit.*, p. 19.

[71] Samoan fine mats and kilts were ornamented with red paroquet feathers usually obtained from Fiji (T. R. Hiroa, *Samoan Material Culture*, Bulletin, Bishop Museum, No. 75, 1930, pp. 256, 281).

[72] Williams and Calvert, *op. cit.*, Vol. 1, pp. 45, 94; Seemann, *op. cit.*, pp. 240, 241.

[73] Mariner, *op. cit.*, Vol. 1, pp. 66–70, 307.

[74] Williams and Calvert, *op. cit.*, Vol. 1, p. 45. The greatest migration of Tongans was to Lakemba and the neighboring islands (*ibid.*, Vol. 2, pp. 4–5). Calvert states that Lakemba

By the middle of the nineteenth century the Tongans in Fiji had grown unruly, and as a result of many complaints against them, King George of Tonga sent the Tongan chief, Maafu,[75] to govern them. Maafu organized a band of Tongan warriors and became powerful in the chiefdom of Lakemba. He secured the support of the missionaries by promising that conquered groups would be required to become Christian. Traders also helped him by extending credit to be repaid by the conquered in coconut oil, bêche-de-mer, and tortoise shell.[76] He was first to use canon on canoes in Fiji.[77] By the clever policy[78] of aiding the weaker side in a struggle between two Fijian groups and using the victory thus gained for his own ends, he succeeded in gaining control of Lau, the Koro Sea, and most of Vanua Levu. He seriously threatened the supremacy of Mbau, and as a last resort Thakombau,[79] the high chief of Mbau, applied to Great Britain for help. The conquest of Fiji by the Tongans was averted when the group became a British Crown Colony in 1874.[80]

Tongan influence in Fiji reached a peak just before British annexation. Its effect upon the culture was weakened by the growth of western influence so that it was never thoroughly assimilated. It was strongest in Lau, especially on Lakemba, the residence of the chief. The Lauans are

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had three Tongan settlements (*ibid.*, Vol. 2, p. 15). Informants on Kambara said that a Tongan settlement was located at Naimarai on the beach near Vunisinu between Ndaku and Nggalinggali. Here they built their double canoes from Kambaran wood. The hull was placed over a trench dug in the ground The workers stood in the trench, which was examined. For other Tongan settlements in Fiji see G. C. Henderson, *Fiji and the Fijians, 1835–1856* (Sydney, 1931), p. 51.

[75] Concerning Maafu see Seeman, *op. cit.*, pp. 241–55; Basil Thomson, *The Fijians* (London, 1908), p. 53.

[76] Seeman, *op cit.*, p. 252. [77] Thomson, *op. cit.*, p. 53 footnote.

[78] First used at Lomaloma, Vanua Mbalavu, a large island in northern Lau (Seemann, *op. cit.*, pp. 242–43).

[79] Thakombau was not only troubled by the Tongans but also blamed for outrages against life and property of American citizens, for which the United States demanded $45,000 indemnity. In 1858 Thakombau negotiated with the British consul in Fiji for cession of Fiji to Great Britain with 200,000 acres of land on condition that the debt to America be paid (Seemann, *op. cit*, p. 246). The end of the war between the Fijians and the Tongans really came in 1861, however, when Commodore Seymour drew up an agreement between the chiefs concerning Mathuata (Vanua Levu) in order to protect the bêche-de-mer trade (*ibid.*, pp. 269–73).

[80] Smythe, sent by Great Britain to investigate the annexation question, recommended acceptance of Fiji for three reasons: (1) as a station for mail lines; (2) as a potential cotton source; (3) as a means of acquiring security in the Pacific (Mrs W. J. Smythe, *Ten Months in Fiji*, 1864, p. 205). Thakombau was given a pension of £1500 per year. He died in 1882 (Thomson, *op. cit.*, p. 55).

taller than the inhabitants of the rest of Fiji. They have markedly lighter skins, less negroid features, and many individuals have wavy hair.[81]

The main influence of the Tongans on Lauan culture[82] has been in the social life and in technology. The Tongan concept of divine chieftainship and rank, expressed in social ceremonial, elaborated that of the Lauans. The whale's tooth won exceptional significance.[83] It became the object of greatest ceremonial and economic value in Lau, a means by which wealth could be condensed, exchanged, and preserved, a symbol of social prestige.[84]

Women, especially those of rank, began to play a role in social life. The rank of a chief was reckoned no longer exclusively through his father, but also through his mother.[85] Women participated not only in the ceremonial preparation and serving of the kava root, but also in drinking it.[86] The chastity of girls of rank was emphasized, and chiefs' daughters were

[81] Tongan mixture alone, however, does not seem to account for the strong Polynesian strain in Lau, most apparent in the chief group. Even today members of the land group are usually smaller, darker, more frizzy-haired and coarser featured than the descendants of the immigrants. This is most striking on islands such as Fulanga where the population is composed largely of land people.

[82] Less canibalism, widow strangling, and burying alive were found in Lau than in Fiji proper. Henderson (*op. cit.*, 1931, p. 32) attributes this fact to Tongan influence.

[83] Jackson, who was two years in Fiji about 1840 and who learned the language, said he was always told that the tambua ndamu (red whales' teeth) were introduced to Fiji by Tongans. They were substituted for yanggona (kava) in ceremonies and called tambua, as kava had previously been called when presented ceremonially. Jackson estimated that there were twenty times as many white as red whales' teeth in Fiji. Frequent oiling and handling turned the teeth red. Whales' teeth, especially red ones, held the highest value in ceremonial exchange, and life and death depended upon them (Erskine, *op. cit.*, p. 439). Also Williams and Calvert (*op. cit.*, Vol. 1, p. 94; Vol. 2, p. 5) state that the Tongans brought whales' teeth to Fiji. Hocart (Man, No. 96, 1914) states that a whale's tooth is called kava in the tauvu presentation ceremony of the Dhakaundrove, Vanua Levu, and evidently kava formerly was the offering.

[84] Mariner (*op. cit.*, Vol. 1, p. 302) states that it was dangerous for a man other than a chief to possess a whale's tooth, but this is not true today.

[85] Williams and Calvert, *op. cit.*, Vol. 1, p. 32.

[86] Hocart states that the Fijian mode of ceremonial kava drinking at state occasions was discontinued under the rule of Maafu (who died in 1881) but it was restored later under the fourth Lord of Naiau (*op. cit.*, 1929, p. 63). The Tongan method is less formal than the Fijian. In the former the kava root was formerly chewed by youths (Williams and Calvert, *op. cit.*, Vol. 1, p. 141). A four-legged Tongan type of bowl is used. There is less hand clapping and no kava mekes are sung. In Lakemba the Tongan method, described by Hocart (*op. cit.*, 1929, pp. 60–63), is used on important occasions. The Fijian kava ceremony is used in the wading ceremony and at the installation of chiefs (*ibid.*, p. 63). In southern Lau the modified Fijian ceremony is used on all formal occasions. Since chewing has been forbidden by the colonial government, the root is either pounded with a stone hammer on a flat slab or with an iron bar pestle in a wooden mortar.

isolated, fattened, and forbidden the sin in preparation for marriage.[87] Perhaps it is also through Tongan influence that Lauan women do not work in the fields, whereas in other parts of Fiji they are responsible for a large part of the gardening.

The legend of Mburotu, an island paradise or land of the dead, located under the sea and filled with beautiful women, probably also came into Lau from Tonga. It is an exotic belief, unrelated to the beliefs of either the early inhabitants or the immigrants, but similar to a concept found in Tonga and other neighboring parts of Polynesia.[88]

Tongan carpenters,[89] sent to Lau to build canoes, had a marked effect on Lauan technology. Not only did the canoe and all woodcrafts gain in importance, but the oval Tongan house was introduced and pushed out the old Lauan form.[90] The oval house was raised on an earth mound and the height of the mound reflected the rank of the owner.[91] With the increased importance of woodcrafts, the prestige of professional carpenters was enhanced.

Another Lauan technic greatly influenced by the Tongans was tapa making. The Tongan rubbing method[92] was introduced and combined with the Fijian stencil method.[93] The women of Mothe and Namuka formed

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[87] A custom still practised on Kandavu Island.

[88] Mariner, *op. cit.*, Vol. 2, pp. 99, 101–102; E. W. Gifford, *Tongan Myths and Tales* (Bulletin, Bishop Museum, No. 8, Honolulu, 1924), pp. 153–80.

[89] During Period 2 a group of carpenter sibs called Matai Sau monopolized the carpentry craft. According to the Lauan lore, the founder of this group, Rokola, came from northeast Viti Levu to Lau before Ndaunisai. Rokola is known in Viti Levu as the god of the carpenters (Brewster, *op. cit.*, p. 249). Each chief had a number of the Matai Sau attached to his retinue, but gradually the chiefs began to employ Tongan carpenters, who competed seriously with the Lauan group. Finally a group of carpenters called Matai Lemaki became established as the high chief's carpenters. This group traces its pedigree to Lemaki who, according to his descendants, came from Samoa through Tonga to Lakemba.

[90] The change was in process when Bligh saw Ngau Island in the Koro Sea west of Lau, on his second voyage (Henderson, *op. cit.*, 1933, p. 164).

[91] Today the height of the house mound depends not only on rank but also on wealth and energy.

[92] Used to make ngatu vaka Tonga (Tongan tapa). Strips of barkcloth, up to about seventy-five meters long, are rubbed with Lauan rust-brown dyes over raised geometric or naturalistic designs called kupetchi. Some of the kupetchi now being used were made in Tonga. Others were made on Lakemba, Ono, and Vanua Mbalavu (islands where Tongan influence has been strong). They are rare and highly valued.

[93] The result is called ngatu vaka vitchi (Fijian tapa). A large, rectangular sheet of fine tapa is decorated, partly by the Tongan rubbing method, partly by the Fijian stencil method. Geometric design units are used for stenciling. Only a few women know how to make ngatu vaka vitchi, which calls for originality and is the most valued tapa in Fiji. It is made well on Matuku and Lakemba (see Williams and Calvert, *op. cit.*, Vol. 1, pp. 65–67).

guilds, according to the Tongan pattern, in order to supply the demand for Lauan barkcloth. Quite likely the naturalistic designs found in Lau and not in Fiji proper are the result of influence from Tonga, where naturalistic designs prevail.

The Tongan chiefs stimulated the production of perfumed oil by exacting large quantities as tribute from the southern islands.[94] To meet the demand, coconut plantations were systematically planted and these served later as a basis for the copra trade.

Turning to European influence, we find that the Tongans were used as a wedge into Fijian culture by the English Wesleyan Methodist missionaries.[95] They came to Lau from their mission center in Tonga and established their first Fijian mission on Lakemba in 1835. They brought Tongan teachers with them[96] and for some time their only converts in Fiji were Tongans.[97] During the first fifteen years the Lakemba mission made slow headway along the Lauans, but finally in 1849 the high chief of Lau was converted[98] and the gospel was soon established on the southern islands. Chapels in charge of native missionaries were built on each island and Sunday was introduced as a day of rest, prayer, and feasts. From the beginning the missionaries waged a death struggle against the houses of the gods, hereditary priesthood, cannibalism, human sacrifice, widow strangling, infanticide, cave burial, and the tattooing of women.[99] In this undertaking they were aided by the colonial government. Warfare soon ceased in the group. The people were forbidden to live in hamlets in the interior of the islands and they moved to new villages along the coast.

Christianity had a great influence on the religio-magic world of the natives. In opposition to the Christian God, the native dieties were said to be devils and the word tevoro (devil) was introduced to the culture.[100] So Christianity compensated for the loss of a hierarchy of old gods with a hierarchy of new devils. For some time the ancestral gods were eclipsed by the Christian God who, because of the white man's power, appeared

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[94] Southern Lau is known for its perfumed coconut oil, prized also in Tonga. To cope with the increased production, large wooden bowls called papasia were used. A few of these may still be seen in Lau.

[95] Williams and Calvert, *op. cit.*, Vol. 2, pp. 5–8; Henderson, *op. cit.*, 1931, p. 32.

[96] Williams and Calvert, *op. cit.*, Vol. 2, p. 12. Six years before the arrival of the first missionaries two Tahitian teachers were sent from Tonga to Lakemba. They were persecuted there and later settled on Oneate (*ibid.*, Vol. 2, p. 9 footnote).

[97] *Ibid.*, Vol. 2, pp. 10–12. [98] *Ibid.*, Vol. 2, p. 138.

[99] The missionaries, however, tried to uphold the system of chiefly tribute (*ibid.*, Vol. 2, p. 75). [100] Hocart, *op. cit.*, 1929, p. 185.

to have more mana. But the old gods were still feared and secretly propitiated, and the natives were tormented by a conflict of loyalties. Gradually, as the natives adapted western ideas to their own, lotu (the gospel taught by the missionaries) tended to become a formality marked by a feast every seventh day and important mainly for its social value.

The immediate result of mission influence, however, was the undermining of the ancestor cult, the basis of the social system. In spite of the efforts of the government and the mission to uphold it, the institution of chieftainship was weakened. Its inner structure depended on the ancestor cult and its outer form was determined by the rank system. Although the government officials tried to appoint local chiefs as their representatives, personality as well as rank had to be considered. The result was to split the authority formerly held exclusively by the chiefs between the chiefs, native government officials, and native missionaries. So there arose a secret society called luve ni wai, which was forbidden by the government. The members of this organization secured a guardian spirit with whose help they predicted the future, discovered new medicines, and originated new dance forms. Many individuals tried in this way to regain their lost prestige.

Under British rule the Mbauan dialect became the official language. Missionaries and officials used it in communicating with the natives, so that today we find spoken in Lau a mixture of the Lauan and Mbauan dialects with a few additional Tongan words.[101] In time schools were started on most islands under native masters, who taught the children to read and write Mbauan. Teachers were trained not only in mission schools but also in a recently established government training school on Viti Levu. An attempt was made to introduce a few simple methods of hygiene, particularly regarding child birth and care.

Western influence, beginning with warfare and religion and working through the social system, finally reached a peak through the economic life. During the last quarter of the nineteenth century copra became an important export product of the Fiji group. As the industry grew, the coconut acreage was increased and the Lauan plantations, which had supplied tribute to the Tongan chief, began to be used commercially. In exchange for copra the Lauans received tobacco,[102] cloth, soap, tinned beef,

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[101] Hocart (*op. cit.*, p. 231) has pointed out that Polynesian words which are distinctly non-Tongan occur in the Lauan dialect. These words may be due to contact with the immigrants from the west in Period 2, but the point cannot be determined without examination of the linguistic evidence.

[102] Tobacco smoking was introduced at the beginning of the nineteenth century (Williams and Calvert, *op. cit.*, Vol. 1, p. 161).

rice, tea, and oil. As they acquired a taste for European trade goods, they began to neglect their other economic pursuits such as fishing, gardening, canoe building, and interisland trade. Men, women, and children worked on the plantations belonging to their sibs. There followed a period of prosperity which lasted until the copra slump after the World War.

Then the copra trade in Lau ended abruptly. Communication with the outside world was cut, and the natives found themselves no longer in a position to secure many trade goods upon which they had become dependent.

PERIOD 5

A new period began. Neglected gardens were cleared and replanted, native crafts began to flourish, trade between the islands revived, and the whole daily routine resembled olden days. The hereditary master fisherman, whose title is determined by rank, regained control of the communal fishing. The first fruits of the harvest were again presented, but now to the old chief and the native colonial official jointly,[103] while in the first and second periods they had been offered to the gods and in the third to the chiefs. Large, single sailing canoes, with improved rigging due to western influence, have replaced the cutter but the double canoe has disappeared. Wooden bowls are made in large quantities but with less skill than in olden days. The tapa and mat making industries are again flourishing and native rope, fish lines, and fish nets are replacing imported articles.

Now the natives have regained most of their old economic independence. A few articles are still imported. Metal axes and bush knives have become quite indispensable, and it would be very difficult for the Lauans to give up trade cloth and cooking pots. Today axes, bush knives, cooking pots, and trade cloth form practically the only economic ties which link southern Lau with the outside world.

British political control is being adjusted more and more to the old order, high ranking families are receiving more attention, and a new pattern of social values is in process of formation.

As far as religion is concerned, the outer forms of Christianity have been incorporated into the native ceremonial life, but the inner conflict, caused by the weakening of the ancestor cult, has not yet been satisfactorily solved. This conflict tends to sap vitality from the culture. It is to a great extent responsible for the restlessness of the natives, in spite of their growing economic and social stability.

Reviewing the culture history of Lau we find:

The first great merging was of a simple, indigenous Melanesian type of culture with a highly organized, intrusive Micronesian-Polynesian

[103] Witnessed in Tokalau, Kambara.

type.[104] The intrusion consisted of one movement (probably extending over a relatively short period of time) and was carried by a group of immigrants from the west, who settled permanently in Lau. The process of adaptation of the two cultures was relatively undisturbed for several generations. The organization pattern of the immigrants gradually affected nearly every phase of the indigenous culture and in time the typical Lauan configuration emerged. The two cultures were sufficiently similar so that a fusion, based on common traits, could take place and sufficiently different so that the result was a new configuration. With the blending of the intrusive culture with the indigenous one, the essential outlines of Lauan culture were set.

The next strong influence in Lauan culture came from Tonga in the east. Tongan elements were introduced into Lau by individuals or by small groups of traders, carpenters, adventurers, and warriors, many of whom later returned to Tonga. The two cultures, namely, the strongly Polynesianized Lauan and the adjacent Polynesian Tongan, were of the same general type, and the result of contact was an elaboration of the social ceremonial and technology of Lau. Tongan influence was checked by European penetration before it had been thoroughly assimilated; it affected the outer form but not the inner constellation of Lauan culture.

The last great intrusion of exotic elements into Lau, namely European civilization, was brought by missionaries, political officers, and traders. Contact with such a totally dissimilar culture weakened the inner structure of the Lauan configuration. For this the new religion was especially responsible. Changes appeared first in the religious, then the social, and finally the economic life. The cultural equilibrium was seriously disturbed but a breakdown was averted by the sudden isolation of the islands resulting from a change in economic conditions in Europe and America. This forced the natives back to economic independence and allowed the culture time for readjustment toward the creation of a new balance.

HONOLULU, T.H.

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[104] Hocart (Man, No. 43, 1915) states that the island of Viti Levu may be divided by a natural barrier of mountains into two culture areas, the western and the eastern. In the western area he found a culture which he briefly characterizes by the following traits: simple social organization, petty chiefs, the Nanga secret society, the square house, the favorite number 5, and barkcloth made in the interior by men. This culture he calls Low Fijian. In the eastern area he found what he calls the High Fijian culture. It is characterized by elaborate social organization, great sacred chiefs, the oblong house, the favorite number 4, barkcloth made by women on the coast, and canoes. This two-fold, geographical picture of the culture of Viti Levu corresponds in general to the historical picture of the first two periods in Lau.

THE CANE BLOWGUN IN CATAWBA AND SOUTHEASTERN ETHNOLOGY

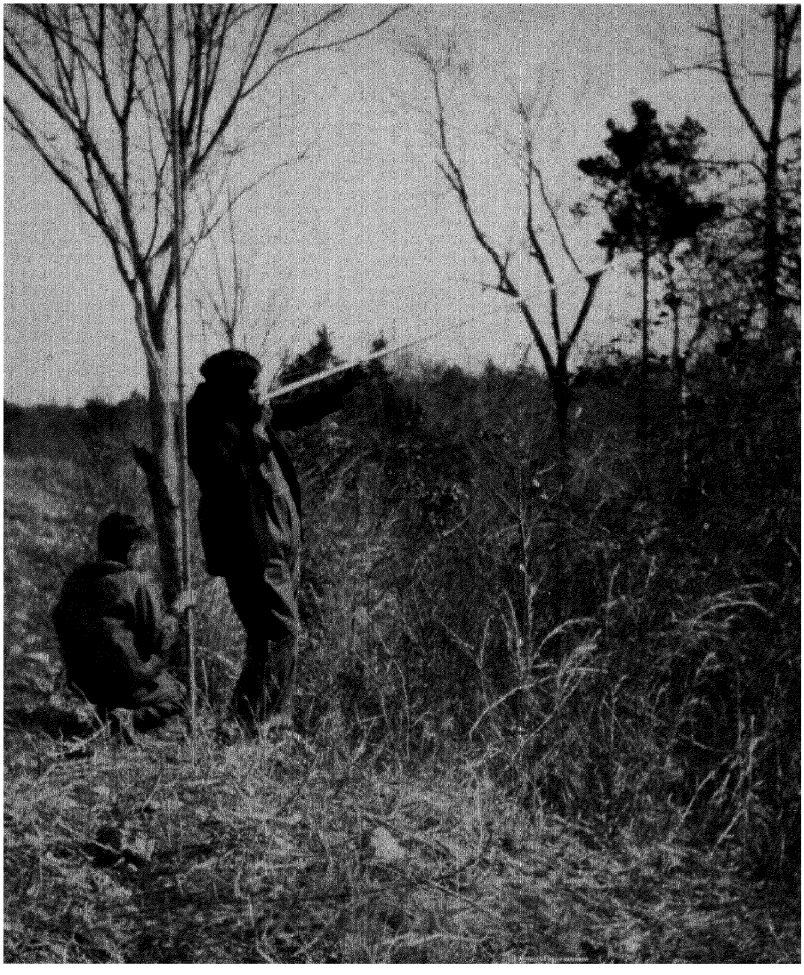
By FRANK G. SPECK

NOTES on another topic of Catawba ethnology are herewith offered as an addition to older sources in published form dealing with the Southeastern Siouan-speaking peoples. Interest has been accumulating in the field of the Southeast, and some demand has been expressed by ethnologists, whose desires should no longer be denied, that information recorded by the writer during some years of investigation among the Catawba and their congeners be made accessible to students of the area. The blowgun was a cultural property of the Catawba. It has, however, passed entirely out of use in the past two generations, at least as an object of common possession and use. Thus it happens that no further information of importance concerning this significant weapon of the chase may be expected to emerge from the memories and habits of living members of the tribe to cause hesitation in releasing data which now unfortunately possess the guise of finality.[1]

With other peoples of the Southeast the Catawba shared the trait of using the blowgun or blowpipe exclusively for purposes of hunting small animals and birds.[2] It has had a desultory survival down to the present

[1] The sources of information for the material presented were Mrs Sampson Owl, Margaret Brown, Henry Saunders and his son Joe Saunders, Ben Harris, Billy Harris and David Harris (all deceased), and Sam Blue. Investigation was conducted through support given by the American Council of Learned Societies, Bureau of American Ethnology, and the Faculty Research Fund, University of Pennsylvania, variously from 1921 until the present year. The ethnological notes were a product incidental to the collection of myths and texts, with grammatical notes, in the Catawba language.

[2] Without attempting to cite references in modern ethnological sources at this time, it may be noted that the simple cane tubular blowgun is known to occur among the recent Cherokee (Mooney, Harrington, Olbrechts, Gilbert and others), Creek (Swanton, Speck), Alibama and Koasati (Paz), Yuchi (Speck), Choctaw (Bushnell), Biloxi (Dorsey), Chitimacha (Swanton), Natchez (Swanton); the reed blowgun among the Iroquois divisions and the Tutelo incorporated with them since the middle of the 18th century. (The absence of mention of the weapon among the Iroquois in the early narratives opens a possibility of its introduction to the Iroquois at the hands of the Tutelo.) The weapon was carried to the Oklahoma domicile of the Cherokee, for which we have the testimony of C. T. Forman, *Journal of a Tour in the Indian Territory* (Chronicles of Oklahoma, Vol. 10, No. 2, June, 1932, p. 244), who mentions in 1844 a conservative Cherokee family there where the children were playing with blowguns and bows and arrows. The first, and apparently only, reference in Seminole narratives may be that of an anonymous author in *Narrative of a Voyage to the Spanish Main in the Ship Two Friends, etc.* (London, 1819, pp. 170–71) describing the efforts of a Seminole boy at St Augustine, Florida, to kill a bird with one. Search would undoubtedly disclose other references. Dr J. R. Swanton has indicated references to the instrument in Louisiana in the narratives of Romans and Bossu (1761).



Catawba using cane blowgun on small birds at edge of swamp.

generation of older men, and is known by the designation wą'sa pu'hę, "cane-blowing," or "dart-blowing" (wą'sa, "cane stalk, arrow").

The problems of its history and distribution in the region are more interesting than the details of its construction, for the Catawba blowgun is extremely simple. It is here economically non-important but ethnologically significant. The first description of the instrument was published by Harrington.[3] My own observations upon its manufacture and use are based upon witnessing the gathering of material, the making, and bird

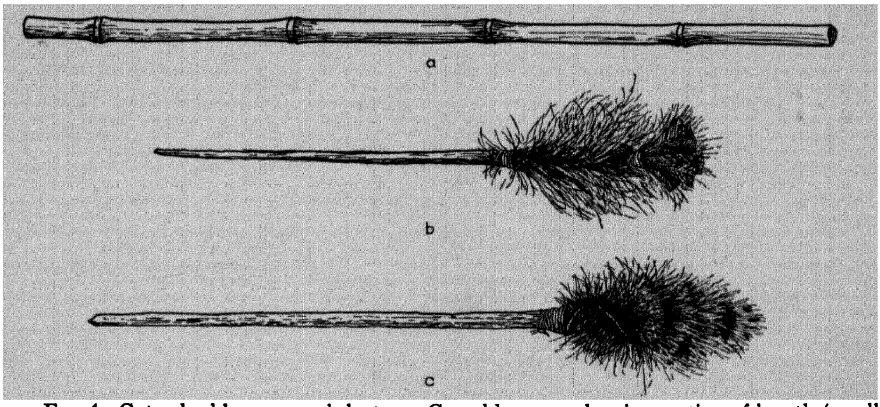


FIG. 1. Catawba blowgun and darts. a, Cane blowgun, showing section of length (small specimen for boy, 52 in.); b, Blowgun dart with down and cut feathers (7½ in.); c, Blowgun dart with rabbit fur (10 in.). (Museum of American Indian, Heye Foundation, Nos. 15-8639, -8637, -9099.)

hunting in the winter of 1930 in company with Joe Saunders (died 1931), who derived his experience from early instruction with his father (see Plate 4). Selected straight shoots of cane (wą'sa), cut from the formerly abundant cane-brakes growing in the Catawba river lowlands, were used. There are some flat muddy stretches along the rivers where the cane-brakes attain a height of some fifteen feet. After being gathered, the canes are hung suspended vertically from the branches of trees with weights (properly stones) attached to their lower ends. This prevents warping

An interesting essay on distributional possibilities of the instrument is that of Georg Friederici, *Die geographische Verbreitung des Blasrohrs in Amerika* (Petermans Mitteilungen, 1911, p. 71, map). This author regards the South American weapon as an introduction from western Oceania. N. A. Sprinzin, *The Blowgun in America, Indonesia and Oceania* (Twenty-third International Congress of Americanists, New York, 1928, pp. 699–704) also discusses the question of distribution, without conclusion.

[3] M. R. Harrington, *Catawba Potters and Their Work* (American Anthropologist, Vol. 10, 1908), p. 401.

while they are seasoning. The cane is next bored with a heated iron rod which burns through the septa. We know nothing, however, of how the boring was accomplished in early times, nor do the Catawba themselves.[4] Saunders believed that a smaller cane ramrod well sharpened would accomplish the breaking through the segment barriers when the cane is green. He did not live to put the idea to test.

In size the Catawba blowgun (fig. 1a) is shorter than the weapon of the Cherokee,[5] this group being the nearest in location to the Catawba. The usual size is five to six feet, though examples made by Joe Saunders, between seven and eight feet long, have been collected. The diameter of the smaller ones is three-quarters of an inch; that of the larger, one and one-quarter inches. No other features of construction entered into the manufacture of any specimens seen or heard of in the tribe. The outside is not scraped to smooth the joints nor is it polished by rubbing, as is frequently the case among the Cherokee.

The darts for the blowgun (fig. 1b, c) are denoted by the monosyllable wą (compare wą'sa, "arrow," also "cane"). The Catawba darts are simple and crude in construction when compared with those of the Cherokee, and are also shorter.[6] They are made of oak, pine, or cedar slivers, usually eight to ten inches in length, three-eighths inch in diameter, and round in cross-section. The point is trimmed sharp. The piston end or plunger is formed of three or four trimmed soft feathers, almost downy in quality, from either chicken or goose, about two inches in length, attached to the blunt end of the sliver. Sometimes the tying is at one place by a winding of thread that holds the bases, allowing the feathers to point backward and spread out. Other darts have the feathers fastened to the wood at both upper and lower ends. The methods of feathering the darts correspond to those in the feathering of Catawba cane arrows—technically crude. Several specimens made by the Saunders men had rabbit fur and rabbit tail tufts bound on in place of the feathers (see fig. 1b, c). Feather- and fur-tufted darts to

[4] Harrington (*ibid.*) describes the Catawba blowgun as being made hollow by rasping out the septa of the cane with a tin-tipped wooden rod. The modern Cherokee employ this method. The darts that he secured were wrapped with cotton.

[5] Also M. R. Harrington, *Cherokee and Earlier Remains on Upper Tennessee River* (Indian Notes and Monographs, Museum of the American Indian, [No. 24], 1922), p. 211.

[6] The long hardwood (locust, mulberry, or white oak; inf'n V. J. Fewkes) blowgun darts of the Cherokee, are often twenty-two inches in length, wrapped with a thick and even plush of thistledown for four to five inches—masterpieces of workmanship. The dried thistle blossoms are gathered at the right season and kept in wooden frames in neat condition. The blowgun equipment of the Cherokee is prepared and kept with a care which is noticeably lacking in Catawba economy throughout.

strike down feathered and furred small game—could one suppose an old synergetic belief to lie hidden in the association now unknown to the Catawba?

Some of the older men remembered the time when the blowgun was used for securing birds for the cook-pot. It was generally during the winter when the bird migrants, robins, thrushes, doves and other medium-sized birds, flocked at dusk to the dense foliage of the junipers which by accident or art are usually to be found growing near the dwellings or along the edges of the cultivated ground. Here in early evening the roosting birds could be picked off without noise to alarm them. The blowgun is extremely effective under such conditions as an auxiliary weapon in food-getting. Imagination might further serve to add to the picture, portraying the use of the instrument to kill small bright plumaged birds in the early days for their feathers to be woven into feather robes. Among the southeastern groups noted for the exquisite art of feather embroidery, the Catawba were specifically included.

While the efficacy of the blowgun in the hands of the earlier Catawba users of the implement can not be accurately judged at the present time, the following notes have some bearing on the question. The dart can ordinarily be sent to a distance of 100 feet, but at that distance it is incapable of penetration; at 25–30 feet, however, it has a penetration sufficient to pierce the skin of a rabbit (or table oilcloth in two thicknesses). If the missile were to strike the eye of a rabbit, quail, or partridge, it could be fatal to the victim. Its drop from the horizontal at this range is about one foot, which necessitates aiming that much higher at the target. The Catawba blowgunner holds the wider end of the weapon to his mouth with the right hand and supports the cane with his left arm extended as he would a rifle—manifestly influenced by familiarity with the latter in these days. The discharging blast from the lungs is given with a sudden force which launches the dart, accompanied by a distinctly audible rippling sound. It seems, however, insufficient to startle its timid victims. Perhaps it is more than a mere accident that the inventive concept which produced the blowgun took cognizance of the innocent sound of its discharge to the ears of birds in the simulation of the whirr of the dart to the flight of a passing flock-mate.

The Cherokee blowgun, in the hands of one of the tribe accustomed to using it, has a considerably longer range, 40 feet being regarded as close target range; while an observer has recorded for it a shooting-match target range of 100 feet. The common killing range for small game is 40–60 feet. The Cherokee cane blowgun, of similar construction to the Catawba

article, is 9–10 feet in length and throws a dart of 21 inches length, having a piston of thistledown. The Cherokee stance is to hold the cane with both hands near to the mouth, not with one hand extended forward as does the Catawba shooter. Lieutenant Timberlake (1754) describes the Cherokee using a blowgun in the following words:

> There are a vast number of lesser sort of game, such as rabbits, squirrels of several sorts, and many other animals, beside turkeys, geese, ducks of several kinds, partridges, pheasants, and an infinity of other birds, pursued only by the children, who, at eight or ten years old, are very expert at killing with a sarbacane, or hollow cane, through which they blow a small dart, whose weakness obliges them to shoot at the eye of the larger sort of prey, which they seldom miss.[7]



FIG. 2. Sketch illustrating twisted shaft of Chitimacha blowgun dart.

In view of what has already been stated concerning the modifications observable in construction of blowgun darts from various tribes of the Southeastern area, it may be noted that still another form is made by the Chitimacha. Specimens obtained from the late chief Benjamin Paul show the following peculiarity. The hardwood splinter constituting the dart is a flat strip twisted for its entire length after the manner of a screw (fig. 2). What effect this can have upon the motion of the dart in flight may be surmised—an addition to its penetrating power caused by its revolution in the air. This is suggestive of the principle of rifling. The thistledown plug of wrapped fibre at the rear end covers about half of the length of the dart. The Chitimacha darts are less than twelve inches in length. This ingeniously conceived addition to the mechanical principles of the blowgun dart in the form of the twist seems to be exclusively recorded among the Chitimacha. I consider it to possess some significance in the historical horizon as a development from within the group; not a trait, through what we know as yet, diffused from or into the immediate locale where it appears. In other respects the Chitimacha blowgun coincides with those of the

[7] *The Memoirs of Lieut. Henry Timberlake* (London, 1765), p. 45. This early mention in North America of the term sarbacane for the blowgun is most interesting. Sarbacane seems to be the usual term for the instrument in the literature of southeastern Asia and South America (Spanish cerbatana, Arabic sabatānah being the given derivation). A warning need hardly be sounded against assuming both the term and the weapon to have invaded the New World from the Malay region across the Pacific! Timberlake evidently had knowledge of the South American terminology, which again might induce someone to think that the term was employed by the Cherokee; therefore that the Cherokee had in their turn acquired the idea of the weapon itself through outside sources.

Cherokee and Catawba, resembling the latter in its shorter length.

The occurrence of the blowgun in the Southeastern area of North America awakens some interesting thoughts in the direction of the diffusion theory. While the mechanism itself, not a very complicated one in respect to its composition, has been thought by several students to form part of a complex diffused from South America if not from a more distant locus, we must give weight to considerations that might tend to account for its production independently through long experience with hunting devices, progressing from the simple to the more advanced. In southeastern North America the blowgun is regularly no more than a simple cane tube (*Arundinaria*), lacking the sights and the basketry covering or reinforcements at the ends occurring to the southward; the darts are never poisoned; and it is not important as a hunting mechanism.[8] Moreover, we find among the Catawba for one tribe—and it may be found elsewhere (as among the Iroquois) were it made the subject of questioning—that a short blowgun of simple elder (*Sambucus*) shoot is likewise known. It is here fundamentally a *simple* weapon. And yet there are some analogies with the implement in use among the Neotropical peoples; for instance, as Nordenskiöld has pointed out, in the non-occurrence together of the blowgun and the blunt or round-headed bird hunting arrow (the blunt arrow is not reported in the Southeast); in the form of the dart and its cotton or feathered piston; in its limit of use to small game hunting; and in the position or stance in which it is held when in use. The history of derivation of the blowgun in the Southeast remains for the present, after all, an open question. To my mind the case in favor of its being a diffused trait from South America is no stronger than that for its local invention.

Not desiring to obscure my purpose of keeping the topic presented within the bounds of an objective essay, a few thoughts may yet be tolerated in respect to the blowgun as a general invention of people in the south-

[8] To cite an exception, a reference may be given to the Creek Indians (Taskigi Town group) who formerly used a composite form of the weapon "made of a cane stalk about as long as a man is tall. . . . To remove the pith it was sometimes necessary to section the cane, then bind it together again" (F. G. Speck, *The Creek Indians of Taskigi Town*, Memoirs, American Anthropological Association, Vol. 2, Part 2, 1908, p. 110). This information was derived from an old Creek ceremonial leader. Another exception to the remarks above: Mr Louis Korn informs me of a compound blowgun from the Houma (Louisiana) which he examined in the collections of the Museum of the American Indian, Heye Foundation. It is described as a split cypress stick, the two halves grooved to form a bore, cord wrapped, and coated with wax or gum. The darts are twisted into a screw-like form (*Guide to the Museum, First Floor*, Indian Notes and Monographs, Museum of the American Indian, [No. 30], 1922, pp. 72–73). Through Dr Fred Kniffen and Dr Frans Blom I learn that trappers around Houma use a blowgun of the above type. Georges Billiout, a Houma camped near Pointe de Chien, La., described to me a blowgun of alder with darts of twisted cane (see Fig. 2).

ern regions. Active inventiveness in small devices implies, according to some axioms of reasoning, a resourcefulness of mind which needs only to be magnified to account for a major discovery like the blowgun in its more perfected stages. The evidences of manifold ingenuity exhibited in the series of modified forms of dart might accordingly be interpreted as steps in the progression of a discovery indigenous to the cultural soil of the Southeast.

The restriction of the blowgun to cultural levels of relatively "high ethnological status" (*vide* C. Hose, Encyclopaedia Britannica, Vol. 3, 1929, p. 750) would seem to be a consideration which would not necessarily apply from the world-wide point of view—perhaps not outside of the Indonesian region. In southeastern North America the involved mechanical progress of boring and polishing the interior of the cane tube, and the adaptation of a lethal poison to improve the efficacy of the darts, are all wanting. The instrument is essentially one of simple development and inefficiency. In the Southeast, furthermore, the knowledge of vegetal poisons is not wanting, but the two discoveries have never been allied to create the death-dealing mechanism which appears in Indonesia and South America. To include two such outwardly unrelated phases of killing devices in the same explanatory category may seem to some, as it does to me, like reading a purpose into an accident in culture history. The popgun of cane identical with the familiar European toy is also a product of the Catawba. It might be asked, from the viewpoint of the inventive faculty in ethnology at large, in what manner are we to regard the popgun as a compression toy known in recent times to Catawba as well as to European toy-makers? Its creation involves essentially the same understandings of air-power and discharge as the blowgun, and the two may be functionally related inventions arising in their respective areas.

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PENNSYLVANIA

PERSONAL NAMES OF THE TODAS[1]

By M. B. EMENEAU

IN societies organized in sibs, the sib unit sometimes has a name which is borne by all its members. Personal names often have no relation to the sib unit, but either are drawn from a common stock which may be utilized indiscriminately by all the sibs, or are invented according to patterns which are distinct from the pattern of sib-division. The latter type is seen in the system employed by the Plains Indians of North America. The former resembles the family naming system employed normally in European or European-derived cultures, where it is not combined with a sib-division except in such groups as the Scottish clans.

§1. An example of sib-division combined with utilization of a common stock of personal names is seen in the Coorgs of South India. Among these people the patrilineal sibs have each a name which is borne by every member of the sib. Personal names are drawn from a rather small stock, consisting of some sixty names for men and a slightly smaller number for women. A male or an unmarried female is identified by the sib-name, the father's personal name, and the individual's personal name, in this order. A married female bears her husband's sib-name, his personal name, and her own personal name. There seems to be no tendency for personal names to be linked with particular sibs. A slight tendency is found to preserve the use of particular personal names within the family (as distinguished from the sib) by giving to a child the name of some dead ancestor within the family whose memory it is desired to perpetuate. It is doubtful, however, whether this tendency has even as much force as the similar tendency in European or American society; a notable difference between the two is that the Coorgs do not give such names during the lifetime of the earlier bearer of the name, since this would cause a certain amount of confusion within the family.

§2. Among the Todas, a pastoral tribe of the Nilgiris in South India, the method of giving names is different from both those outlined above. The individual does not bear a name which is common to all members of his

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[1] This paper represents a small part of the work which I have done on the non-literary languages of South India, under the auspices and with the financial aid of the American Council of Learned Societies in 1935–36 and of the American Philosophical Society (Penrose Fund) in 1936–37. I have to acknowledge my gratitude to Dr David Mandelbaum, who read over the paper and made numerous helpful suggestions. The system of phonemic writing for Toda words is the same as that employed in my paper, *Toda Marriage Regulations and Taboos* (American Anthropologist, Vol. 39, pp. 103–12, 1937); in that paper, f, θ, x should be read for v, δ, γ in Toda words throughout. Accent is always on the initial syllable.

patrilineal sib. Only one name is borne by each individual. Rivers[2] mentions the fact that, if two individuals bear the same name, one of them will change his name. Such identity of name is avoided merely to escape confusion and misunderstanding. Identical names can seldom occur among men for reasons that will be clear later in this paper. They are more likely to occur among women. One recent case is that of two women who were named sondɑrɪɪdz. One of these is the daughter of ɪɪmɯxfɯn (19, Imokhvan)[3] and she retains the name in this form. The other is the daughter of midzxŭɯɪr (63, Midjkudr); she is usually called sondɯr to distinguish her from the other, though her full name may still be used when there is no possibility of confusion.

§3. To make clear the background of the naming system it is necessary to clarify the religious system of the Todas. Each sib possesses a number of munds,[4] which are essentially holy places or gods with dwelling houses attached. The holy place or god is the localized dairy-complex, all the elements of which are holy. The elements are the sacred buffaloes (as opposed to the non-sacred buffaloes), the dairies, and the milk of the buffaloes. No further localization of the divinity appears to be made within the complex. All the contents of the dairies, bells, tools, coagulant (called pep), partake to some degree of the holiness of the complex, and, like the buffaloes and the milk, must not be profaned by contact with profane persons; but it cannot be discovered that any object or place is especially the seat of the divinity. Linguistic evidence has made it clear that this is correct. In both songs and speech the mund (excluding the dwelling houses) is referred to as töŭ "god" or noɪr "sacred place" or by the compound töŭnoɪr, and my informants can make no distinction between these terms, or between mod "mund" and noɪr when these two form a pair in the songs.[5] These divinities are to some extent anthropomorphic, since it is said that all the gods, including the gods of the Hindu pantheon worshipped in the plains, the Toda gods who are mountains and rivers of the Nilgiris, as well as the god öɪn who lives in the world of the dead, and the gods who are the munds, i.e. the töŭnoɪr, hold assemblies to settle their disputes in the dairy of the mund myɪnj.

[2] W. H. R. Rivers, *The Todas* (London, 1906), p. 625. He has a chapter on "Personal Names," pp. 619–27.

[3] The number of the genealogical table in Rivers and the spelling of the name in the table will be given for each individual mentioned.

[4] Toda terminology applies the word mod to (1) the sib as a whole, (2) each separate dairy institution plus a dwelling place which belongs to the sib, and in several other ways which are not in point here.

[5] For the technique of the songs, see my paper, *The Songs of the Todas* (Proceedings. American Philosophical Society, Vol. 77, pp. 543–60, 1937).

It is said that the munds and the other gods assemble there, and their approach and departure are known to the Todas when they see whirlwinds going into or leaving the dairy. All lamps when they are extinguished at night go to this dairy to provide light in case the gods are holding a night-assembly.

§4. The prayer at each dairy is made up of a list of names of objects connected with the dairy-complex, in forms usually different from their ordinary names. These are the kŭɑsm (the word is best translated as "sacred name"). For each mund (in sense 2 of footnote 4) there is a pair of kŭɑsm, as also for the people of the sib as a whole (among the toɪrθɑsoɪl̩ moiety, but not among the töŭfiljoɪl̩), for the buffaloes of the sib, and for the funeral-munds, tiɪ-dairies (i.e. the most sacred grade of dairy which never has dwelling houses attached), and their buffaloes. Some of the more important mountains, rivers, Badaga villages, and other localities on the Nilgiris have similar pairs of kŭɑsm, while all the other less important localities, small streams, valleys, ravines, hills, groves and the paths through them, level grounds and rocky grounds on the hills, buffalo tracks, etc., have a name and at least one kŭɑsm by which they are mentioned in prayers. All these places are regarded as being closely associated with some mund, generally the nearest one. In addition, within the mund there are dairies, pens, calf-sheds, watering-places, rocks, cooking-places used at ceremonies, trees, shady places where the people sit, all with names and at least one kŭɑsm which is used in prayers. The bells in dairies are also named. All such things and places are referred to in songs also by the kŭɑsm.

MEN'S NAMES

§5. Each sib then has associated with it a large number of names and kŭɑsm, most of them with sacred associations. It is from these that men are named. In many cases a name is used without change. ŭɯşoɪr̩ of the meljgɑɪsoɪl̩ (48, Ushadr) is named after the chief male funeral-place of the sib. pɑɪng (47, Pongg) is named after a bell in one of the dairies of the sib. mɑɪkɑɪs of the kɑɪsoɪl̩ (10, Makars) has the name of one of the tiɪ-places of this sib. toɪsjɑlf of the kɑɪsoɪl̩ (15, Tarziolv) has the name of the kur̩poljdairy at the mund kɑɪs. koɪndŭɯɪ of the toɪroɪr̩oɪl̩ (23, Kandu) is named after the pen of the kogfoljdairy at the mund toɪroɪr̩. pepoɪb of the meljgɑɪsoɪl̩ (44, Pepob) has the name of a snake said to live at kɯsɑɪs, a mund of the sib. köɪroɪr̩xŭɯtn̩ of the köɪroɪr̩oɪl̩ (26, Keradrkutan) has as his name the second kŭɑsm of the people of the sib. oɪtjɑrz of the pɯrgoɪr̩oɪl̩ (34, Atiurz) has the second kŭɑsm of the people of the sib. munoɪnbiɪʃtj, son of koɪtsiɪθj (12, Kacheidi) has one of the kŭɑsm of the buffaloes of his sib.

§6. Most frequently some modification is made in the name. Often this is done to avoid a personal name that is in use simultaneously or that has been used in a previous generation. See e.g. tæɪθj in §12 and tæɪθjxæɪn, the name of his great-grandson explained in §16. tɯɪpɯsxŭɯṭn, son of tæɪpɑx (20, Teipakh), and tɯɪfnɯs (25, Tiveners) are both called after the kogfol̥j dairy at the mund toɪroɪr, which is named tɯɪpɯsfoɪŭ. In the case of one man pɑnɯs (23, Paners), I was told that his real name is koɪnɯs, which is the first kŭɑsm of the mund pɑʃtɑɪr of the toɪroɪroɪl̥, but that a real kŭɑsm of a mund cannot be used in addressing a man for fear he may suffer misfortune or die. The name pɑnɯs is based on the second kŭɑsm of this mund, pɑɪngub, with unusual changes. This explanation may be correct, but two men of this same sib are called by the unchanged kŭɑsm of two munds which were abandoned so long ago that the real names are not remembered, viz. öɪkjɑl̥f (24, Irkiolv) after the kŭɑsm öɪrṇɯs, öɪkjɑl̥f, and oɪxŭɯlṇ (24, Orguln) after the kŭɑsm oɪrṇɯs, oɪxŭɯlṇ; the kŭɑsm are remembered from their use in the prayer of the calf-sacrifice of this sib. That we are not dealing in these two cases with munds whose gods are regarded as no longer existent is clear, for kiɪrṇɯs of the niɾjoɪl̥ (43, Kidrners) derives his name from the unchanged second kŭɑsm of the mund niɾj, and orjxɑɪs of the möɪroɪl̥ (16, Odikars) from the unchanged second kŭɑsm of the mund pɑn. In fact, so long as an abandoned mund is remembered at all, it may be reoccupied, and it seems clear that the Todas do not believe that the god vanishes when a mund is abandoned.

§7. Modification follows a number of patterns, some of them not always clear. If a place-name is being adapted, such suffixes or second members of compounds which characterize the locality are frequently dropped entirely or replaced by others. E.g. töŭmo*d* (24, Teimad) <a valley (pɑl̥) called töŭmo*d*fɑl̥. mɑgoj (24, Mogai) <mɑgojnæɪs "cubit (mɑgoj)-shade (næɪs)," a shady place at the male funeral-place tyl̥tsŭɯɪ of his sib.[6] kɑkɑɪr (20, Kakar) <kɑkɑɪrxŭɯt, an open place in the middle of thickets (kŭɯt) near the mund toɪroɪr. See also kæɪn in §16. If another suffix is used, it sometimes is one that is appropriate to the locality, as in kiɪθjmuɾj (20, Kidimudri) <kiɪθjmɯn, a mountain; mɯn is the peak of a hill and muɾj may have the same meaning, though it denotes most generally the top of anything which is shaped well, e.g. a conical dairy, a gracefully spreading tree, a man's hair cut in the style peculiar to the Todas. It is probably substituted here because of this emotive connotation.

[6] Rivers (p. 623) supposed wrongly that this man was named "from the language of everyday life." His name is undoubtedly the same as the common noun in phonetics, but derived as it is by curtailment of a place-name associated with the sib, its connotations are very different from those of the common noun.

§8. In many of the names the substituted suffix is -kŭɯɪr. This is clearly the noun kŭɯɪr "stream," "path," or "horn." One man kŭɑɪngŭɯɪr (63, Kwongudr) is named after kŭɑɪngŭɯɪr, the meeting place of the assembly of the tribe; the place-name is that of a stream flowing in the valley at this place. noɪrgŭɯɪr (62, Nargudr) <a stream and pool near the mund tögoɪr. In some other personal names it is probable that this suffix has reference to a stream; e.g. iɪşxŭɯɪr (21, Idrshkwòdr) <iɪşfɑl, a valley (pɑl) near the mund toɪroɪr; iɪdzxŭɯɪr (23, Idjkudr) <iɪdzfɑl, a valley near the mund paʃtɑɪr; in both these cases the valley has a stream. töɪsxŭɯɪr (63, Terkudr) <a path near the mund æɪpɯsgoɪr. In many other names however -kŭɯɪr can have no reference to a stream or a path, and there is great probability that the word kŭɯɪr has its other meaning "horn;" so in fact the Todas analyze the names. The horns of their buffaloes are much admired by the Todas, and in such a buffalo-centred culture it is not surprising that "horn" should be an element in names. This use is clear in such a name as kæɪnxŭɯɪr (62, Kangudr), where kæɪn refers to a sacred buffalo of his sib. Such a case as kerxŭɯɪr (63, Kergudr) <the mund kerxoɪr, is much less obvious and is clearly of the same nature as those names discussed in §9. The word has come to be felt as a suffix that may be used with little regard to the meaning but merely for the connotive force. For the specific origin of the use we may, however, reasonably look to the use of stream-names and path-names and the presence in the language of the homonyms kŭɯɪr "stream" or "path" and kŭɯɪr "horn."[7]

[7] I have made this specific analysis for the benefit of psychologists who may wish to find in these personal names a phallic significance. Such a significance is certainly not there on the surface. Moreover, in the erotic songs which I have recorded, where phallic symbolism is to be looked for, the horn does not occur as a phallic symbol. A number of such symbols that are used are given in the following paragraphs.

The most common symbolism that is to be regarded as sexual is that of the bee and the flower: a specimen of this type is given in *The Songs of the Todas*, p. 551. I also remark there that the same metaphor is used of a man catching a buffalo at a funeral, and finally in a marginal use to describe the activities of the bed-bug.

In one of the songs in which a woman is represented as talking about the party that had come to carry her off to give her in marriage to an old man comes the couplet:

puɪfysmitʃ	pɑrk æɪfɯs
flower-lime fruit	crowd-for I became
toɾjoɪnoɪl̥	tuɪtk æɪfɯs
pole-who are-men	bushes-to they became

i.e. "for the crowd of Toda men I have become a lime; men who are (or, who have) long poles have hidden in the bushes to carry me off." The toɾj is a long pole carried at a two-day funeral; reference to the lime is common in such connections, especially as a vocative addressed to a beautiful woman. The informants said that in this passage there is another meaning, viz. that since the husband is old, she thinks that all the Todas will come to have intercourse with

§9. The frequent suffix -kŭɯtn has defied analysis. Rivers[8] thought that it was connected with the word for "horn," but the difference in the quantity of the diphthongs makes it unlikely, and my informants refuse to recognize any connexion between the two. It may be added to a word, as in pɯtʃofxŭɯtn (a son of sirjaɪr 20) < pɯtʃof, a mountain near the mund toɪroɪr, or it may be substituted for another suffix, as in tɯɪpɯsxŭɯtn (20; referred in §6) < tɯɪpɯsfoɪŭ, the kogfol'j dairy at toɪroɪr; kæɪnxŭɯtn, son of toɪliɪθj and nertnɯs (24, Tòleidi and Nertiners) < kæɪnal'f, the ŭɯsol'j dairy at the mund karkos. A son of kŭaroɪn of the pɯrgoɪrol' (34, Kwodron) is named asojxŭɯtn < asojɯr, the buffaloes of the tiɪ of this sib. köɪkisjxŭɯtn (20, Kekarikutan, which represents the Toda form of the Badaga name of another man kekæɪrjxŭɯtn in table 25) < köɪkisjxuḍḍ, the name of buffalo-track (kuḍḍ) leading to the mund toɪroɪr.

§10. Another frequent suffixal element is -fɯn; e.g. in karoɾfɯn (21, Karadrvan) < karoɾθɯṭ, name of a mountain (tɯṭ) near toɪroɪr; ɯɾkŭɯɪrfɯn (24, Idrkudrvan) < ɯrkŭɯɪrfaɪɯ, a river (paɪɯ) near Mt. karoɾ; pɯtʃefɯn (24, Pachievan) < pɯtʃof, a mountain near toɪroɪr (cf. pɯtʃofxŭɯtn in §9); kergæɪrfɯn (25, Kerskedrvan) < kergæɪrfaɪɯ, a stream near the mund paʃtaɪr; asojfɯn < asojɯr, the buffaloes of the tiɪ belonging to the pɯrgoɪroɪl', is another name of poɪtɯs (35, Patirsh; cf. asojxŭɯtn in §9); mupuɪfɯn (16, Mopuvan) < mupuɪf, the conspicuous mountain, called Staircase by the English. This element may be added to the name of any old man, apparently as a mark of respect, e.g. pæɪθoɪl' or pæɪθoɪl'fɯn, kæɪnodz or kæɪnodzfɯn; and many names which have this final element may also appear without it in familiar speech. Rivers was told that the suffix is the same as the word for the stone circles on the summits of some hills, but the Toda word for these circles is mɯn, which cannot be connected with the suffix. The word pɯn, which is the only possibility, means "gold, the gold bangle kept in a dairy; the privates of a small girl; afterwards" and none of these meanings seems to be appropriate, except possibly the first.[9]

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her by stealth; each will hide in the bushes and wait for her to come to him. It is undoubtedly the erotic language that suggests this second meaning. The phallic bearings of the passage are obvious.

Other passages which can be interpreted as containing sexual symbolism, either conscious or unconscious, will be available when my complete collection of song-texts is published.

[8] Rivers, *op. cit.*, p. 619.

[9] In case sexual symbolism should be looked for here, I observe that caution must be used. The three meanings given for pɯn belong to three South Dravidian words which have quite distinct phonetic forms in most of the other languages, and it may be found that the suffix -fɯn derives from still a fourth distinct phonetic entity. Until the historical grammar of Toda

§11. Another frequent suffix is -nuɪs. It is found also in a number of kŭɑsm of munds and in these it is possible to find a meaning for it. E.g. myɪnj of the kuɪɪŭɯṭoɪl is the place where the gods hold their assembly (cf. §3); its first kŭɑsm is pɑɪrnuɪs which is interpreted by the Todas as "standing-place (nuɪs) of the 1600 (pɑɪrnuɪr) gods." There seems to be no reason to doubt this interpretation; the gods are said in a song-pair to be 1600 (pɑɪrnuɪr) and 1800 (puɪṭṇuɪr) in number. If this is correct, nuɪs, found only as a suffix or second member of a compound, is to be connected with the verb stem nuɪl- "to stand;" the change of l to *s* is paralleled elsewhere in the language. So also the kŭɑsm koɪnuɪs of the mund nyɪḷṇ of the meḷgɑɪsoɪl is to be interpreted as koɪn-nuɪs "the place of the god koɪn;" koɪn or koɪntöŭ is the mountain near this mund. The first kŭɑsm of the mund meḷgɑɪs is nɑɪsnuɪs, clearly to be connected with the two kŭɑsm of the people of this sib, nɑɪsθoɪr, nɑɪsfep, the first of which has the element toɪr which means the endogamous moiety toɪrθɑsoɪl as a whole or the people of each sib of this moiety. The first kŭɑsm of the buffaloes of this sib, nɑɪsiḷṇ, is also to be adduced, and the name of the pen at meḷgɑɪs, nɑɪsŭɯɪ (i.e. nɑɪs-tŭɯɪ "pen"), which is also the name of a man (45, Narso). What the element nɑɪs means is quite unknown; but nɑɪsnuɪs is "the place of the nɑɪs." Two munds, kĭuɪr of the kuɪɪŭɯṭoɪl and kŭɑɪṛθyṇj of the puɪrgoɪṛoɪl, have kŭɑtæɪnuɪs as their first kŭɑsm. This is undoubtedly to be interpreted as "the standing-place of kŭɑtæɪn (the semi-mythical hero who was one of the möɪṛoɪl sib);" what connection he had with these two munds is unknown. Two place-names, not kŭɑsm, with this element are poḷjnuɪs "the place of the funeral-hut," a male funeral-place of the kuɪɪŭɯṭoɪl, and mɑsnuɪs, a female funeral-place of the möɪroɪl, with unknown prior member. It is now established that the element -nuɪs is appropriate in place-names and kŭɑsm of munds. A brother of moɪngiɪθj (15, Mongeithi), not recorded in the tables, is kĭuɪdnuɪs, whose name is the first kŭɑsm of the mund kiʃker of his sib. kɑɪsnuɪs (56, Karsners) < the first kŭɑsm of the mund tɑɪmuɪx of his sib. The name kiɪnuɪs (26, Kiner) is derived from kiɪnuʃnuɪs, the first kŭɑsm of the mund köɪroɪr, either by omission of the second syllable or by loss of the third syllable and rebuilding of the second on the pattern of other personal names ending in -nuɪs. For it is certain that -nuɪs is now felt as a

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is worked out, we shall not know whether the homonymy is of long standing or very recent, and the chronology should, I think, be taken into account in making any psychoanalytic study. It may be remarked, however, that the meanings "gold" and "privates of a young girl" have been represented by homonyms sufficiently long so that the first word is under a taboo in circumstances where the language-taboos work (see *Toda Marriage Regulations and Taboos*, p. 110).

suitable ending for personal names. E.g. panɯs and tɯɪfnɯs (§6); kŭɯɾjnɯs (25, Kudeners) <the relic-burning place kŭɯɾjoɪsoɪrm at the funeral-place tyɬtsŭɯɪ; piɪɬdjnɯs (21, Püldenir) <piɪɬdjxasfem, the slope of a hill near the mund kŭɯrmaɪs; nertnɯs (24, Nertiners) <nerpaʃt, an alternative name, or ɯnerpaʃt, the first kŭasm, of the mund tæɪlgŭɯɪr.

§12. Another suffix of quite unknown meaning, but probably originally at home in place-names, is -iɪθj. ertsiɪθj (20, Ircheidi) is taken without change from the name of a hill near the mund karkos. All the other names with this suffix that I can derive show it as a suffix or as a substitute for some other element; e.g. tɯsiɪθj (20, Tirseidi) <tɯkisjxöɪr, a pool at the mund toɪroɪr. He was a brother of ertsiɪθj, but his eldest brother, and so his name was not influenced by the latter's, but vice versa, and both were probably influenced either in formation or in choice by that of their father tæɪθj. This last name is puzzling, but is said to be derived from tæɪf, the name of the mountain near the mund toɪroɪr, and we may suspect that -θj is related to the suffix -iɪθj. Two other brothers of tɯsiɪθj have names with the same formative -iɪθj, tɯnpiɪθj (Tanpeidi) <kŭɯɪtθɯnp, the raised grassy mound (tɯnp) where the corpse is laid at the funeral-place tyɬtsŭɯɪ, and mɯdbiɪθj (Madbeithi) <mɯdboɪrθɯt, a mountain near toɪroɪr. paɪkiɪθj (21, Parkeidi) <paɪkefem, the slope of a hill near the mund karkos. toɪliɪθj (24, Tòleidi) <toɪlfaɪɯ, a stream (paɪɯ) near the mund tæɪlgŭɯɪr. It was said that pɯlkiɪθj (22, Pulkeidi) was named after the mund pɯlkŭɯɪr and the mountain kiɪθjmɯn near the mund kŭɯrmaɪs; this is possible, but derivation from pɯlkŭɯɪr alone is possible in view of the preceding examples. kydsiɪθj (21, Kudztheidi) <kyd, a male funeral-place of the toɪroɪroɪɬ. kŭɯɪtiɪθj (21, Kuteidi) <kŭɯɪtθɯnp, see tɯnpiɪθj above. These two men were brothers, an elder brother was paɪkiɪθj (explained above), their father was petŭɯɪθj and another elder brother was oɪrdŭɯɪθj; the similarity of endings is striking, and is paralleled by various similarities of ending (such as that given earlier in this paragraph) or of beginning in various families. The ending found in the last two names is probably -tŭɯɪθj. I know it in these names only. oɪrdŭɯɪθj (Arthothi) derives from oɪrθoɪɬ, an open stretch of ground (toɪɬ) near the mund artoɪɬ. The origin of petŭɯɪθj (Peratuthi) is unknown.

§13. Another ending is -odz; e.g. kæɪnodz (21, Keinodz) <kæɪnaɬf, the ŭɯsoɬj dairy at the mund karkos. This ending appears preceding another suffix in the name of tyɬjodzxŭɯɪr, son of toɪliɪθj (24), named after tyɬjpɯɬ, a path through a thicket near toɪroɪr; tyɬjxŭɯɪr would have been possible, but this name is borne by another man, as is also tyɬjodz (62, Tiliodz), which is derived from katyɬj, the kŭasm of the gateposts of the pen at the mund piɪr.

§14. The suffix -oɪn is fairly common. The meaning of this suffix is "he who is, or has" (cf. the song passage quoted in appendix to note 7 above); this is clear in the name nɑsoɪn (a son of tæɪpɑx [20, Teipakh]) "he who has beauty, or is beautiful." From such transparent cases the suffix has spread to other less transparent cases, as e.g. kŭɑɾoɪn of the pɯrgoɪɽoɪl̪ (34, Kwodron), who is named after the mund kŭɑɪrθyɳj with shortening of the first vowel (cf. pɑnɯs in §6). The suffix -ɑɪr is fairly common. I know of one name with this suffix based on the name of a rock at a watering-place (which should end in ɑr "flat rock"), but my informants were unable to remember the name of the rock; the man's name is sinɑɪr (55, Sinar). Other examples connected with sibs do not occur in my material. sirjɑɪr (20, Siriar) <sirirɑŋgɑm, the Tamil name ordinarily spelt in English Srirangam. The parents of this man made a vow for children at the temple there. pil̪jɑɪr (52, Piliar) seems to be derived from the common noun pil̪j "silver" by this suffix. However, the name has a peculiar origin in that it was given by this man's recently dead grandfather in a dream experienced by his father. A sib origin could not be given for it, or at least was not sought for; it is, however, based on the familiar type and probably has reference to some sib-object, perhaps the kɯrfol̪j dairy at the mund kɯɪŭɯr, which has as kŭɑsm pil̪jɑg, which was used unchanged for this man's younger brother (Piliag).

§15. Rivers took -ɑl̪f (his -olv) to be an ending of personal names as such, as well as an ending of dairy-names. The Todas, however, do not seem to regard it in this manner. In all the examples, with two exceptions, a personal name with this ending is first a dairy-name. So toɪsjɑl̪f in §5, and öɪkjɑl̪f in §6; the latter is one kŭɑsm of an abandoned mund, but in all the cases where a mund has a name of this type as one kŭɑsm, this represents a dairy at the mund. The two exceptions are kŭɯɪsjɑl̪f (52, Kuriolv) and pɑɪɯkiɪsjɑl̪f (7, Pakursiolv). The former is made from kŭɯɪsɯɾn, the ground where the sacred buffalo is killed at piɪts, the male funeral-place of the sib, but with its ending derived by the informants from pɯnɑ:sɑl̪f, the second kŭɑsm of the funeral-place, referring to the funeral-hut, which represents a dairy. pɑɪɯkiɪsjɑl̪f<pɑɪɯkiɪsjniɪr, the watering place of the kurpol̪j dairy at the mund kɑɪs, with the ending from toɪsjɑl̪f, the name of the kurpol̪j dairy. I know of only one dairy-name in poɪŭ used as a personal name, viz. tyl̪jpoɪŭ (12, Tilipa), which is derived from poɪŭθyl̪jpoɪŭ, the kŭɑsm of the ŭɯsol̪j dairy at the mund nɑesminoɪr. Usually some change is made, as in tɯɪpɯsxŭɯtn̪ and tɯɪfnɯs in §6 (cf. §9 and §11) and piʂtjxŭɯɪr in §21.

§16. A few of the names which were explained to me have very irregular formations. pɯnɯr (23, Puner)<pɑnɑrθöŭ, the second kŭɑsm of Mt.

pɑɪrθoṭj near the mund kɑrkos. edzen (22, Idjen) <ɪɪdzfɑl, a valley near the mund pɑʃtɑɪr; this man was afterwards called kŭɑrxɑs, from a rocky ground near the mund tæɪlgŭɯɪr, since there was another man called edzen. nɑtyl̥j (25, Natuli) <kinxɑtyl̥j, a rocky ground with a deep pool near the mund pɑʃtɑɪr; kinxɑtyl̥j = "small (kin)-stone (kɑs)-deep pool (tyl̥j)," and nɑtyl̥j = "beauty (nɑs)-deep pool (tyl̥j)." I could not discover that nɑtyl̥j was ever regularly applied to this locality. tæɪθjxæɪn (see §6) is said to be a combination of tæɪθj and kæɪn, a brother of tæɪθj who is not found in the genealogical tables. The latter name is derived from kæɪnɑl̥f, cf. kæɪngŭɯṭn̥ (§9) and kæɪnodz (§13) and see §7 for the process of formation. The formation of a name by the combination of two others is unusual but it is paralleled in pmlkiɪθj, for which see §12.

§17. Practically all the names analyzed above are derived by one process or other from names or kŭɑsm of things or places closely associated with the sib in each case. Another class of names of men derives from the names of gods of the Hindu pantheon or from temples, if a vow was made to these gods or temples for the birth of a child. So sirjɑɪr in §14. Others are moɪronɯs, a son of töŭθuxn (23, Teitukhen), named from the goddess moɪrɑmn, i.e. Mariamma; noɪxoroɪdzn, a son of sirjɑɪr (table 20), <noɪxuɪr "Nagore" or noɪxuɪrxuṛj "the temple at Nagore" with roɪdzn "king." The famous mosque at this place is treated by the Todas exactly as if it were a Hindu temple, an interesting example of the syncretistic tendencies of an illiterate and untutored Indian community. This name seems to have been influenced phonetically by the word noɪxor or noɪxoroɪf "cobra."

§18. Two names of Hindu divine figures, who do not possess any temples known to the Todas, are known to me. The first is ɑrdʒoṇ "Arjuna" (25, Kagerikutan); the representation of Sanskrit n by Toda ṇ is a sporadic and irregular change. This name is also shortened to ɑrdʒ. The other name is idjoɪn (a son of tæɪpɑx, table 20). This is from idroɪdzn "king (roɪdzn) Indra (id)." One of the Toda gods appears in öɪngŭɯṭn̥ (20, Enkutan); öɪn, the god who lives in the world of the dead, is not especially associated with any sib. One of the semi-mythical heroes kŭɑtöŭ, who belonged to the sib of the mel̥gɑɪsol̥, had another name mæɪltɑrz, which is now borne by a man of this sib (44, Meilitars).

§19. I know of one case of a Toda who was given the name of a Hindu of another community, viz. koɪntsɑrz, a son of kæɪnodz (table 21), who was named after the Maharaja of Mysore's maternal uncle Kāntarāja Arasu, formerly Diwan of the states and known popularly in Mysore as Kāntarasu. (ɑrz is the Toḍa representation of Kannaḍa ɑrɑsu, which appears in the names of members of the Maharaja's house and is Englished as Urs; it

also means "Englishman, European in general." It may be that the Tamil ɑrɑsɑn is also concerned in the origin of the Toda word, but in that case we should expect final -n to remain.). It is to be expected that names of Badagas might be adapted, and perhaps such cases occur, but I have no record of any.

§20. One name that I know of has reference to an incident in the life of a man's father. udjoɪsn (34, Udiosan) was made from udj "a government appointment" and oɪsn "he who became," since when this man was born, his father held an appointment as a forest-ranger.

§21. Many of the examples given above are names of men of the toɪroɪroɪl sib. In order to give a comprehensive view of all the names of one sib, I collect those here with references to the paragraphs where they are treated above and add all those that have not yet been mentioned. A few names given in Rivers' tables of this sib are not remembered by my informants, either because they belonged to children who died before they made any mark in the tribal life, or because the taboos on the names of the dead have caused them to be forgotten. I mark with an asterisk those names that follow the norm of derivation from names of places, objects, etc., connected with the sib.

RIVERS' TABLE 20

*tæɪθj (§12)

*tɯsiːθj (§12)

*tɯɲpiːθj (§12)

*nöɪrnɯs (Narsners) < ɯnöɪrof, the second kŭɑsm of the mund tæɪlgŭɯɪr (see nertnɯs, §11)

*mɯḍbiːθj (§12)

*ertsiːθj (§12)

*kɑkɑɪr (§7)

*tæɪpɑx (Teipakh) < tŭɯɪθæɪpɑx, a pen at the mund toɪroɪr
sirjɑɪr (§§14,17)

*tæɪfxŭɯɪr (Tavkudr) < Mt. tæɪf near toɪroɪr, "he who has horns as tall as Mt. tæɪf" (cf. §8)

*kiːθjmurj (§7)

*pɑɪɲxŭɯɪr (Pankudr) < pɑɪɲḍŭɯɪ, two pens, one at toɪroɪr, one at kɑrkos (cf. §8)

*köɪkisjxŭɯɪɲ (§9)

*æɪdʒ, son of kɑkɑɪr, < æɪdʒɑlxuɪṭ, a ravine near pɑʃtɑɪr (cf. §7)
idjoɪn (§18)
nɑsoɪn (§14)

*tɯɪpɯsxŭɯɪɲ (§§9, 15)

öɪngŭɯtn̥ (§18, and cf. §9)
noɪxoroɪdzn (§17)
*tæɪθjxæɪn (§16)
*pɯtʃofxŭɯtn̥ (§9)

RIVERS' TABLE 21

petŭɯɪθj (§12)
*karoɾfɯn (§10)
*oɪrdŭɯɪθj (§12)
*paɪkiːθj (§12)
*kydsiːθj (§12)
*kŭɯɪtiːθj (§12)
*piːl̥djnɯs (§11)
*kæɪnodz (§13)
*iːsxŭɯɪr (§8)
*mɯnæɪs (Muners), name of a mountain near the funeral-place tyl̥tsŭɯɪ (cf. §5)

kŭaḍxarts (Kudrvas), son of kæɪnodz; this was the name of the father or grandfather of petŭɯɪθj, a great man of former times. The origin of the name is unknown; a guess was hazarded that the first part (kŭaḍ) represents the Badaga word for an umbrella and has to do with the shape of a tree connected with the sib.

koɪntsarz (§19)

RIVERS' TABLE 22

*pɯlkiːθj (§12)
*kiɪn̥jxæɪr (Kiuniar), a level ground where the game el̥, tipcat, is played near the mund paʃtaɪr (cf. §5)
*poɪlgar (Polgar), a valley between toɪroɪr and paʃtaɪr (cf. §5)
*edzen, alias *kŭaɾxas (§16, and cf. §5)
*pɯndŭɯɪ (Pundu) < pandŭɯɪ, a cooking ground at karkos (cf. §16)
*köɪmuɯɪf (Keinmuv) < köɪnmuɪfniɪr, the dairy watering-place at paʃtaɪr (cf. §7)
*paʃtxŭɯɪr (Pushtikudr) < nerpaʃt (§§8, 11) with special reference to the paʃt "large flat lichen-covered rock" at the mund
*tɯɪkŭɯs̥, son of poɪlgar, < tɯɪkŭɯtəθj, a mountain, formerly a semi-mythical hero who belonged to the sib

RIVERS' TABLE 23

*panɯs (§§6, 11)
*toɪkas (Ṭokas), a mountain near karkos (cf. §5)
*pɯnɯɪr (§16)

*tö̆ŭθuxn (Teitukhen), a mountain near toɪroɪr (cf. §5)
*iɪdzxŭɯɪr̥ (§8)
*koɪm*d*ŭɯɪ (§5)
*tö̆ŭθŭɯɪ, son of toɪk*a*s and pɯnɯr, <name of the general pen at toɪroɪr (cf. §5)
mo*r*onɯ*s* (§17, and cf. §11)

RIVERS' TABLE 24

*pɯtʃefɯn (§10)
*ɯrkŭɯɪrfɯn (§10)
*kidʒxŭɯtn̥ (Kidjkutan), origin unknown to my informants (cf. §9)
*öɪkj*a*l̥f (§§6, 15)
*töŭmo*d* (§7)
*oɪxŭɯl̥n̥ (§6)
*toɪliɪθj (§12)
*nertnɯ*s* (§11)
*mɑgoj (§7)
*piɪʃtjxŭmɪr (Pushtikòdr) <piɪʃtjfoɪŭ, the second kŭɑsm of the ŭɯ*s*ol̥j dairy at toɪroɪr (§15, and cf. §8)
*ty*l̥*jodzxŭɯɪr̥ (§13, and cf. §8)
*kæɪnxŭɯtn̥ (§9)

RIVERS' TABLE 25

*nɑ*t*y*l̥*j (§16)
*ke*r*gæɪ*r*fɯn (§10)
*kŭɯrjnɯ*s* (§11)
*tɯɪfnɯ*s* (§§6, 11, 15)
*a*r*dʒon̥ (§18)

§22. This list contains 66 names, plus one alias; 6 of those in Rivers' tables were unknown to my informants. Of the 67 names, 2 are of unknown origin, one (kŭɑd̥x*a*rts) is doubtfully connected with the sib, 8 are definitely not connected with the sib, and 56 (55 plus one alias) are definitely connected with the sib. Expressed in percentages and counting the one doubtful case with the two of unknown origin, we have approximately 83.6% accounted for as being sib-names, 4.5% of unknown origin (and the presumption is that they are sib-names), 11.9% derived from other sources than the sib. In a similar enquiry into the names of the piɪt̥oɪl̥, 59 names (one an alias) were known to my informants. Of these, two could not be analyzed but were presumably sib-names, 56 were certainly sib-names, and one was doubtful. This last was koɪmdzöɪn (62, Komjon) "queen-bee." When he was born, his parents were living at kɑfiɪθj in the Wynad where honey is

very plentiful. The informants conjectured that this fact accounts for the name; if so, it too is in a manner a sib-name. Similarly tömn, a son of piɬjɑg (52, Piliag), has as name the word for "honey," said to be used because honey is for the Todas surrounded with taboos and in some sense holy. When the names of the kɯɪŭɯṭoɪɬ, the sib of this man, were investigated, 100 were sib-names, 3 could not be analyzed but were presumably sib-names, one was of non-Toda origin, one (tömn) has just been analyzed, and one, piɬjɑɪr, is of peculiar origin, for which see §14. In my investigations I have complete analyses of the names of these three sibs. The latter two are the largest sib of the töŭfiɬjoɪɬ moiety and one of the smaller ones. The toɪroɪṛoɪɬ sib, belonging to the toɪrθɑsoɪɬ moiety, is one of the larger sibs of the moiety. Its names show a larger proportion with non-sib and non-Toda origin than either of the other two, and I suspect from the samplings of names that I have made from other sibs that it has probably a higher proportion of such names than any other sib. All the larger toɪrθɑsoɪɬ sibs, however, show a few such names. When it is considered that none of these sibs is as large as the kɯɪŭɯṭoɪɬ and that the latter has only two names of non-sib and non-Toda origin out of the 106 analyzed, and that the piɪṭoɪɬ have no name of non-Toda origin and only one that was not certainly derived from the sib, we may see here evidence to substantiate further Rivers' statement that the töŭfiɬjoɪɬ moiety is more conservative than the other.

WOMEN'S NAMES

§23. Women's personal names are not derived or allowed to be derived from the sib. It is evident, however, in one case that the thought of a sib-association had operated in the formation of a woman's name; this is the first name treated in the following paragraph. It was difficult to get any definite interpretation of women's names from the men; they are quite uninterested in the matter. Their stock answer is that women's names are derived from names of flowers; but in fact, I have in my material no name so derived. Women informants were no more interested in the matter than the men, though they could analyze the names of men of their father's or husband's sibs with almost as much ease as the men. However, many of the women's names are quite transparent, and some principles can be stated. In a number of cases it is clear that words frequently used in songs are at the base of women's names, and it will emerge in the sequel that association with the songs is to be suspected in most of them. In the detailed discussion of the names song-associations will be pointed out whenever they are known to me.

§24. A frequent suffix of unknown meaning, probably merely a formant

of female-denoting significance, is -ɪɪdz. E.g. ɑrlɪɪdz (3, Arlidz) is derived by this suffix from ɑrl "small pebbles used in playing jackstraws or as counters in reckoning accounts." This woman was born in the sib of the noɪṣoɪl; it was at noɪṣ that the goddess töɪkisj performed her acts of creation and divided up the Todas into sibs and assigned buffaloes to the sibs. In the songs when this is referred to, a usual pair of phrases is:

mɑxɑrxoj	potsɯθnoɪr
first-hand	where (she) placed-sacred place
mɑxɑrɑrl	oɪkjɯθnoɪr
first-pebbles	where (she) set out-sacred place

i.e. "(noɪṣ) the sacred place where töɪkisj in the beginning laid on her hand and set out pebbles in making the divisions." It is clear that ɑrl in the woman's name was used because of the association of her father's sib with töɪkisj, and it is probably significant that no other name has been discovered with this element. Another name with this suffix is moṇɪɪdz (7, Manidz); moṇ "soil, owned land" is a member of several pairs in songs—iṇefæɪdʒ, moṇefæɪdʒ "quarrels (pæɪdʒ) about women (iṇ, a Badaga word) and land;"

iṇexŭɑɪṭ	koṭjɑθik
woman-bungalow	you built
moṇexöɪr	kertɑθik
earth-pool	you dammed

i.e. "though a woman, you built a fine house and dammed with earth a pool to supply water." tɑrmɪɪdz (44, Termidz) < tɑrm "alms" (indirectly from Sanskrit dharma) has in mind the passage in the songs where a woman is praised for her alms-giving. nŭɯɪṭɪɪdz (3, Notidz) < nŭɯɪṭ "a sight," has in mind the pair describing funerals and festivals: koɪleoɪṭ, koṇenŭɯɪṭ "dancing (oɪṭ) with the legs (koɪl), sights for the eyes (koṇ)." poṇɪɪdz, daughter of kŭɯɪlpɑx (52, Kulpakh) < poṇ "colored cloth" is probably derived from the song-unit otsodjfoṇ which refers to a loincloth put on by men when they drive the buffaloes round in the pen at a two-day funeral. sinɪɪdz (21, Sinidz) < sin "gold." lɑɪbɪɪdz, daughter of töɪkŭɯɪr (63, Teikudr), < lɑɪbm "profit" (indirectly from Sanskrit lābha). ruɪpojɪɪdz (also ruɪpoj), daughter of kömnɯs (34, Kemners), < ruɪpoj "rupee." rɑɪmɪɪdz (38, Ramidz) < Rāma, the divine personage. roɪdʒɪɪdz, daughter of poɪdz (34, Podj), < roɪdʒ "kingdom" (indirectly from Sanskrit rājya). pirkɪɪdz (28, Pirkidz) < pirkitsn, the Toda form of the English name Breeks, after the Collector in the Nilgiris who did ethnological work on the Todas. sonmɪɪdz (63, Sanmidz) < sonm "the people" (indirectly from Sanskrit jana); this

name is possibly made with thought of the song-pair: kuɪɾefɑɾ, keresonm "a crowd such as has not gathered before, the people in a crowd such as has not assembled before." motʃiɪdz (21, Matchidz) <motʃ "cot," with thought of the song-unit sinɑθmotʃ "golden cot," which occurs in descriptions of the possessions of a wealthy man or of his wife. ofɯliɪdz (16, Ovalidz; 24, Ovelidz) <ofɯl "rice puffed over the fire."

§25. The suffix -ɑr is found in several names; e.g. koɪsɑr (57, Kosar) <koɪs "coin, rupee" and piʎjɑr (21, Piliarh) <piʎj "silver." noɪxoremj (10, Nagerami) contains a suffix -emj found in several other names; the first part of the name is to be compared with the first part of noɪxoroɪdzn (§17). In sinɑg (27, Sinakh) we have sin "gold" and a suffix -ɑg. In several names there is a suffix -ɯl; e.g. sinɯl (28, Sinul) <sin "gold."

§26. Many names are compounds. Frequent first members are sin "gold," pɯn "gold" (used in this sense in songs and proper names only), piʎj "silver." E.g. sindɑrm (10, Sindarm) with tɑrm "charity" (for the song-association cf. tɑrmiɪdz in §24); sindɑgɑs (62, Sintagars) with tɑgɑs "chain," with special reference to a chain as a neck-ornament; sinboɳm (63, Sinpanm) with poɳm "4-anna piece;" singŭɑɾ, daughter of töɪkŭɯɪr (63), with kŭɑr "umbrella," a frequent word in songs; sinbydj, daughter of the same man, with pydj "wisdom" (indirectly from Sanskrit buddhi); sinmɑl, daughter of tɯbxŭɯɪr (68, Tebkudr), with mɑl "mountains, esp. the Nilgiris," a frequent word in songs; sindoɖ (38, Sindod), with toɖ "army," a frequent word in songs (indirectly from Sanskrit daṇḍa); siniɪr (56, Sinir), with niɪr "water;" sinuɪr (41, Sinur), with uɪr "town, city;" singupj (14, Sinkupi), with kupj "the cowries or beads dangling in a bunch from a woman's armlet;" sinduɪfj (58, Sinduvi), with tuɪfj "feather;" sinbɑθuɪfj (65, Sinbuthuvi), with pɑ(θ)-tuɪfj "eagle's feather;" sines (8, 40, Siners), with es "leaf;" sindɑrx (3, 25, 56, Sinderg; 53, Sinterg), with tɑrx "plate from which food is eaten," and singöb (43, Singib), with köb "small bamboo cup from which milk is poured to drink," probably have reference to feeding visitors in the song-pair: tɑrxŭɯɾɑʃkj, köbŭɯɾfoɪs "rice in a plate, milk in a cup;" sindɯrp (68, Sintharap), with tɯrp "key." In a number of names the vowel -ɑ- is inserted between the two parts of the compound: sinɑmut (43, Sinamut), with mut "pearl;" sinɑmoɲj (24, Sinamani), with moɲj "bell" (see note 10); sinɑbuɪf (8, Sinabuv), with puɪf "flower;" sinɑfiʎj (1, Sinaveli), with piʎj "silver." Names with pɯn "gold" are: pmnduɪfj (68, Punduvi), with tuɪfj "feather;" pɯnbɑθuɪfj (8, Punbuthuvi), with pɑθuɪfj "eagle's feather;" pɯnuɪr (66, Punur), with uɪr "town, city;" pɯndɑrx (26, Pündergh), with tɑrx, cf. sindɑrx above. pɯnɑbuɪf (10, Punabuv), with puɪf "flower," contains the inserted vowel -ɑ-. pɯndŭɯ-

ţeɯj (10, Punduteimi), with tŭɯţ "handle of a bamboo vessel" (frequently found in songs), has also the suffix -emj mentioned in §25. piɭj "silver" is found in piɭjmoʃt (54, Pilimasht), with moʃt "ax;"[10] piɭjniɪr (55, Pilinir), with niɪr "water;" piɭjmut (35, Pilimut), with mut "pearl."

§27. As first member of a compound is found nas- 'beauty;" nastuɪfj (49, Narstufi), with tuɪfj "feather;" naspiɭj (35, 52, Naspilthi), with piɭj "silver." It is found in the form nal- with insertion of -a- in nalabuɪf, daughter of panɯs (23, Paners), with puɪf "flower." puɪf "flower" is found as first member of a compound in puɪfiɭj (20, Puveli), with piɭj "silver;" with inserted -a- in puɪfamut, daughter of sirjaɪr (20), with mut "pearl;" with suffix -ɪɪdz and piɭj "silver" in puɪfiɪdzfiɭj (65, Puvizveli).

§28. Other compounds are found with more sporadic members. koɪsmaɪlj, daughter of oɪtjarz and udjoɪsn (34, Atiurz and Udiosan), from koɪs "rupee" and maɪlj "garland;" koɪsafiɭj (11, Kosaveli), from koɪs "rupee" and piɭj "silver" with inserted -a-; cf. koɪsar §25. niɪrfiɭj (68, Nirveli) from niɪr "water" and piɭj "silver." arzniɪr (16, Arsner), from arz "European" and niɪr "water." mutniɪrfiɭj (51, Mutnirveli), from mut "pearl," niɪr "water" and piɭj "silver," is rather exceptional in having three members. pumes (23, Pumers), from pum "fruit" and es "leaf;" cf. sines §26. Several contain English words: soɪpniɪr (6, Sapnir), from soɪp "shop" and niɪr "water;" pofɯrmut, daughter of oɪtjarz and udjoɪsn (34), from pofɯr "power," referring to the electric power line across the hills, and mut "pearl." Three refer to Miss C. F. Ling who was formerly a missionary among the Todas.[11] ligmisj (23, Lingimishi) represents Ling Missy (i.e. Miss Ling), which is the ordinary way in which a South Indian would refer to this lady; ligjabuɪf, daughter of ŭɯṣoɪṛ (48, Ushadr), has puɪf "flower" with an inserted -a- and an unwarranted j; misjamut, daughter of kömnɯs (34, Kemners), is misj "missy" and mut "pearl" with an inserted -a-.

§29. Uncompounded words without any suffix are found as names: tɯgɯl, daughter of kŭɯɪsjaɭf (52, Kuriolv), "moon;" sæɪfer (62, Sever) "1000;" ysmitʃ (12, Irsimitch) "lime (the fruit)," cf. the appendix to note 7; muɪnet (56, Munat), "affection." poṭoṇm (34, Paton) is the word found in Sanskrit as paṭṭana "city" and is the usual Toda word for Madras city. kopol (41, Kapal) seems to denote the compound of a bungalow and refers especially in the songs with its pair kotsæɪrj to the law-courts in Ootacamund. A few English words have been taken as names changed only to such

[10] Moʃt "ax" and moṇj "bell" (cf. sinamoṇj §26) form a song-pair, denoting two of the objects found in dairies.

[11] See *The Songs of the Todas*, footnote 2 and p. 554.

an extent that their phonetics follow the Toda pattern: pæɪbj, daughter of öɪknɯs (8, Arkners), < "baby;" pentʃ, daughter of koṛxŭɯṭṇ (42, Kadrkutan), < "bench (i.e. of magistrates in the courts)." The English "station," i.e. police-station, becomes in Toda tæɪsn; a woman's name tæɪs is derived by dropping -n, which if it were kept would give the word the appearance of a man's name (daughter of kɑjniɪr, 3, Kainir).

§30. The Sanskrit dēvī "goddess" borrowed indirectly gives tiɪfj (8, Tivi). Several goddess names (Hindu) with this as final element are found, among them ɑmɑndiɪfj, daughter of kŭɯɪlpɑx (52, Kulpakh), the first element being Amma, a South Indian word for "goddess;" the whole word probably refers to Mariamma.

CONCLUSIONS

§31. Analysis of a large collection of proper names has thus yielded a number of general tendencies. Men's names are in the majority of cases sib-names, based on names and kŭɑsm "sacred names" of all things connected with the patrilineal sib and especially with the gods or munds of the sib. In this the Todas join in principle with many other sib-organized communities, in which the individuals of each sib bear a name belonging to the sib, but they differ from other such communities in that while in most each individual uses the name of the sib and a personal name not closely connected with the sib, the Todas use only personal names, which are derived from the sib. Of the small residue of names not definitely connected with the sibs, a few are derived from religious entities not closely associated with any sib (e.g. öɪngŭɯṭṇ §18), and perhaps a larger number are derived from the names of gods of the Hindu pantheon, usually in consequence of a vow made by the man's parents (§17). A very few are derived from more miscellaneous sources (§§19, 20).

§32. Women's names on the contrary have nothing to do with the sib with the exception of the one discussed in §24 and possibly others that I have not discovered.[12] Some women's names are simple common nouns, often of non-Toda origin, many more are common nouns with a suffix, and the great majority are compounds of common nouns. Those names borrowed from English probably in many cases have a bizarre or perhaps even comic connotation, judging from the facial expressions of my informants

[12] It may be noted that though women have no part in the religion of the dairy-complex and are a source of pollution to the complex in many circumstances, they are not debarred from using the kŭɑsm "sacred names" in composing songs. Here they are entirely on an equality with the men. It has been found too that the women have as good a knowledge of the details of the formation of men's names as the men; cf. §23.

when I recorded such names. The tendency appears to use words that have song-associations, and one may refer especially to the large class of names with puṉ "gold," a word used in this sense in songs and not so used in ordinary speech. It may be that this tendency is even more powerful than appears to the non-Toda observer, since it is extremely difficult for him to know what connotations a word may or may not have and informants are inarticulate on this matter. It may be, again, that the feeling that an outsider receives, that Toda women's names are generally rather poetical in the Western sense, i.e. in their reference to objects with aesthetic associations, is not entirely in accordance with Toda feelings. I can only adduce a small bit of evidence which I have already used in *The Songs of the Todas*.[13] In composing a song lamenting the death of the late King George V, the composer changed kiŋsoɪrdʒ, the Toda form of the king's name, into siŋsoɪrdʒ. He gave as the reason for this change that the former is not "poetical" and the latter is; my interpreter explained that kiŋ- suggests the word for "small" while siŋ- suggests the word for "gold," i.e. sin. This being so, we may conclude that women's names with the element sin "gold" are poetical to the Todas, i.e. they suggest to them the vocabulary of song. We have already seen that those with puṉ "gold" are poetical in the same sense, and I think that it is possible to conclude that women's names in general have for the Todas much the same connotations that they have for us. They are connected with the expressions of song and derive their connotations from the songs, and so may be justly said to be poetical.

YALE UNIVERSITY
NEW HAVEN, CONNECTICUT

[13] *Op. cit.*, p. 553.

NATIVE AMERICAN BEERS

By WESTON LA BARRE

ALTHOUGH conservative opinion would consider the contended aboriginality of New World distilled liquors as yet undemonstrated, there is ample evidence of the wide distribution both in North and in South America of native undistilled alcoholic liquors, or beers and wines. Since the plant-substances of which these are made vary considerably, and since the usage of terms has sometimes been rather loose, we define these terms before discussing the distribution of the liquors themselves.

Aguardiente (contraction of Sp. agua ardiente, "burning water"), properly speaking a brandy of Spain and Portugal, generally made of grapes; but in Latin America it is applied to various spirituous liquors. In California and New Mexico the name is used for American whisky, in Mexico for pulque, while the aguardiente of the Chiricahua is an undistilled yucca beer.[1]

Algoroba, a South American beer made from the fruits of leguminous plants, *Prosopis alba*, *P. pallida* and *P. juliflora* (mesquite beans).

Asua, a beer of the Quichua-speaking groups and others of mountainous Ecuador, made by boiling and crushing maize, and allowing it to ferment in a sealed vessel.

Atole, *atolle* (Mex. Sp. from Nahuatl atolli) is properly a mush made of Indian corn, a favorite food in Spanish-American countries; also diluted and used as a drink. On the Colorado and Gila Rivers the bean of the mesquite, *Prosopis juliflora* DC, containing 25–30 percent sugar, or the screw bean, "tornillo," or *P. pubescens* Benth. are cooked, pounded, mixed with water, strained, and allowed to ferment into a beer.[2]

Balché, the Mayan name of a plant, extended in usage to a drink made of its bark mixed with wild honey and fermented; the same as pitarrilla.[3]

Cachiri, *kaschiri* is made of cassava (*Jatropha manihot*, mandioca, tapioca, Brazilian arrowroot); the starchy juice is pressed out and fermented, or, according to Lewin,[4] it is chewed in the starchy form, which aids the change into sugar.

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[1] V. Havard, *Drink Plants of the North American Indians*, Bulletin, Torrey Botanical Club, Vol. 23, No. 2, 1896, p. 37. This writer (p. 34) sums up the general opinion on pre-Columbian alcoholic liquors: "The discovery, in some parts of Mexico, of crude stills constructed of native material, has led some authors to think that distillation may have been practiced on this continent before the coming of Columbus, but there is no ground for such belief in the accounts of the first explorers nor the Indian traditions."

[2] L. Lewin, *Phantastica, Narcotic and Stimulating Drugs* (New York, 1931), p. 169 (asua); Havard, *Drink Plants*, p. 37 (atole).

[3] M. H. Saville (ed.), *Reports on the Maya Indians of Yucatan, etc.* (Indian Notes and Monographs, Vol. 9, No. 3, 1921), pp. 151–52; glossary, p. 217.

[4] Lewin, *Phantastica*, p. 169 ff.; R. Karsten, *The Civilization of the South American Indians* (New York, 1926), pp. 312–15.

Cangüi, the maize beer or chicha of the Avas or Chiriguano of the Bolivian Andes, *q.v.*

Cauim, a name for cachiri in Brazil; same as pajuarú.

Caysuma, the Ega name for cachiri.

Chañar, a drink made of *Gourliea decorticans* (a plum-like fruit) by the Pilcomayo tribes.[5]

Chicha (Am. Sp. from the Taino chicha, Quichua chica, Galibi huicú), a beer made of maize, boiled, chewed, put in large pots covered with leaves, and fermented.[6]

Chontarúru, the cultivated chonta palm (*Guilielma* sp.), bears a fruit from which the Canellos and Jíbaros of Ecuador make a wine; the wild species *Bactris* and *Iriartea* are also used.[7]

Colonche is made of the fruit of several species of *Opuntia* (esp. *O. tuna* Mill and *O. Ficus Indica* Haw.). The fruit is peeled and pressed, the juice passed through straw sieves, to ferment near a fire or in the sun. The pinkish liquor tastes somewhat like hard cider. Although there are *Opuntia* spp. available in the American Southwest, colonche appears to be entirely Mexican in distribution.[8]

Haren, a Papago name for sahuara wine, *q.v.*

Kiwa, a Gran Chaco name for algoroba; *Prosopis juliflora* beans are chewed and fermented in goat-skins, as the natives chant and beat the drum to drive away evil spirits who would spoil the brew. Only men drink it.

Mazamorro, a drink of the Nicarao and Chorotega of Nicaragua, made of a mixture of honey and ground corn.[9]

Mescal (from Aztec mexcalli, "metl [maguey] liquor") in its primary sense is the fleshy leaf-base and trunk of various species of *Agave*. It is an important food source among most of the tribes within the plant's range, of diverse linguistic stocks: Mohave, Yuma, Cocopa, Kawia, Southern Diegueño, Walapai, Kaibab Paiute, Havasupai, Chiricahua Apache, etc. The Mescalero Apache derive their name from their use of this food. The American Spanish mexcal, mezcal, or mescal comes from the same Nahuatl root, and refers to a Mexican brandy distilled from agave beer, properly called pulque. Note that the Aztec lacked the brandy "mescal" in the modern sense, though they had pulque. In its secondary sense of intoxicant, the term mescal has been misleadingly extended to the "mescal" bean (*Sophora secundiflora* Lag ex DC), a narcotic red bean of the southern Plains, Southwest, and northern Mexico, which was formerly involved in cult use; various Apache groups sometimes mixed it with their mescal or pulque, to strengthen it. Another misleading and widespread extension of the term is to the cactus *Lophophora williamsii*, the "mescal button" or "mescal bean" of the Plains. The

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[5] Karsten, *Civilization*, p. 311.

[6] Havard, *Drink Plants*, pp. 34–35; etymology from the Century Dictionary.

[7] Karsten, *Civilization*, pp. 304–305. [8] Havard, *Drink Plants*, pp. 36–37.

[9] Oviedo, cited by S. K. Lothrop, *Pottery of Costa Rica and Nicaragua* (Contributions, Museum of the American Indian, Heye Foundation, Vol. 8, 1926), Vol. 1, p. 34. They also made a wine of plums (p. 54).

"tea" made from the dried top of the cactus is *not* the drink "mescal" nor does the plant resemble a bean; the confusion comes from the fact that *Lophophora williamsii*, like *Sophora secundiflora*, was sometimes used in the Southwest and northern Mexico to fortify agave-beer, i.e., pulque or "mescal."[10]

Mistol is a wine made of the fruit of *Tizyphus mistol* (which resembles over-ripe grapes).

Nawá, a Huichol name for tesvino.

Paiva or *Paiwari*, a name for arrowroot beer in British Guiana; see cachiri.

Pajuarú, a name for cachiri in Brazil.[11]

Pissioina is a native beer of the Yuma, prepared by roasting wheat grains over a charcoal fire until light brown in color, pulverizing them, and fermenting the mixed mash with water.[12]

Pitahaya (from a Haitian or Cuban word) is a name applied in the Southwest to the sahuara.

Pitarrilla is the drink made from the balché plant, *q.v.*

Pulque (Mex. Sp. pulque, of uncertain origin; probably from a Carib source [Cuban or Haitian], but also conjectured to be ultimately a corruption of the Sp. pulpo, flesh, pulp) is agave beer. The maguey or *Agave Americana* is the commonest source. From time immemorial the maguey has been cultivated for the abundant sap or aguamiel, which collects in the cavity made in the heart of the plant by the removal of the young central leaves. The juice abounds in sugar and muci-

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[10] F. W. Hodge (ed.), *Handbook of American Indians North of Mexico* (Bulletin, Bureau of American Ethnology, No. 30, 1907–10), Part 1, p. 846; E. W. Gifford, *The Cocopa* (University of California Publications in American Archaeology and Ethnology, Vol. 31, No. 5, 1933), p. 267; L. Spier, *Southern Diegueño Customs* (same series, Vol. 20, pp. 297–358, 1923), p. 335; A. L. Kroeber (ed.), *Walapai Ethnography* (Memoirs, American Anthropological Association, No. 42, 1935); E. Sapir, Field notes on Kaibab Paiute (ms.); L. Spier, *Havasupai Ethnography* (Anthropological Papers, American Museum of Natural History, Vol. 29, Part 3, 1928), pp. 105–106; L. Hooper, *The Cahuilla Indians* (University of California Publications in American Archaeology and Ethnology, Vol. 16, No. 6, 1920). Cf. Hodge, *Handbook*, Part 1, p. 282; also Part 1, p. 846: "So far as known mescal was not fermented by the Indians to produce an intoxicating drink before the coming of the Spaniards" (Hough). This statement is questionable if it refers to the simple fermented beer, for Havard (*Drink Plants*, p. 34) states: "The historian Sahagun says that long before the conquest, the use and abuse of pulque were so general that one of the Aztec kings forbade the sale of it and punished drunkenness with death. The Mexican liquor, mescal, manufactured by the distillation from the baked, pounded and fermented heads of several species of *Agave*, was unknown to the Aztecs, who like other American aborigines were ignorant of distillation, an art introduced from Europe. They only knew the first part of the process." C. Lumholtz (*Unknown Mexico*, New York, 1902, Vol. 1, pp. 182–86) would argue for the aboriginality of the Cora, Huichol, and Tarasco distillation process, but his case would be stronger if further examples from the same area could be found.

[11] Lewin, *Phantastica*, p. 169 ff.

[12] W. C. Farabee, in A. Hrdlička, *Physiological and Medical Observations among the Indians of Southwestern United States and Northern Mexico* (Bulletin, Bureau of American Ethnology, No. 34, 1908), p. 28.

lage when the maguey is about to flower, and is fermented in reservoirs of rawhide. It resembles spruce-beer in the early part of the process, but at the end acquires the putrid odor of the animal matter in the hides. The national drink of the Mexicans, it smells much like half-turned buttermilk, but it is cooling, refreshing, nutritious, and stimulating. It contains three to four per cent alcohol usually.[13]

Sahuara is a name of native origin for the giant cactus *Cereus giganteus* Englm. from whose fruits a wine is made; variations are saguaro, suwarrow, etc. This is the Mexican pitahaya, which has a fluted column thirty to fifty feet high, crowned in season with handsome pink flowers. The fruit is two or three inches long, full of rich crimson pulp of fine flavor, a great delicacy to the natives of the region. A clear light brown syrup is prepared from it which is used as a substitute for sugar, and from the syrup a sourish strong beer is made. The still larger and sweeter fruit of the pitahaya dulce of Sonora and Lower California (*C. Thurberi* Englm.) is used for the same purpose.[14]

Sotol (from Nahuatl zotoli, the ancient Mexican name) is the designation given in the southern United States and Mexico to several species of yucca-like plants belonging to the genus *Dasylirion*, sometimes called "bear-grass." The fleshy crown at the apex of the stem of *D. Texanum* and *D. Wheeleri* is roasted and eaten by the Mexicans and Indians. The watery juice is easily pressed out, and is not unpalatable, but cooking alone sweetens it. As with mescal, the name of the drink derives from that of the plant, though it is sometimes called mezcal de sotol.[15]

Taroba is the cassava beer of the Tapajós region.

Tepache is maguey aguamiel fermented (after the addition of sugar and water) into a pulque-like beverage.

Tequila is a place name applied to a mescal brandy, precisely as are the terms Scotch, Pilsener, Münchner, Champagne, Port, etc. This town is in the State of Jalisco and contains modern factories which produce the best brand of mescal.[16]

Tesvino, tizwin, tesgüino, etc. (Mex. texgüino, fr. Nahuatl teyhuinti, "intoxicating") is prepared from corn sprouted, dried, ground and fermented; it is a typical Apache drink, also called tulpi or tulapai.[17]

Toach is a Huichol name for mescal beer. (Compare Nahuatl toloache = datura).

Tshawi is the Tarahumari (and perhaps also the Tepehuane) name for mescal beer or pulque.[18]

Tulapai, tulpi, are Apache names for pulque.

Tusca is a beer of South America, prepared from the *Acacia aroma*.

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[13] Havard, *Drink Plants*, p. 34; and others.

[14] Havard, *op. cit.*, p. 36. [15] *Ibid.*, pp. 43–44.

[16] Lumholtz, *Unknown Mexico*, Vol. 2, p. 182. Tequila is prepared from the *roasted* agave. For a full account of the preparation of pulque and tequila see W. Hough, *The Pulque of Mexico* (Proceedings, United States National Museum, Vol. 33, pp. 577–92, 1908).

[17] Hrdlička, *Physiological and Medical Observations*, pp. 27–28; Havard, *Drink Plants*, p. 35; Jules Henry, *Cult of Silas John Edwards* (ms.).

[18] Lumholtz, *Unknown Mexico*, Vol. 1, p. 125.

Ui is a Jíbaro wine made from the fruit of the chonta-palm (*Guilielma speciosa*, cultivated for the purpose in Ecuador); the chontarúru of the Canellos.[19]

This survey does not pretend to be exhaustive, but it includes the commonest of the native names found in the literature, and most of the other native drinks may be referred to one or another of the types cited. We may now summarize by tribe and area the distribution of native American alcoholic liquors, and indicate some of their uses ceremonially.

With respect to Central and South American intoxicants[20]

it is worth noting that at the only part of the American continent trodden by the foot of Christopher Columbus, namely the coast of Venezuela, the great discoverer observed and recorded the two alcoholic drinks used by the natives; they were the same as in Mexico, one prepared from corn, the other from the Maguey.

Drinks with a basis of maize (boiled, chewed, and put in earthenware pots to ferment) of the chicha type were used from Mexico to Guatemala, Yucatan, and Darien, and to the high plateau of Bogotá in the south; they are also found among the inhabitants of the Andes, in Ecuador, Peru, and Chile to Araucania and eastward from the Orinoco, and in Guiana as far as the territory of the Amazon. This maize drink was the national beverage of the Indians of the Guarani group, especially the Abas or Chiriguano, also of the half-civilized Indians of the Andes, the Coroado and Quichua-speaking Indians of mountainous Ecuador (asua), the Quichua and Aymará of Peru and Bolivia. The Aymará and Quichua sacrifice chicha to the earth to promote the increase of the maize crop. At the great arete or drinking-feasts of the Ava or Chiriguano, the aña or spirit of the corn itself was thought to be present. Every important occurrence—marriage, the birth of a child, or death—is celebrated with dancing and excessive drinking of maize-beer, chicha or cangüi.

Another method of manufacturing alcoholic beverages in South America was to ferment the starchy juice of the pressed or chewed cassava (*Jatropha manihot*). Its use extended southeast from the territory west of Magdalena to about 50° west longitude, north to the Caribbean, and south to the Amazon and the upper reaches of the Tapajós. It was called paiwari or paiva in British Guiana, taroba on the Tapajós, caysuma in Ega, cachiri among the Roucouyenne, and cauim or pajuarú among the aborigines of Brazil. One of the most important feasts of the Jíbaro is the noa tsangu or

[19] Lewin, *Phantastica*, p. 169 ff.; Karsten, *Civilization*, pp. 304–305.

[20] Havard, *Drink Plants*, p. 36. The following paragraph is based on Lewin and Karsten.

"feast of the women,"[21] which has particular reference to the harvest of the manioc and other garden plants. The paiwari of the Guiana Indians and the kaschiri of Brazil play the major part in religious affairs, especially the death-feasts, in which its consumption is believed to give the drinkers the power of resistance against evil spirits. At the great victory-feasts which the Jíbaro celebrate when the head of an enemy has been taken, manioc-beer is consumed by the warriors; without it the object of the feast could not be accomplished. In Ecuador, as elsewhere in South America, fermentation is brought about by chewing. Karsten writes that "the saliva, which shares the natural magical power of the whole body, is supposed favorably to influence the spirit that is active in the fermented drink."

Yucca angustifolia, *Y. glauca*, and *Y. filamentosa* were used by the Jíbaros and Canellos of eastern Ecuador, and by the Cholones of the upper Huallaga region. The manufacture of yucca beer was surrounded with ritual, and during the fermentation in earthenware jugs, the women squatted around the vessels singing magic chants to aid the process.[22]

The Indians of Ecuador make chontarúru (Canellos) and ui (Jíbaros) of the fruit of the chonta palm, and both its cultivation, preparation and consumption are heavily ritualized. The growth of the tree and the ripening of its fruit is thought to be due to the wakani or soul inhabiting it; and since the wakani of the chontarúru palm is male, it is planted and tended by men. When the fruit is ripening and the beer is being prepared, great feasts are held at which dancing and singing are performed to "hurry up" the ripening and fermentation.[23]

The Matacos, Chorotis, and Ashluslay all make algoroba beer. The Matacos, for example, beat a drum every night for about a month previous to the beginning of the algoroba season (the end of November until early February) to expel the evil demons which would prevent the fruit reaching maturity, and to influence the spirit of the tree directly. The Toba, again, perform a dance to accelerate the ripening of the fruit. The beer of the Chaco Indians is thought to derive its power from the very spirit that animates the algoroba tree and other plants which they use.[24] The seeds are chewed for fermentation in goatskins, and men alone drink it. Other South

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[21] Karsten, *Civilization*, p. 315. Many South American groups attribute sex to plants: big and hard species of trees and plants with strong properties are male, while manioc, sweet potatoes, carrots, beans, pumpkins, etc. are female. Cf. Karsten, *op. cit.*, pp. 301, 304–306, 319–20, 323–24.

[22] Karsten, in Lewin, *Phantastica*, p. 159 ff.

[23] Karsten, *Civilization*, pp. 304–305. Chonta wood and thorns are used in war, hunting, and sorcery also.

[24] Karsten, *op. cit.*, pp. 311–12.

American native drinks are made of the *Acacia aroma* (tusca-beer), *Gourliea decorticans* (chañar-wine), and *Tizyphus mistol* (mistol).

The drinks of the Antillean region appear to affiliate with northeastern South America. Gower writes:[25]

> The popular beverage in the Antilles . . . was a mild intoxicant made with chewed cassava bread or corn. It was imbibed on all festive occasions. . . . Dancing attended all Antillean celebrations. In connection with the dance there was a great consumption of an alcoholic drink made with chewed cassava. The same sort of festivity is frequent in Guiana.

Both the Taino (Arawak) and Island Carib made the drink.

In Central America, the Nicarao and Chorotega of Nicaragua made mazamorro, a fermented mixture of ground corn and honey. The Maya of Yucatan likewise prepared a mead called pitarrilla, consisting of the bark of the balché tree and wild honey fermented in fresh water.[26]

Farther north, in Mexico, we have already mentioned the Aztec use of pulque or "mescal." The Huichol preparation of toach is described as follows:

> The hearts of the [mescal] plant are baked between hot stones in an earth mound; then they are crushed, mixed with water, and left to ferment in cowhides, each of which is suspended between four poles. After the mass has stood in this way in the open for about a week it is ready.

The Huichol also make tesvino or nāwá by mashing sprouted corn on a metate, boiling it down, adding more water, and straining it into gourds; after twelve days it is ready to use. Besides these, they make a "wine" from corn-stalks, another from the juice of the mashed guayabas fruit, and still another from sotol. Tequila or Mexican brandy is also drunk at festivals, for no Huichol ceremony would be complete without intoxicants.[27]

The Tarahumari made a "wine" from corn-stalks, corn tesvino or tesgüino, sotol and tshawi (agave pulque), adding the narcotic frijolillo (*Sophora secundiflora* or "mescal bean") to fortify it. The maize-beer bata-like was of central importance in Tarahumari life. All celebrations, dances, and religious ceremonies required its preparation and drinking; it was given with the mother's milk to the newborn baby, who was also

[25] C. D. Gower, *The Northern and Southern Affiliations of Antillean Culture* (Memoirs, American Anthropological Association, No. 35, 1927), pp. 25, 40, 50.

[26] Lothrop, *Pottery of Costa Rica and Nicaragua*, p. 34; Saville, *Reports on the Maya Indians*, pp. 151–52.

[27] C. Wissler, *The American Indian* (2nd ed., New York), p. 244; Lumholtz, *Unknown Mexico*, Vol. 2, pp. 13, 31, 186, 253, 278; also C. Lumholtz, *The Huichol Indians of Mexico* (Bulletin, American Museum of Natural History, Vol. 10, Art. 1, 1898), p. 11; Hrdlička, *Medical and Physiological Observations*, p. 28.

"cured" or sprinkled with it. It was applied externally for all diseases as a remedy; it was the means of payment to assistants for the cultivation of the fields, and a sacrifice to obtain rain. Drinking it at feasts marked the turning-points in Tarahumari life: a boy's maturity, a girl's seeking for a husband, at marriage feasts, and at funerals as a sacrifice to the dead. It was even drunk for luck before going hunting or fishing.[28]

The Tarasco, whatever they may have formerly made in the form of alcoholic drinks, now rely on Mexican aguardiente, or sugar-cane rum. The Tlahuiltec use this exclusively, but the Tepecano drink sotol and probably pulque also. The Tepehuane on special occasions use "vino, or mescal," like the Tarahumari tshawi, or agave-pulque, though they do not make corn tesvino. The Comecrudo word afisián is translated by the Spanish terms mezcal, aguardiente or vino. The Cora drank home-made mescal at their puberty rituals.[29]

In the United States, nearly all Southwestern groups save the Pueblos used intoxicants. The Apache of Arizona and New Mexico often preceded their ceremonial drinking of tizwin or tulpi by a long fast, that they might the better experience its effects. The Chiricahua Apache make tesvino or tulpi, sometimes adding other substances to make it more intoxicating; they likewise make a drink of various species of yucca whose fleshy, banana-like fruit contains much sugar. The species most commonly used are *Yucca baccata* Torr., *Y. macrocarpa* Colville and *Y. Treculeana* Carr. The Chiricahua have a Coyote story involving the use of "mountain laurel berries" or "mescal beans" also. The Coyotero make tesvino and recently have begun mixing whisky with it to make it stronger. The Mescalero mix tulipi with the inner bark of a pine tree; the San Carlos Apache make pitahaya wine as well as tulipi, and to their tesvino added numerous other substances.[30] The Tonto make tesvino, which they occasionally "spike" with whisky. Tulapai is made by the Western Apache also. The White Mountain Apache sometimes add the roots of *Datura meteloides* and other plants to their tulapai.[31]

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[28] Hrdlička, *op. cit.*, pp. 27–28; C. Basuri, *Monografía de los Tarahumaras*, (Mexico, 1929), p. 68; Lumholtz, *Unknown Mexico*, Vol. 1, pp. 125–27; also C. Lumholtz, *Tarahumari Life and Customs* (Scribners Magazine, Vol. 16, No. 3, 1894), p. 299, and *Tarahumari Dances and Plant Worship* (*idem*, No. 4), pp. 438, 442.

[29] Hrdlička, *op. cit.*, p. 28; Lumholtz, *Unknown Mexico*, Vol. 1, pp. 125–26, 460–61, 510; A. Gatschet, Ms. in Bureau of American Ethnology; Hodge, *Handbook*, Part 1, p. 34℄.

[30] E. g., "crazy medicine" (root of *Lotus Wrightii*), "make noise" (*Cassia Couesii*, root), "medicine sticks" and aromatic root or roasted seeds of *Canotia holocantha* (Hrdlička, *op. cit.*, pp. 27–28).

[31] Havard, *Drink Plants*, pp. 35–37; Hrdlička, *loc. cit.*; M. E. Opler, *Autobiography of a Chiricahua Apache* (ms.); Henry, *op. cit.*

Even today, in the northern part of their reservation, the Papago make a fermented liquor from the fruit of the giant cactus or sahuaro (also called haren, sawado, or saguaro). When the fruit is ripening, they laughingly point at it and say, "See the liquor growing!" and sing songs about it. The liquor was formerly the central feature of their seasonal rain-making ceremonies: "Much, much liquor we made," said a Papago woman, "and we drank it to pull down the clouds." In its preparation the men dance in a great circle around a fire, following a leader with a rattle, and later the women join them so that men and women alternate in the circle. Thus they dance and sing for two nights, while the medicine men make magic with strings of eagle feathers and sprinkle the dancers with eagle down, which symbolizes clouds. Next the liquor is strained through baskets and a gourd is passed around until all the liquor in the council house is consumed. Then they visit from house to house and drink the liquor which each woman has brewed and buried in the ground with the injunction, "Do you ferment and let us get beautifully drunk." No family may drink its own liquor lest the house burn down, but they drink at other houses, vomit, and go on to visit others and sing songs. The Papago also manufactured corn tesvino, and sometimes mescal, or got it and sotol from Mexico.[32]

The Otomi, like the Mazahua, drank pulque, while the Opata used corn tesvino as well as drinks made of native grapes and a number of cacti. The Pima and Maricopa prepare sahuara wine, and the Pima make agave pulque in addition. The Maricopa lack both pulque and tesvino, but they gathered the cactus fruits near the Yavapai country in mid-June. They boiled a large number of pots of the juice, and in fermenting mixed them so that all would be ready at about the same time two days later. Maricopa custom dictated that the guests must have become drunk before the host may partake, after which friends of the invited guest might drink. The custom was rigidly formalized.[33]

The ẋatca or "wine" song, performed at no other time, was part of the drinking festivities. An informant of Spier's said of the Maricopa that "when they were drunk they thought of war." The song told of "red water," i.e., blood, and how it was made (though the drink is blood-red in color, the name of the song means neither "blood" nor "red water"). It told how the enemy had come to drink with them: they had joined in battle, and now

[32] R. Underhill, *The Autobiography of a Papago Woman* (Memoirs, American Anthropological Association, No. 46, 1936), pp. 2, 10, 45–47; C. Lumholtz, *New Trails in Mexico* (New York, 1912), p. 47; Hrdlička, *op. cit.*, p. 28; Havard, *op. cit.*, p. 35.

[33] Hrdlička, *loc. cit.*; Hodge, *Handbook*, Part 1, p. 468; A. L. Kroeber, *The Seri* (Southwest Museum Papers, No. 6, 1931), p. 46.

they would drink together. The intoxication and incitement of the song commonly ended in a decision to go on a raid, for at the time the sahuaro was harvested the Yavapai were camping in the mountains not far distant, not, as in winter, in isolated caves. The same song is recorded for the Halchidoma, who say the Pima got it from them, and the Maricopa from the Pima, though Dr Spier notes verbally that the indicated direction of diffusion is not too probable. The man who had first dreamed the song had heard the enemy singing it. In connection with this reference to war, Cremony writes:[34]

It is upon [sahuaro] liquor that the Pimos, Maricopas, and Yumas get drunk once a year, the revelry continuing for a week or two at a time; but it is also a custom with them to take regular turns so that only one-third of the party is supposed to indulge at a time, the remainder being required to take care of their stimulated comrades and protect them from injuring each other or being injured by other tribes.

The Gila River Yuman trait of making a fermented drink from the fruit of the giant cactus or sahuaro, according to Kroeber, is lacking among the Colorado River Yumans. The Havasupai, Walapai, Mohave, Cocopa, Navaho, and Ute, like the Pueblos, lack native alcoholic intoxicants.[35] However, Park reports for a region much farther north that the Paviotso made a "fermented drink from a reed-like plant," and a number of tribes in California are said to have made a cider from manzanita berries, which was fermented. The pissioina liquor of the Yuma, made of wheat roasted until brown, pulverized, and fermented in water, is not aboriginal, at least as far as its basis is concerned.

Kroeber says the Gila is the northwestern limit of alcohol, but the problem remains as to why the sedentary grain-growing Pueblos lacked fermented liquors when many of their nomad neighbors had them. Havard would make this largely a question of geography, involving the historical accidents of a possibly late diffusion of the trait. Beals, more plausibly, admits a possibly late diffusion, but suggests that there may be something in Pueblo ritual and belief antagonistic to the spread of the trait. The explanation by differential diffusion gains weight when it is recalled that the jimson-weed cults of northern Mexico are found in southern California as far north as San Francisco Bay, and not in the Pueblos; and that, similarly,

[34] Cremony, in Havard, *Drink Plants*, p. 36 (species used are *Cereus giganteus* and *C. Thurberi*); L. Spier, *Yuman Tribes of the Gila River* (Chicago, 1933), pp. 56–58, 105, 146, 162, 258, 262, 269; W. Park, Paviotso field notes (ms.).

[35] But Hrdlička (*Medical and Physiological Observations*, p. 27) says wine is made from grapes at Isleta.

the peyote cult of northern Mexico affected only one Pueblo, Taos,[36] besides such Southwestern nomads as the Mescalero, before jumping northeastward to run riot in the Plains clear up to beyond the Canadian border. The heavily institutionalized and ritualized religions of the Pueblos evidently found little place in them for such orgiastic experiences as the California datura-intoxication, the Yuman alcoholic or dreamed vision, or the individualistic Plains peyote-vision.[37]

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[36] Again, Taos—perhaps the most Plains-like of Pueblos—was the only one which the Ghost Dance excitement affected. Another marginal Pueblo, Zuñi, which also had the somewhat orgiastic urine-dances, was the only one which used datura ritualistically.

[37] Kroeber, *Seri*, p. 46; Havard, *Drink Plants*, pp. 35–36; R. L. Beals, *The Comparative Ethnology of Northern Mexico before 1750* (Ibero-Americana, No. 2, 1932), p. 133. Beals' Tables 31 and 138 show virtual identity in the distribution of intoxicating liquors and ceremonial drunkenness. This writer suggests a connection of the intoxicating liquors of the Southwest with the "black drink" (*Ilex cassine*) of the Southeast. F. G. Speck (*Catawba Texts*, Columbia University Contributions to Anthropology, Vol. 24, 1934, p. 61) reports that the Catawba made a beer of the flat pods of the black locust, but the *ilex* purgative-drinks appear rather to affiliate with northeastern South America and the Amazon Basin via the Antilles. Nevertheless, it is highly probable that such drugs and drinks as the middle American native beers, the "black drink" and other *ilex* teas, peyote, the mescal bean (*Sophora secundiflora*) the narcotic mushroom teo-nanacatl of Mexico, datura (of northwestern Mexico, southern California, and northwestern South America), coca-chewing, the South American "death-vine" drink (aya-huasca, *Banisteria caapi*), marihuana (*Cannabis indica*) in Mexico, pasta guarana (*Paullinia cupana*) of South America, cohoba snuff (*Piptadenia peregrina*) of the Antilles and South America, chocolate (*Theobroma cacao*, which contains the mildly stimulating alkaloid theobromine), and yahé (*Haemadictyon Amazonicum* Spruce) of South America, as well as tobacco, may have had considerable importance in the development of the basic New World religions of the visionary type. All produce physiological and psychic disturbances of greater or lesser degree, which would promote the vision-experience.

THE INCIDENCE, CHARACTER, AND DECLINE OF POLYGYNY AMONG THE LAKE WINNIPEG CREE AND SAULTEAUX

By A. IRVING HALLOWELL

DEPENDING upon the number of individuals involved and their sex, it has long been customary to differentiate marital unions as monogamous, polygynous, and polyandrous. These terms have likewise been used more or less systematically to characterize familial institutions, and surveys have been undertaken to establish the occurrence of the different forms of marriage prevailing at this or that period or place in the history of mankind. Cases of polyandry still remain something of a collector's item. Yet how much do we know about how polyandry actually works, even in the societies where it is known to occur? The fact is that, without further analysis, such broad characterizations, when applied to any particular people, are insufficient to evoke a precise or realistic picture of actual marital conditions. Simply to assert that such and such a people are polygynous really does no more than make us aware that a certain type of plural marriage is permitted. In one society polygynous men may, at the most, have two or three wives; in another the average number of wives may be twice this number or more. The sororate may act selectively with respect to the choice of the second wife here, while there, some other agency is influential. Polygyny, too, may be a caste or class prerogative in one society and not in another; household and general domestic arrangements will differ, and so on.

Among the factual data necessary for a realistic account of polygyny in any given society, information on the actual incidence of polygynous marriages and the number of wives each man has, is basic. Yet this is a type of information often difficult or impossible to obtain among the aboriginal peoples of the contemporary world. Among North American Indians of today, for example, it is practically impossible to secure such information. Polygynous marriages are known to have existed in the past, but they have long since disappeared under the moral pressure exerted by the missionaries, as well as through the operation of other factors. As a basis for estimating their former incidence we usually are forced to rely upon retrospective generalizations of the natives themselves, or statements of contemporary observers. In a few instances, genealogical data are available which, while never penetrating very far into the past, provide the basis for more precise quantitative inferences.

SOURCE MATERIAL

A few years ago I was fortunate enough to come into possession of some documentary material that furnishes reliable information, over a period

of seven years, on the *actual* incidence of polygyny among Cree and Saulteaux bands of the Lake Winnipeg region. These documents comprise two Treaty Books. They contain the original entries of annuities paid to Indians who were parties to Treaty No. 5. This Winnipeg Treaty, as it is often called, was negotiated in 1875 and the entries are for that year and each succeeding year until 1881. By the terms of this treaty, the Dominion Government obligated itself, in return for the claims relinquished by the aborigines, to pay each Indian $5.00 annually in perpetuity. Consequently the records of these payments, year by year, are as accurate a measure as can be obtained of the native population. And since the entries are made in columns headed *Men*, *Women* (wives), *Boys*, *Girls*, *Other Relatives*, to the left of which appears the name of some particular male individual, a certain amount of statistical information can be compiled from them. In addition, a gossipy note or two is occasionally entered opposite the name of an individual which provides a colorful touch and sometimes a clue to personal events in their lives. With the exception of the initial year of the treaty period when all of the Indians within the geographical limits defined were not present to receive their annuity, or did not fully understand the conditions imposed, there is no reason to suppose that, during the succeeding years, any eligible native failed to collect the amount promised for himself, his wife or wives, children and other relatives.

ETHNIC GROUPS

The geographical boundaries officially delimited by the Winnipeg Treaty embraced an area estimated at 100,000 square miles.[1] (See map, fig. 1.) Linguistically, the native population belonged to the Algonkian stock. Occupying the eastern border of Lake Winnipeg and inland to the Height of Land[2] were the Saulteaux (Ojibwa) speaking peoples. From south to north, beginning at the Winnipeg River,[3] they comprised: (a) the so-called Island bands,[4] i.e., Indians living east of Lake Winnipeg in the

[1] Alexander Morris, *The Treaties of Canada with the Indians of Manitoba and the Northwest Territories, etc.* (Toronto, 1880), p. 143. For the territorial boundaries described in the treaty itself, see p. 344. A map showing the boundaries of Treaties 1 to 7 is to be found in George G. F. Stanley, *The Birth of Western Canada* (London, 1936), p. 210.

[2] The topographical feature providing the eastern boundary specified in the treaty.

[3] But not including the Fort Alexander band.

[4] The generic designation that appears in the Treaty Books and the Government documents of the period. Cf. Morris, *op. cit.*, p. 350. Only those at Dog Head were paid in 1875, the others not being rounded up until the following year when the commissioners had some difficulty in persuading them to elect and recognize a common chief. See Morris, *op. cit.*, p. 154 *seq.* Since that time the Indians comprising the Island bands have been subdivided into three groups.

region of the Manigotagan (Bad Throat) River, the Blood Vein River, and those in the neighborhood of Dog Head and, on the western side of the lake the band at Jack Head, and a few nomadic families from White Mud (now Icelandic) River that really belonged to the St Peter's band on the

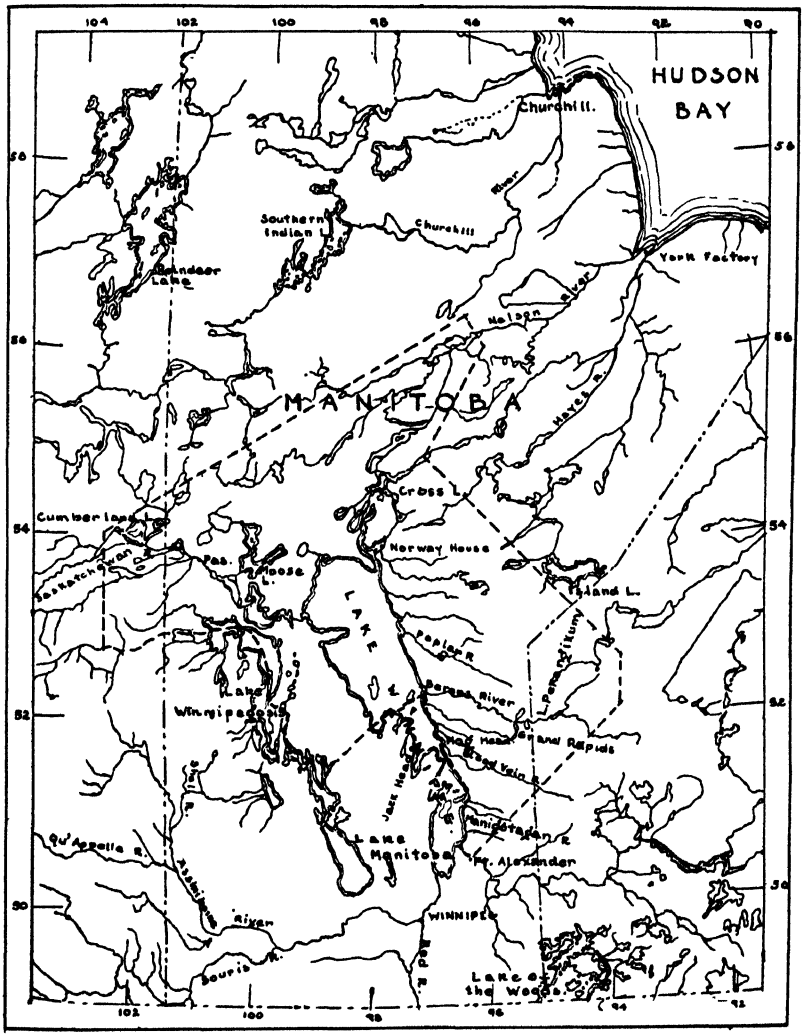


FIG. 1. Map of the Lake Winnipeg region. The boundary established by the Winnipeg Treaty (1875) is shown by the dash line.

Red River; and (b) the Berens River bands (i.e., the band at the mouth of this river and the people farther inland for 250 miles, now divided into two additional bands, Grand Rapids and Lake Pekangikum, as well as the Indians on the Poplar River to the north). In 1876 these Saulteaux Indians, as represented by treaty payments, numbered 668 persons.

To the north of them, surrounding northern Lake Winnipeg and extending up the Saskatchewan River to the west, were Cree speaking bands that made up the remaining adherents to the Winnipeg Treaty. They comprised the following bands: Norway House, Cross Lake (60 miles north of Norway House), Grand Rapids (mouth of the Saskatchewan), Moose Lake, The Pas, Cumberland Lake. The Indians of these Cree bands who received treaty payments in 1876 numbered 2185. Adding the population of the Saulteaux bands to them, we get a total of 2853 individuals. For the territory embraced by the Winnipeg Treaty this gives an areal density of .028 persons per square mile.[5]

All of these Indians were hunters, trappers, and fishermen and, except for the fact that the Saulteaux had sibs, while the Cree did not, their basic social organization was identical.[6] Other aspects of their culture only differed in details that are irrelevant to the topic under discussion.

REGIONAL PREVALENCE OF POLYGYNY

At the time that the Winnipeg Treaty was made, however, there were essential differences in the above mentioned bands with respect to the degree to which Christianity had been embraced. Significantly enough, this aspect of the acculturative process exhibits a definite correlation with the presence or absence of polygyny. Polygyny is absent in all of the Cree groups with the exception of the bands at Cross Lake and Moose Lake. That this fact is connected with missionary efforts there is no reason to doubt. In 1840, with Norway House selected as the base of operations and Rev James Evans in charge, the British Wesleyan Missionary Committee inaugurated the first attempt to Christianize the native Cree in the neighborhood of northern Lake Winnipeg.[7] In the 'forties missionaries were

[5] The estimate given by A. L. Kroeber for the eastern sub-arctic area (*Native American Population*, American Anthropologist, Vol. 36, pp. 1–25, 1934, p. 5) is precisely the same. For the northern Plains a higher figure is reported, a density of 0.3+persons per square mile calculated by Clark Wissler (*Changes in Population Profiles among the Northern Plains Indians*, Anthropological Papers, American Museum of Natural History, Vol. 36, Pt. 1, 1936, p. 36) from Alexander Henry's population data collected at the beginning of the 19th century.

[6] See A. I. Hallowell, *Cross-Cousin Marriage in the Lake Winnipeg Area* (Twenty-fifth Anniversary Studies, Philadelphia Anthropological Society, 1937).

[7] See (Mrs.) F. C. Stephenson, *One Hundred Years of Canadian Methodist Missions* (2 vols., Toronto, 1925).

also sent to Cumberland and The Pas and later to Grand Rapids.[8] Some of these Cree bands, then, had had missionaries in residence for as much as thirty-five years. The two bands mentioned were not among these, however, and despite their proximity to Norway House, the Cross Lake Cree are referred to by Commissioner Morris at the time of the treaty as the "Wood or Pagan Indians of Cross Lake."[9] The chief, he says, had just been baptized.

In contrast with the Cree, the Saulteaux east of Lake Winnipeg had remained unchristianized much longer. As late as 1854 when Rev J. Ryerson made an inspection tour of Wesleyan missions on Lake Superior and in the "northwest," there were no missions of any kind on the eastern shores of Lake Winnipeg between Fort Alexander and Norway House.[10] The first mission to be established there was at Berens River. But this was not until 1873, only two years before the treaty[11] was signed.

As of the year 1876, when the first representative census derived from annuity payments is available, the bands in which polygynous marriages occur comprise only 39 percent of the native population within the boundaries delimited by the Winnipeg Treaty. In the remainder of the Indian population of this area, polygyny was even then an institution of the past, although it is possible that sporadic cases were kept under cover and the annuity payment collected under the guise of "other relatives,"[12] in the communities under direct missionary influence. In view of what has been said above, however, with respect to the relatively late influence exerted by the missionaries in the Saulteaux bands, it is significant that polygyny is reported in all of them. But numerically, the Saulteaux comprised less than a quarter (23 percent) of the entire native population of the treaty area at this time.

LOCAL INCIDENCE OF POLYGYNY

I have summarized the information on the local incidence of polygyny for the period 1875 to 1881 in Table 1. It exhibits the total number of

[8] At the time the treaty was signed Morris (*op. cit.*) refers to a church, school, and parsonage at The Pas (p. 161) and similar equipment at Cumberland (p. 163), while at Grand Rapids there was a building that served as a church and school (pp. 160–163).

[9] *Op. cit.*, p. 148.

[10] *Hudson's Bay, or a Missionary Tour in the Territory of the Honorable Hudson's Bay Co.* (Toronto, 1855), p. 80.

[11] Rev E. R. Young, who had been stationed at Norway House since 1868 was the first missionary. See his *By Canoe and Dog-Train among the Cree and Saulteaux Indians* (New York, 1890), pp. 46, 252. Later, upon leaving the Berens River Mission, Rev Young's heart rejoices at the results of his efforts "among such a wicked and degraded tribe as were these Saulteaux, so different from the more peaceful Crees" (p. 265). Cf. Stephenson, *op. cit.*, pp. 114, 118.

[12] Some actual instances of this will be referred to later.

TABLE 1. LOCAL INCIDENCE OF POLYGYNY

Year	Band	Population	Adults		Minors		Married Men*						
			M.	F.	M.	F.	Total	With 1 wife	With 2 wives	With 3 wives	With 4 wives	Percent polygynous	Percent with more than 2 wives
1875	Berens River	201	39	53	58	51	34	29	3	2	0	15	6
	Island Bands	28	8	10	5	5	5	4	1	0	0	20	0
	Cross Lake	161	35	42	38	46	29	23	6	0	0	20	0
	Total	390	82	105	101	102	68	56	10	2	0	17.6	3.6
1876	Berens River	392	75	102	120	95	69	58	9	1	1	19	3
	Island Bands	276	59	67	86	64	47	44	1	2	0	6	4
	Cross Lake	185	38	48	41	58	33	25	8	0	0	24	0
	Total	853	172	217	247	217	145	127	18	3	1	15.2	2.8
1877	Berens River	410	84	106	123	97	75	65	8	1	1	13	3
	Island Bands	236	47	60	76	53	38	36	0	2	0	5	5
	Cross Lake	207	46	51	47	63	36	30	6	0	0	16	0
	Total	853	177	217	246	213	149	131	14	3	1	12.1	2.7
1878	Berens River	439	91	111	137	100	81	71	8	2	0	12	2
	Island Bands	241	47	62	76	56	39	36	1	2	0	8	5
	Cross Lake	207	52	54	46	55	40	35	5	0	0	12	0
	Total	887	190	227	259	211	160	142	14	4	0	11.3	2.5
1879	Berens River	474	93	115	156	110	83	73	8	2	0	12	1
	Island Bands	244	50	63	73	58	41	38	1	2	0	7	5
	Cross Lake	216	53	59	51	53	44	40	4	0	0	9	0
	Total	934	196	237	280	221	168	151	13	4	0	10.1	2.4
1880	Berens River	480	88	113	163	116	79	70	8	1	0	11	1
	Island Bands	243	45	62	73	63	40	37	1	2	0	7	5
	Cross Lake	225	52	61	57	55	44	40	4	0	0	9	0
	Total	948	185	236	293	234	163	147	13	3	0	9.8	1.8
1881	Berens River	497	95	114	168	120	78	69	8	1	0	12	1
	Island Bands	253	50	65	77	61	45	42	2	1	0	7	2
	Cross Lake	231	48	65	60	58	44	42	2	0	0	5	0
	Total	981	193	244	305	239	167	153	12	2	0	8.4	1.2

* With spouses living.

married men, the number of wives reported for each man, the percentage of polygynous marriages, and the percentage of men with *more* than two wives. The Moose Lake Cree have not been included because, for some reason unknown to me, the entries are limited to the years 1876 to 1878.

In 1876 there were 6 men with 2 wives apiece out of a total of 43 married men, a percentage that falls within the range exhibited by the other bands.

Table 1 also indicates correlative information on the total population of the several bands and on the sex ratio for adults and for minors.[13] It will be seen that among the minors, with few exceptions, males predominate, and among the adults, women. While these ratios are necessarily crude, I see no reason to doubt the relative proportion of the sexes as indicated. Indeed, it is a striking fact that the population figures compiled by Alexander Henry at the beginning of the 19th century, which contain an entry for the natives of "Lake Winnipic," exhibit a comparable sex ratio for adults.[14] Wissler, moreover, who has compiled the most elaborate data we have on sex ratios among the Canadian Indians from Canadian Government records comparable to those I have used, finds low ratios for adults under non-reservation conditions.[15] Among the Woods Cree, in particular, he found a striking excess of females.[16]

While I do not believe that it is legitimate to argue from the Lake Winnipeg population statistics that a surplus of women, under aboriginal conditions, was a primary causal factor in the prevalence of polygyny, it is evident that such ratios as those exhibited in Table 1 constitute a favorable condition for polygyny, whereas this would not be the case if there were a surplus of men. I would also like to point out that the band figures taken separately, rather than the totals for each year, are probably of the most sociological significance, since intra-band, rather than inter-band marriages were the rule. It will be seen from an inspection of these figures (Table 1) that the percentage of polygynous men ranges from 5 to 24, the percentage of men with more than two wives from 0 to 6.[17]

On the whole I am convinced that the quantitative data tabulated are

[13] Entries in the Treaty Books under the heading "Other Relatives" have been allocated to age and sexual categories. The margin of error is small because the book containing the entries from 1879 to 1881 distinguishes male and female under "Other Relatives." This makes sex certain for these years. Both books contain notations in almost every case that indicate who the "Other relatives" are. These notes make sex differentiation possible for the years 1875–1878 and are the basis of age distinctions for the total series of years.

[14] See Wissler, *op. cit.*, p. 43.

[15] *Ibid.*, p. 38 (General Summary). In respect to the sex ratio of minors, Wissler found an approximate equality among the Cree, Assiniboine, and Blood; female minors slightly in the minority among the Blackfoot and the tribes of British Columbia (p. 18).

[16] *The Excess of Females among the Cree Indians* (Proceedings, National Academy of Sciences, Vol. 22, pp. 51–153, 1936).

[17] This latter figure would have been raised to 8 percent if a man with four wives who lived up the Berens River had applied for his treaty money in 1875. As it was, he does not appear on the rolls until 1876.

not only a reliable measure of polygyny in these particular bands but that the maximum percentages approximate the maximum incidence of polygynous marriages in the general cultural and ecological conditions under which the native population lived. If so, our data are not merely an adequate sample of the former incidence of polygyny under older aboriginal conditions in this area, which the Berens River Saulteaux and Cross Lake Cree undoubtedly approximated at the period immediately following the treaty. They are a measure of the extent to which polygyny occurred among Cree and Ojibwa peoples generally at still *earlier* periods. A glance at some of the statements made by traders, missionaries, and travellers who came into contact with these Indians in the 18th and early 19th centuries will be instructive in this connection, supplemented by the later observations of ethnologists in the 20th century.

COMPARATIVE INCIDENCE OF POLYGYNY

Some of the early observers of the Cree and Ojibwa (Saulteaux) simply assert that polygyny is permitted, while a few statements are couched in terms that lead one to suppose that almost every man had more than one wife. Alexander Henry, the Younger, for instance, asserts that "the Cristinaux have *usually* two wives each and often three" (italics ours).[18] We do have statements, however, which are probably more exact. Franklin (Richardson), for example, referring to 120 Indian hunters (Cree) who frequented Cumberland House in the early 19th century says, "Of these a few have several wives, but the majority have only one. . . . "[19] Ballantyne,[20] too, remarks that a single wife is the rule. Hence Skinner's categorical statement for the Eastern Cree that "polygamy was once common but has now been given up,"[21] is an extremely loose statement for an ethnographer to make. But he is equally incautious in respect to the Northern Saulteaux, among whom he finds polygyny not only to be common but "*only limited* by a man's means to maintain a harem" (italics ours).[22] This statement, however, can be balanced by that of Grant[23] who says that these Indians are generally content with one wife.

[18] E. Coues (ed.), *New Light on the Early History of the Greater North West. The Manuscript Journals of Alexander Henry and David Thompson, 1799–1814* (2 vols., New York, 1897), Vol. 1, p. 249.

[19] John Franklin, *Narrative of a Journey to the Shores of the Polar Sea in the Years 1819, 20, 21, 22* (Philadelphia, 1824), p. 53.

[20] R. M. Ballantyne, *Hudson's Bay* (London, 1848), pp. 78–79.

[21] A. Skinner, *Notes on the Eastern Cree and Northern Saulteaux* (Anthropological Papers, American Museum of Natural History, Vol. 9, Pt 1, 1911), p. 57. [22] *Op. cit.*, p. 151.

[23] Grant in L. R. Masson, *Les Bourgeois de la Compagnie du Nordouest* (2 vols., Quebec, 1889), Vol. 2, pp. 320–21.

While these estimates of the number of wives retained by polygynous men vary somewhat, they indicate a general trend of agreement in respect to the small number of spouses in plural marriages. For the Cree two or three are mentioned by Henry[24] and Drage[25] ("a number which they seldom exceed"). Ballantyne[26] states that it is "looked upon as neither unusual nor improper to take two or even three wives," while a very good hunter may have four; and Robson says "they generally content themselves with two."[27] Here again Skinner overtops the estimate of others on this point in his assertion that the number of wives in polygynous marriages "varied from four to five."[28] In individual cases of course this may have been true. La Verendrye[29] reports a Cree "Chief" (La Marteblanche) with five wives, Grant refers to a similar case,[30] and Keating to an Ojibwa chief with nine wives.[31] But these figures can scarcely be taken as an average in view of other statements quoted. Observers of the Ojibwa (Saulteaux), moreover, are in agreement with those referring to the Cree. Grant says a good hunter may have two or three wives.[32] Kohl states that they "rarely have more than three wives."[33] Cameron writes that they "seldom take more than four."[34] Densmore[35] adheres to an estimate of two or three as usual in polygynous marriages, but says that a Canadian Chippewa stated that many Indians had two and that in olden times some men had five. It is all the more amazing then to read Skinner's statement that among the Saulteaux "men having thirteen wives are still remembered though five to seven were more *common*" (italics ours).[36] One cannot help wondering whether Skinner was completely unaware of the fact that Indian informants, like ourselves, may sometimes exhibit the common human trait of projecting their own personal fantasies into statements made about by-gone days.

In my own genealogical data from the Berens River, including reliable information on some 200 marriages, I have recorded a single instance in

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[24] *Op. cit.*

[25] *An Account of a Voyage for the Discovery of a North-West Passage . . . by the Clerk of the California* (2 vols., London, 1748–49), Vol. 1, p. 208. [26] *Op. cit.*

[27] Joseph Robson, *Account of Six Year's Residence in Hudson's Bay, 1733–36 and 1744–47* (London, 1752), p. 52. [28] *Op. cit.*

[29] *Journals and Letters of Pierre Gaultier de Varennes de la Verendrye and his Sons* (Champlain Society, L. J. Burpee, ed., Vol. 16, 1927), p. 164.

[30] "Kakegameg the late chief of Lac Lapluie, had not less than 5 wives" (Grant, *op. cit.*).

[31] W. H. Keating, *Narrative of an Expedition to the Source of St. Peter's River, etc.* (2 vols., London, 1825), Vol. 2, p. 151. [32] *Op. cit.* [33] *Kitchi-Gami* (London, 1860), p. 111.

[34] Duncan Cameron in Masson, *op. cit.*, Vol. 2, p. 252.

[35] *Chippewa Customs* (Bulletin, Bureau of American Ethnology, No. 86, 1929), p. 73.

[36] *Op. cit.*, p. 151.

which a man had six wives. This is the same individual who appears in the treaty records of 1876 with four wives, two of his spouses having already died. So far back as the memories of the Berens River Indians go, this man holds the polygynous record. They never heard of anyone having more wives than Cɛnawágwaskaŋg.

I think that it is clear from the foregoing statements by persons who had a much better opportunity to observe native habits under aboriginal conditions than any contemporary ethnologist, that their assertions both in regard to the prevalence of polygyny and the number of wives most common in plural marriages, are in general accord with the statistical data presented. They bear out its reliability as an accurate quantitative index of polygyny under aboriginal conditions.[37] This consonance is particularly significant, it seems to me, with respect to the small proportion of men who had more than two wives.

SORORAL POLYGYNY

Only a few early observers tell us whether the wives of polygynous men were ever sisters, and if so, how frequently this was the case. Nevertheless we have some specific statements.[38] Referring primarily to the Cumberland House Cree, Franklin[39] states that a man's

> second wife is for the most part the sister of the first; but not necessarily so, for the Indian of another family often presses his daughter upon a hunter whom he knows to be capable of maintaining her well.

For the Saulteaux we have Cameron's assertion[40] that plural wives were "sometimes all sisters" and Peter Jones' general comment for the Ojibwa proper that men making polygynous marriages generally chose sisters.[41] Skinner,[42] referring to both the Cree and Saulteaux, likewise stresses the occurrence of sororal polygyny. For the former he asserts that a man

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[37] Comparisons further afield might be made. The following observations are particularly worthy of note. For the Potawatomi early in the 19th century, we have the statement of Dr Thomas P. Hall, a surgon in the United States Army, that "polygamy exists in the proportion of 25%, that some men had 3, 4 or 5 wives, and one man was known to have eight." See Keating, *op. cit.*, Vol. 1, pp. 92–93. K. Birket-Smith, basing his statement on quantitative information for two Caribou Eskimo groups, says that 25 percent of the men had two wives (*The Caribou Eskimo*, Report, Fifth Thule Expedition, Vol. 5, pt. 1, Copenhagen, 1929), p. 294.

[38] Early writers, of course, did not distinguish between blood sisters and classificatory sisters. When they refer to sisters we may assume that the former are meant.

[39] *Op. cit.*, p. 63. [40] *Op. cit.*, p. 252.

[41] Peter Jones, *History of the Ojibway Indians* (London, 1861), p. 81. Cf. Kohl (*op. cit.*): "Usually they take their wives from one family—frequently a whole row of sisters."

[42] *Op. cit.*

"marrying the eldest of a group of sisters, usually if he married again, took the younger sisters as they became old enough."

In view of the many non-quantitative statements about the prevalence of sororal polygyny throughout ethnological literature, it is unfortunate that the more exact information on the occurrence of polygyny in the Lake Winnipeg region does not also permit a quantitative answer to this further question. It is impossible, however, to tell from the Treaty Books how many of the men who made polygynous marriages took sisters for their wives.[43] I can only turn to the information contained in my Berens River genealogies as a reliable sample of Saulteaux, if not Cree, practice. I also obtained some positive information in respect to Poplar River polygynists. According to this data it appears that the wives of polygynous men were often, but by no means always, either blood or classificatory sisters.

Eight polygynous marriages appear in my genealogies. In six of these marriages the husband had two blood sisters as wives. In one of the remaining instances, the man[44] had six wives, three of whom belonged to the same sib. I was told quite positively, however, that these women were not blood sisters. But they fall into the social category of sisters because of their common sib membership. In the remaining case, the wives were neither sisters nor members of the same sib.

Of the five polygynous men from Poplar River who appear in the treaty records it is certain that three of them did not have blood sisters as wives and it is probable that the others did not. Whether any of the wives of these men were classificatory sisters I cannot say.

This factual evidence, numerically slight as it is, proves that on the Berens and Poplar Rivers at least, the marriage of sisters, whether blood or classificatory, was not an inevitable correlate of polygyny. In the former region it is particularly impressive that Cɛnawágwasaŋg had no blood sisters among his six wives and that Pazagwí·gabo, one of the most noted leaders of the Midewiwin, took both his wives from different families and different sibs. These instances are important because both these men were outstanding personalities of the aboriginal regime.

Why did men who had more than one wife often choose sisters? Personally, I do not think that there is any categorial answer to this question. I have not run across any information in the field or in the older literature

[43] But I have no doubt that this information could even now be obtained locally if inquiry were made.

[44] No. 1 in Table 3. Only five polygynous marriages are listed in this table because information on the number of offspring in the other three cases is not full enough. Of the men in this table Nos. 2, 3, and 5 married sisters.

that suggests a clearly defined customary motivation.[45] Nor does the evidence cited above suggest any formal rule.[46] The reason the natives now advance for the sororal polygyny of the past is that sisters were supposed to get along better together than women of different families. The same motivation is reported by some of the earlier observers of the Cree and Saulteaux,[47] and it is likewise familiar in ethnological literature at large. So far as the Lake Winnipeg Algonkian are concerned, it is a rationalization that may symbolize the "solidarity of sisters" as a cultural ideal and need not be taken as a literal statement of fact.[48] In terms of the functioning of the aboriginal social organization of these peoples,[49] it was probably inevitable that, in some instances, sisters would be taken as wives. At any rate, it seems to me that under the caption "sororate" sororal polygyny has too often been treated as if it were an independent variable or even a possible "cause" of other social phenomena. A familiar verbal label has made it only too easy to point up one facet of plural marriage. Hence the importance of sororal polygyny may be overemphasized, if its actual incidence and the role that it plays in the social order as a whole is not taken into account. While certainly an item worthy of note among the Lake Winnipeg Cree and Saulteaux, it probably was a great deal less than momentous in the total operation of their social life.

RANK OF PLURAL WIVES

Statements in the literature are contradictory in respect to differences in the rank of wives. For the Cree, Drage specifically states that there were no distinctions in rank,[50] while Franklin,[51] on the other hand says, "the first wife always remains the mistress of the tent, and assumes an

[45] Cf., however, the statement of Sol Tax (*The Social Organization of the Fox Indians* in *Social Anthropology of North American Tribes*, F. Eggan, ed., Chicago, 1937, pp. 273–74) that in the old days the sororate was "almost compulsory."

[46] Alexander Mackenzie (*Voyages from Montreal, etc. in the Years 1789 and 1793*, New York, 1803) speaking of the Cree (p. 67) says that "When a man loses his wife, it is considered as a *duty* to marry her sister if she has one" (italics ours). It will be unnecessary to go into this aspect of the sororate here, but it may be worth noting that Berens River informants took the contrary attitude. One man said that it would be better to marry them both together, otherwise it "looks as if you had been after her all along." In my genealogies there are surprisingly few cases of marriage with a deceased wife's sister.

[47] E.g. Jones, *op. cit.*, p. 81

[48] R. Briffault (*The Mothers*, 3 vols., 1927, Vol. 1, p. 626) points out in his discussion of the "reason" so often given for sororal polygyny, that "usages and customs do not generally owe their origins to the careful 'a priori' weighing of fine points of psychology," and that, by and large, there is evidence of *dissension* among sisters and *harmony* among polygynous wives who are *not* sisters.

[49] See Hallowell, *op. cit.*

[50] *Op. cit.*, p. 208.

[51] *Op. cit.*, p. 63.

authority over the others, which is not in every case quietly submitted to." In the case of the Saulteaux, Grant[52] writes that the first wife "claims a certain superiority over the others and is generally considered by the husband as chief mistress of the family." Kohl says, "the first wife, however, always remains at the head of affairs. . . ."[53] Among the Berens River Saulteaux I did not secure any positive information that suggested evidence of any different ranking among the wives, except that the first wife was said usually to "boss" the others. I do not believe, however, that such a status could have been very highly formalized among these northern people. Presumably, the first wife would be older than the others, which would in itself be a socially recognized token of a certain degree of authority, especially within the household. For among both Cree and Saulteaux a man and his wives constituted a single household group.[54] Plural wives never had separate wigwams.

OFFSPRING OF POLYGYNOUS MARRIAGES

As might be expected, the number of offspring of polygynous unions were often, but not always, larger than those produced by monogamous unions. Table 2 gives the distribution of dependent living children by monogamous and polygynous marriages for the years 1876, 1878, and 1881, which years have been arbitrarily selected as samples. An inspection will indicate that the largest number of offspring in each year are those of polygynous marriages. Since the average number of children per fruitful woman, calculated from my Berens River genealogies is 4.5, it may be assumed perhaps that, at any one time, it was not likely that there were more than seven or eight dependent children present in a family, as the age of marriage for both sexes was early. It will be noted in the table that 9, 10, and 11 children only occur in polygynous families. The fact that a notable proportion of monogamous marriages appear without issue probably is to be explained by the fact that year to year records include a considerable number of unions that have been freshly contracted. On the other hand, the polygynous marriages recorded for these years are those of individuals of middle age or older.

In respect to the *total* number of offspring in polygynous, as compared with monogamous, unions, no satisfactory quantitative data are avail-

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[52] *Op. cit.* [53] *Op. cit.*

[54] Among the Berens River Saulteaux, the cä'bandawan, a rectangular structure in ground plan and prismatic in form, was the typical multiple family abode of the aboriginal regime. There was a door at either end and several fires along the central axis. A polygynous family usually occupied such a dwelling. I do not know whether this was also true of the Cree.

TABLE 2. DISTRIBUTION OF DEPENDENT LIVING CHILDREN* BY MONOGAMOUS AND POLYGYNOUS MARRIAGES

Year	*Number of Children*	0	1	2	3	4	5	6	7	8	9	10	11	*Total*
1876	Number of monogamous marriages	15	35	25	16	20	13	1	1	1	0	0	0	127
	Polygynous marriages	0	1	3	2	3	2	2	4	2	1	1	1	22
	Total	15	36	28	18	23	15	3	5	3	1	1	1	149
1878	Monogamous marriages	28	28	26	24	20	12	1	0	3	0	0	0	142
	Polygynous marriages	0	1	0	5	1	1	2	3	2	2	1	0	18
	Total	28	29	26	29	21	13	3	3	5	2	1	0	160
1881	Monogamous marriages	26	28	30	27	22	12	4	4	0	0	0	0	153
	Polygynous marriages	0	1	1	0	2	2	3	0	1	3	1	0	14
	Total	26	29	31	27	24	14	7	4	1	3	1	0	167

* Appearing in the column headed "Boys and Girls" in the Treaty Books.

able.[55] The only information I have on this question comes from a handful of polygynous unions that occur in my Berens River genealogies. Five of the eleven polygynous men of the Berens River Bands who received treaty payments in 1876 (Table 1) appear in my records,[56] but I lack full informa-

[55] But it is worth noting that Keating, writing of the Ojibwa, says (*op. cit.*, p. 152) that the average number of children is four; "they seldom have as many as seven, unless they have many wives."

[56] Two others that appear in my genealogies probably died before 1876, and a third man, Ogáwapwan, I cannot identify in the Treaty Books. Four others in the Treaty records belonged to the Poplar River band.

tion on the children of one of them. In Table 3 I have summarized my information in respect to the total offspring of the other four men in the treaty records and of Ogáwapwan, whose name does not appear in these records. If miscarriages and still births were included, the number of children in each case would be higher. I tried to obtain information in regard to the number of children who died in infancy, but it is unlikely that the cases entered are all that occurred. In connection with these figures, I may

TABLE 3. TOTAL NUMBER OF CHILDREN BY POLYGYNOUS MARRIAGES OF BERENS RIVER MEN

Name of man	*Number of children by wife*						*Total*	*Dependent children 1876*
	1	2	3	4	5	6		
1. Cɛnawágwaskaŋg	5	4	2	5	4	0	20	7
2. Kepegí·ji·kweäs*	8	10					18	8
3. Tetabaiyábin†	8	9					17	6
4. Pazagwí·gabo	8	5					13	6
5. Ogáwapwan	4	4					8	?

* Oldest son of Cɛnawágwaskaŋg.

† Son of Pazagwí·gabo.

say that the range in the number of offspring of married women for the three generations in my genealogies for which I have the most complete information, is from 0 to 13. Only one woman bore 13 children, none 12, and only two women gave birth to 11 offspring. In view of these data the number of offspring of the first four polygynous marriages listed in Table 3 is obviously due to the fact that they *are* polygynous unions. However, the average number of children born to these eleven child-bearing wives of four polygynous men is six, which is higher than the average for child-bearing women of the Berens River as a whole.

WHO WERE THE POLYGYNOUS MEN?

If the data summarized in Table 1 are a reliable index of the incidence of polygyny under aboriginal conditions, the relatively small percentage of polygynous men raises further questions. Who were these men? What were their personal characteristics and life histories? Why were these par-

ticular men, rather than others, polygynous? What role did their rank or personal achievements play in the situation? Did polygyny give them a higher social status?

While it will be impossible to answer all these questions satisfactorily, they are among the questions that need to be answered in order to understand the functioning of polygyny in Cree and Saulteaux culture. By synthesizing the information contained in the Treaty Books with that obtained by local inquiry among the Berens River Saulteaux and the earlier observations on culturally and linguistically related peoples outside the Lake Winnipeg region, it is possible to obtain some insight into the dynamic factors at work.

If we include six men of the Moose Lake band (Cree), the actual number of polygynous men whose names occur in the Treaty Books is twenty-nine. Detailed biographical information about all of these particular men would, of course, throw a great deal of light upon the polygyny of this region as a going concern. Since information of this character is unavailable, I will take the polygynous men of the Berens River as a point of departure. The information which I obtained about them, while not as full or detailed as might be desired, comes directly from their immediate descendants and offers some clues that make intelligible the more fragmentary facts concerning polygynous individuals elsewhere.

Of the twenty-nine polygynous men recorded in the Treaty Books, twelve appear on the rolls of the Berens River bands during the seven years covered by the records. Five of these latter are men already mentioned as living on the Poplar River. Another man is listed solely for the year 1875, and afterwards appears on the roll of the Blood Vein River division of the Island bands. I have no information about him. Of the six men remaining, all of whom lived on the Berens River itself, I can identify only five in my genealogies. In addition there are the three polygynous men who appear in my records but not in the Treaty Books.[57]

Cɛnawágwaskaŋg, the most notorious of the Berens River polygynists, was a noted hunter and also the most famous conjurer of his time. He had gained prestige, that is to say, in the two most important aspects of life—the economic and the magico-religious.

Pazagwí·gabo and later, his son, Tetabaiyábin, were successively headmen of the Midewiwin, this being the supreme position of magico-religious importance in Saulteaux society. While it required no little ambition, persistence, and intelligence to secure and fulfill the exacting requirements of this role, these men were respected and feared chiefly because of the magi-

[57] I regret that my notes do not contain full information on the entire series.

cal power they were believed to have at their command. In addition, Pazagwí·gabo was a conjurer and practiced ni'bakí·win, a special curative technique by which material objects, magically projected into a person's body in order to cause illness or death, were removed.

Without further elaboration it is obvious that these men were among the most important in a society which lacked any institutionalized leadership of a purely *secular* kind. No one was formally charged with executive, legislative, judicial, or penal functions. It was precisely for this reason that the individuals who exercised magico-religious, curative, or clairvoyant functions became the real leaders in effect, even in spheres outside of their immediate specialties. Men of this type then were prominent among the polygynists.

The same situation appears to have existed among the Poplar River Saulteaux. For according to what information I have, two of the five polygynists there were prominent "medicine men."

On the Blood Vein River to the south a similar correlation holds in the case of the one man about whom I have positive information. He was known to my Berens River informant as Wagi·bí·kwan, Crooked Back. Although he does not appear in the Treaty Book under this name he was undoubtedly one of the two men with three wives recorded for the Island bands. I was told that at first he had two blood sisters as wives. When one of these women fell ill, his parents-in-law promised Crooked Back another one of their daughters if he was successful in curing the one who was ill. He did cure the latter and then took the third sister as a wife. A custom similar in principle was once in vogue among the Berens River Saulteaux and is reported for the Ojibwa by Ruth Landes. She writes,[58] "If a shaman had cured a girl of a dangerous illness, had 'given life to her' through the power of his guardian spirits, he might receive her in payment for his priceless services." The Blood Vein case involves the application of this idea indirectly and it is easy to see how such a prerogative exercised by those engaged in professional curing could operate in building up a series of plural wives.

Further evidence in respect to the status of the Berens River men mentioned comes from another angle. It was formerly the custom, during the period when the competition for fur was keener than it is now, for the factor at the local post to make one or more of the best Indian hunters or leading men his unofficial agents.[59] These Indians were counted upon to

[58] Ruth Landes, *The Ojibwa of Canada* (in *Cooperation and Competition among Primitive Peoples*, Margaret Mead, ed., 1937), p. 106.

[59] Atawágani·ogimakan, barter chief.

exercise sufficient control over their fellows so that the fur the latter caught would be taken to the Company and not to a rival trader. The "Barter Chiefs" usually received a new suit of clothes annually, a little rum, tobacco, and sometimes a red feather to wear in their hats.[60] Thus the fact that Cɛnawágwaskaŋg and Tetabaiyábin were "Barter Chiefs" in their time is additional evidence that they were leaders, as well as excellent hunters.

It is clear then that among the Saulteaux east of Lake Winnipeg the polygynous man was often, if not inevitably, out of the common run. He must have been an exceptionally good hunter[61] and often he was a leader by virtue of the reputation he had built up as the possessor of magico-religious, curative, or clairvoyant powers. Thus while we cannot say that polygyny was a prerogative of rank in a formal sense, in effect, it often amounted to this, and consequently became a tangible sign of social prestige.

The two other Berens River polygynists who appear in Table 3 (Nos. 2 and 5) were said to have been excellent hunters, but so far as I know, they were not noted for any magico-religious powers. I do not think that this fact contradicts the correlation pointed out above in the case of the other men in view of the extremely individualistic character of Saulteaux society and the fact that polygyny was not a formally recognized prerogative. While a good hunter might or might not be a polygynist, there was a greater expectation that a man who, in addition, was noted for his possession of magico-religious powers and hence stood out as a leader among his fellows, would be a polygynist.

A few casual statements by early observers support the correlation between leadership and polygyny, and personally I would assume that magico-religious powers were the supporting base upon which the fact of leadership rested. The three most striking examples have already been cited—a Cree "chief" with five wives (La Verendrye), a Saulteaux chief with the same number (Grant), and an Ojibwa chief with nine (Keating)—because the number of wives these men had was above the average. Although it is impossible to identify the tribes Carver[62] refers to, it is worth while to call attention to a passage in which he stresses the fact that chiefs

[60] Local information.

[61] From the native point of view this was attributable to magico-religious powers rather than to personal skill, as such. References to being a good hunter as a prerequisite to polygyny are to be found in Drage, Robson, Grant, and Ballantyne.

[62] Jonathan Carver, *Travels through the Interior Parts of North America, in the Years 1766, 1767, and 1768* (London, 1778), p. 260.

have the most wives. At the same time he points out that polygyny is not limited by rank.

In the Lake Winnipeg region the fragmentary evidence we have indicates that the correlation between magico-religious functions, leadership, and polygyny was carried over into the treaty period. The pagan bands, in particular, when asked to elect chiefs and councillors by the commissioners, often chose the "medicine men" who had been their unelected leaders under the aboriginal regime. Täpästä'nam, of the Cross Lake band, was one of these, and Sagatcí·weäs, leader of the Midewiwin, was elected by the Island bands. These two men were not among the polygynists but two of the councillors of the Island bands were. One of these was Thickfoot, the leader of the band from Dog Head, who sulked because he was not made chief; the other was the leader of the band across Lake Winnipeg at Jack Head. The leader of the Grand Rapids band on the Berens River, who also became a councillor under the head chief of all the bands, Jacob Berens, was also a polygynist. At Moose Lake, too, a councillor was polygynous. If we had more detailed information I feel sure that these fragmentary correlations would be upheld with evidence that would demonstrate the selective influence of characteristic cultural values upon the incidence of polygyny. The deeper lying personality factors must, of course, remain obscure.

DECLINE OF POLYGYNY

Perhaps the most striking feature of the statistical data presented in Table 1, when the total figures for all of the bands together are inspected is the progressive annual decline in the percentage of polygynous men as a whole, and of those having more than two wives.

As already pointed out, polygyny once flourished in the population of the whole area delimited by the Winnipeg Treaty. By 1876 it was already extinct in the bands representing 61 percent of the Indian population. The decline observable in our sample thus represents a continuation of this process of extinction, under conditions of acculturation that were spreading to the bands previously unaffected. The most effective factor leading to decline was undoubtedly the hostile attitude that the missionaries assumed towards polygyny. Everywhere they went they took vigorous measures to stamp it out.

Behind the bare statistical data revealed in the Treaty Books, it is possible to discern some details of the processes at work. With a single exception,[63] no new names of polygynous men appear in these records after

[63] A Saulteaux from Jack Head who received an annuity for one wife in 1876 and 1877, and for two wives in 1878 and three years thereafter.

1876. This means, of course, that fresh polygynous unions were not being contracted. Although I have no way of proving it, I judge that most of the polygynous men were of middle age or older at the time the treaty was signed. Such was the case with respect to those belonging to the Berens River bands and several others who were known by reputation to my Berens River informants.

Secondly, some names of polygynous men disappear from the Treaty Books as the years go by. I think we may assume that death accounts for their absence from the record rather than removal to some other locality. If the latter were the case, they would appear on the roll of some other band unless they moved to a section of the country outside of the borders of the Winnipeg Treaty. In a few instances the wives and children of the polygynists of one year can be identified in successive years. In these cases it is quite obvious that death removed the husband.[64]

In the third place, one or more of the wives of several polygynous men died during the period covered by the records. Cɛnawágwaskaŋg, for instance, had only three wives left by 1878, but he still falls into the polygynous category. But in cases where a man had only two wives to begin with and lost one of them, I have henceforth counted him as monogamous.

Finally there is evidence of separation. The second wife of a Cross Lake bigamist, for instance, is entered under her own name in 1881, as "abandoned wife No. 2 of Andrew O—." Whether this abandonment was due to the increasing adoption of the Christian ideal of monogamous marriage that was permeating this band at the time, I do not know. But this process was at work and together with the other causes mentioned, helps to account for the decline in polygynous unions. The evidence in the case of the Cross Lake band in particular is clear because in 1879 the second wives of two polygynous men are given separate entries and marked "put away."[65] One of these women had evidently taken her children with her, since the former husband is paid for wife number one and five children that year, while wife number two is paid the usual amount for herself and *two children*. One may well speculate upon the human effects of these early attempts at

[64] Since I have made *married men with spouses living* the basis of enumeration, I have not counted such cases as polygynous unions. For example, the three wives and children of a deceased man of the Poplar River band (Berens River bands) drew their Treaty money in 1880 and 1881. This case was counted as a polygynous marriage from 1875 until 1879.

[65] The same process had evidently begun at Moose Lake as early as 1877 for in that year three women are listed under "other relatives" along with the notation "formerly a wife." In the same year, too, the second wife of Thickfoot, leader of the Dog Head division of the Island bands, is given a separate entry with a similar notation. It is interesting to note that in 1878 there is the entry that the annuity due the wife was paid to Thickfoot.

stamping out polygyny since in this particular case we get a glimpse behind the scenes. In 1881 this woman received treaty payments for *three children* but no husband appears on the record either in that year or the previous one. Nevertheless, the fact that polygynous men actually were putting away their wives indicates the process of acculturation that was occurring. Christian attitudes were being substituted for native ones and polygyny as an approved form of marriage was being broken up.

Fortunately enough, we have the personal testimony of Edgerton R. Young,[66] who was a missionary at Norway House prior to the Winnipeg Treaty (1868–1873), in respect to his handling of particular cases. Since this was the same individual who later started the first mission in the heart of the pagan Saulteaux, east of Lake Winnipeg,[67] we can assume that he utilized the same tactics there during the early part of the period represented in Table 1.

Reverend Young clearly recognized how difficult it was for polygynous men to give up their wives.

> To have several wives is considered a great honour in some tribes [he says]. For a man to separate from all but one is to expose himself to ridicule from his pagan friends, and also to the danger of incurring the hostility of the relations of the discarded wives. Some of the most perplexing and trying duties of my missionary life have been in connection with this matter of re-organizing, on a Christian basis, the families of once heathen polygamists, who desirous to do what was right, have left the matter entirely in my hands.

At first Reverend Young thought that he could apply the rule that the first wife should always remain with her husband. But he said that this idea had to be modified. In one case that he mentions, the first wife had no children. The second wife had several small ones. So the man was advised to "put away" the first wife in this instance. Another case seems to have been decided on a purely quantitative basis. Two wives wished to become Christians. One had five children and the other four by their common husband. After asking "divine guidance" the wife with five children was told to stay with her husband, after certain of the family effects had been equally divided between them. In another instance an old man with four wives wanted to be baptized. He was willing to give up three of them—all old women with grown sons. But when he announced his decision to his family there was a "row." The women began to wail, and the sons, who generally treated their mothers with neglect and indifference, now

[66] *Op. cit.*, p. 223 *seq.*

[67] At Berens River in 1873

declared, with a good deal of emphasis, that their mothers should not be sent away, and thus degraded in the eyes of the people. The sons picked up their guns and went to see the missionary. The case was finally settled by having the old man remain with the wife who had no children and by having the sons of the other wives set their mothers up in separate wigwams.

Thus, the increasing moral pressure exerted by the missionaries, which probably made the contraction of new polygynous marriages impossible, and the insistence upon the abandonment of all wives but one in the case of individuals who desired to become full fledged Christians, combined with the death of polygynous men or their wives, led to the extinction of a form of marriage that had once been a feature of the aboriginal mode of life among the Lake Winnipeg Cree and Saulteaux.

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PENNSYLVANIA

TABOO AS A POSSIBLE FACTOR INVOLVED IN THE OBSOLESCENCE OF NAVAHO POTTERY AND BASKETRY

By HARRY TSCHOPIK, JR.

THE data presented in this paper are strictly applicable only to the Navaho in the vicinity of Ramah, New Mexico, and may not apply to the Indians on the Navajo reservation in all details.[1] The purpose of the paper is an attempt to suggest in what manner taboo and related phenomena may have contributed to the decline of the very interesting Navaho crafts of basketry and pottery.

A brief description of the essential characteristics of these crafts may be in order. The baskets were made in the coiled technique using sumac for the rods of the foundation and for the sewing material and *Yucca baccata* for the bundle. The shallow tray is the form which is still manufactured today. The designs are almost invariably broken at one point by a gap—which is oriented to the east when the basket is used ceremonially — and the last coil ends at precisely the point where the break in the design occurs. The rim is finished in the herringbone technique often referred to as "false braid." The pottery is a crude, unpainted, and unslipped ware, characterized by conical-bottomed vessels which are coated with piñon gum. A coarse painted ware was formerly made.

In studying the degeneration of these crafts among the Navaho, three phases, roughly, may be inferred.

During the first phase — just after the termination of the captivity at Fort Sumner in the middle of the last century — basketry and pottery were a functioning part of Navaho every-day life. They were employed as utilitarian articles, serving as receptacles for food and water. Being the only containers and vessels, they served all purposes.

In the second phase the pots, pans, and buckets introduced by white traders largely replaced pots and baskets as utilitarian articles of Navaho material culture. Baskets continued to be used in weddings and in ceremonials. They continued to be manufactured, but to a lesser extent than formerly. The pots persisted for use in the Enemy Way or "Squaw Dance," as it is popularly called, and in other ceremonials. The painted ware dropped out.

In the third phase — which represents present day conditions — baskets continue to be employed in the "sings," but their use in weddings has

[1] The field work on which this paper is based was made possible by a grant from the Division of Anthropology of Harvard University. The writer wishes to acknowledge gratefully his indebtedness to Dr Clyde Kluckhohn, under whose supervision the work was done.

become largely obsolete. A few continue to be manufactured but many more, apparently, are purchased from the traders who in turn secure them from the Ute or Paiute. In the Ramah area, at least, pottery as a functioning craft has quite recently disappeared, while the pottery drums used in the "Squaw Dance" are heirloom pieces.

Pottery, therefore, has become a thing of the past, while basketry is well on the wane. Paradoxically enough, however, there are several reasons why these crafts should continue to be engaged in, at any rate, to a limited extent. In the first place, there is a need for baskets in the "sings" and for pottery drums in the "Squaw Dance;" and this need, though a ceremonial one, is a real need. Navaho ritual requires that a basket be used in every "sing." From it the ritual bath must be taken. In some "sings" the basket is used as a drum and in others as a receptacle for medicine paraphernalia. In its manufacture, it must be begun to the east and finished to the east. The design should be broken to the east, and the whole basket must be in good condition in order that it may hold water during the ritual bath. As to the specifications regarding pottery, every "Squaw Dance" requires a Navaho-made drum, while pottery bowls are required for rites in other ceremonials. The drums are prepared under ritual conditions, and after they have once been so employed, the vessels may never again be used for cooking purposes. In respect to the cup in which the medicine is administered and the pot from which the patient eats, the opinion of singers differs. Some maintain that they need only to be made of clay; others assert that they must be of Navaho manufacture. It seems possible that basketry survives, while pottery is lost, because of the differences in the rigidity of these ritual specifications; but perhaps in the case of the latter the specifications have been relaxed and rationalized to meet existing conditions.

The other reasons why basketry should continue to exist as a craft are more commonplace but none the less real. Baskets, as well as pots, are fragile objects and must be replaced from time to time. The baskets made by Navaho women are sold for use in "sings" at extremely good prices. On the other hand, the Paiute and Ute baskets, which are made according to Navaho ritual requirements and are practically indistinquishable from Navaho products, command high prices at the hands of the traders.[2]

In an attempt to discover exactly why these crafts are so nearly extinct, we must observe the conditions under which they are pursued, or rather were pursued until recent times. In so doing there is one thing that is im-

[2] The prices received by Navaho basket makers are of rather considerable size: a yearling sheep, a horse, a second-hand Pendleton blanket, two dollars and a silver bracelet, etc.

mediately outstanding, namely, the multiplicity of taboos which accompany and surround every phase of basketry and pottery manufacture.

First, let us consider pottery. A potter setting out to make pottery goes some distance from her hogan to do her work. No one may watch; especially is this true of children. Should any one watch, the pot would split. Should any one touch it, it would crack to pieces. While working on pottery one may not molest snakes nor frogs; one may harm neither dogs nor puppies. No one may step over the materials and clays used in pottery making. One may not break the metate on which the clay is ground nor may one break stones or bones. No one may touch the pottery with bloody hands. One may not jump across deep ditches but must go around them. When working on pottery during a rain, one must avoid getting under rock shelters or trees. One must stay out of caves. One may not swear. While working on the pottery, one may not hit another person, because he might be killed at this time.

In respect to basketry the array of taboos is even more varied and complex. Those applying to pottery also apply to basketry with the following additions. A woman must always work on the concave surface of a basket; if she turned it over, she would lose her mind. She must never allow a child to place the sumac on his head, else it would stunt his growth. If she works on the basket in a high wind, the materials will split. Should the basket or materials be burned, she would lose her mind. If a man works on a basket, he will become impotent. While a woman is working on a basket, she may not sleep with her husband. While menstruating, she may not work on the basket at all and must purify herself afterward before she may resume her work. If she is out during a rain, she must walk slowly and may never run. Should she be riding, she must get off her horse until the rain is over. If she neglected to put the doorway in the basketry design, she would lose her mind or else go blind. When the sumac is cut in preparation to making a basket, it must be tied with a yucca leaf, but never with string or anything else. After the design has been started she may eat only a little meat and bread, but no salt. In coiling the basket, the butt end of one rod must be placed next to the top end of the previous rod; the reverse of this situation may never occur, or the basket cannot be used in a "sing." The scraps of the basketry material must be placed in a tree, or under a rock in the shade. When making basketry dyes, the mixture must be stirred with a stick of sumac, but this is not done when preparing the very same dyes for wool or cloth. The aforementioned taboos are representative, but by no means exhaust the list.

This complexity of taboo represents a very definite attitude and state of

mind towards the crafts under consideration. The question is: was this the attitude and state of mind towards basketry and pottery when they were common, every-day articles? Old informants stated that in the "old days" there was no difference in appearance between food baskets and medicine baskets, pottery drums and cooking pots. But there are indications that the behavior towards these "sacred" and "profane" baskets — if we may so term them—was quite distinct. While blood, for example, could come in contact with a food basket, it could never touch a medicine basket. Medicine baskets could never be buried or disposed of with corpses, whereas baskets have been found archaeologically in Navaho graves. This is clearly based on the Navaho emphasis of the distinction between the living and the dead, between killing and curing. It is indeed probable that when pots and baskets were commonplace objects in Navaho culture there were no special emotional attitudes towards them, such as are manifested by taboos.[3] But under special circumstances — that is to say, conditions wherein baskets and pots are no longer commonplace things, and are, furthermore, bound intimately to ritual — special attitudes towards them and ways of dealing with them have arisen.

It should be clear from the foregoing that the function of pottery and basketry has changed. It is no longer utilitarian; it has become wholly ceremonial. It is a well known fact that objects of former utility survive in ritual — nor is this the only case of it that we find among the Navaho. Arrow points and fire drills are usually encountered in medicine bundles. As the pots and baskets were associated more and more closely with ceremony and ritual, this association manifested itself to an increasingly greater degree in the attitudes and behaviors displayed toward them, and this in turn served to identify them more and more closely with the ceremonial aspects of Navaho life.

It is difficult to get at the factors which have resulted in bringing about these special attitudes. The more obvious ones are the facts that baskets are used in a ceremonial association exclusively; that the sumac itself is used in the manufacture of ritual objects both in "sings" and at home; that the drum is both prepared and employed ceremonially. Although we may never wholly realize by what processes these bonds of association have come into being, the facts clearly indicate that they exist. Before a woman may

[3] It is not unlikely, in view of various bits of evidence, that many of these taboos applied in the "old days" to the ceremonial pots and baskets, but not to those manufactured for everyday use. There are, however, strong indications that many are of more recent origin, as indicated both by their variability from one individual to the next and by the direct statements to this effect by informants.

start her first basket, she must have a certain "sing." And again, after it is finished, she must have another "sing."[4] Old baskets are neither thrown away nor burned after they have become worn out; instead they must be disposed of in special ways. Myths relating to the origin of baskets are intimately bound up with the origins of certain "sings." Basketry dyes must be made under conditions not applying to wool dyes. Finally, pots and baskets are no longer placed in graves, though other personal effects may be. The statement of an informant clearly indicates why this is so: "Pottery and baskets — they are medicine people. Medicine men always use them on sick persons to cure them; so I call them medicine people because they go with medicine."

In what ways, then, have these special attitudes contributed to the decline of the crafts under consideration? In the first place, these attitudes have served to reenforce the natural conservatism which governs any art tradition or native craft. Whether or not materials, designs, and colors in baskets have actually been specified verbally by singers is doubtful. The point, however, is that the women are afraid to experiment; hence individual expression has been largely stamped out. This also applies to a more limited extent to the pottery drum, which is no longer manufactured. Some women admitted that they had discontinued the pursuit of these crafts because the observation of the multiplicity of taboos was both tedious and uncomfortable. One informant states: "There are so many things that I can't do when I make baskets, that I don't know what I can do and what I cannot do any more." Furthermore, several women have not wished to learn basketry because they consider the sumac dangerous, believing it a potential source of sickness. The very association of pottery and basketry with the "sings" makes them a convenient target for the diagnosticians seeking the cause of disease. There are several cases, indeed, where women were explicitly told by the singers that they should cease to make either pots or baskets, as the case may be. They were told that if they continued to make them, they would become sick. It is indeed not improbable that this one fact alone may have contributed extensively to the dying out of these crafts.

To sum up the foregoing: (1) Baskets and pots formerly had both utilitarian and ceremonial uses. (2) The extensive introduction of objects of our culture by traders practically extinguished the utilitarian need. (3) When

[4] The Franciscan Fathers (*An Ethnologic Dictionary of the Navaho Language*, Saint Michaels, Arizona, 1910, p. 292) refer to a rite for curing "rheumatic stiffness" of the wrist and joints consequent upon basket making, and suggest that this rite supplies "a reason for the taboo . . . placed upon anything connected with basketry, and for the readiness with which the Navaho decline to pursue the industry."

these articles became wholly ceremonial in use, they became surrounded by so many ritual restrictions that they have recently become obsolete, or at least obsolescent.

In concluding, it may be stated that here we appear to be dealing with a peculiar phenomenon; namely, that crafts, surviving today solely in ritual context, have declined to the point of extinction principally, it would seem, because they do survive solely in a ritual context.

HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS

ETIQUETTE AND SOCIAL SANCTION IN THE FIJI ISLANDS[1]

By DOROTHY M. SPENCER

A USEFUL definition of etiquette is that given by Hogbin:

> Etiquette consists in the rules which regulate the behaviour of members of a society towards one another, but which have no further sanction than public opinion. The violation of these rules calls forth disapproval or ridicule, but the offender is not punished by any form of social machinery. On the other hand, a person who observes the rules with more than ordinary care is rewarded by public approval.[2]

Others who have dealt with the subject have usually agreed that the essential points in any definition of the term are first that etiquette is concerned with relations between people, and second that rules of etiquette have no sanction beyond that of public opinion. Rules of etiquette are thus set off on the one hand from conventions[3] in general, and on the other from moral or legal regulations. These distinctions are of value and importance; however, while it is useful to have a term which is more narrow in its connotation than convention, it may be doubted, it seems to me, whether, in many societies where etiquette is of importance, it is possible to draw definite lines between rules of etiquette and customs or mores[4] the violation of which calls forth more than mere "disapproval or ridicule." In any case the Fijian material does not lend itself well to such a classification.

Polite and courteous acts in general are termed in Fijian tovo vaturaŋa, "chiefly ways," and are thus distinguished from rude, boorish manners,

[1] Since Fiji is not uniform culturally it is necessary to state that I am dealing, unless otherwise noted, with customs prevailing today in the district of Namataku, Tholo West, on the island of Viti Levu, in which region I spent about ten months as a pre-doctoral fellow of the Social Science Research Council for 1935–36.

[2] H. Ian Hogbin, Man, Vol. 31, 1931, p. 76. This was in answer to a request made by A. M. Hocart (*op. cit.*, p. 32) for a definition of the term. Hocart himself defined etiquette in the *Encyclopedia of the Social Sciences* (Vol. 5, p. 615) as "the body of forms of conventional decorum into which one's behavior is cast." This is not, it seems to me, sufficiently specific to be useful; furthermore it introduces into the definition the word conventional, and convention as usually defined is a very broad term which refers to a wide range of behavior patterns.

[3] Morris Ginsberg in his article on "Social Conventions" in the *Encyclopedia of the Social Sciences* (Vol. 4, pp. 351–52) has defined this term as the "rules or standards of conduct or behavior prescribing what is to be done or not to be done by the members of a given group or community. . . . Conventions are best understood as habits of thought or behavior which have become generalized and almost automatic in their operation. . . . Language is a system of conventionalized signs."

[4] I am here using the term as defined by E. Sapir in his article on "Custom" (*Encyclopedia of the Social Sciences*, Vol. 4, p. 658): "The term mores is best reserved for those customs which connote fairly strong feelings of the rightness or wrongness of modes of behavior."

tovo vakaisi, or "ways of the low-born." On the surface these linguistic terms might be interpreted as evidence that social classes were of significance in the study of etiquette in Fiji[5] but as a matter of fact the distinction between chiefs and others is comparatively slight, at least in that part of Fiji with which we are dealing. With few exceptions chiefs are not accorded marks of respect which set them apart from the rest of the population nor are they distinguished by their polite ways. Tovo vaturaŋa are expected of everyone.[6] Actually the word kaisi, far from being a term of reference for members of society who are not of chiefly rank, is used to express anything from disapproval and contempt to strong opprobrium and its application is considered uncomplimentary in the extreme.

Fijian etiquette regulates the behavior of individuals towards one another in various situations. Certain forms should be observed by persons participating on such occasions as arrival and departure, at meal times, and in connection with many of the economic and ceremonial institutions. In addition social intercourse of a general sort is facilitated and directed by a number of rules which prescribe the mode of behavior proper between individuals, especially those of different age or sex, and the conduct of relatives to one another. The etiquette connected with a few of these situations may be discussed in some detail.

Rules of etiquette observed in connection with meals and eating are of interest. The principal meal of the day is in the evening shortly after dark. It is important to be cleanly and neatly attired for this occasion, and since everyone bathes and dresses in clean clothes at the end of the day's work, this involves no special effort. An amusing story that illustrates very nicely the attitude toward this rule of etiquette was told to me by one of the natives, an inhabitant of the southern coastal region where the incident occurred. The people of his village extended a dinner invitation to the European district commissioner and his assistant. With the best of intentions, probably, they attended the dinner party attired in shorts, a costume which the Fijians well knew to be an informal one, reserved for working hours, field excursions, and the like. The men were furious and the women too felt

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[5] In her *Questionnaire on Etiquette* in the Journal of Social Psychology (Vol. 7, 1936), E. G. Herzog says (p. 260) "Etiquette tends to define, emphasize and preserve social distinctions, using social here in both the narrower and broader sense, . . . it may easily implement and foster snobbery."

[6] But A. M. Hocart (*Lau Islands, Fiji*, Bulletin, Bishop Museum, No. 62, 1929, p. 43) says of the Lau Islanders, "Politeness (*vakarokoko*) is the sign of a nobleman; 'a nobleman is known by his manner.' A man who is not polite is known immediately as a low-born fellow. From my experience I should say that the higher the man, the better his manners."

themselves insulted that they should be forced to serve such unmannerly foreigners.

When the food is spread out on the mat anyone who happens to be present is invited to eat, and during the course of a meal any passer-by is called in and urged to sit down and help himself. If persons of chiefly rank are present they eat by themselves, and when they have finished the rest of the company claps with the hands cupped to show respect. Ordinarily the men of the household eat first; they are waited upon by the women who do not eat until the men have finished. During the course of the meal young girls fan the flies away from the food, and when the men have finished eating a bowl of water is passed around with a piece of cloth and the mouth and fingers are washed and dried.

The custom of kerekere or begging, important in the economic organization of these people, has its prescribed rules which to ignore would be impolite and even unwise. The individual making the request sits with head bent and eyes lowered before the one from whom he is begging and speaks slowly in a low voice. It is difficult to imitate the tone of humility in which the opening phrase, ŋgi kerekere, "I am begging," is uttered. If his request is for something valuable, such as a pig or a sum of money, he has come provided with a root of yaŋgona[7] which he now presents with the proper formula before stating his desires. To one acting in accordance with Fijian etiquette it is not possible to refuse to give that which has been asked for, and the object requested is placed on the floor in front of the beggar who does not touch the gift until he has expressed his gratitude with the proper phrases, at the same time clapping with cupped hands, slowly and at length. Likewise when receiving a gift which has been unsolicited it is polite to make use of this means of expressing thanks.

There are many rules of etiquette to guide the individual in his casual everyday contacts with his fellows. A Fijian, for example, must be careful to enter any house not his own in the proper manner. In the rectangular dwelling house there are two doors, one of which, placed in the middle of the long axis and facing the village green, is the mata sau, or "doorway of chiefs." The other, in the short side of the house is the mata kaisi, or "commoner's door." It is bad form for anyone not of high rank to enter of his own accord by the mata sau. It not infrequently happens, however, that the owner will bid his visitor to use this door in entering or leaving; it may be because of a mud puddle outside of the other door or merely as an act of courtesy to his guest. To take food into the house through this door is a very grave breach of etiquette and I have never seen anyone offend in this way.

[7] The Fijian word for the *Piper methysticum*.

The mata kaisi is the door in general use, but even here one must be careful to vakalawathia, to step over rather than on the door-sill. Within the house, the section close to the commoner's door is regarded as the most humble part of the room; as one advances towards the opposite wall the dignity and honor of one's position increases. A stranger in the village, upon entering the house, will sit down as unobtrusively as possible against the wall close to the lower door. The owner of the house says to him, "Come up here, and sit on the mat." The guest, however, will politely protest several times; then urged repeatedly by his host he moves to a position higher up in the house. If anyone of chiefly rank enters the house he seats himself in the upper part of the room without any preliminaries and those of lesser importance are careful to remain lower down.

It is very rude to walk behind an individual who is seated. Properly one walks in front of him, and this was rationalized by the observation that "a hostile-minded person would be in a good position to deliver the man a blow when he passed behind his back." When others are seated in the room it is polite when moving about to yato vasewa, or to "walk small," that is, in a stooping postion. Women, if they wish to move around when men are seated in the house, do so by crawling on their hands and knees. This custom is, of course, based on the idea of the sacredness of the head; it is undesirable to place one's self in a position higher in a literal sense than that of others and the practice of "walking small" is at least a gesture towards removing that condition. There are other rules of etiquette based on the same principle. It is not only rude but insulting to reach above a person's head. If, however, as is frequently the case, it is necessary for an individual to do this, perhaps to hang up or to take down an object from the wall, he must first ask permission, which is always granted, and then, when the act is completed he squats or sits on the floor and claps with hands cupped. To neglect to do this after directly touching the head of another is to offer a deadly insult.

Besides such courtesies as those mentioned above, certain relationships within the social order are marked by additional forms of etiquette. Children should show respect to their parents by carefully observing those rules which we have already discussed. The use of relationship terms rather than personal names by younger members of the family to their elders is thought proper, though at the present time it must be admitted that children occasionally make use of the personal name even for their fathers, as well as for more distant relatives and this is a matter for disapproving comment on the part of the elders. A brother and sister do not talk freely in each other's presence; they are careful not to swear or to use obscene language. A man would not mention, in any connection, marriage to a girl in the presence of

her brother. A blood brother and sister may talk together, but in the classificatory relationship no conversation is permitted. Similarly two blood brothers, while they are supposed to treat one another with courtesy and respect, may talk together, but according to Fijian etiquette it is not proper for two classificatory brothers to converse. I once requested one of my informants, when he was about to make a visit to a neighboring village, to learn some stories from a native of that region who had a great reputation as a story-teller. My informant refused on the ground that the man was a "brother" of his, and in this instance the relationship was too distant to trace. Cross-cousins, on the other hand, are permitted to joke freely. The use of obscenity between them is considered quite proper and correct. They greet each other with the words, m'ta, m'mi, "your excrement, your urine," and they ask, "Where are you going, you lunatic?" Other relationships have their own appropriate behavior.

According to the definition, rules of etiquette have "no further sanction than public opinion. The violation of these rules calls forth disapproval or ridicule but the offender is not punished by any form of social machinery."[8] It is therefore on the basis of sanctions that rules of etiquette are to be set off from such other social usages as are concerned with relations between people. In his discussion of social sanctions[9] Radcliffe-Brown distinguishes between diffuse sanctions "comprising reactions toward the particular or general behavior of a member of the community which constitute judgments of disapproval;" and organized sanctions, "definite recognized procedures directed against persons whose behavior is subject to social disapproval." Fines, exile, imprisonment, etc., are examples of organized sanctions. Since according to the definition of etiquette "the offender is not punished by any form of social machinery" it is obvious that it is here a question of diffuse sanction. It was suggested in the beginning of this paper that in Fiji at least forms of etiquette could not be clearly distinguished from mores, the violation of which calls forth more than mere disapproval or ridicule. One reason for this is, it seems to me, the fact that in Fijian society there is a lack of organized sanctions such as fines or exile by which certain customs are to be distinguished from others which are not sanctioned in this way. A number of social usages depend for sanction only upon public opinion and they can be set apart from the rules of etiquette which I have been discussing only by the strength of the feeling of approval or disapproval which their violation calls forth in the minds of members of so-

[8] Hogbin, *loc. cit.*

[9] A. R. Radcliffe-Brown, "Sanction, Social" (in *Encyclopedia of the Social Sciences*, Vol. 13, pp. 531–34).

ciety. Since, as I hope to show by citing a few examples, the violation of many of these rules of etiquette may, on occasion, evoke strong reactions on the part of individuals, it is necessary to call attention to the fact that such types of behavior cannot well be fitted into any narrow classification of etiquette; yet due to the fact that a breach of etiquette only rarely, and depending on individual temperament and circumstances, calls forth a strong reaction, it would be equally difficult as well as misleading to fit the regulations which I have been discussing into any classification of mores which depended for its limits on a narrow definition in terms of the strength of the sanction.

A few illustrations will serve to clarify the point. The strength of feeling with regard to committing a breach of etiquette was brought home to me quite clearly one evening. The Fijian girl who was in charge of my domestic arrangements wanted to hang up a towel on a line directly beneath which a venerable old man, a stranger in the village, was seated. She hesitated and looked around to discover some way by which she could avoid doing so and finally asked me to hang it up, feeling no doubt that it would be less rude for me to offend in this way. Her hesitation and final rejection seemed especially significant in view of the fact that Fijian etiquette does provide for such emergencies by means of the custom of asking for permission and the propitiatory gesture of clapping. When these measures are ignored the insult to the head may not be taken lightly, as the following anecdote, related to me by Kitcioni, will indicate. One evening a man by the name of Kavunikoro went to visit Kitcioni; another man, Naulunisau, was also present. The men lounged on the mats, smoking and chatting by the fire. Presently Naulunisau reached up and took a stick of firewood from the rack above the fireplace; but he neglected to ask permission to do this. While Naulunisau was sleeping that night, Kavunikoro, incensed at the insult to his person, collected from the fireplace some ashes mixed with the spit of Naulunisau, and using one of the methods of sorcery, brought about his death. Another individual died because he had thrown a stone, accidentally hitting the head of a man who took his revenge by means of sorcery. The famous story of the fate of the Reverend Baker comes to mind in this connection. Brewster concludes his account of the episode with the following remarks:

He sealed his own fate by what his host considered a gross breach of good manners. . . . When Mr. Baker arrived in the village he was hospitably received, and spent the night there. In the morning he produced a comb and used it in his toilet, and then laid it down on the mats. His host, the leading chief, picked it up and stuck it in his own fuzzy locks. He did it quite innocently, as property was, as regards ordinary people, in communal use, and the upper classes could certainly take any-

thing they fancied. Native combs, too, were worn stuck into their owners' hair. They were very necessary appanages from the verminous state of the big-heads, being constantly required for scratching The knowledge of this probably offended the real owner's sense of cleanliness and decency, and he snatched it from the chieftain's head. He could not have committed any deadlier offense . . . . The insult to the chief's honor . . . sealed Mr. Baker's fate."[10]

Other rules of etiquette may also involve strong feelings. Williams tells the story of a chief on the island of Thithia

who was addressed disrespectfully by a younger brother: rather than live to have the insult made the topic of common talk, he loaded his musket, placed the muzzle at his breast, and pushing the trigger with his toe shot himself through the heart.[11]

Williams adds that he knew of a very similar incident on Vanua Levu. The same author has also given us some interesting observations on etiquette in connection with meals and eating, which are to the point in this connection.

I have often been struck by the promptness with which a party of natives, while eating have transferred their meal to others passing by; and so long as I was a tyro in native matters, I liked to regard this as a sign of the people's hospitality. But the assurance of many among themselves compelled me to believe that this act of seeming liberality was the result of fear; lest by withholding any part or by something in their manner of eating they should give offense.[12]

And he adds an account of the disastrous consequences resulting to those who once offended in this way.

Further light on native attitudes regarding this particular rule of etiquette is afforded us in Brewster's work on the hill tribes.

Early missionaries introduced a rough code such as they had established in the Friendly Islands, from whence they brought it on to Fiji . . . . Under it there was a judge . . . in every village. Every three months or so they would assemble in the principal centre of their district and hold a sort of quarter sessions. . . . Soon rough written notes of the cases were recorded. . . . We came across some of these old and curious records and found minutes of convictions for selfishness, *for not sharing food with one's friends and comrades*, and for stinginess.[13]

Generally speaking all rules of etiquette, however trivial, should be observed; since, though no direct steps be taken by an offended person to avenge the insult, his anger itself may be a dangerous thing in that it may

[10] A. B. Brewster, *The Hill Tribes of Fiji* (Philadelphia, 1922), p. 30.

[11] T. Williams and J. Calvert, *Fiji and the Fijians* (New York, 1859), p. 96.

[12] *Op. cit.*, p. 119.

[13] Brewster, *op. cit*, p. 49. Italics ours.

cause sickness to one against whom it is directed. When I asked why one should step over rather than on the door sill I was told simply that the owner of the house would be angry; this in itself seemed a sufficient reason to my informant. On one occasion I threw a small empty match box toward the fireplace and accidentally hit a woman in the head. Of course I immediately sat down and clapped my hands, explaining that I had not hit her intentionally and begging her not to be angry with me. She assured me, with an earnestness the meaning of which was unmistakable, that she was not angry; in other words I was not to worry.

Broadly interpreted the term etiquette as defined by Hogbin can be used to cover the social usages discussed in this paper but it should be recognized that in Fiji there can be between these rules and others sanctioned by public opinion no distinct line which is drawn on the basis of the strength of the sanction.

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PENNSYLVANIA

THE USE OF PEYOTE BY THE CARRIZO AND LIPAN APACHE TRIBES

By MORRIS E. OPLER

INTRODUCTION

DURING the summer of 1935 the writer made an attempt to salvage as much ethnographic data as possible from the few surviving Lipan Apache living on the Mescalero Indian Reservation in New Mexico.[1] Among the most interesting materials coming out of this effort were those which had to do with the use of peyote, for they involved an account purporting to be a description of a Carrizo peyote meeting which indicated that the use of peyote had diffused from the Carrizo Indians to the Tonkawa and Lipan Apache. In the first half of the nineteenth century, according to Lipan informants, their tribe claimed a home in the Texas gulf region around Houston and Galveston. Their neighbors to the east were the Carrizo. In the third quarter of the century, the pressures of warfare and epidemic divided the Lipan, forcing the segments west across the Rio Grande and north, respectively.

Only one Lipan man who had lived under aboriginal conditions could be found at the time of the field researches. Lipan women were barred from most activities concerning peyote, so the entire account had to be recorded from this man, Antonio Apache. There is a manifest danger in accepting the account of one man in respect to the peyote rite of another tribe and his own, but since one of the tribes under consideration is extinct and the other is nearly so, and since these notes are very likely the last we shall obtain about these peoples on this subject, they are offered without further apology.

If the picture given below is accurate, it is plain that with Lipan and Carrizo peyote we are close to the source of this interesting cult within the present boundaries of the United States. There is no reason to believe that this Lipan's account is not highly authentic. He proved to be a very patient, intelligent, and careful informant whose descriptions checked perfectly with such scraps concerning peyote as other Lipan were able to give me. The information is rendered in the informant's own words. The only liberties taken have been to organize the material a bit more logically in view of the anthropological interest and to omit a few asides and irrelevancies.

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[1] The field-work was made possible by the generous financial support of Columbia University, the National Research Council, the Social Science Research Committee of the University of Chicago, and the Southwest Society.

PEYOTE IS OBTAINED BY THE LIPAN FROM THE CARRIZO INDIANS

There was a lot of peyote in Lipan country, both in Mexico and in Texas. It grows around the Rio Grande near the border.

The Lipan were not the first people who found out about peyote. It was learned first by other people and later the Lipan learned about it too. The way I heard it, the Carrizo people[2] started it.

One Lipan man heard the sound of a drum. When he heard that he went over to the place from which the sound was coming. This was near morning, when the morning light was breaking. He followed the sound. He got there. He stood a little distance away. Some people were there. They saw him. He stood there. One motioned to him to come over and asked what he wanted. He replied that he wanted to watch what they were doing. They motioned him in. He came forward and lifted the log which acted as the door [the gate] and entered. They placed him at the south of the "door" next to a woman. The leader of the meeting was the one who invited him in. He sat there and watched what they were doing.

Right in there they had a wooden bowl. The peyote was mashed up in there with water. Some drank of this. And they had buttons in there too for those who wanted to use the buttons. They had the peyote both ways.

When the peyote was passed, it began at the door with the woman at the south. The Lipan did not take any. He was just there to visit and watch. No matter who asked for it or where he sat, the bowl or the buttons had always to be passed from the southeast around to him.

All the ground had been swept clean, and all over the ground was covered with sage. These people who were carrying on this ceremony were the Carrizo. They were not in a tipi but in a clearing out in the open. The fire was in the center. A big peyote was back of this, to the west of it. Sticks were laid around to form a little circle which stood for the tipi.

The men were all naked except for a gee-string. The two women at the door were dressed differently. The one at the south of the door was covered with a red blanket. It was fastened at the top with a red feather of a flicker. The woman on the north side of the door also had a red blanket, but it was fastened at the top with a woodpecker's feather.

The leader sat in back, at the west. Toward morning he told his men, "All right now. We have a visitor here. He came here to see what we are doing. Now all you men do your best; do it in the right way. Do no foolish things, so that when he goes home to his people he will tell them what we saw and what we did in a good way."

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[2] The Carrizo were called "Enemy Camped about Water" by the Lipan.

They were getting visions now. The Lipan was watching pretty closely. The leader told his men to entertain the Lipan with their power. The leader began to do it himself too. He knelt down. He breathed hard four times and the fourth time out of his mouth came downy feathers. They floated around and covered the inside. The Lipan could hardly see the people in there. He watched and pretty soon, while all the other feathers were in the air, just one feather fell to the ground. The leader sucked in his breath just once and all the feathers except this one which was on the ground came back into his mouth.

The leader made a sign to the Lipan to take that one on the ground. He said, "Keep it. Some day when your people eat peyote like this you can use it. It will remind you of me, your friend."

After the leader did the magical trick with the feathers, the other men did all sorts of magical tricks. One made a bear appear, another a turtle, another a buffalo. They did many wonderful things, more than we could mention.[3]

Among the Carrizo the peyote leader speaks. He says, "I'm going to hold a meeting tonight." Then he takes charge of it and sees that all goes in the right way. It is just like a man holding a party. He has charge of it then. It was this kind of a man who showed the Lipan all about peyote. He was the leader, the one who arranged the meeting. The Lipan learned it from these people, the Carrizo.

After he got back, the Lipan kept his knowledge secret. Finally someone noticed that he was eating peyote and told him he was eating something very dangerous. Then he told the people of his knowledge and they began to use it. Since then it has been known by the Lipan.

The Mescalero already had the ceremony before I came here to the Mescalero Reservation. The Mescalero used to go down and meet the Lipan.[4] That is how it started. They got it from the Lipan.

The Lipan learned it from the Carrizo before they had had any experience with white people or Mexicans. They were by themselves then. The Tonkawa got it from the Carrizo people too.

[3] In reference to such exhibitions on the part of Lipan, the informant said, "Perhaps the old Lipan did magical tricks formerly at peyote meetings, but I never saw any in my day"

[4] This refers to the time span just before the reservation period, when the Lipan were being driven north and the Mescalero south. Many Mescalero accounts attribute the introduction of peyote among them to the Lipan. At this point the informant hinted that the Mescalero were instrumental in establishing the peyote cult among the Kiowa Apache. He said, "At peyote meetings the Kiowa Apache used to sing any kind of songs, dance songs or anything they knew. Then Nayohogał ('Coming after Property') went there and put up a tipi in the right way. He was a Mescalero. Then they learned the right way."

The eastern tribes hardly know how to use peyote. They got it recently. They use dancing songs in there now.

The Tonkawa tell of a time some Indians from the north came with peyote. The Tonkawa already knew it, but they kept quiet. These Indians said, "Let's put up a ceremony." "What kind?" "Oh, a medicine ceremony." "With what?" "Peyote." Then they had a big meeting. The northern people said, "It's this way, this way." They started with their gourd and drum. But they could not do much. The songs were about half and half. It did not sound like much. Then it was the turn of a Tonkawa to sing. They did it right. They shook the rattle. They sang four songs in the right way. The others were ashamed. They stopped at midnight and went on their way.

The northern tribes think they know more about peyote. They put up a peyote meeting and always quarrel about it.[5]

THE GATHERING OF PEYOTE

The peyote tipi leader furnishes all the peyote that is eaten. There is a lot of it there. He gets it and provides all of it. He is the one who puts it up. He has to get a whole big sack full. The real eaters did not take just four or eight for fun. They took forty or fifty or more.

When a man goes out to gather peyote, he stops before taking any and prays. Then sometimes he sings peyote songs right in the middle of the field. Among the Indians, when they pray at this time they first take out a cigarette and pray with the smoke. They do not use pollen or red paint, though.

When the peyotes are growing, there will be a big one with several little ones around. They cut off the tops without bothering the roots. The plants are not dug up. The only one they dig up whole is the big one they are going to use for the chief peyote.[6] Then they cut off about an inch. But the best way to fix it, and the way it is usually done, is to cut off the top of this too. They cut it thicker. Then when it is drying they keep working it to make it round. It dries really round then. The chief peyote is supposed to be perfectly round.

All peyotes are good to eat whether they are big or small. They do not like to take the very large ones for eating. They want them just big enough

[5] The Mescalero and Lipan, realizing that they and the Tonkawa represent an early stratum of peyote usage, are contemptuous of the tardy enthusiasm with which northern and eastern tribes have accepted the use of the plant.

[6] The Lipan call peyote "cactus that one eats." The chief peyote is simply termed "peyote lying."

so that a whole one can be eaten at once. I never heard of anyone picking peyote when the flower was on it.

Peyote is pretty hard to find when you are looking for it. A person who has been there picking it before finds it easily, but a person who is not used to it does not recognize it though he is in the middle of a whole clump of peyote. Once he sees one, another appears and so on till they all come out just like stars.

If you are having a hard time finding them, you do this. When you find just one by itself you eat it. When it takes effect, when you get a little dizzy, you will hear a noise like the wind from a certain direction. Go over there. You will find many of them. From the place where the noise is coming you will get many peyote plants.

If a man has never been to a peyote meeting and eaten peyote before and he finds some growing out on the flats, he can handle it but should not eat it by himself. He should go to a peyote meeting and have it fed to him in the right way by the peyote leader or one of the experienced men present. If he should eat it by himself it would not do him any great harm, but he is not supposed to do it.

INDIVIDUAL PREPARATION BEFORE THE PEYOTE MEETING

If you want to learn power from peyote you have to go out by yourself and stay away from women. You learn at the peyote meeting. You go and eat many peyote buttons. You study it. You study your dreams and visions. Perhaps you will learn something, a little, one little word at first. Then you will learn more.

Before they go to the meeting, they have to take a good bath, clean themselves nicely, and comb their hair with a brush of agave leaf. A man perfumes himself with mint. He uses soapweed to wash his hair. He gets all cleaned up. If you want to learn anything about peyote you have to wash your hair and your whole body. You cannot use common soap. You have to use yucca root. If you have soap of any other kind, Peyote will smell it all the time and will not work for you.

And, after a little breakfast, you cannot have water or food all day before the peyote meeting. In the morning breakfast is eaten; then they do not eat anything all day if they are going to a meeting that night. That is the way it is with the Lipan.

If you want to try it, you must wash in yucca. You tell your relatives first. You cleanse your clothes. You tell people not to bother you when you roll over; tell them not to bother you after the ceremony even if you sleep four days. That is the way you will travel somewhere. You might learn

something, some power, something good, even an herb. Before you go in to eat it you must pray, not only for yourself, but for your people, your relatives, your children. You pray for your crops if you have any, your stock, for all good things. Then you may learn something. That is what the great peyote ceremony man told the others after he had been asleep those four days. "Tell your people not to bother you, not to wake you, that you will come back."[7]

The peyote has two roads. When a fellow is honest and good natured it is easy for him. But when a fellow is rough and ill-tempered he will have a hard time learning from peyote. It will scare him and make it hard for him. But the good man gets help easily from peyote.

In the old days the Lipan did not throw up when they ate peyote. Now they do. The reason is that they do not fast. And they drink water. Peyote cannot get along with water. Now they eat three meals a day and then go in. Peyote does not agree with what they eat. But formerly the Lipan used to fast. They ate breakfast and that was all.

THE PEYOTE MEETING

In the old days those who had already tried it, once in a while kept up a meeting for four nights. They would gather every night. They could stand it. But usually when the Lipan held the ceremony it was for one night.

It is the fellow who knows a lot about peyote, who has had long experience, who puts up a camp.[8] A young fellow who does not know much about it would not do it. He had better keep his hands off it.

One who knows much about peyote can put up a tipi. He and his helpers get the place ready just as soon as the sun sets. When they put up the tipi, the drum has to be ready. They fix it while it is still light, in the daytime. When they first started, back in the early days, they did not have a

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[7] This is a reference to a Lipan peyote tale which recounts how a peyote eater was led by Peyote Old Man to the camp of the Peyote People (the personifications of peyote). There he watches the Peyote People conduct a peyote meeting of their own at which they assume human form and eat one another. They grant power of invulnerability to the Lipan and return him to his fellows. "After he got back, at each meeting he learned more about peyote, about its rules, until at length he had all of it, every bit of it." This story will be published in due course in a collection of Lipan myths and tales now being arranged by the writer. It follows the usual Chiricahua-Mescalero-Lipan pattern of the supernatural encounter leading to the acquisition of supernatural power. For details of this pattern see *The Influence of Aboriginal Pattern and White Contact on a Recently Introduced Ceremony, the Mescalero Peyote Rite* (Journal of American Folk-Lore, Vol. 49, Jan.–June, 1936).

[8] The leader of the peyote meeting is termed "one who makes the peyote camp."

drum which made a loud noise; it was just loud enough to make a good time there.[9]

The Carrizo had their ceremony out in the open because they had no skins or cloth with which to make a tipi, but the Lipan had skins and so put up a tipi. They put it up just at sundown for the peyote meeting. But they swept it very well inside, just as they had seen the Carrizo do. They put sage on the floor all around. They made a little pit about four inches deep for the fire. It was just a little hollow. They had the door facing the east. They had a regular door to take the place of the log of the Carrizo people. The large peyote was put back of the fire. The man in charge sat in back to the west. The Lipan had to follow the same instructions which that Lipan had learned from the Carrizo leader. The Lipan could use any tipi for the ceremony; it might belong to anyone. They could use their own tipi poles too. There were no special designs on the tipi and nothing was put on top. The peyote tipi had twelve poles, two more, fourteen in all, with smoke flap poles. It had a three-pole base.

When the men hear the drum they come in. They come in of their own accord. You do not have to tell them to come in there. Those who are interested come. It is for anyone who wants to come. Anyone who wants to come in and try it may. When they put up the tipi they fix everything. Then the men come in, and they can go and sit where they want to; they do not have to go around clockwise.

The peyote leader starts the fire, but after that the man at the right of the door takes care of it. In the old days it was started with the fire drill, but later on, after matches came in, they were used. The leader tells someone, someone who is brave, to take care of the fire. This man has to go out at night to get wood and it is a frightening job sometimes; especially

[9] In regard to the drum the informant had this to add: "There is no figure on the Lipan peyote drum. At the very first they did not use a drum. They used a bow, a regular bow instead of the drum. They hit it with a stick, not with an arrow. Later the tambourine drum, covered on one side, came in. The bow used to be passed around just as the drum was later. Recently they began to use the kettle drum too. The iron kettle with three legs is used. It is covered with buckskin but not decorated. They got it from the Mexicans. They did not put charcoal or anything else in the kettle, nothing but a little water."

From Yeyu, an old Lipan woman, I obtained an account of a wooden bucket drum which was used on occasion for peyote Her account runs: "They used a wooden bucket. There was a little water in the bucket. But there was nothing inside when it was used for dancing. It had a buckskin cover tied with rope. Before it was tied, the skin was soaked. Such a drum was called 'bucket that sounds.' The bucket drum was used for peyote. When making a peyote drum they put four pieces of charcoal inside, but that is the only time it is done." Possibly the use of this type of drum led to the ready acceptance of the Mexican kettle drum when part of the Lipan crossed the Rio Grande.

when one is under the influence of peyote. Peyote is sure a joker! The fire tender takes care of all the work that goes on in the tipi.[10]

The Lipan did not have the two women at the door. They did not allow any women in there. The Lipan who first saw the ceremony of the Carrizo never found out why the women were there, whether they were bringing the water or what. He never learned the rule about this and so he did not start it that way. The two women must have been there to do some work around there, but he never learned what their duties were.

The Lipan do not allow women to handle the tipi or put it up for the peyote ceremony. Only men do this. They do not allow women around.[11] Peyote wants all to be pure and to go well. He does not want any dirty thing or anything bad to be around. They do not want the women around. They do not put up the tipi nearer than a hundred yards or so to any camp. But the women know that they are not supposed to be there, and keep away. This is because it is dangerous to have women there. When a man is under the influence of peyote, when he has eaten quite a bit and feels good, he notices the body odor of women. You smell it then; peyote makes you smell things easily. When a man smells this he gets upset. It makes him throw up the peyote and that is bad. It is all right for the women to touch the plant out in the fields. Even if a woman cut some, it would do no harm. But she cannot be around the meeting. This is to safeguard the men at the meeting. But it is not dangerous to have the buttons around camp where the women and children are. It is only when they are used in a meeting that women should not be around.

Those Carrizo people hardly ever wore many clothes. But the Lipan people were different. They dressed up nicely. So some Lipan kept to their own ways and wore good clothes in the peyote meeting. Some came in with only a loin-cloth on and even without moccasins as the Carrizo did in that first meeting that the Lipan saw.

When the men come in, the leader furnishes tobacco and oak leaf or corn husk for cigarettes. Each man rolls a cigarette. Then each man prays and puffs in the direction of the chief peyote. The chief peyote is not on buckskin; it is just on the ground which is covered with sage. Peyote said

[10] The fire tender is known as "he who builds fire."

[11] Yeyu, the Lipan woman who acted as my informant, corroborated the account of the disqualification of women in Lipan peyote. She said: "I never heard of women and children picking them [peyotes]. The women do not take a hand in it when they gather peyote. It is men's work. Among the Lipan they did not allow women to take part in it." She likewise gave similar information in respect to the difficulty of finding the peyote plants. On this point she averred: "The plant is just the color of the ground and is hard to see. You might be right in the center of some plants and not know it. Then you see one and then you discover you are in the midst of them."

that he did not want anything else around. The only thing that he looks upon as his friend among the plants is sage. That is why sage is put on the floor. Some tribes later discovered other things and think it is better to use red paint and pollen on the chief peyote, but the Lipan use only those two, sage and peyote, together. The Lipan always have the big peyote there. Some of the old Lipan say that even the Mexicans use it this way.

The leader puts the peyote buttons back of the fire at the beginning, west of the fire, behind the chief peyote. They are kept in a bag. When anyone wants some he asks for some; he says he wants one or two. The bag is passed directly to him, or he may reach out and get the bag. In some Lipan ceremonies they put peyote buttons in a circle around the fire pit and the chief peyote.[12]

Before the singing, after they say their prayer, they eat peyote. The peyote leader does not have to eat it first. They eat any number they want. When that Lipan saw the Carrizo that first time, he watched and watched. They ate and drank it right along. Some had as many as a hundred buttons and drank a great deal. But the Lipan did not use peyote in the liquid form as the Carrizo people did. They just kept it in the button form. They used the peyote buttons green or dry. It is all the same either way.

The peyote leader is the one in charge there. But the chief peyote is the main one to look to. This chief peyote is pretty tough. It watches what is going on. It keeps everything straight. It is a plant, but it can see and understand better than a man. If someone has wrong thoughts, he had better look out or he will go crazy.

There are two kinds of peyote, male and female. The male blooms red when it blossoms. The female bears white flowers. Both kinds are used. When they are singing at the meeting they often hear a woman's voice singing. Then they listen. It sounds to some as if it is a woman's voice far away. They hear it come right from the chief peyote. Then they know that the chief peyote is a woman. It may be man or a woman. You cannot tell which it is till it sings. Sometimes a gruff voice is heard, a man's voice. Then they know it is a male. You cannot tell by the appearance, but when a man sits there steadily and looks and looks and listens to it, he finds out. Sometimes some men hear a voice coming from the top of the tipi, from the place where the poles are tied together. They say it is the voice of Changing Woman singing there.[13]

To start the singing the leader takes the gourd rattle and a staff. Later

[12] The informant remarked, "There is no mound near the fire pit. This is something which other Indians have put in later."

[13] Changing Woman is the mother of the culture hero and one of the most important supernaturals to whom prayers and requests are addressed.

they used a ramrod instead of the staff. The staff, "peyote stick," is a piece of wood peeled off smoothly but not painted nor marked with designs. Mulberry, oak, or any sturdy wood that would make a good rod is used. The staff is just to lean against, to help you, as a man needs a cane to hold him up when he grows old. The staff stands for what holds you up in the ceremony. The leader holds the gourd rattle, called "peyote rattle," in his other hand.[14]

There is one on the leader's right side who has the drum and keeps time while the leader sings. The gourd rattle and the drum always go together. The rattle always leads. The one to the right has the drum and they pass it clockwise all the time. The leader sings four songs. Then the man to the left is the singer and the leader is the drummer. But if the leader does not want to be the drummer he does not have to, and in that case the man to the right of the one next to the leader is the drummer. Then the one to the left of the man who sang last is the singer, and the drum is passed back to the one next to the leader. From there on the teamwork continues and the drum and rattle follow one another.

They have only one rattle that is passed and one drum. These are passed around clockwise for the whole evening. Some men may be present with their own rattles and they can use them, but these are not supposed to be passed around. Only the rattle of the leader is passed. The staff which the leader has is passed too. It is held in the left hand and the rattle in the right hand of the singer. Each man who wishes to sings four songs. A good many do not sing; the drum is just passed to the next man and the one who did not sing drums for him.[15]

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[14] A buffalo horn peyote rattle was described by the informant also. In summarizing the uses of the buffalo he said: "The horn was used for a rattle too. They blocked up the big end, cut it about half way down, and blocked up that end the same way They drilled a little hole in it and put stones inside. They used it as a rattle for a dance or ceremony. They put half inch stones in and it made a big noise. This was used for a peyote rattle too if they could not find a gourd. But they put smaller pebbles in if it was used for the peyote ceremony." Yeyu, the Lipan woman, offered an independent account of this horn rattle as follows: "If you have no gourd rattle, use buffalo horn. Cut the tip off. Plug it at both ends with wood. Have a stick going through, coming out a little at the top. This is used in peyote." According to Yeyu it is "up to the owner to put any kind of design he wants" on the peyote rattle. "Rattles were marked with sun, moon, stars, and animal figures. Buckskin was put on the projection which comes out of the top."

[15] In response to direct questions concerning the paraphernalia used in the rite the informant said: "In the old days they did not use the eagle bone whistle in peyote. Lately men began to bring these in. It was not mentioned in the very old descriptions or stories. No musical rasp is used in peyote meetings. The Lipan have no musical rasp at all. There are no feathers in the tipi or beside the door to take out with you when you go out." (This is the Mescalero practice.–M. E. O.)

They usually sit cross-legged in the peyote meeting. They do not lie down. They cannot shift the position for comfort. There is no water in the tipi. They are not supposed to drink. There is no food in the tipi. They should not eat till morning, till breakfast. Those in the tipi are not allowed to talk. They are just supposed to sing; that is all. If anyone wants to leave, he may. If anyone wants to enter, he may. A man does not have to stay in the tipi once he is in there. When the peyote meeting runs smoothly, then everyone has a good time. When one man sings, another may get up and dance. Anyone who wants to can get up and dance.

It is great fun when the men are in a big meeting and all are of one mind, when all are singing and all is running smoothly. There is a good time there when there are no hard feelings and you can see it going well.

The chief peyote man, the leader, has to keep everything straight. He tells those present to keep to one road and one mind, not to interfere or disturb the thought of others. He is supposed to keep the ceremony going in the right way without trouble. The chief peyote is the one who tells the peyote leader what is going on, whether anyone is working against the others in a way which he should not.

The head man is supposed to stop all arguments in there. He has to watch all the men. He sees that they obey the peyote rules. He wants them to go on in a good way. All the Lipan, the old Lipan, did not care much for supernatural power. Just recently, when they drifted into northern country, they have gotten interested more in that, and then the trouble started. But before, they did not make a lot of trouble so that the peyote chief had always to tell them, "Stop this; stop that."[16]

When they first start eating peyote they put their thoughts on something good, something they want, for they say that whatever you are thinking about when you start is what you will see all during the night in your vision. Your mind cannot stray even a little. You must be thinking in a good even way. Then you will learn all about peyote.

Some people, if they eat four, or just a few, or even as many as twenty buttons, do not feel good. It just makes them dizzy. But when they eat fifty or more the good time is right there, if they are not afraid of it.

Sometimes a man sees a vision and it scares him and he goes out running. But he is all right the next day. The thing that frightened him will not happen unless he thinks about it all the time and it frightens him con-

[16] Peyote was used principally as a curative rite by the Mescalero and as such took its place among the shamanistic ceremonies with all the individual rivalry which this implied. Doubtless Lipan peyóte took on more of a curative and shamanistic coloring after contact with the Mescalero. For an account of the development in this direction and its probable causes see the article referred to in footnote 7.

tinually. Then he begins to be afraid of it and thinks it will happen. But if he holds it off—holds off the bad thoughts that frighten him—nothing will occur.[17]

If a fellow is not afraid of it, he will surely have a good time. A fellow who is afraid of it just gets dizzy and frightened. He sees things that frighten him. What he sees is not true, but is just playing a joke on him. If he is not afraid and keeps on and eats up to fifty buttons, the bad visions will go away and nothing but good times will take their place.

A young fellow was at a meeting once. He was a member of the Northern Lipan.[18] He was just a young man. He had been at meetings before. The peyotes, which are about the size of a dollar when they are green, are small like pebbles when they are dry. This boy decided to eat many of these. He counted out fifty of them and put them in his mouth at once. He got dizzy. It was towards morning. He was leaning back on his elbows and crying, with his mouth in a funny position.

If a new member comes in, a person who has never been there before or who has never eaten peyote, he must go to one of the men present who he thinks has a good head and a good "road" and ask that man to fix the peyote for him. He might go to the leader of that meeting, but not necessarily. After that he eats it like the others. This man sometimes chews it first and then passes it to the new man, or sometimes he just breathes on it four times and gives it to him.

If a man does not know the peyote songs he must keep quiet and keep his ears open. He learns the songs. He tries to pick up four. Then at the next peyote meeting he can sing them. He can sing songs of a personal ceremony, such as bear songs. But he must not mix up these two;[19] they each have their rules. The songs of the masked dancers should not be mentioned in the peyote meeting nor should a masked dancer come in there.[20]

They do not smoke during the night; just at the beginning and at the

[17] At this point the informant said: "Once 'way back peyote made me cry, gave me a bad dream. Sometimes it makes you dream something pleasant; sometimes it makes you dream something dangerous."

[18] Literally the "No Water People," a group which moved north and therefore away from the gulf area. Later they lived between the Rio Grande and the Pecos River, near the juncture of the two. There they became much mixed with the Mescalero. The "Big Water People," those Lipan who tried to remain nearer their old territory on the gulf but who were finally driven over into Mexico, are sometimes quite critical of the "No Water People" because of their apostacy and mixture and classify them as a Mescalero or part-Mescalero group.

[19] I. e., personal power songs and peyote songs.

[20] There is some evidence to show, for the Mescalero at least, and in this remark for the Lipan, that the masked dancer cult and the peyote cult were competitors and that the leaders of one were not enthusiastic about the claims of the other.

end of the ceremony. But if someone had a bad vision, he might smoke a cigarette to get his mind off it and get it away. That is the only time they smoke except at the beginning and at the end of the ceremony.

When the peyote buttons are still green, the fuzz from the top is hard to get off. When the buttons are dry some scrape the fuzz off before eating them; others chew the buttons with the fuzz on. The Lipan say that the fuzz from the top of the peyote is bad for the eyes and will give you sore eyes. Some, when they eat peyote, peel off the fuzz and put it aside, mixing it with the sage, so that it will not fly around. At first the men begin by taking the fuzz off. After midnight they feel good and do not care any more. They just chew them up.

In the morning, when the sun comes up, or just before the sun is up, they are still in there. They are quiet. Each man rolls a cigarette and prays and smokes, saying, "May all be well. May no enemies bother us. May we have good health and long life." Then they untie the drum. A man goes after water and brings it in anything that will hold water. Women cannot bring it in. They drink at daybreak. Water comes before food even. They drink all they want then. They wash their hands and faces, all of them.

Then food is brought in. The first food to come in is corn, roasted corn. Next is some kind of wild fruit, like yucca fruit, and then any other dish of wild fruit. And the fourth is meat. Four things are eaten. Women bring these in; they can come now, for it is all over. The food comes from several camps whose men are in the ceremony. The women provide the food. If the women want to feed the men, they can contribute it from the camps. The men eat alone in there. The women bring the food and go out. When the food comes in, they pass it around. First the corn is passed clockwise, then the other dishes. Each man takes a little out in turn. Then it is put in the middle and each man helps himself as he wants to after that. The food remains there all day and while the tipi is standing.

After the men eat they have to remain in there for the day, resting, sleeping, and telling their visions. After the meeting is over, you can tell others what you saw during it. You should not do it while the meeting is going on because it will disturb the other people. The men cannot leave the tipi where the meeting was held until the sun goes down. They can go out to urinate or defecate but they must come back. The idea is that a man should not go back to his own camp under the influence of the peyote. That same evening, as soon as the men get out, the tipi is taken down. They take it down in no special fashion, but just as any tipi is taken down here. There are no restrictions, food or any other kind, on men when they get out of the peyote meeting.

PEYOTE MEETING AS A CURING CEREMONY

In the early days they just had a good time for one night. It was not used as a curing ceremony then. Later they began to use it for curing and put up all kinds of rules. At first they wanted to have good visions; that is what they were after. But then, recently, they began to use it as medicine for sick people. They brought them in and tried to cure them. What they have done recently is this. They bring the sick person in. Then the men there try to get some good vision from the chief peyote about it. They pray to the chief peyote to help the patient. In those early days down in old Lipan country there was no sickness. You could get soaking wet and would not get sick. But lately there have been all kinds of sickness.

If a sick person comes in the tipi, they see what is the matter with him. Perhaps a witch has shot something into him, a bone or something like that. It is seen. Then the sick one rolls a cigarette and gives it to someone there who he thinks can cure him. Perhaps some man present says, "I think I can take that out with the help of peyote and these other men." So he does his ceremonial work in there and extracts what is bothering the patient. He sucks it out usually. He sucks it out with his own lips, not with a tube. It is nasty work right there. It might be dirty and full of pus. But the shaman does not think of it that way. To him it is just as if he is sucking nice juice out of something. Yet it will look terrible to others.

The shaman wants to cure that person. He wants to get rid of the thing at once. He does not want it to come up again. All the bad things in the peyote meeting have to go into the fire and burn down to ashes. That is what the fire is kept burning for in the peyote meeting. The object is put in the fire at once and burned up as soon as it is extracted. If a person wants to be a shaman he has to learn it thoroughly. He has to be very careful. If he does not want to learn it thoroughly, he will get into trouble himself. He will get sick.

The man who cures in a peyote meeting has to use peyote songs if he sings. In his own camp he might use bear songs or whatever he knows, but here in the peyote meeting he is supposed to use peyote songs only for curing. Sometimes he sucks right away without singing. He just looks and sees what it is and then sucks. Sometimes they suck out things like insects which have been shot into the patient and these things pop when burned. Sometimes when they throw the evil object in the fire, it blazes up blue but does not pop.

This doctoring in the peyote meeting has been done only recently. Be-

fore that there was not much sickness among the Lipan and the ceremony was not used that way for that reason.[21]

After the ceremony was used for curing, women were allowed to come for curing purposes. The woman patient must cleanse herself and wear clean clothes. Then she can come in. Beforehand she must have seen a shaman to whom she has already been going and must have been instructed by him to come to the meeting. The shaman, if he gets a vision from the chief peyote that it is all right, might give her peyote and cure her in there. But a woman could not come in just to eat peyote like a man. Women do not come in unless they are sick, and then they have to take a good bath in soapweed suds beforehand.

INDIVIDUAL AND MEDICINAL USES OF PEYOTE

It is all right for a man to eat peyote by himself. Eat as many as you can, about fifty, and you will have good dreams [visions]. You might start by yourself. You might try twelve. It might not affect you. You take ten more and some more. You get to fifty. Then you get there. You get into a good land. When you get dizzy, when it takes effect, your mind is where you see things you never saw before.

Peyote has a medicinal value apart from the peyote meeting. It was put on wounds of all kinds. Anyone could do it. It is eaten as a medicine too for almost any illness.

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[21] See footnote 16 for a hint in regard to the growth of the curative phase.

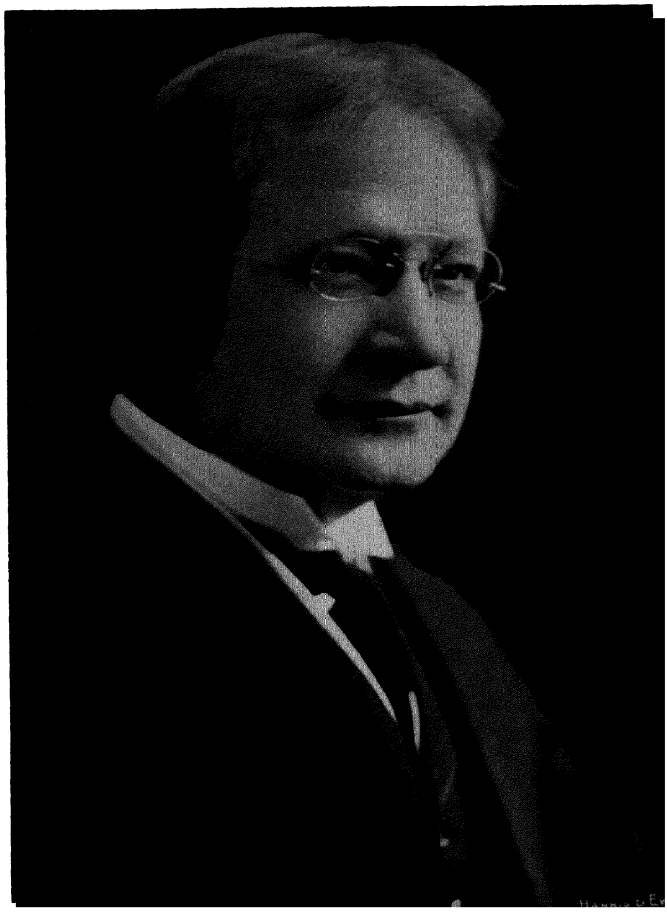
JOHN NAPOLEON BRINTON HEWITT

By JOHN R. SWANTON

IN the death of Mr J. N. B. Hewitt on October 14, 1937, there passed from the field of anthropology the last of that notable group of students of the American Indian which Major J. W. Powell assembled when he founded the Bureau of American Ethnology. Mr Hewitt was not, it is true, a member of the Bureau staff from the beginning but it was only seven years old when he joined it and he had given it fifty-one years of service at the time of his death.

Mr Hewitt was born in the neighborhood of Lewiston, Niagara County, N. Y., on Dec. 16, 1859, being the oldest of a family of five children. His mother, Harriet Brinton (Hewitt), was of French, English, and Tuscarora Indian descent and his father a physician of Scotch ancestry who enjoyed a wide country practice and was highly esteemed throughout the section. Young Hewitt received his early education in the public schools of Niagara County, and later pursued classical courses in Wilson Union and Lockport Union academies. A serious sunstroke in the fourth year of his preparatory work prevented him from completing the studies necessary to enable him to enter college, and from 1876 to 1879 he was engaged in farming and as a newspaper correspondent. From 1877 to 1879 he conducted a private night school for young men and for heads of families in the Mt Hope District school house, Lewiston, N. Y. Later he lived for a time at Suspension Bridge, N. Y., and in Jersey City.

It had been his hope and expectation to follow the same profession as his father and he began, in fact, to study for it, but in 1880 the course of his interests was entirely changed when he was employed by Mrs Erminnie A. Smith of Jersey City as her amanuensis in collecting myths among the Iroquois tribes of his native state. He was associated with her in this work from 1880 to 1884, in the latter year on the Onondaga and Grand River reservations. Afterwards, for a brief period, he was in the employ of the Jersey City Railways Co. (1884–85) and Adams Express Co. (1885–86), but upon Mrs Smith's death on June 9, 1886, Hewitt was called to the Bureau of American Ethnology to take up her work and he continued in the same institution and line of research to the end of his life, soon coming to be regarded as the leading authority on the organization of the Iroquois League and the ceremonials, customs, and usages of the tribes composing it. He acquired an intimate knowledge of the languages of the League, including a speaking knowledge of Mohawk and Onondaga, and also became acquainted with several Algonquian dialects.



JOHN NAPOLEON BRINTON HEWITT

Although the connection of Cherokee with the Iroquoian family of languages had been suspected by Barton as early as 1798 and later affirmed by Gallatin and Hale, it was finally demonstrated to the satisfaction of the Bureau staff in a manuscript submitted by Mr Hewitt in 1887.

In 1893–94 he was assigned to investigate the relationship between the languages of the tribes which had been assigned by Powell to the Shahaptian, Waiilatpuan, and Lutuamian stocks, and reported that in his opinion the three belonged together. His conclusion as to the first two of these was noted in the Bureau Report for 1893–94, and the connection of both with Lutuamian was accepted by adopting the name suggested by him, Shapwailutan—a name made up of syllables from the three previous stock names—in classifying Bureau manuscripts. But publication of these papers was unfortunately withheld by Powell and the change was not registered in later editions of the linguistic map—perhaps owing to the same conservatism which prevented Powell from uniting Shoshonean, Piman, and Nahuatlan—and the stock distinctions were preserved until Melville Jacobs revived the question and put the relationship beyond doubt.

In 1895 Mr Hewitt was asked to compare Maya with the languages of Polynesia in order to test a claim to relationship made for them by Dr Cyrus Thomas, and he found, as might have been expected, that the claim was groundless.

After W J McGee's return from visiting the Seri Indians of Tiburon Island in 1895–96, Hewitt was asked to make a comparison between their language and those of the Yuman and Waicurian tribes to accompany Mr McGee's paper. He reported adversely to the relationship and has so far been sustained as to the Waicuri, but it is now believed that Seri is distantly connected with the Yuman dialects though the relationship is admittedly remote.

Some time was also devoted to a thorough examination and orderly arrangement of Tubari and Tarahumari vocabularies presented to the Bureau of Ethnology by Dr Carl Lumholtz.

From this time on, although Hewitt collected material in Chippewa, Ottawa, Delaware, and some other non-Iroquoian languages, he concentrated his attention mainly on the Iroquois and their immediate relatives. He was painstakingly conscientious in his work, but it moved slowly and only a small part of his material was actually printed. In the manuscript collections of the Bureau there are 250 entries under his name, including nearly 8000 manuscript pages and 10,000 cards, over half under the heading Onondaga, but with considerable bodies of Mohawk, Tuscarora, and Seneca material. Mr Hewitt also edited the narrative of Edwin T. Denig

on the *Indian Tribes of the Upper Missouri*, which constitutes part of the Forty-sixth Annual Report of the Bureau of Ethnology, and the *Journal of Rudolph Friederich Kurz*, printed as Bulletin 115.

From 1894 on Hewitt had practical charge of the manuscript collections of the Bureau and he was appointed official custodian in 1903.

Much of Mr Hewitt's time was also devoted to the preparation of articles for the *Handbook of American Indians* (Bulletin 30), well over a hundred having been contributed by him. This work extended over several years but yet was confined to a relatively limited period. More continuous and long-standing duties were involved in answering questions of correspondents, an obligation which he accepted very seriously indeed, and in the execution of which he performed invaluable service. He was especially well qualified for this work, not only in the Iroquois field but on questions touching upon the history of the entire eastern part of North America, for he read widely and omnivorously.

On March 19, 1918, Mr Hewitt was appointed a member of the United States Board on Geographical Names and continued in that capacity until his death, being esteemed highly by his fellow members, who treated his opinions with profound respect.

Hewitt was a founder of the American Anthropological Association and a member of the Anthropological Society of Washington from the time when he transferred his residence to the capital city. He was treasurer of the society from 1912 to 1926, and president from 1932 to 1934. He was also on the membership list of the American Museum of Natural History. On February 28, 1914, in recognition of his services in preserving for posterity a knowledge of the history and ethnology of the Indians of New York State, he was presented with the Cornplanter Medal for Iroquois Research by the Cayuga County Historical Society of Auburn.

Mr Hewitt was deeply religious and profoundly interested in and versed in the results of Biblical scholarship. He was a member of the Laymen's League of All Souls Unitarian Church and of the Congregational Club. He also belonged to the La Fayette Lodge of Masons.

No one ever questioned the depth of Mr Hewitt's knowledge of the constitution of the Iroquois League and the rites and ceremonies connected with it, but recognition of his abilities was hampered by the fact that he repeatedly postponed the publication of materials and although this was due largely to a praiseworthy wish for completeness, the effect was detrimental to his advancement and a due appreciation of him among the members of his profession. Even in matters brought to the point of publication, his lack of aggressiveness resulted, as in the case of the Shahaptian-

Waiilatpuan-Lutuamian investigation, in a failure to reap the rewards of an accomplished undertaking. His services to ethnology will be better appreciated as his literary remains appear in print, a proceeding which is likely to extend over a considerable period of time.

Mr Hewitt was blessed with a quiet, even disposition and an attractive personality. He was always an interesting conversationalist, possessed of a keen sense of humor, and a rich fund of anecdote. In the Institution and the Bureau to which he gave over half a century of his life he occupied a position that it will be impossible to fill.

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Manuscript Material

Onondaga	about 4000 pages
Tuscarora	about 800 pages and 10,000 cards
Seneca	about 800 pages
Cayuga	about 200 pages
Miscellaneous	above 6000 pages

BUREAU OF AMERICAN ETHNOLOGY
WASHINGTON, D. C.

REPORT

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR THE YEAR ENDING DECEMBER, 1937

The American Anthropological Association held its thirty-sixth annual meeting at Yale University, New Haven, Connecticut, on December 27–30, 1937. At the same time the American Folklore Society celebrated its Fiftieth Anniversary, and the Society for American Archaeology held a regional meeting.

COUNCIL MEETING, DEC. 28, 4:30 P.M.

President N. C. Nelson presided. Forty-five members were present.

The minutes of the Washington meeting, 1936, were not read, but approved as printed in the AMERICAN ANTHROPOLOGIST, Vol. 39, pp. 316–27, 1937.

REPORT OF SECRETARY

The President appointed the following committees and representatives during the year:

Nominating Committee: Fay-Cooper Cole (chairman), A. M. Tozzer, Ruth F. Benedict.

Program Committee: J. M. Cooper (chairman), M. W. Stirling, W. D. Strong, F. M. Setzler.

Local Committee on Arrangements: L. Spier (chairman), G. P. Murdock, C. Osgood, Clark Wissler.

Representative of AAA to American Council of Learned Societies alternating for A. V. Kidder: E. Sapir.

The membership of the Association as of December 1, 1937, is as follows:

Life members					10
Regular members					
AAA members	in good standing		616		
"	in arrears for 1937		23		
"	deceased or in arrears for 1936		28	667	
CSB "	in good standing		76		
"	in arrears for 1937		11		
"	deceased or in arrears for 1936		7	94	
AES "	in good standing		234		
"	in arrears for 1937		17	251	
ASW "	in good standing		41	41	
PAS "	in good standing		10		
"	in arrears for 1937		3	13	1066
Total membership					1076

(Total membership for 1936 – 996)

There are 18 exchanges.

The Association has lost through death the following members: (AAA) Jeremiah Zimmerman, Manley Chester; (ASW) J. N. B. Hewitt (Founder), Wm. J. Graham; (AES) Felix Warburg.

Respectfully submitted,
FRANK M. SETZLER, *Secretary*

It was voted that the report of the Secretary be accepted.

REPORT OF TREASURER

The present bank balances of the four funds of the Association stand as follows:

Regular Fund	$5,475.56
Permanent Fund	3,961.11
Index Fund	1,232.84
Memoirs Fund	788.74

This makes a total of $11,458.25 of which $10,360.48 is drawing interest in four savings accounts (New Haven Savings Bank, Connecticut Savings Bank of New Haven, Second National Bank of New Haven, and First National Bank and Trust Co., New Haven). The $5,475.56 of the Regular Fund is divided between a checking account with a balance of $1,097.77 and a savings account of $4,377.79.

The annual surplus of the Association is the extraordinary sum of $1,694.18. Of this amount $638.42 results from an unexpended balance against the 1937 budget, chiefly saved on the item of printing. The principal increase is due to the unexpected rise in income from sales, which jumped from $375.24 for 1936 to $1,064.65 for 1937.

REGULAR FUND

Gross Receipts

Balance on hand, December 1, 1936			$ 4,068.30
Membership dues:			
American Anthropological Association:			
1934–35	$ 27.83		
1936	102.40		
1937	3,279.00		
1938	366.35	$3,775.58	
American Ethnological Society		$1,185.50	
Anthropological Society of Washington		205.00	
Central States Branch		426.00	
Philadelphia Anthropological Society		60.00	$5,652.08
Sale of Publications			1,064.65
Reimbursements			318.50
Reprint Series			46.60
Interest (Regular Fund only)			99.51 7,181.34
			$11,249.64

Gross Disbursements

American Anthropologist:			
George Banta Publishing Company:			
Printing and Illustrating		$2,952.69	
Distribution (includes Memoir No 47)		261.51	
Storage, insurance		60.00	
Reprints		366.30	$3,640.50

National Academy of Sciences			
(Contribution from American Anthropological Association)		300.00	
Editor's expenses		1,106.40	
Treasurer's expenses		590.65	
Secretary's expenses		136.53	$ 5,774.08
Cash on hand, November 30, 1937			5,475.56
			$11,249.64

Resources

Cash on hand, November 30, 1937			$5,475.56
Due from dues:			
1937: American Anthropological Association	$138.00		
American Ethnological Society	70.00		
Central States Branch	50.00	$ 258.00	
Due from sales		216.22	
Due from reimbursements (reprints, etc.)		74.47	548.69
			$6,024.25

Liabilities

Membership dues for 1938 already paid	$ 366.35	
Net excess resources over liabilities	5,657.90	$6,024.25

PERMANENT FUND

Receipts

Balance (savings account and bonds), Dec. 1, 1936		$3,854.67	
Interest on savings	$ 95.68		
Interest on one bond (1936 and 1937)	6.50		
Life Membership	100.00	202.18	$4,056.85

Investments

Liberty Bond (one)	$ 95.74	
Cash in savings account, November 30, 1937	3,961.11	$4,056.85

INDEX FUND

Receipts

Balance, December 1, 1936	$1,211.56	
Interest on savings	21.28	$1,232.84

Investments

Cash in savings account, November 30, 1937	$1,232.84

MEMOIRS FUND

Receipts

Balance, December 1, 1936		$1,220.21	
Interest on savings	$ 21.60		
Royalty from book "American Indian Life"	16.50		
Berreman's share of Memoir No 47	100.00	138.10	$1,358.31

Disbursements

Memoir No 47 (Berreman)	$ 254.46	
Memoir No 48 (Turney-High)*	315.11	
Cash in savings account, November 30, 1937	788.74	$1,358.31

* This amount represents one-half the cost of the memoir. The other half will be paid by Montana State University *et al.*

NET EXPENDITURES AGAINST 1937 BUDGET

	Allowed	*Spent*	*Balance*
Secretary's expenses*	$ 200.00	$ 117.25	$ 82.75
Editor's expenses:			
Editor's assistant	960.00	960.00	——
Office expenses	150.00	146.40	3.60
	1,110.00	1,106.40	3.60
Treasurer's expenses:			
Treasurer's assistant	480.00	480.00	——
Office expenses	100.00	68.50	31.50
Membership charges	25.00	17.15	7.85
	605.00	565.65	39.35
American Anthropologist:			
Printing and illustrating	3,300.00	2,820.91	479.09
Reprints	200.00	204.86	−4.86
Distribution (includes Memoir No 47)	250.00	261.51	−11.51
Storage, insurance	60.00	60.00	——
	3,810.00	3,347.28	462.72
American Council of Learned Societies	25.00	25.00	——
Anthropological Reprint Series	50.00	——	50.00
Totals	$5,800.00	$5,161.58	$ 638.42

* Budgeted to include the President's expenses, if any.

REGULAR RECURRENT INCOME AND EXPENDITURES

Net Income

	1934	1935	1936	1937
Memb. dues collected directly at $6 (less subscription commissions) (AAA)	$3,273.73	$3,550.64	$3,744.74	$3,775.58
Memb. dues from Central States Branch and affiliated societies	1,415.25	1,509.00	1,760.25	1,876.50
Total dues	$4,688.98	$5,059.64	$5,504.99	$5,652.08
Sale of Anthropologist and Memoirs	329.24	366.54	375.24	1,064.65
Sale of Reprint Series		43.86	140.24	46.60
Interest (Regular Fund only)	144.81	122.05	104.00	99.51
Totals	$5,163.03	$5,592.09	$6,124.47	$6,862.84

Net Expenditures

American Anthropologist, printing and illustrations:				
No. 4 of preceding year	$ 874.26	$ 745.87		
Nos 1–3 of year	1,836.75			
Nos 1–4 of year		2,613.89	$2,753.43	$2,820.91
Totals	$2,711.01	$3,359.76	$2,753.43	$2,820.91
Anthropologist and Memoirs (distrib., storage, insur., net cost gratis reprints):				
1933	199.66			
1934	291.20	58.88		
1935		559.01		
1936		7.08	362.25	
1937		7.08		526.37
Totals	$ 490.86	$ 632.05	$ 362.25	$ 526.37
Memoirs: print. and illus. paid by Association (Regular Fund)		232.32		
Total account publications	$3,201.87	$4,224.13	$3,115.68	$3,347.28
Sec'y, Treas., and Ed.'s offices	$1,222.77	$1,598.89	$1,723.56	$1,789.30
American Council of Learned Societies	25.00	25.00	25.00	25.00
Anthropological Reprint Series		122.55	185.00	
Totals	$4,449.64	$5,970.57	$5,049.24	$5,161.58
Surplus carried over or deficit	713.39	−378.48	1,075.23	1,701.26
Annual surplus or deficit	$ 982.56	$ 440.43	$1,068.15	$1,694.18

Respectfully submitted,

CORNELIUS OSGOOD, *Treasurer*

The Council voted to accept the report of the Treasurer, subject to the findings of the Auditing Committee.

The President then appointed the Auditing Committee, consisting of C. Wissler (chairman), W. C. Bennett, and G. P. Murdock. The President further appointed the Executive Committee of the Association to serve as the Budget Committee and to prepare an estimate for the 1938 budget to be presented before the annual meeting December 29, 1937.

REPORT OF AUDITING COMMITTEE

The undersigned, appointed as Auditing Committee by the President, report that they have examined the Treasurer's accounts as submitted for the fiscal year 1937, and find them correct.

CLARK WISSLER, GEORGE P. MURDOCK

REPORT OF EDITOR

The publication record of the year is the AMERICAN ANTHROPOLOGIST, Vol. 39, in 738 pages, and three Memoirs: No 47—"Tribal Distribution in Oregon" by Joel V. Berreman, No 48—"The Flathead Indians of Montana" by Harry Holbert Turney-High, and No 49—"Minnesota's Browns Valley Man and Associated Burial Artifacts" by Albert Ernest Jenks. The Association is grateful to the authors and their sponsors for sharing the cost of printing these Memoirs.

The Memoir series has again served as a vehicle for publishing material from a local institution; No 48 bears the additional title of "Contribution from Montana State University."

An effort has been made to publish material covering a variety of aspects of anthropology in the Memoirs as well as in the AMERICAN ANTHROPOLOGIST. This is demanded by the growing breadth of interest of our members. Toward this end we ask the continued contribution of articles and monographs in fields heretofore not well represented in our publications.

Respectfully submitted,

LESLIE SPIER, *Editor*

It was voted that the report of the Editor be accepted.

REPORTS OF COMMITTEES

The Council voted to accept for recommendation at the annual meeting of the Association the report of the Nominating Committee, presented by R. F. Benedict.

It was voted by the Council that the 124 new applications for membership in the Association be accepted.

The President appointed the Committee on Resolutions, consisting of J. M. Cooper (chairman), T. Michelson, and R. Lowie, with instructions to report at the annual meeting, December 29, 1937.

The Secretary reviewed the action of the Executive Committee concerning their approval to pay $300 to the National Research Council for defraying part of the expense of preparing and distributing the International Directory of Anthropologists. The President called upon W. D. Strong to read a report from the Secretary, Division of Anthropology and Psychology of the National Research Council, indicating the progress made on the directory.

The President called for a report of the American Council of Learned Societies, and a brief summary of the Secretaries Conference was read by the Secretary.

A letter from the American Documentation Institute, which requested the Association to forward a nomination to represent our Association, was read. After some discussion it was voted to refer the matter to the Executive Committee with power.

After reading the schedule of the A.A.A.S. meetings, the Council voted the Executive Committee power to decide upon the next meeting place of the Association in 1938.

A discussion was held on the procedure concerning the submission of a complete paper to the Program Committee (cf. AMERICAN ANTHROPOLOGIST, Vol. 39, p. 323, 1937). The Council voted to give the Program Committee power to set the date and to call for only *abstracts* of papers to be included on the program and furthermore to empower them to demand a full paper when they are unable to judge the quality from the abstract alone.

ANNUAL MEETING, DECEMBER 29, 2:00 P.M.

President N. C. Nelson in the chair. The Nominating Committee (Cole, chairman, Tozzer, Benedict) presented its report. After presentation thereof the following officers, Council members, and representatives to councils and associations were elected:

President, Edward Sapir
First Vice-President, Diamond Jenness (1938)
Second Vice-President, John M. Cooper (1938–39)
Third Vice-President, Earnest A. Hooton (1938–40)
Fourth Vice-President, Wm. Duncan Strong (1938–41)
Secretary, Frank M. Setzler
Treasurer, Cornelius Osgood
Editor, Leslie Spier
Associate Editors, M. J. Herskovits, Cornelius Osgood, F. H. H. Roberts, Jr., Frank G. Speck
Executive Committee, R. Linton, E. C. Parsons, R. Redfield

Council

Members for term to 1941 inclusive: B. Aginsky, C. M. Arensberg, M. F. Ashley-Montagu, H. G. Barnett, R. B. Bean, H. B. Collins, Jr, B. Cummings, F. Densmore, A. C. L. Donohugh, F. H. Douglas, H. E. Driver, P. Drucker, F. Eggan, L. C. Eiseley, R. Fisher, W. H. Gilbert, Jr, A. A. Goldenweiser, C. W. M. Hart, G. G. Heye, E. A. Hoebel, E. A. Hooton, A. E. Hudson, H. Kelley, A. R. Kelly, A. Kidder, 2d, H. W. Krieger, W. M. Krogman, S. K. Lothrop, R. Mackaye, J. G. McAllister, T. D. McCown, W. C. McKern, H. S. Mekeel, H. Miner, M. A. Mook, H. L. Movius, Jr, P. Nash, K. Oberg, R. L. Olson, J. E. Pearce, R. Redfield, D. Rodnick, H. L. Shapiro, J. K. Shryock, V. J. Smith, F. G. Speck, L. Spier, E. Spinden, W. S. Stallings, Jr, W. D. Wallis, L. Ward, H. N. Wardle, W. R. Wedel, R. Zingg.

Members for term to 1940 inclusive: S. A. Barrett, R. L. Beals, M. V. Beckwith, R. F. Benedict, C. W. Bishop, D. D. Brand, M. Butler, C. S. Coon, C. A. DuBois, M. M. Edel, W. N. Fenton, G. R. Fox, E. F. Greenman, G. B. Grinnell, E. Gunther, B. Haile, A. I. Hallowell, D. G. Haring, E. Haury, J. Henry, M. J. Herskovits, G. Herzog, E. B. Howard, W. W. Howells, A. E. Jenks, N. M. Judd, R. Kennedy, E. Kopta, F. de Laguna, R. Linton, D. Mandelbaum, J. C. McGregor, P. A. Means, H. P. Mera, N. Morss, J. L. Nusbaum, B. Oetteking, L. M. O'Neale, L. Outhwaite, W. Z. Park, A. C. Parker, H. Pollock, R. H. Post, J. H. Provinse, F. G. Rainey, G. Reichard, H. H. Roberts, M. J. Rogers, L. Satterthwaite, Jr, C. C. Seltzer, L. Sharp, J. H. Steward, M. W. Stirling, R. J. Terry, M. Titiev, R. Underhill, B. L. Whorf, A. Woodward.

Members for term to 1939 inclusive: H. M. Allyn, M. Andrade, W. C. Bennett, G. A. Black, L. Bloomfield, P. H. Buck, R. Bunzel, D. Byers, W. B. Cline, C. H. Danforth, D. S. Davidson, H. Field, R. Fortune, L. Foster, E. W. Gifford, E. A. Golomshtok, W. D. Hambly, M. R. Harrington, L. Havemeyer, H. Hoijer, M. Jacobs, D. Jenness, F. Johnson, C. R. Keyes,

C. Kluckhohn, T. F. McIlwraith, R. McKennan, P. S. Martin, J. A. Mason, M. Mead, W. K. Moorehead, G. P. Murdock, N. C. Nelson, P. H. Nesbitt, E. C. Parsons, O. Ricketson, H. B. Roberts, E. Sapir, A. H. Schultz, D. Scott, F. M. Setzler, W. D. Strong, G. C. Vaillant, C. F. Voegelin, W. S. Webb, H. Webster, L. A. White, C. C. Willoughby, W. J. Wintemberg, G. Woodbury.

Members for term to 1938 inclusive: C. Amsden, H. Beyer, P. A. Brannon, K. M. Chapman, F. E. Clements, H. S. Colton, J. M. Cooper, T. Deuel, K. P. Emory, G. Engerrand, R. Flannery, C. D. Forde, A. H. Gayton, J. Gillin, M. R. Gilmore, H. S. Gladwin, C. D. Gower, J. B. Griffin, C. E. Guthe, H. U. Hall, E. S. Handy, A. T. Hansen, J. P. Harrington, F. Hawley, C. L. Hay, W. W. Hill, L. W. Jenkins, I. T. Kelley, A. V. Kidder, O. LaFarge, A. Lesser, J. Lips, E. M. Loeb, T. Michelson, E. H. Morris, M. E. Opler, C. Osgood, H. Powdermaker, V. F. Ray, W. A. Ritchie, F. H. H. Roberts, Jr, H. C. Shetrone, J. B. Stetson, Jr, S. Tax, T. W. Todd, H. Turney-High, W. L. Warner, G. Weltfish, G. D. Williams, F. R. Wulsin.

Past Presidents (*ipso facto* members of the Council). F. Boas, F.-C. Cole, F. W. Hodge, A. Hrdlička, A. L. Kroeber, R. H. Lowie, G. G. MacCurdy, N. C. Nelson, H. J. Spinden, J. R. Swanton, A. M. Tozzer, C. Wissler.

Representative to Social Science Research Council: R. Redfield.

Representatives to National Research Council: M. J. Herskovits, W. M. Krogman, F. H. H. Roberts, Jr.

Representatives to Section H, A.A.A.S.: H. B. Collins, Jr, L. A. White.

The Budget Committee presented the following budget recommendations for 1938:

1. Secretary's expenses:		
Secretary's assistant	$ 100.00	
Office expenses	100.00	$ 200.00
2. Editor's expenses:		
Editor's assistant	960.00	
Office expenses	200.00	1,160.00
3. Treasurer's expenses:		
Treasurer's assistant	480.00	
Office expenses	100.00	
Membership charges	25.00	605.00
4. American Anthropologist:		
Printing and illustrating	3,300.00	
Reprints	250.00	
Distribution	300.00	
Storage, insurance	85.00	3,935.00
5. Anthropological Reprint Series	—	—
6. American Council of Learned Societies		35.00
		$5,935.00

The Budget Committee further recommended that $800.00 be allotted from the Memoir Fund for the publication of Memoirs during the year 1938.

It was voted that the budget as recommended be approved.

The following resolutions as presented by the Committee on Resolutions (Cooper, chairman, Michelson, Lowie) were adopted:

1. *Be it resolved,* that the American Anthropological Association express to the President and Corporation of Yale University its sincere appreciation of their cordial welcome and hospitality and of their generous provision of facilities for its annual meeting.

2. *Be it resolved,* that the American Anthropological Association express to the Peabody Museum and to the New Haven Lawn Club its cordial thanks for their courtesy in providing accommodations for the Association.

3. *Be it resolved,* that the American Anthropological Association with profound regret takes cognizance of the decease of J. N. B. Hewitt, one of its founders and one of the recognized authorities on the Iroquois, and that its sincere condolences be transmitted to his surviving widow and relatives.

4. *Be it resolved,* that the American Anthropological Association learns with deep regret of the death of Jeremiah Zimmerman and conveys to his surviving relatives its sincere sympathy.

PROGRAM

MONDAY, DECEMBER 27TH

American Folklore Society

1:00 P.M.

Council Meeting of the American Folklore Society

Reports on Folklore Activities from Local Societies and Other Folklore Agencies.
AURELIO M. ESPINOSA, JR, More Folktales from Spain.
J. MASON BREWER, Problems of Negro Folklore in America.

7:00 P.M.

Anniversary Dinner and Annual Meeting of the American Folklore Society

FRANZ BOAS, Fifty Years of Folklore Study.
STITH THOMPSON, American Folklore in Retrospect and Prospect.

TUESDAY, DECEMBER 28TH

American Folklore Society

9:30 A.M.

SYMPOSIUM: *The Problems and Methods of Folklore Research.*
GEORGE HERZOG, Sources of Primitive Poetic Meter.
RUTH F. BENEDICT, Mythology and Cultural Studies.
HERBERT HALPERT, Observations on Modern and Traditional Ballads and the Folk Singer's Attitude Toward Them.
KATHERINE LUOMALA, Turtle's War Party.
ALEXANDER LESSER, Kinship, the Family, and the Clan.

3:00 P.M.

DISCUSSION: *How Shall the Efforts of Collectors of Folklore be Guided and Coordinated.*

TUESDAY, DECEMBER 28TH

American Anthropological Association

9:00 A.M.

ELIZABETH E. BACON, Land Tenure Among the Nomadic Kazaks.
FENG HAN-YI AND J. K. SHRYOCK, The Historical Origins of the Lolo.
DOROTHY M. SPENCER, Etiquette and Social Sanction in the Fiji Islands.
C. W. M. HART, Embryonic Age-Grading in an Australian Tribe.
WILLARD Z. PARK, Ethnological Problems in Northern Colombia.
CHARLES WAGLEY, Social Groupings in the Northwestern Highlands of Guatemala.

12:00 NOON

Complimentary Luncheon for Members of AAA, AFLS, and SAA by Yale University

2:30 P.M.

TRUMAN MICHELSON, Some Linguistic Aspects of Algonquian Kinship Terms.
A. IRVING HALLOWELL, The Incidence, Character and Decline of Polygyny Among the Lake Winnipeg Cree and Saulteaux.
REGINA FLANNERY, Cross Cousin Marriage Among the Cree and Montagnais of James Bay.
JOHN M. COOPER, Is the Algonquian Family Hunting Ground System Pre-Columbian?

4:30 P.M.

Council Meeting of the American Anthropological Association

8:00 P.M.

E. ADAMSON HOEBEL, The Nature of Law in the Light of Anthropology.
BERNARD W. AGINSKY, Psychopathic Trends in Culture.
B. L. WHORF, A Linguistic Consideration of Thinking in Primitive Communities.
PHILLEO NASH, The Reintegration of Modoc Ritual After the Ghost Dance of 1870.

WEDNESDAY, DECEMBER 29TH

American Anthropological Association

9:00 A.M.

MARVIN K. OPLER, The Influence of Plains Culture in Southern Ute Society.
VERNE F. RAY, The Relation of the Sun Dance of the Plains to the Spirit Dance of the Plateau.
HENRY ELKIN, Arapaho Age Societies.
JACK HARRIS, Band Mobility Among the Western Shoshoni.
CLYDE KLUCKHOHN, Participation in Ceremonies in a Navaho Community.
HARRY TSCHOPIK, JR, Taboo as a Possible Factor Involved in the Obsolescence of Navajo Pottery and Basketry.

2:00 P.M.

Annual Meeting of the American Anthropological Association

H. G. BARNETT, The Nature of the Potlatch.
PHILIP DRUCKER, Rank, Wealth, and Kinship in Northwest Coast Society.
H. E. DRIVER, Girls Puberty Rites in Western North America.
ROBERT J. SULLIVAN, The Family Among the Ten'a of Alaska.
JULES HENRY, The Pilaga and Kaingang—Two South American Tribes.

EMMA REH, Notes on Mixtec Indian Land and Farming Practices.
FRANCIS H. ELMORE, Ethnobotany of the Navajo (by title).

6:30 P.M.

Annual Dinner

N. C. NELSON, Thirty Years of Archaeology.
WARREN K. MOOREHEAD, Some Observations with Reference to Our Mound Problems.
JUNIUS BIRD, Human Remains in Association with Extinct Horse and Sloth at the Straits of Magellan [by invitation].

THURSDAY, DECEMBER 30TH

Society for American Archaeology

9:00 A.M.

JOHN H. BAILEY, A Ground Slate Producing Site Near Vergennes, Vermont.
WILLIAM A. RITCHIE, A Newly Defined Culture Aspect in New York.
DOUGLAS S. BYERS, Burials in the Nevin Shell Heap, Blue Hill, Maine.
A. R. KELLY, Lamar and Related Site Exploration in Georgia.
GORDON R. WILLEY, A Preliminary Dendrochronological Survey in Central Georgia.

2:00 P.M.

H. MELVILLE SAYRE, The Archaeology of Inscription Cave, Montana, and Its Significance in Northwest Plains Cultures.
H. M. WORMINGTON, Two Rock Shelters in Southwestern Colorado (a Preliminary Report).
LOREN C. EISELEY, Some Limitations of the Pollen Analytical Method as Applied to the Dating of Early American Cultures.
PAUL S. MARTIN, Report on Field Museum Expedition to Colorado, 1937.
ROY L. MALCOLM, Navajo Archaeological Remains in Chaco Canyon.
ROBERT F. HEIZER, Time Perspective in Central California.
H. C. SHETRONE, The Lithic Laboratory for the Eastern United States.

The meetings were attended by 197 persons, plus a score not registered. The society affiliations were as follows: 136 AAA, 38 AFLS, 49 SAA, and 36 who had no affiliations.

BOOK REVIEWS

NORTH AND SOUTH AMERICA

Archaeology of St. Lawrence Island, Alaska. HENRY B. COLLINS, JR. (Smithsonian Miscellaneous Collections, Vol. 96, No. 1. xi, 424 pp., 84 pl., 26 figs., map. Washington, 1937.)

An enthusiastic reviewer may sometimes feel that the work he is reading deserves a prize. The present monograph not only deserves but did win the gold medal offered by the Danish Royal Academy of Sciences and Letters in a competition on the question of the origin of Eskimo culture. The Academy could not have made a happier choice.

From a bewilderingly rich array of archaeological material, Collins has assembled a coherent and comprehensible picture of the development of culture on St Lawrence Island, and has traced in detail the modifications from one stage to the next, without allowing us to lose sight of the main pattern in what might easily have been a tangle of typological complexities. Excellent and numerous illustrations document this exposition.

Of greater interest and value to the more general reader, is the comparative analysis of the elements particularly characteristic of the two prehistoric stages (the Old Bering Sea and the Punuk), which continue and supplement the studies of Mathiassen and Birket-Smith on the elements of the Thule and Caribou Eskimo cultures. In particular, to single out only one of many excellent sections, Collins' discussion of house types should stand as a model of scholarly exactness and illuminating interpretation.

His theory of the development of Eskimo culture, perhaps too briefly summarized, is as follows. The Old Bering Sea culture, with its elaborate art and specialized typology, is as yet the oldest Eskimo culture found. On St Lawrence Island it gave rise to the Punuk, a culture enriched by acquisitions from Siberia. Farther north in Alaska, the Birnirk culture developed as a peripheral outgrowth of the Old Bering Sea culture, in part contemporaneous with it, in part with the Punuk. From the Birnirk stage emerged that culture which was carried east into Arctic Canada where it appears as Mathiassen's Thule culture and where it stamped out the earlier Dorset culture. (Collins' suggestion that the Dorset were primarily an Indian group who became Eskimoized does not seem very plausible, since their most striking types could not have been acquired from any known Indian culture nor from the Thule invaders. I would regard them as real Eskimo, who had perhaps been Indianized.) The Canadian Thule culture and the fully developed Punuk culture may be equated in many ways. Northwest Coast influences have not been felt in northern Alaska until very late and have played no part in this development. While some of the Canadian Thule Eskimo continued east into Greenland, others pushed back again into Alaska, arriving at the end of the Punuk period and inaugurating the proto-historic period. This return migration, affecting chiefly the

Eskimo north of Bering Strait, explains the present uniformity of culture, language, folk-lore, etc., from Alaska to Greenland, and this hypothesis is supported by physical resemblances between the Canadian Thule Eskimo and the modern Eskimo at Point Barrow. This return migration may in part explain the cultural break between the Northwest Coast and Siberia, which led Boas to assume that the Eskimo had only recently entered Alaska from the east. In addition, some of the similarities which Boas and the Jesup Expedition found on both sides of the North Pacific and which I also found when comparing ancient Aleut and southwestern Alaskan Eskimo material with archaeological remains from Kamchatka and Japan, Collins would explain by a cultural movement from the American mainland to Siberia, via the Aleutian Islands. I would differ with him only in suggesting that this borrowing might have gone in both directions.

The Old Bering Sea culture is not the primary ancestral stage from which all Eskimo culture developed, and Collins would seek that ancestral culture in northern Eurasia, where widely scattered finds lead one to expect that there formerly existed cultures of a generalized Eskimo character, though each probably bore a localized and special stamp, just as does the Old Bering Sea culture. These hypothetical old coastal cultures represented the ice-hunting stage, while the Punuk has been slightly tinged by the later snowshoe stage. Collins' conception of the ice-hunting stage is thus closer to Hatt's than to that of Birket-Smith, who saw among the inland-dwelling Caribou Eskimo the survival of the original Eskimo culture. Collins recognizes the difficulty of reconciling Birket-Smith's theory with our present archaeological evidence, and wisely leaves this problem open.

Collins' position is so plausible that I must agree with him in the main, even though his arguments run counter to certain ideas that I formerly advanced. He points out that I should have described the earliest culture on Cook Inlet (Kachemak Bay I) as containing simple, generalized Eskimo types, and should not have referred these specifically to the Thule culture, nor on the basis of these types, have suggested that one should find traces in Alaska of a proto-Thule stage, earlier than or contemporaneous with the Old Bering Sea culture. At the time *The Archaeology of Cook Inlet* was written it was not possible to make detailed comparisons of the earliest Kachemak Bay material with Old Bering Sea and Dorset types. Had such comparisons been possible, I could have made a different evaluation of these Kachemak Bay elements. On the other hand, those features of southern Alaskan Eskimo culture which Collins lists to show its extreme divergence from northern patterns are, with few exceptions, all recent traits in the south and do not affect the relationships of Kachemak Bay I. It is possible, too, that somewhere in the north there may have been a simpler, less specialized stage than the Old Bering Sea culture (which I was too specific in calling proto-Thule) which perhaps did have affinities with Kachemak Bay I and did influence the development of the Birnirk-Thule series. Collins and I would probably both agree in a rephrasing of the whole problem which implies that the original Eskimo culture, wherever it existed, must have contained that common fund from which specialized out the

Old Bering Sea, Kachemak Bay I, and the Dorset, even though, as he puts it, the last two are not Eskimo in the same sense as the first. And to the solution of this problem, Collins has made a thoroughly important and valuable contribution.

FREDERICA DE LAGUNA

SEATTLE, WASHINGTON

Oklahoma Delaware Ceremonies, Feasts and Dances. FRANK G. SPECK (Memoirs, American Philosophical Society, Vol. 7. 161 pp., 4 pls., 5 figs. $2.00. Philadelphia: University of Pennsylvania Press, 1937.)

Once more Professor Speck has given us a rich account of ceremonies which were until recently current among the Delaware of Oklahoma. Although two thousand miles and two hundred years separate them from their original homeland in Pennsylvania and New Jersey, Speck's research, in missionary sources interspersed with field trips spread over eight years to the Delaware of Oklahoma and the Delaware-Munsee of Ontario, has yielded information on twenty family feasts and rites included in this monograph. Its uneven and sometimes seemingly disorganized character is understandable when it is considered as a continuation and series of appendices to a previous publication, just as the ceremonies themselves are somewhat subsidiary to the main event, the Big House Ceremony.[1] Had both items appeared under the same cover, as Speck originally intended, he could have avoided some rather cumbersome documentation and duplication of material.

Speck believes that the Family Feasts antedate the more complex Big House Ceremony which a division of the tribe gave periodically, the latter having arisen through integration of originally separate elements and patterns from the Family Feasts (pp. 4, 8; and *Big House Ceremony*, pp. 16–17). In discussing this point Speck indicates a fallacy in too strict reliance on "ancient documentary sources dealing with native life and customs as compared in value to living sources available today among the Indians themselves." He indicts Denton (1670) and Zeisberger (1750) for inaccuracies and indifference to the value of detail now required in field work (pp. 7, 9).

Speck has analyzed admirably this Delaware ceremonial pattern (pp. 10–12) which, elaborated in the Family Feasts, is fundamental to the Big House Ceremony, and he has presented a summary of rites and feasts in tabular form (opp. p. 26). Stimulated by W. Schmidt's theory concerning symbols of duality in Delaware religion, Speck again sanely prefers "speculative attempts of the natives who themselves *profess* the principles of the religion," which he tabulates as they fall under the native classification into Male and Female categories (p. 26). This presentation proves particularly useful to the field worker in eastern North America who would compare Delaware ceremonies with those of other eastern tribes.

The Delaware believe that their family cult rites originated in associations

[1] Frank G. Speck, *A Study of the Delaware Big House Ceremony* (Publications, Pennsylvania Historical Commission, Vol. 2, Harrisburg, 1931).

with mystic animals who have imposed on them certain ceremonial obligations lest individuals become afflicted with sickness. In this respect they resemble Iroquois medicine societies. There are Bear and Otter variants of a Grease Drinking Ceremony, a Masked Dance Company, Opossum Dance, Doll Dance, and Sacrifice feasts. Buffalo Dance seems of recent borrowing.

Seasonal ceremonies are a Rain Making Ritual, Spring Prayer and Football given by a chief of a division to advance vegetation, Corn Harvest, and a Prayer to Avert Thunder. There follow: notes on three "stomp" dances—Turkey, Bean and Drunken dances—and ceremonial games—Moccasin, Ring and Pin, Ceremonial Dolls, and Jack Straws. Grouped as miscellaneous rites come: Scratching Rite for Warriors, a suggestive account of men's training for ceremonial and personal conduct, some notes and a text on the consanguinity of tribes, and a description of funeral and burial rites with an account of the Bone Burial Ceremony of Southeastern provenience. Three traditional Delaware narratives of Nanticoke witchcraft, bone scraping before burial, and the Skeleton Dance are particularly welcome since we know so little of these reputed sorcerers from the Chesapeake, who, having lived peripheral to the Southeast, were later adopted among the Iroquois and Delaware.

Speck does not merge conflicting testimony of informants, explaining that differences of opinion concerning Family feasts reflect levels of individual participation in the ceremonies and variations between family traditions. Each informant gave what he knew of the variant possessed by his family. Thus the problem of treating the conflicting sources, from the viewpoints of similarity in procedure and conflicting testimony, is largely minimized (pp. 47–48).

The reviewer's first reaction to the challenge thrown down to some student (pp. 51–52) was to examine the similarities between Delaware and Iroquois mask traits; but the results of this comparative study seem misplaced here, and we shall therefore pass over these and other Iroquois-like ceremonial traits. However, it is noteworthy that Seneca informants were interested to hear passages read from Speck's descriptions of the Delaware rites. Speck ventures one conclusion which I will confirm by inversion. He says,

> It is my impression namely, that a Delaware could particpiate in the program of many of the ceremonial observances of a Cayuga Iroquois Long House group with a certain assurance of understanding the theology involved and of being able to take part comfortably in them despite his ignorance of the language (p. 151).

Conversely, Jesse Cornplanter, my Seneca interpreter, thought that he might participate after a fashion in the Delaware rites, but that linguistic differences and those of emphasis and sequence of the ritual program would make him decidedly uncomfortable, however much he might welcome this novel and amusing experience.

WILLIAM N. FENTON

ST. LAWRENCE UNIVERSITY

Hopi Journal of Alexander M. Stephen. ELSIE CLEWS PARSONS (ed.). (2 vols.: lii, 1417 pp., frontispiece, 25 pls., 531 figs., 12 maps. $10.00. New York: Columbia University Press, 1936).

Very little is known of the author of this remarkable journal. He was born in Scotland, and is said to have graduated from the University of Edinburgh.[1] He served in the Union Army throughout the American Civil War. As early as 1881, at least, he was in the Hopi country; there he lived until his death in 1894. Why he went there and how he sustained himself is not known.

Stephen lived on intimate and friendly terms with the Indians for many years, living in their households and sharing their daily life. He first conversed with them in the Navajo language, later supplementing this with Hopi as he acquired some proficiency in this tongue; virtually none of the Hopi spoke English in those days. Stephen began to record his observations in 1882, but it was not until 1890 that he undertook to record systematically the ceremonial and daily social life of the people: the bulk of his field notes are for the years 1891 to '93, inclusive. He was a careful and diligent observer, a meticulous recorder. He did not regard Indians as inferior beings but viewed their ways with sympathy and an understanding rare in a white man. In addition to his written descriptions, Stephen made hundreds of very fine drawings, some in color, of paraphernalia and costume; diagrams of kivas and ceremonies; and topographic maps, which are reproduced here. He had free access to all ceremonies except those of the War society, and was himself inducted into three societies, including the Snake society of Shipaulovi. He participated slightly in their ceremonial life, such as planting beans at Powamu and depositing prayersticks. And, finally, as he lay ill in his house shortly before his death, he was treated by a Hopi medicineman, the ritual of which he faithfully records.

The *Journal* is devoted almost exclusively to the towns of First Mesa: the Hopi pueblo of Walpi, and the Tewa town of Hano, although there are bits of information concerning Second and Third Mesas as well. The bulk of the *Journal* consists of descriptive accounts of the major Hopi ceremonies. But there is also a great deal of information on many other subjects, such as cooking, farming, hunting, kin and clan, the girl's adolescent ceremony,[2] contacts between the Hopi and their Indian and white neighbors.

Dr Parsons' contribution to this *Journal* in its published form has been tremendous, much greater, probably, than will be generally appreciated. Fortunately she was spared the tortured labor of deciphering poorly written field notes, for Stephen wrote a good hand. But the enormous industry, patience and pains, and vast knowledge of the Southwest which she has lavished upon the *Journal* have

[1] P.S.: I have since received a communication from the University of Edinburgh which states that no Alexander M. Stephen graduated from that institution prior to 1858, although four Alexander Stephens were matriculated there as students between 1841 and 1854.

[2] " . . . As far as I know, this is the first and only account [among the Pueblos]," Parsons. p. 123.

contributed in large measure toward making it one of the most valuable and usable works in our entire literature on the Pueblos. First of all, she has provided a "Preface" and an "Introduction" which serve to orient the reader and to place the *Journal* in its proper perspective. She has grouped together the descriptions of each ceremony for various years and has prefaced them with an appropriate introductory note. Illuminating and informative footnotes are interspersed freely throughout. Odds and ends, culled from Stephen's notebooks, have been arranged systematically in a 300 page appendix. An extensive glossary of terms (125 pp.) and a very full index (87 pp.), add greatly to the usefulness of the *Journal*.

The *Journal* naturally does not pretend to give a complete exposition and interpretation of Hopi culture. Nevertheless, it does provide, thanks to its editorial presentation, a better introduction to Hopi ethnography than any other single work which we have at present. Moreover, since this record is almost a half-century old (parts of it are even older), it provides us, by comparison with recent studies by Lowie, Parsons, *et al.*, with a means for gauging the magnitude, velocity, and direction of culture change among the Hopi. In this respect it is invaluable. Stephen's *Hopi Journal* will remain a veritable treasure house as long as the study of Pueblo ethnology shall last.

LESLIE A. WHITE

UNIVERSITY OF MICHIGAN

Report on Archaeological Reconnaissance in the Rainbow Plateau Area of Northern Arizona and Southern Utah. LYNDON LANE HARGRAVE. (56 pp. 16 pls., 2 maps. $.60. Berkeley: University of California Press, 1935.)

The Rainbow Bridge-Monument Valley Expedition was organized for the purpose of determining outstanding scientific problems in the region lying north of Black Mesa, Arizona, and south of the San Juan and Colorado Rivers in Utah. Numerous fields of interest—geology, paleontology, archaeology, ethnology, and various phases of biology—were included in the investigations. The paper by Hargrave deals in the main with the archaeological aspects of the reconnaissance, but includes a helpful historical background for explorations in the area. There are descriptions of the localities studied, and the methods used by the present party are discussed. The problems apparent in the area are considered and there is a careful presentation of results obtained, including a tabulated summary. The closing section of the paper deals with Southwestern archaeology in general and the importance of the area under consideration. There is a rather extensive bibliography.

The author stresses the fact that the project was primarily a reconnaissance and that the results were based more on elements of an intangible nature—visual correlation and mental tabulation—than on materials collected. He admits the hazards in such a method but concludes that the hypotheses formulated from the evidence are valid in outlining the problems for future study. As a preliminary report, written before there was opportunity for laboratory work and the proper evalu-

ation of data, the paper is an interesting document. The photographs of the country and of some of the ruins visited are exceptionally fine. Considering the fact that the party was forced to cover an extensive area in a relatively short time—one stretch some seventy-five miles in length and containing many sites and ruins was traversed in nineteen days on foot—it is surprising that as much information as is presented in the report was obtained. Hargrave, one would judge, made good use of the time available for the inspection of sites.

FRANK H. H. ROBERTS, JR.

BUREAU OF AMERICAN ETHNOLOGY

A Historical, Political, and Natural Description of California by Pedro Fages, Soldier of Spain. HERBERT INGRAM PRIESTLY (tr.). (83 pp., map. $1.50. Berkeley: University of California Press, 1937.)

This translation of Fages' description of California was first published in the *Catholic Historical Quarterly*, 1919. The present reprinting, a little book of attractive format, makes it more accessible to general readers interested in Californiana. While this translation does not differ from the earlier printing, its usefulness is greatly enhanced by notes giving Professor H. E. Bolton's identification of localities, and by a reference to his recent article explaining Fages' presence in the southern San Joaquin Valley. The real contribution in this volume is the publication of José María Estudillo's map of the San Joaquin Valley which more properly belongs with that explorer's diary.[1] It is probably the first accurate map of the region and should be of equal interest to geographers and ethnographers. If it has been made public heretofore, Professor Priestly makes no note of it, nor even of its source.

Pedro Fages was one of the little group who toiled their way from San Diego harbor to San Francisco Bay in 1769. The Indians were friendly, the topography hostile: Fages and Miguel Costansó took note of both. In 1775 Fages wrote the present account, incorporating observations from later journeyings in California and leaning heavily for identification of marches and descriptions of localities upon the diary of his companion, Costansó. While Fages' account gives a broad sweep of ethnographic description for the southern half of the California coast, it is by no means the earliest. Natives at specific coastal localities were well described some two centuries earlier by persons with Cabrillo, Drake, and Viscaino. Material from these accounts, including the French translation of Fages' *Historical, Political, and Natural Description* were incorporated by A. L. Kroeber in his *Handbook of the Indians of California;* hence, a résumé of Fages' contribution is unnecessary here.

A. H. GAYTON

NEW HAVEN, CONNECTICUT

[1] Published in *Essays in Anthropology in Honor of Alfred Louis Kroeber* (Berkeley, 1936), pp. 67–85.

Blankets and Moccasins. GLENDOLIN DAMON WAGNER AND WILLIAM A. ALLEN. (304 pp. Caldwell, Idaho: Caxton Printers, Ltd., 1933.)

Notwithstanding its gush, triteness, and hoary misconceptions this wholly popular book, which centers in the career of the Crow chief Plenty-coups, harbors a few items of ethnographic interest. Having a small body lure a hostile force on to be overwhelmed by a surprise attack of ambushed tribesmen (p. 34) is revealed as a traditional device of Crow warfare.[1] It is good to have confirmation of the belief that by catching butterflies and smearing their wings on his chest a boy would acquire the butterfly's speed (p. 71); and a vivid account of the youngsters' "magpie-imitation," i.e., of their assuming disguise to steal meat hung up in camp (p. 295). There are sketchy references to comradeship (p. 101 sq.), the relation of elder and younger brother (p. 81 sq.), swearing by the knife (p. 156), and visions (pp. 290f., 292). The sidelights on Wraps-up-his-tail's uprising in 1887 are likewise of some merit (pp. 226–52), though the prophet's picture as a charming and astute agitator thirsting to supplant Plenty-coups in his people's hearts is not convincing.

ROBERT H. LOWIE

UNIVERSITY OF CALIFORNIA

Satanta, the Great Chief of the Kiowas and His People. CLARENCE WHARTON. (239 pp., 22 illus. Dallas: Upshaw and Co., 1935.)

This book of local history, well-written and with a certain quiet humor, is superior to many of its kind. The former position of the Kiowa is accepted somewhat uncritically from Mooney (pp. 17, 26, 30), but the information on Kiowa wars and alliances is reliable. There is an appreciable amount of ethnographic information also: total nudity (?) in battle (pp. 29–30), Go^{i}tsenk$^{\omega}$, a warriors' society (pp. 34–36), shield (pp. 63–65), horse-racing (pp. 71–72), burial (pp. 83–84) and mourning (pp 88–89), abandonment of the aged (p. 95), eating of dogs (p. 113), the Sun Dance (p. 130), elopement (p. 46), medicine power (p. 178), shield and lance transfer (p. 220), and population (p. 230). There is an index, largely of proper names, however.

WESTON LA BARRE

YALE UNIVERSITY

Yucatan Before and After the Conquest by Friar Diego de Landa: with Other Related Documents, Maps, and Illustrations. WILLIAM GATES (tr.). (Baltimore: Maya Society, 1937.)

Bishop Landa's account of the Maya of Yucatan, written in 1566, is the source book on Maya culture. Without his report, which incorporated many data obtained directly from Maya informants, our knowledge of Yucatecan Maya ethnology would be woefully small. Lopez de Cogolludo's history is very frequently cited as a second important source, but in actual fact practically all of that writer's information comes from Aguilar's "Informe" or Gaspar Antonio's manuscript.

[1] Cf. R. H. Lowie, *The Crow Indians* (New York, 1935), p. 235.

There have been two French and two Spanish editions of Landa, but only one of these, the inaccessible de Rosny edition (only sixty copies printed) was complete. Gates is the first to publish an English translation, and his edition is complete. The hitherto inaccessible sections deal principally with the flora and fauna of Yucatan, but contain many ethnological references. For instance, sting rays, sometimes found with burials in the Peten District, have been explained as possible cloak pins. Through the Gates translation we now know that they were kept by priests and used in the sacrificial drawing of blood.

In Section 22 Gates has the cup-bearers get drunk. The translation should be, "After the feast the cup-bearers, who used not to get intoxicated, drew drink out of great tubs, until they [the revellers] were as drunk as lords." The frequent translation of adelantado as admiral has little to recommend it.

The sentence "In their fasting they generally abstained from salt in their stews and pepper, which was a serious matter to them, and they were continent for the celebration of all their feasts" is omitted from Paragraph xxvii. The following sentence is better translated "Widowers did not marry until a year after [widowhood] in order not to know [carnally] a woman." The implication, strengthened by the next sentence, is that there was a taboo against sexual intercourse until the year was up.

Despite a few such slips, the translation is good. A number of informative footnotes are added. For instance, the reviewer had been puzzled by Landa's statement that the Mayas put salt in their cotton armor, but Gates solves this by showing that Landa mistranslated quilted cotton as salt and cotton. However, the identification of the long-nosed god as Itzamma in several illustrations is very dubious. This deity is in all probability Chac, the rain god.

Landa's account is rounded out by appendices. One is on the Xiu family and their papers. In another Gates uses the very important and unpublished tax list of 1549 to paint a picture of Yucatan in Landa's time. A third comprises the hitherto unpublished Ordinance of Tomas Lopez which, by prohibiting *inter alia* tattooing, general use of bows and arrows, wife purchase, service to wife's parents, and divination of maize offers an explanation of why the Mayas have been so hispanicized.

Mr Gates is to be congratulated on this publication. Institutions and individuals interested in Latin America should not fail to order it for their libraries.

ERIC THOMPSON

CARNEGIE INSTITUTION OF WASHINGTON

Medicina aborigen Americana. RAMON PARDAL. (Humanior, Biblioteca del Americanista Moderno, Sección C, Vol. 3. xxii, 377 pp., 6 pls., 70 figs. $m/n 5.50. Buenos Aires: José Anesi, 1937.)

Pardal's work on native medicine in America does not hold the promise implied by its title. The Indians of North America are virtually ignored, and the author has paid attention only to Mexico and a few regions of South America (Paraguay, Chile, Peru). The book was evidently written by a layman who had

in mind a larger public, ignorant of anthropology. In his generalizations he shows a rather naïve respect for old-fashioned theories.

Pardal's book would have been invaluable if the documentation had been based on actual observations collected in the field. As it is, it represents only a compilation. Furthermore, many important sources have been neglected and those utilized have not been subjected to sufficient criticism.

Since Pardal's book contains illustrations of many medicinal plants and their scientific determinations, the volume may be useful for general reference. The author must also be commended for his sensible view of primitive medicine. He has avoided, on the one hand, excessive enthusiasm for the "esoteric and wonderful" secrets of the Indians and, on the other hand, has refrained from scornful attitude for the empirical knowledge of the Indian medicinemen. He has also introduced to Spanish literature concepts which are still unfamiliar to many local scholars. This work shows a real improvement over past publications of that nature in South America.

Pardal's work is one of the first volumes to appear in a collection dedicated to the American Indians under the direction of Dr J. Imbelloni. It is to be regretted that the collection is not directed toward the gathering of actual evidence and original observations. Few countries in the world present better opportunities for fieldwork than does Argentina. For the present purely compilatory works of this kind seem somewhat premature.

ALFRED MÉTRAUX

UNIVERSITY OF CALIFORNIA

Archaeological Explorations in Peru. Part IV. Cañete Valley. A. L. KROEBER. (Anthropology Memoirs, Field Museum of Natural History, Vol. 2, No. 4, Chicago, 1937.)

Archaeological Explorations in Peru. Part III. Textiles of the Early Nazca Period. LILA M. O'NEALE. (Same series, Vol. 2, No. 3, Chicago, 1937.)

The third report of Dr Kroeber's archaeological work in Peru for Field Museum covers the 1925 excavations in Cañete Valley made in conjunction with Sr Antonio Hurtado of the University of San Marcos. Investigation was concentrated at two sites, Cerro Azul and Cerro del Oro.

Cerro Azul site is a cluster of adobe pyramids and terraces without evidence of dwellings. Burials on the terraces pertain to a Late period similar to Late Chincha, Ica, and Nazca. Ceramics include blackware, redware, and some poorly painted ware, although none of the shapes or designs are specifically Incaic.

No pyramid construction is associated with the Cerro del Oro site, which is an extensive cemetery on the terraced sides of a natural hill. Late period burials like those at Cerro Azul are found, but there are also other graves, lined with cubical, hand-made adobes, which Kroeber has isolated as a Middle Cañete period. The artifacts associated with the Middle period are distinct from the Late, and furthermore one grave was stratigraphically below Late period refuse. The ceramics are

identified as Middle period in time because of certain Early Nazca influence from the last or Y phase, because of black-white-red design, because of long tapering spouts, because of the associated cumbrous bowls, and because of general similarities with the Middle Ica period. On the other hand the ceramics are lacking in Tiahuanaco and Epigonal influence, generally characteristic of Middle periods, and furthermore tapestries are not found and metal work is rare. This presents a Middle period in Cañete that is distinct from all others yet isolated on the southern coast of Peru. No explanation is available for this paradox.

Excavations in Nazca Valley were part of Dr Kroeber's 1926 archaeological research program for Field Museum. His report has not been published, but the textiles are classified and described by Dr O'Neale. This analysis will be valued both because of its technical completeness and competence and because the textiles themselves are identified as Early Nazca period.

Dr O'Neale confines her study to Dr Kroeber's material without attempting comparisons with other periods or collections—a subject which she treated in a previous report. The analysis covers garment types, colors, yarns, warp and weft count, and techniques. Considerable attention has been devoted to the range of colors. Samples have been matched and tables arranged according to the color chart presented in Maerz and Paul's *Dictonary of Color*. While this has involved painstaking work and raised problems of fading, accidental or intentional hues, and variations in a single yarn, the result is an estimate of color value and range which is basically accurate and not subject to confusing terminology. It is noteworthy that 190 hues were distinguished.

Pieces are first classified into types of garments; for example, the mantles are compared by size, warp and weft count, technique, material, and color range. The same treatment is given to tunics, kerchiefs, veils, aprons, and miscellaneous types. A final summary gives a résumé of the total collection.

An appended glossary of terms applicable to the Early Nazca collection is of great importance to textile students since terminology is easily confused in this subject. One hopes that Dr O'Neale will some day enlarge her glossary to cover the range of Peruvian textiles. A brief review does not do justice to the excellence and importance of this study.

WENDELL C. BENNETT

AMERICAN MUSEUM OF NATURAL HISTORY

AFRICA

Religion and Medicine of the Gā People. M. J. FIELD. (viii, 214 pp., 16 pls., map. $6.50. New York: Oxford University Press, 1937.)

This monograph is concerned with a social and spiritual study of the Gā people, who inhabit a strip of flat grassland country on the west coast of Africa immediately to the west of the Meridian of Greenwich. The area of research includes Accra and numerous villages inhabited by fishermen. The introduction gives a general description of the topography, and an excellent map is provided.

Dr Field is not concerned with disentangling cultural elements that appear to have clustered in this region as a result of steady pressure of population toward the coast. Neither is the research functional in the sense of selecting one or more pivotal traits with a view to showing how the social and religious life are oriented. The dissertation is rather psychological, for the author is inspired by the question "How do these institutions look to Africans?" She despairs, however, of answering such a question satisfactorily, and describes her observations as a "sheaf of by-products." In this statement she errs on the side of modesty, for the abundance of her factual material, and the clear presentation indicate that she gleaned something more important than mere by-products.

The book is divided into three main sections, the first of which deals with public worship and the priesthood in six localities, including Accra. The second section is entitled "The Principles and Practice of Medicine" which includes an illuminating discussion of the subject of witchcraft. The third division, which is concerned with "Ceremonies of Everyday Life," is what many authors have referred to as the "life cycle." The subdivision dealing with pregnancy and childbirth customs contributes valuable data to the subject of naming and its association with beliefs in reincarnation. Treatment of twins, attitudes toward idiots, and the cult of the third child offer some original material and new points of view. The data assembled under a heading "The Cult of the Dead" deal mainly with the observed procedure during obsequies. The philosophical side dealing with the fate of the soul, or the possible existence of multiple souls with different destinies, is lightly touched upon.

In her preface the author states that she deliberately refrained from reading earlier accounts of the Gã people, notably one by A. B. Ellis, as she wished to remain unhampered by preconceived ideas. The advantage of remaining unbiased and of being unaffected by observations and opinions of others, is obvious; yet there is another side to the question. Previous reading and discussion on a proposed subject of investigation, for example the abstruse problem of witchcraft, should give an investigator an awareness and a sensitiveness to the subject. The research worker so equipped may discover some data that an unprepared mind might overlook.

A writer who has done so much as Dr Field in the collation of raw material may feel that the onus of further research lies with the reader of her monograph. One cannot help feeling, however, that Dr Field's labors need supplementing in at least two directions. It is true that she gives us a glimpse of the cultural conflicts of Europeans and Africans, but this is *en passant*, and an expansion of the subject so briefly described (pp. 131–33) would be of the greatest practical importance as an exercise in applied anthropology. Here and there reference is made to the records of earlier observers; but there now remains the task of assessing the new culture against the old, as described by Ellis half a century ago. To have such a background is extremely fortunate, as Dr L. P. Mair showed in using the data of Roscoe as a basis for the study of cultural change among the Baganda.

The index and glossary are combined, an arrangement which is unfortunate for the research worker who is making a comparative study and searching the text for data. Those interested in military organization will find the most useful of their data under "asafo," but only one item under the word "military." Under the word "blacksmith" some references are given, but other important items are under the word "gua." Some bibliographical items are given as footnotes, and reference is made to these in the index, but for research work there is no method better than an alphabetical bibliography placed at the end of a book. It is unfortunate that most of the footnotes (other than bibliographical) could not have been included in the text, with which most of them would have dovetailed quite smoothly.

The typography is according to the best traditions of the Oxford University Press. The illustrations are excellent in technique, well chosen, and effectively placed in reference to the text. Dr Field is to be complimented on producing a work which furthers the aim of social science in providing sound data on which general principles may ultimately be founded.

WILFRID DYSON HAMBLY

FIELD MUSEUM OF NATURAL HISTORY

Völkerkundliche Ergebnisse der südafrikanischen Reisen Rudolf Pöch's in den Jahren 1907 bis 1909. WALTER HIRSCHBERG. (Rudolf Pöchs Nachlass, Serie B: Völkerkunde, No. 1. 64 pp., 16 pls., map. RM 20. Vienna: Anthropologische Gesellschaft, 1936.)

This work is compiled on the basis of the very good ethnographical collections, mainly from the Bushmen but also from the Batauana, a Bantu people of the Okawango basin, which R. Pöch brought back from South Africa and which are preserved in the Museum für Völkerkunde at Vienna. Dr Hirschberg has worked up this collection together with Pöch's own account of it; in doing this he has taken great pains to compare its components with material in the possession of the ethnographical museums of Germany and London, and with data found in the literature. But his work is something far beyond a mere description and comparison of objects. He aims at sifting out what may be regarded as indigenous to the Bushmen from things exotic, and he propounds an analysis primarily of their material culture, which, in spite of so much having been written about the Bushmen, yet may be said to have hitherto been rather neglected. The great interest in the Bushmen that exists has, as we know, principally been devoted to the question of their origin and their art, their relation to Hottentots, Pygmies, etc.

Lack of space prevents me from entering into particulars. May I, however, be allowed to dwell on one detail; namely the Batauana "doll" that Hirschberg depicts (p. 30, Table 3, fig. 11). The Ethnographical Museum of Sweden, at Stockholm, possesses a similar doll from the Bechuana, collected by Holub (Holub's collection, No. 45), and the Cologne Museum possesses at least three specimens from the Ovambo (*Führer durch das Rautenstrauch-Joest-Museum*, 1927, p. 176,

there referred to as "Zauberpuppen"). W. Foy mentions "dolls" of this type used by women wishing for children among the Bechuana, especially the Basuto.[1] This appears to me in any case to be a question of magic, and not of children's toys.

Dr Hirschberg's study constitutes an excellent survey of the present state of Bushman research, and at the same time he gives expression to his own views on the subject. Particularly in the closing chapter he endeavors, so far as it be possible, to fit the Bushmen into African culture history as a whole. No one interested in this difficult although fascinating question should neglect making himself acquainted with this latest work of Hirschberg's.

If in conclusion I were to express a desire it would be that the author might have collected his literary sources—in part rather difficult of access— in a separate bibliography. As it is, they have to be looked up in scattered places in the text.

GERHARD LINDBLOM

ETHNOGRAPHICAL MUSEUM OF SWEDEN

AUSTRALIA AND INDONESIA

Zur Urgeschichte Australiens. CHRISTOPH VON FÜRER-HAIMENDORF. (Anthropos, Vol. 31, pp. 1–36, 433–55, 1936.)

Die Rechtsverletzung bei den australischen Eingeborenen. ALBERT HARRASSER. (Beilageheft zur vergleichende Rechtswissenschaft, Vol. 50. xv, 167 pp. Stuttgart, 1936.)

Here are two valuable summaries of two aspects of aboriginal Australian culture which heretofore have not received adequate attention. Both authors base their investigations on literary sources and thus have no new material to present. However, as the result of their organization of the available data they define new issues and bring into vision new horizons for subsequent research in the spheres of their respective interests.

Von Fürer-Haimendorf gives an excellent descriptive summary of the published sources on Tasmanian and Australian archaeology. Since only a few sites in widely separated regions have been adequately excavated and since there are few exhaustive surveys of the distributions of even the more important types of artifacts, any present attempt to organize the evidence is beset by many difficulties. The author nevertheless undertakes the ambitious task not only of correlating the miscellaneous data for the continent at large but also of interpreting the results in terms of extra-continental migrations and diffusions. In many instances he shows keen insight into what appear to be the probabilities of the situation and such opinions can be regarded as satisfactory working hypotheses. However, as the result of the very meager evidence available at present, most of his interpretations which pertain to basic problems of the continent should be considered as extremely speculative.

[1] Ethnologica, Vol. 1, Leipzig, 1909, p. 231.

The reviewer regards it as unfortunate that the author chose to make such prominent use of the terminology employed in European archaeology and to assume thereby historical relationship in those cases in which Old World and Australian artifacts have been described as similar in technique of manufacture. For instance without question he attributes the slight polishing on the non-utilitarian "sacred" stones of the Tasmanians to an arrival of "Neolithic" pecples. Such terms as Mousterian, Aurignacian, etc., so loosely employed in respect to Australian and Tasmanian artifacts, are accepted as bona fide without a critical examination of the evidence, and therefore are regarded as sufficient grounds for assuming extra-continental associations. What at this time seems to be most unwarranted is his attempt to correlate with specific Kulturkreise certain poorly known types of artifacts from various isolated prehistoric horizons.

In so far as the author has treated the evidence objectively his study can be considered as extremely illuminating. It is to be hoped that his paper will stimulate active interest in the securing of field data which will furnish a greater factual background for the many problems he discusses.

Harrasser's contribution will be welcomed by those interested in comparative jurisprudence and philosophy of law, as well as by students of Australian ethnology. Interested in determining what are regarded as crimes in aboriginal Australia and the methods by which they are punished, in ascertaining the differences between civil and criminal offences and between private and public punishment, the author set out to collect all available data on these questions. The literature up to 1931 was carefully combed and the data meticulously classified. It is unfortunate that the various published sources between 1931 and 1936 are not included, for although none of these is concerned specifically with crime, many of them throw new light on Australian marriage and necessitate revision of the theories on this institution maintained by the older writers on whom Dr Harrasser has relied.

As a result of the extreme variation in quantity and quality of his information, the author finds it impossible to establish any satisfactory continental scheme or to come to any detailed conclusions on the questions in which he is interested, although he does essay some correlations in terms of Kulturkreis hypotheses. On subjects such as crime and punishment such difficulties should be not unexpected until we possess an abundance of intensive case studies in a number of regions. Such evidence is not available. Hence the author had no choice but to secure his data from the casual reports of travelers, explorers, and the older writers, most of whom seem to have had little interest in collecting more than casual details, often ambiguously described.

In several instances the methodology of the author is open to question, although the evidence is so meager that he was forced to considerations of a most general character. For instance if we eliminate from consideration, as he does, those motives, criminal acts, and the attitudes toward, and the methods of, punishment attributable directly or indirectly to the influences of the whites, it does not follow that the residue of criminal activity and associated traits now observable would reflect necessarily pre-European conditions. Marriage violations, for example, may

have been much less or more frequent under a strictly aboriginal environment, or may have been less or more frequently punished with severity than at the present time. In attempting to classify and determine the distributions of the various motives, crimes, and punishments the author treats as standard for a tribe, described perhaps by only one person, some act, motive or attitude which may be reported but once. His attempt to distinguish private from public punishment cannot be considered satisfactory, for it may be the custom that specific relatives, and only they, inflict punishment for certain types of crime. A superficial observer might easily misinterpret the actual situation and attribute the action to private retribution.

The author devotes considerable attention to magic and the part it plays in criminal acts and as a means of both preventing and punishing crime. There also is an excellent summary of the data on infanticide, although in Australian ideology this act is not regarded as criminal. It is interesting and important to note that although it is the women who generally practice infanticide, the evidence indicates that women never take the life of men. Many such problems of profound concern to psychiatrist, criminologist, and anthropologist are introduced by the author's findings. Interested in both historical and functional considerations Harrasser gives us an excellent summary of the facts at hand and outlines many questions which cannot be treated further until more intensive studies have been conducted in the field.

D. S. DAVIDSON

UNIVERSITY OF PENNSYLVANIA

Heilkunde und Volkstum auf Bali. WOLFGANG WECK. (xii, 248 pp., 27 illus. Stuttgart: Ferdinand Enke, 1937.)

This monograph, written by a former medical officer of the Netherlands East India government, deserves high praise. Dr Weck comes to his subject with a background of years of experience in Bali and with a comprehensive knowledge of the Balinese medical literature, culled from nearly two hundred original native manuscripts. These sources are in themselves interesting. They are written in the Hindu-derived script of the island, on lontar palm leaves, which are bound together in volumes. The Balinese practitioners learn their healing art by thorough study of these "textbooks" and by courses of instruction. Their methods combine magical devices with the use of medicines and manipulative techniques.

Probably the most vivid impression one gains from reading Dr Weck's book is that of the strength of Hindu influence on the culture of the Balinese. The ancient civilization of India has permeated the island so thoroughly that nearly all aboriginal features of the culture have been transformed and recast in the Hindu mold. One might say that here we have a peripheral survival of Hindu civilization of centuries ago, altered, to be sure, by syncretism with native folkways. One can surely say that here in Bali we have a close approximation to a living picture of what Java was like before the Islamic transformation of the fifteenth century.

The book is well arranged in sections dealing with the kinds of specialists, the literature and philosophy of medicine, the conceptions of anatomy and physiology (including a remarkably vivid idea of the human body as a microcosm), and the magical and medical remedies for various illnesses. Also included are a chapter on Yoga as practiced by the Balinese and a brief section on poisons. This excellent volume leaves only two things to be desired: an index, and more publications on Bali by its able author.

RAYMOND KENNEDY

YALE UNIVERSITY

GENERAL

Essays Presented to C. G. Seligman. E. E. EVANS-PRITCHARD, RAYMOND FIRTH, BRONISLAW MALINOWSKI, AND ISAAC SCHAPERA (eds.). (ix, 385 pp., 19 pls, figs. 21 s. London: Kegan Paul, Trench, Trubner and Co., 1934.)

With the exception of a few papers,[1] the essays fall quite naturally into four groups:

(1) Material culture, contemporary and prehistoric.[2] Balfour gives a comprehensive description of the manufacture of receptacles from animal membranes; Lindblom's well illustrated and fully documented distributional paper on multiple-pointed African spears and staves is in the Nordenskiöld manner.

(2) Social organization: kinship,[3] ritual,[4] law.[5]

(3) History, historical principles, and "culture on the move."[6] While these essays are highly diverse in range and interest (from culture levels to acculturation, including archaeology, and distributions limited to three neighboring islands in one study, extended to both the New and Old World in another study), they neverthe-

[1] Aleš Hrdlička, "The Anthropological Value of the Skull;" George Pitt-Rivers, "Anthropological Approach to Ethnogenics;" R. S. Rattray, "Hausa Poetry;" "A Bibliography of Charles Gabriel Seligman from 1896 to 1934;" the editors' "Preface;" A. C. Haddon, "Appreciation."

[2] Henry Balfour, "The Tandu Industry in Northern Nigeria and its Affinities Elsewhere;" Louis C. G. Clarke, "Modern Survivals of the Sumerian Chatelaine;" K. C. Lindblom, "Spears with Two or More Heads, Particularly in Africa;" Bronislaw Malinowski, "Stone Implements in Eastern New Guinea."

[3] G. Gordon Brown, "Hehe Cross-Cousin Marriage;" Audrey I. Richards, "Mother-Right Among the Central Bantu;" L. K. Tao, "Some Chinese Characteristics in the Light of the Chinese Family."

[4] R. R. Marett, "Food Rites;" Edward Westermarck, "The Blood-Feud among Some Berbers of Morocco."

[5] C. K. Meek, "Ibo Law;" J. L. Myres, "The Roman Plebs and the Creation of its Tribunes."

[6] A. M. Hocart, "Decadence in India;" Gunnar Landtman, "The Origins of Sacrifice as Illustrated by a Primitive People;" John Layard, "The Journey of the Dead;" Robert H. Lowie, "Religious Ideas and Practices of the Eurasiatic and North American Areas;" F. E. Williams, "The Vailala Madness in Retrospect;" L. S. B. Leakey, "The Sequence of Stone Age Cultures in East Africa."

less have in common a sureness of definition not always found in the following final section.

(4) Psychology and the supernormal: concepts,[7] illustrative cultural material,[8] the supernormal.[9] It is Brenda Seligman who strikes the key note for the psychological interest of the entire volume.[10] First, individual psychology can be described in terms of universal mechanisms, and the analyst does this: he translates—makes a special kind of detailed definition of the anthropological concept of the psychic unity of mankind. Secondly, it is the special task of anthropologists to discover to what degree and in what ways the universal mechanisms are given free scope or hampered in specific cultures. Brenda Seligman herself shows how certain dissociated states are given free range and honored position among the Vedda; Herskovits shows how the Oedipus complex is given unambiguous expression in the death-customs of the Bush-Negroes of Suriname; Thurnwald contents himself with giving especially detailed data out of a faith that these minutiæ constitute "the symbols of [the native's] mental constitution" which permit us "who are anxious to delve 'behind' into the psychological attitude and mental problems" (p. 360); Smith wonders "whether the African child passes through the same psychological stages in this respect [folkloristic categories are compared] as our own children" (p. 331).

In individual psychology it is the neurotic who provides the clearest case for the study of universal mechanisms. It seems reasonable to guess that there are certain fields in cultural anthropology which can give comparable rewards to concentrated exploration—first and foremost perhaps, aspects of culture dealing with the supernormal. Herskovits notes in another context that "the native explanation of the particular type of behavior, though ordinarily couched in terms of the supernatural, can be restated in terms of the unconscious" (p. 83). In the Seligman volume, two of the three papers dealing primarily with the supernormal have failed to realize fully the potentialities of their material. This may perhaps be because the guiding ideology behind the analysis of Zande curing and Tikopia dreams is Lévy-Bruhl's and Durkheim's rather than Freud's. The third paper is concerned with a socially approved method of venting aggression in Bechuanaland, namely by cursing (socially approved in the sense that the victim has no redress in court). The effect of the curse depends on the emotional relation between the curser and the victim, and not on mechanical magic. The misfortune of a curse can be vetoed,

[7] Marie Bonaparte, "Psychanalyse et Ethnographie;" Géza Róheim, "The Study of Character Development and the Ontogenetic Theory of Culture;" Brenda Z. Seligman, "The Part of the Unconscious in Social Heritage."

[8] Melville J. Herskovits, "Freudian Mechanisms in Primitive Negro Psychology;" Richard Thurnwald, "Adventures of a Tribe in New Guinea (the Tjímundo);" Edwin W. Smith, "Indigenous Education in Africa."

[9] E. E. Evans-Pritchard, "Zande Therapeutics;" Raymond Firth, "The Meaning of Dreams in Tikopia;" I. Schapera, "Oral Sorcery among the Natives of Bechuanaland."

[10] Róheim's and Bonaparte's papers are atypical and have been ably criticized by Cora DuBois (*Some Anthropological Perspectives on Psychoanalysis*, Psychoanalytic Review, Vol. 24, pp. 246–63, 1937).

as it were, if the emotional tone between the individuals concerned changes from unpleasant to pleasant. (In this and in other respects Schapera is aware that individuals *are* concerned.) A supernormal device for venting aggression has all the advantages of exaggerated clarity over natural methods of venting aggression in a cultural study that a neurotic individual has over a normal individual in a clinical study.

If the contributions to this volume can be fairly grouped under four headings, as suggested, then the last essays give the volume its distinctive tone. One feels that no group of representative anthropologists would have devoted such a proportionately great interest to psychological implications in culture in any preceding decade. Yet it is easy to overestimate the pervasiveness of this new and growing interest; the older perspectives remain in anthropology and are represented in this volume. All told, the essays presented to, and in several cases confessedly stimulated by Professor Seligman leave no major field in cultural anthropology untouched.

C. F. VOEGELIN

DEPAUW UNIVERSITY

Principles and Methods of Tree-Ring Analysis. WALDO S. GLOCK. (Carnegie Institution of Washington Publication No. 486. viii, 100 pp., 14 pls., 44 figs. Washington, 1937.)

The title covers three papers labeled as parts of the publication. While directed to the bio-climatic phase, each is concerned, in whole or in large part, with fundamentals of tree-ring studies as developed by Douglass over a period of nearly four decades—studies which are well-known to anthropology because of their highly successful application to the chronological problems of Southwestern archaeology and the promise of their extension into other areas.

The whole superstructure of dendrochronological research rests on the precise dating of the rings and the identification of this dating in tree after tree. Part I is a detailed description of the methodology and elementary principles involved in the dating of tree-ring sequences—from primary considerations up to and including the building of chronologies through the use of archaeologic material. These have been described often and in various contexts by Douglass and his students: the value of the present exposition lies in the emphasis on details of procedure. It is, in brief, a scholarly primer, replete with excellent illustrations, for those who would seriously investigate the mechanics of tree-ring dating, and as such it is to be highly recommended. However, it should be noted that consistent with the author's orientation toward the bio-climatic aspects of the study, auxiliary points of special interest to the archaeologist-dendrochronologist are not discussed. A condensed edition, which lacked some of the accessory detail but which is superior in continuity, had appeared previously.[1]

Part II describes the dissection of a ponderosa pine as a study of ring (pattern)

[1] Waldo S. Glock, *Tree-Ring Analysis on the Douglass System* (Pan-American Geologist, Vol. 60, pp. 1–14, 1933).

uniformity throughout the stem. That such uniformity is implied in the repetition of the same pattern in various parts of a number of trees has been tacitly recognized: Dr Glock has made a formal investigation of this point in an individual tree, incidentally bringing forth some interesting suggestions regarding the vertical distribution of ring anomalies. In Part III, which includes a statement by the plant-ecologist Pearson, "Factors Influencing the Growth of Trees," the author has done good service by collating and summarizing existing information regarding tree-rings as climatic indicators.

W. S. STALLINGS, JR.

LABORATORY OF ANTHROPOLOGY

Thraldom in Ancient Iceland. CARL O. WILLIAMS. (xxv, 169 pp. $2.50. Chicago: University of Chicago Press, 1937.)

This is a study of the relationship between master and slave in Icelandic society around the year 1000 A.D. It is based upon original sources, viz., the Eddic poems, the Genealogical Sagas, and upon the laws of ancient Iceland.

Although thraldom was not as highly developed in ancient Iceland as in other Germanic countries, it nevertheless flourished sufficiently to permit its manifestations to stand as a representative of the institution in general Williams' scholarly study might be regarded as a "laboratory analysis" of a single specimen which illuminates the entire class.

Thralls were bought and sold as chattels; they were not infrequently tortured, and might be put to death by their masters. Male thralls were occasionally castrated; handsome females were usually concubines. On the other hand, thralls were legally entitled to indemnity for injury received from one not their master. Occasionally thralls were given their freedom and enough property to make them independent.

Never a vigorous institution in Iceland, thraldom declined during the 11th and 12th centuries, and eventually disappeared. It became easier, according to Williams, for the master class to exploit a class of poor who thought they were "free" than to keep an unruly class of thralls in subjection by brute force.

LESLIE A. WHITE

UNIVERSITY OF MICHIGAN

Primitive Intelligence and Environment. S. D. PORTEUS. (viii, 325 pp. $3.00. New York: Macmillan Company, 1937.)

In his introductory chapter, Porteus states the somewhat familiar *a priori* arguments in favor of the existence of mental differences between races. The remainder of the book includes three chapters on the aborigines of Australia and the physical environment in which they live, nine on the Kalahari desert and its inhabitants, and six dealing with the performances of various native groups in selected mental tests. The material is presented as an answer to those students who maintain that most of the psychological differences to be observed when one race is compared with another are due to differences in the environments in which the subjects

live. In Australia groups of the same race are to be found living under somewhat different environments; in South Africa different races are found in the same environment. In all cases the environment can well be described as repressive. Inasmuch as Porteus finds that the performances of his various groups when confronted with maze tests are not of equal excellence, he concludes that the differences are due to inequalities of mental equipment. He does not, however, contend that psychological tests give an adequate index of the total intelligence of a people, but only of their social adaptability and educability (pp. 312–13). Other indications of their true intellectual status would be derived from an analysis of their social organization, of their mastery of the environment, and of the products of their imaginations. The discussion of these latter aspects of intelligent behavior is reserved for a later volume.

In the meantime, the test results are presented, with emphasis on scores obtained in the Porteus Maze Test, which appears to be well-adapted to the study of primitive groups. (It requires a minimum of linguistic ability, and it arouses the interest of the subjects studied.) According to scores in this test, the natives of central Australia excel those of northwestern Australia; Bantu-speaking groups excel the Bushman. Also, where women were tested, they were always inferior to males of the same group, and mission-trained natives were usually more successful than "bush natives." The latter difference is attributed to the better mental set toward tests acquired in school experience. However, all the groups tested were very small (ranging in size from 14 to 65) and their variability (judged from the standard deviations) was very high. The reader may sympathize with the author's difficulties in finding Bushmen in the Kalahari, but he can hardly be convinced by the meagre data obtained.

Moreover, even if the tests are assumed to be adequate indices of intelligence, the samples to be representative, and the observed differences to be significant, it is not certain that Porteus' study proves anything in regard to racial differences in mentality. The Arunta test higher than the Bantu, but the Karadjeri fall well within the Bantu range, as do the Gurkhas of Nepal and the negritos of Luzon. In this connection, it is interesting to find on page 225 the statement that "as far as the white race is concerned the differences should be called natio-mental rather than racial." It would seem that the same must be said of other races as well. And this, of course, puts the emphasis on cultural differences, which are dismissed by Porteus: "It would seem for the most part that a racial group has just about the government, religion, and education that it deserves to have" (p. 5).

Dr Porteus' discussion of the environmental conditions in Australia and South Africa are very interesting, and are to be recommended to those who tend to think of one desert as much like another. His short accounts of the modes of life of the groups studied are taken from literature already familiar to most anthropologists. There appear to be rather obvious *errata* in Table IX (p. 272).

CHARLOTTE GOWER

UNIVERSITY OF WISCONSIN

SOME NEW PUBLICATIONS

North America

Baldwin, Gordon C. *The Pottery of Kinishba* (The Kiva 3, No. 1. Tucson: Arizona Archaeological and Historical Society, 1937). [Arizona archaeology.]

Brown, F. Martin. *America's Yesterday* (320 pp., illus. $3.50. Philadelphia: Lippincott, 1937). [New World archaeology.]

Colton, Harold Sellers, and Lyndon Hargrave. *Handbook of Northern Arizona Pottery Wares* (Bulletin, Museum of Northern Arizona 11. viii, 261 pp., pl., 62 figs. $4.00. Flagstaff: Northern Arizona Society of Science and Art, 1937).

Devereux, Georg. *Der Begriff der Vaterschaft bei den Mohave-Indianern* (Zeitschrift für Ethnologie 69, Nos. 1–3: 72–78, 1937).

Drucker, Philip. *Culture Element Distributions: V. Southern California* (Anthropological Records, University of California 1, No. 1. 52 pp., fig., map. $0.50. 1937).

Drucker, Philip. *The Tolowa and Their Southwest Oregon Kin* (University of California Publications in American Archaeology and Ethnology 36, No. 4. 80 pp., 2 figs., 3 maps. $1.00. 1937).

Goggin, John M. *Calendar of Eastern Pueblo Festivals, September to December* (New Mexico Anthropologist 2, No. 1: 21–23, Albuquerque, 1937).

Greenman, Emerson F. *The Younge Site: an Archaeological Record from Michigan* (Occasional Contributions, Museum of Anthropology, University of Michigan 6. xii, 172 pp., 33 pls., 9 figs., 10 maps. $2.25. 1937).

Haury, Emil W., and I. F. Flora. *Basket-Maker III Dates from the Vicinity of Durango, Colorado* (Tree-Ring Bulletin 4, No. 1: 7–8, Tucson, 1937).

Hotz, Gottfried. *Über eine Büffeldecke mit indianischen Bilderschriften* (Zeitschrift für Ethnologie 69, Nos. 1–3: 27–30, 1937).

Junek, Oscar Waldemar. *Isolated Communities; a Study of a Labrador Fishing Village* (American Sociology Series. xxi, 130 pp., illus. $2.50. New York: American Book Co., 1937).

Markley, Max C. *Archeology as a Tool for Use in Predicting the Permanency of Agriculture* (Science 86: 492–93, Nov. 26, 1937). [Archaeology, s.e. New Mexico.]

Mathiassen, Therkel. *The Eskimo Archeology of Greenland* (Smithsonian Report for 1936: 397–404, 1937).

McGregor, J. C. *Winona Village: a XIIth Century Settlement with a Ball Court near Flagstaff, Arizona* (Bulletin, Museum of Northern Arizona 12, Flagstaff, Arizona, 1937).

Nye, W. S. *Carbine and Lance: the Story of Old Fort Sill* (xviii, 441 pp., 47 pls. $3.00. Norman: University of Oklahoma Press, 1937). [Comanche notes.]

Page, Gordon B. *The Navajo Sweat House* (New Mexico Anthropologist 2, No. 1: 19–21, Albuquerque, 1937).

Ross, Frank E. *American Adventures in the Early Marine Fur Trade with China* (Chinese Social and Political Science Review 21, No. 2: 190–220, July, 1937). [Northwest Coast.]

Schaeffer, Claude. *The First Jesuit Mission to the Flathead, 1840–1850: a Study of Cultural Conflict* (Pacific Northwest Quarterly 28: 227–50, July, 1937).

Schultes, Richard Evans. *Peyote* (Lophophora Williamsii) *and Plants Confused with It* (Botanical Museum Leaflets, Harvard University 5, No. 5, 1937).

Steward, Julian H. *Petroglyphs of the United States* (Smithsonian Report for 1936: 405–25, 1937).

Stewart, T. D. *Did the American Indians Use the Cautery in Bone Surgery?* (American Journal of Physical Anthropology 23: 83–88, 1937).

Toulouse, Joseph Jr., *Excavations at San Diego Mission, New Mexico* (New Mexico Anthropologist 2, No. 1: 16–18, Albuquerque, 1937).

Van Royen, William. *Prehistoric Droughts in the Central Great Plains* (Geographical Review 27: 637–50, 1937).

Walker, Edwin F. *Sequence of Prehistoric Material Culture at Malaga Cave, California* (Masterkey 11, No. 6: 210–14, Los Angeles, 1937).

Weltfish, Gene. *Caddoan Texts; Pawnee, South Band Dialect* (Publications, American Ethnological Society 17, 1937).

Whiting, Alfred A. *Hopi Indian Agriculture. II: Seed Source and Distribution* (Museum Notes, Museum of Northern Arizona 10, No. 5, 1937).

Whitman, William. *The Oto* (Columbia University Contributions to Anthropology 28. xvi, 132 pp. $2.00. 1937).

Wilbur, C. Martin. *The History of the Crossbow Illustrated from Specimens in the United States National Museum* (Smithsonian Report for 1936: 427–38, 1937).

Zolatarev, A. *On the Question of the Origin of the Eskimo* (Anthropological Journal, No. 1. Moscow [?], 1937). [In Russian; English résumé.]

Mexico and South America

Braden, Charles S. *The Religious Conquest of Mexico* ($3.50. Durham, N. C.: Duke University Press, 1937 [?]). [Notes on fusion of native and Catholic practices.]

Clarke, Charles Upson. *Jesuit Letters to Hervás on American Languages and Customs* (Journal, Société des Américanistes 29: 97–145, 1937).

Cook, S. F. *The Extent and Significance of Disease among the Indians of Baja California* (Ibero-Americana 12. 39 pp., 1 fig. $0.50. Berkeley: University of California Press, 1937).

Gusinde, Martin. *Die Feuerland Indianer. II. Die Yamana: vom Leben und Denken der Wassernomaden am Kap Hoorn* (xx, 1500 pp., 105 figs., plates. Mödling bei Wien: Anthropos Verlag, 1937).

Hanke, Lewis, (ed.). *Handbook of Latin American Studies* (xv, 515 pp. Cambridge: Harvard University Press, 1937).

Imbelloni, J. *Culturas Indigenas de la Tierra del Fuego* (Historia de la Nación Argentina 1: 647–92, Buenos Aires, 1936).

Imbelloni, J. *Fuéguides et Laguides: Position actuelle de la race Paléo-Américaine ou de Lagoa Santa* (Zeitschrift für Rassenkunde 5: 295–315, Stuttgart, 1937).

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BRIEF COMMUNICATIONS

MINNESOTA MAN: A REPLY TO A REVIEW BY DR ALEŠ HRDLIČKA

Under the title, *The Minnesota "Man,"* Dr Aleš Hrdlička[1] has recently reviewed my report, *Pleistocene Man in Minnesota.*[2] In view of his past rejection of all claims for the existence of Glacial Age human skeletal material in the Western Hemisphere, it is no surprise to anthropologists that he does not accept Minnesota Man as of Pleistocene age.

I wish to state at once that, while my faith in the claims made in the report is in no way changed by the review, the friendship which Dr Hrdlička and I have enjoyed for thirty-five years is not impaired by this fundamental difference of opinion.

It should be noted that Dr Hrdlička has never visited the site of the find nor has he ever seen the Minnesota skeleton.

Nine and one-half pages of the review are devoted to a digest of the study and the remaining pages to a "Critique." I trust that those who read the digest will also have read the book. Most of the unusual documented facts of the find given in the book are of necessity absent from the brief digest. I am sure also that Dr. Hrdlička would wish me to point out that Dr George A. Thiel, who was present at all the re-diggings of the site, and who wrote the chapter on the geology of the area (not credited in the review) is not a student of Dr Stauffer, as stated in the review, but has for seventeen years been an eminent member of the faculty of the University of Minnesota.

Dr Hrdlička's criticism, in his "Critique," of the geological evidence of the find is answered by the report of Dean George F. Kay and Dr M. M. Leighton,[3] who in August, 1937, visited and studied the site which had been reopened for the third time, especially for their investigation. They report that they find themselves in accord, without reservation, with the geological findings as reported by Drs Thiel and Stauffer and as confirmed by Dr Bryan in the report "Pleistocene Man in Minnnesota." They find no evidence of burial by landslide; no evidence of gullies in which the body might have been buried; and they conclude that the evidence points to natural burial in forming varved silt in Glacial Lake Pelican. This favorable report from eminent disinterested Pleistocene geologists on the geological aspects of the find is a gratifying confirmation of the claim for Pleistocene age of Minnesota Man.

Dr Hrdlička considers that my presentation of a land bridge between Asia and

[1] Aleš Hrdlička, *The Minnesota "Man"* (American Journal of Physical Anthropology, Vol. 22, pp. 175–99, 1937).

[2] Albert Ernest Jenks, *Pleistocene Man in Minnesota, a Fossil Homo Sapiens* (Minneapolis, 1936).

[3] *Geological Notes on the Occurrence of "Minnesota Man"* (Journal of Geology, 1938). See also article covering the same subject in the same issue by Drs Kirk Bryan and Paul MacClintock.

America in glacial time "does not agree with the conclusions of the geologists best qualified to deal with the matter." The question of the existence or non-existence of a land connection between northeastern Asia and Alaska in Pleistocene times has been debated for many years. At a joint session of the American Anthropological Association and of Section H of the American Association for the Advancement of Science, held in Washington, December 27, 1911, several papers were presented on this subject.[4] Dr William H. Dall, paleontologist (whom Dr Hrdlička quotes), led the opposition to the acceptance of the bridge. The existence of the bridge was as ardently supported by Dr James W. Gidley, vertebrate paleontologist, and Dr Austin Hobart Clark, biologist.

It must be noted that Dr Dall at that time, as quoted by Dr Hrdlička, said: "Or like the present Eskimo, they [migrants from Asia] may have during glaciation followed the marine mammals, the walrus and the seal, along the edges of immovable floe ice closing the strait perhaps for some centuries." Thus Dr Dall, even while arguing for the non-existence of the bridge in glacial time, pointed out a foot passage for Glacial Age man from Asia to America.

More recently soundings taken by the United States Geological Survey have shown that the sea floor beneath Bering Strait and for a considerable distance to the north and south now lies at a depth of less than twenty fathoms.[5] Estimates by geologists Antevs[6] and Daly,[7] as to the deepening of oceans by the melting of the ice of the Wisconsin-Würm glaciation, indicate that the piling up on the continents of great masses of water in the form of snow and glacial ice would have resulted in the rise above sea level of all that area between the two continents now thirty fathoms or less below sea level and given a broad land bridge.[8]

In 1934 Dr Daly,[9] discussing the matter under the title, "Land-Bridges," says specifically:

> Of greater significance is the case at the Bering Strait . . . , which, with depths less than 45 meters, now separates Asia and America. There, a wide land-bridge must have been made and unmade eustatically, several times, if the earth's crust remained steady during the Pleistocene. Migration of men and animals was thus possible for scores of millennia during that period.[10]

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[4] See American Anthropologist, Vol. 14, pp. 1–60, 1912.

[5] Philip S. Smith and J. E. Mertie, Jr., *Geology and Mineral Resources of Alaksa* (Bulletin, United States Geological Survey, No. 815, 1930), p. 237.

[6] Ernst Antevs, *The Last Glaciation* (Research Series, American Geographical Society, No. 17, 1928), pp. 81–82.

[7] Reginald A. Daly, *Swinging Sea Level of the Ice Age* (Bulletin, Geological Society of America, Vol. 40, 1929, pp. 721–34).

[8] See also W. A. Johnston, *Quaternary Geology of North America in Relation to the Migration of Man* (in *The American Aborigines*, Diamond Jenness, ed., Toronto, 1933), pp. 28–32.

[9] Reginald A. Daly, *The Changing World of the Ice Age* (New Haven, 1934), pp. 189, 193–94.

[10] Since Dr Hrdlička quotes Dr Philip S. Smith, Chief Alaskan Geologist, United States Geological Survey, from a private letter of January 8, 1937, we may note that three months later Dr Smith read a pertinent paper at the International Symposium on Early Man, in

Dr Hrdlička also says in his "Critique":

The further assumed "continuation" of the migrants through northern Alaska to Mackenzie River and along this same southward, in the volume on the Minnesota find, has no discoverable evidence in support, and would be very difficult to accept by anyone who knows those far inhospitable regions.

The route through northern Alaska to the Mackenzie River is not so difficult as Dr Hrdlička assumes. Witness the successful drive of a herd of reindeer over that route, of which Mr Carl J. Lomen wrote me in considerable detail, May 21, 1934. The Lomens had sold the reindeer to the Canadian Government. The drive began at Nabaktoolik, just east of Kotzebue Sound, western Alaska, December, 1929, and ended at Kittigazuitt on the east side of the Mackenzie delta five years later. The route was northward to a point about seventy-five miles from the Arctic coast and thence easterly along the northern slope of the Endicott Range to the Mackenzie delta. Due to the difficulty of transporting supplies, all travel was in the winter months when lichens constitute the sole food of the reindeer. In the spring and summer months the herd gave birth to its young, rested and pastured nearer the coast where grasses and sedges have luxuriant growth. Mr Lomen suggested, "Any prehistoric route would probably have been a meandering course from coast to mountains and back to the coast, with the seasons." Not such a difficult route after all for a hunting people with plenty of time at their disposal.[11]

We now come to what seems to me, in its refutation, a most important aspect of of the "Critique." I quote Dr Hrdlička:

The lay and completeness of the juvenile skeleton alone force some serious reflections. The posture of the body was not that of a drowned person as seen usually in medico-legal experience nor was its lay on its side. Even greater difficulties, however, are due to the completeness and

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Philadelphia, from which I briefly quote: "Despite the absence of tangible evidence of actual land connection [between Asia and America] there are thus [as just presented in his paper] a number of processes known to have been active, any one of which might have brought about the relatively minor changes that would be required to make such connections. The geologists, therefore, reviewing such evidence as is available and bears on the subject, can hardly fail to believe that it is more likely than not that such connections have occurred" (Philip S. Smith, *Certain Relations between Northwestern America and Northeastern Asia*, in *Early Man*, George Grant MacCurdy, ed., New York, 1937, pp. 85–92).

[11] Again I quote Dr Smith in his paper of March 17, 1937, regarding living conditions in Alaska during Glacial times. He says: "To one who thinks of Alaska as a land of perpetual ice and snow" the idea of human life there in Glacial time "is perhaps a real difficulty. . . . One who knows the real conditions, however, realizes that Alaska did and does present incentives for migration. . . . Practically the entire central part of the Territory, an area several hundred miles north to south and nearly 1,000 miles from east to west, at no time during the Quaternary was glaciated. . . . Thus, in Alaska there were several hundred thousand square miles that lay beyond the margin of even the extensive glaciers that originated in its mountains, so that in that area was an attractive and not a repellant land, and the fossil remains of its then existing flora and fauna show that it could well have supplied the wants of many migrant people passing through or dwelling therein."

cohesion of the skeleton. How could a good-sized body become thus covered in a lake and enclosed before it decayed and before the parts were displaced or lost through currents, waves or animals? Perhaps the best way to appreciate the improbability of such a series of accidents is for every informed reader mentally to concentrate on the subject and try to follow the events that could lead to such results. He will find the way full of obstacles.

Full of obstacles, perhaps, but not impossible. I have carried on a correspondence with police officials in American and Canadian cities on Lake Superior. I quote C. H. Overdahl, Chief of Police of Ashland, Wisconsin, who has written me regarding a named sailor who was drowned in 1930 and whose body was washed ashore six years afterwards, in 1936, on the north side of Outer Island.

Chief Overdahl writes:

The body was all intact although the flesh had left the skull and the abdominal cavity was filled with sand. The flesh on the left hand was partially gone and on the right hand the flesh was fairly solid. This was one of the identification marks, because the man had cut his hand years ago on a broken milk bottle and the scar was still shown. His dental work was the other means of identification. At the time this body was found there was no clothing on the body. It has been mentioned the cause of this body coming ashore was that during the winter of 1935 the ice was much thicker and formed icebergs and one of these in a wind no doubt forced the body to the shore where it filled up with sand. In regards to your other question, I might state that neither the fingers, toes, hands, feet, arms, or legs had been removed from the torso.

Here is the police record of a human body which was drowned in the cold waters of Lake Superior (there is a popular saying that "Lake Superior never gives up its dead"), and after six years the parts were not "displaced or lost through currents, waves or animals." The body of a person drowned in cold water apparently disintegrates so slowly that the skeletal parts, even bones of fingers and toes, need not become disarticulated for a considerable period of time. It is the supposition that the Minnesota body fell into the cold waters of Glacial Lake Pelican. Decomposition was slow and the heavy annual deposit of silt laid down in the lake at once began to cover it. Dr Thiel states that the seasonal layers varied from 3.5 to 6 inches in thickness.[12] Thus in three or four years the Minnesota body would have been covered with the varved silt in which it was found lying ten feet below the original farm surface, June 16, 1931.

I have discussed the matter of the posture of drowned persons with Dr Gilbert Seashore, now serving his twenty-ninth year as Coroner of Hennepin County, Minnesota. Dr Seashore has had much experience with drowned bodies He states that bodies recovered by the use of grappling hooks soon after drowning are often quite rigid and distorted. The rigidity due to *rigor mortis* soon departs, and bodies after a time assume a relaxed position. There is no special position: sometimes the arms and legs are more or less bent; at other times they are nearly straight, but with no contortion and no rigidity.

In view of the statements of Chief Overdahl and Dr Seashore neither the fully articulated condition of the Minnesota specimen, nor its posture is evidence to "an

[12] George A. Thiel, in Jenks, *Pleistocene Man in Minnesota*, p. 23.

informed reader" that the cause of death was not by drowning in a glacial lake.

Under the head of "Primitive Features" Dr Hrdlička attempts to prove that the characteristics of the Minnesota skeleton are of modern Sioux type and that the skeletal remains therefore represent a modern Sioux burial. Because of its pertinency to our immediate discussion, I take up this latter point first.

In the field class work of the University of Minnesota we have dug in the last six summers 320 burials in this historic Sioux area. Being thus familiar with Sioux burials it would seem strange that we should not have recognized some marks of a modern Sioux burial, if the find under question had been of that nature.

The usual Sioux earth burial is of the secondary bundle type. A few are of bodies much flexed. Some bodies were placed apparently directly on the surface of the ground or in a shallow grave of a few inches and then earth mounds were piled over them. The Highway Location Engineer's survey shows that there was no mound at the site. Other than in a mound we have found no Sioux burial which even approaches a depth of three feet, to say nothing of ten feet. The lay of the Minnesota skeleton was not that of a Sioux burial. There was, moreover, an absence of any trace of red ochre, the almost invariable accompaniment of all primary Sioux burials in this area, either on the bones or in the surrounding silt.

Further, earth closely associated with regular burials less than a few thousand years old in this area of abundant vegetation should have plant pollen discoverable in and about the skeleton. Dr Sears found the endocranial silt of Minnesota Man to be sterile.[13] Dr Otto C. Rosendahl, Department of Botany, University of Minnesota, finds all silt samples taken August 28 and 29, 1937, from near the skeletal placement to be sterile. He recently examined five samples taken from varves beneath the position of the skeleton, one taken laterally and within two or three feet of the position of the skeleton, and five taken from above the level of the skeleton.[14] All these samples of sterile silt bring strong additional supporting evidence of a natural placement of Minnesota Man in the silt of a glacial lake.

Turning to the skull measurements, used in Dr Hrdlička's "Critique," we find he has given various tables comparing the measurements of the Minnesota skull with individuals from a group of 40 (or 41) female Sioux. In his comparisons with Sioux crania he does not show that the primitive features of the Minnesota skull are those of the Sioux crania generally. Instead, he finds that one or a few Sioux individuals share one primitive feature with Minnesota Man, others share a second primitive trait, etc. Thus he shows that of forty female Sioux crania, eight have protruding occiputs; in three out of forty, the occipital segment of the sagittal arc exceeds the other segments; three out of forty have dull nasal sills with subnasal fossa; three have very low nasal spines; ten are prognathous. The tables presenting these features show that, in each case, the feature is not the average or mode for the group but falls in the extremes of the group.

A conclusion that racial affinities are shown by the fact that certain features of

[13] See Jenks, *Pleistocene Man in Minnesota*, p. 40, fn. 5.

[14] Letter to the author from Dr O. C. Rosendahl, dated October 22, 1937.

one group or individual are included within the range of variation of a second group, especially where these features are shown to fall near the limit of variation, cannot scientifically be entertained. The range of variation of the characteristics of all groups is so wide that, unless a particular group is one having features markedly different from those of mankind in general (such, for instance, as the stature and steatopygia of the Bushman-Hottentot peoples), the group means of a very large number of unrelated groups of people will be found to fall within its range. Thus, a comparison of Martin's data[15] on the measurements of female crania with Hrdlička's measurements of Sioux female crania[16] shows that in maximum length of the skull every group mean listed by Martin falls within the Sioux range; in maximum breadth eighteen of the twenty-two group means fall within the Sioux range; and in basion-bregma height seventeen of Martin's nineteen group means fall within the Sioux range. It is obvious thus that measurements of one individual falling within the range of a certain group is not conclusive evidence of any close racial relationship.

As to the measurements of the Minnesota Man which fall close to the Sioux mean, some degree of relationship might be surmised if there were anything distinctively or peculiarly Sioux about those Sioux measurements. But such is not the case. The closest parallel to the Sioux averages is found in the three diameters of the Minnesota skull vault: the maximum length, breadth, and the basion-bregma height. Each of these measurements in both the Minnesota cranium and the Sioux crania is so close to what may be considered a mean for the females of the world generally that each is duplicated in the group means of peoples found all over the world and in each of the three great primary races of mankind—namely, Negroid, Mongoloid, and White.[17] Neither have the Sioux any monopoly on the particular combination of those three diameters. The Guanches, Teneriffe Islanders, and the Scotch have diameters almost identical with the Minnesota Man and the Sioux in each respect.[18]

In Table 1 the Sioux ranges and averages are computed from the figures given by Dr Hrdlička in 1927 on forty crania designated as Sioux females, not including

TABLE 1. FEMALE CRANIAL MEASUREMENTS AND INDICES

	Hrdlička's Forty Sioux		*Scotch*
	Range	*Average*	*Average*
Cranial module	138.7 –152.3	147.1	147.7*
Maximum length	165 mm.–186 mm.	177.6 mm.	179 mm.
Maximum breadth	131 mm.–147 mm.	138.0 mm.	138 mm.
Basion-bregma height	118 mm.–134 mm.	125.6 mm.	126 mm.
Cranial index	73.1 – 82.8	77.7	77.2
Mean height index	74.8 – 84.8	79.5	79.5*

* Computed from figures given.

[15] Rudolf Martin, *Lehrbuch der Anthropologie* (2nd ed., 1928), pp. 765, 766, 795.
[16] Hrdlička, *The Minnesota "Man,"* p. 193. [17] Martin, *loc. cit.* [18] *Ibid.*

the figures on those designated as Siouan crania other than Sioux.[19] The data on Scotch female skulls are given by Martin, who has cited Turner for each measurement.[18]

This table shows the fallacy of assuming racial relationships on the basis of the similarity of cranial length, breadth, and height. The close resemblance of the Scotch and Sioux cranial measurements is purely a coincidence, due partly to the fact that these cranial measurements in each group fall near the average of females generally.

In Table 2 the mean facial measurements and indices of forty Sioux females, as computed from Hrdlička's figures,[20] are compared with those of the Minnesota specimen.

TABLE 2. FEMALE FACIAL MEASUREMENTS AND INDICES

	Hrdlička's Forty Sioux Average	*Minnesota Man*
Menton-nasion height	115.0 mm.	114.5 mm.
Upper facial height	71.1 mm.	67.0 mm.
Bi-zygomatic breadth	132.8 mm.	125.0 mm.
Total facial index	86.4	91.6
Upper facial index	53.6	53.6
Orbits		
Mean height	35.7 mm.	34 mm.
Mean breadth	38.6 mm.	38 mm.
Mean index	92.5	89.5
Nose		
Height	52.0 mm.	47 mm.
Breadth	25.5 mm.	22.1 mm.
Index	49.1	44.7

For facial measurements there is a wide difference between the Minnesota measurements and those of the Sioux.[21] It is to be noted that the closest correspondence in the measurements is that of total facial height (menton-nasion height). But, this is a composite measurement. The Minnesota upper facial height is actually 4+ mm. less than that of the Sioux, hence the mandibular portion of the total facial height must be 3.5+ mm. greater than in the Sioux. The apparent correspondence in total facial height is merely a balancing of two real differences.

The facial breadth and the nasal breadth of the Minnesota specimen are decidedly lower than the Sioux breadths. These differences are reflected in the higher total facial index and the lower nasal index of Minnesota Man. Dr Hrdlička would minimize these differences by saying that the Minnesota specimen is an immature

[19] Aleš Hrdlička, *Catalogue of Human Crania in the United States National Museum Collections; the Algonkin and Related Iroquois, Siouan, Caddoan, Salish, and Sahaptin, Shoshonean and California Indians* (Proceedings, United States National Museum, Vol. 69, Art. 5, 1927), pp. 50–79.

[20] *Ibid.* All of the facial measurements and indices presented by Hrdlička in his *Catalogue* studies are included.

[21] Hrdlička, *The Minnesota "Man,"* p. 199.

individual, the dimensions of whose face are not completed, and adding, "this is particularly true of the breadth of the face [and] the breadth of the nose."[22] His use of the word "particularly" seems to infer that during growth the facial and nasal breadths increase more rapidly than the facial and nasal heights. Such an inference is not in accordance with the facts. During growth, both the face and nose lengthen more rapidly than they broaden, with a corresponding increase in the facial index and decrease in the nasal index, a fact too well established to need discussion.[23] There is nothing in Wissler's data on the growth changes in the facial and nasal diameters and indices of Hawaiian females from the fifteenth year to adulthood (studied by Sullivan) to indicate that with maturity the Minnesota face would have changed appreciably in the direction of the Sioux averages. An added fact to be noted is that the face of our specimen is doubtless more mature than that of modern fifteen year old females generally. Facial maturity is closely correlated with the completion of dentition, and the Minnesota skull is clearly precocious in the matter of the eruption of the third molars. In this respect it has the development of a Zulu girl of seventeen or older, and of a white girl of nineteen or older.[24] Not one of Dr Hrdlička's published Sioux females has a nose as narrow as that of the Minnesota specimen. The significance of the narrow nasal aperture, as anthropologically considered, is that it indicates cold dry habitat. Dr Hrdlička has himself elsewhere published the fact that the narrower noses in America are in the coldest parts of the Eskimo area, that is, northeastern Greenland, where still the Eskimo lives with the glaciers.[25] The narrow nose of the Minnesota skull significantly suggests glacial habitat.

None of the lower molars of Dr Hrdlička's ten Sioux females having lower jaws are as large as those in the Minnesota lower jaw. In his table on "Dimensions of the Lower Molars" he uses a Brulê Sioux male skull, as indicated in his footnote, instead of a Sioux female, for comparison with the lower molars of the Minnesota specimen. Neither do any of the ten Palaeolithic specimens of Europe, whose teeth Dr Hrdlička measured by his own method in 1930, have in absolute size such large lower molars as the Minnesota lower jaw. He said in 1930, "Concerning the lower molars in present man it is safe to regard as primitive or phylogenetically inferior a tooth that is absolutely large."[26] It seems safe, therefore, to regard as primitive or phylogenetically inferior, especially when taken in connection with the other remarkable primitive features of the teeth, the larger lower molars of Minnesota Man.

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[22] *Idem.*, p. 194.

[23] See Martin, *Lehrbuch*, p. 894, also p. 712; Hrdlička in Martin, *op. cit.*, p. 715; Martin, *op. cit.*, p. 942. See also Clark Wissler, *Growth of Children in Hawaii; Based on Observations by Louis R. Sullivan* (Memoirs, Bernice P. Bishop Museum, Vol. 11, No. 2, 1930), pp. 130–31.

[24] See Jenks, *Pleistocene Man in Minnesota*, pp. 40, 41, 47.

[25] Aleš Hrdlička, *Anthropological Survey in Alaska* (Forty-sixth Annual Report, Bureau of American Ethnology, 1930), pp. 267–70.

[26] Aleš Hrdlička, *Skeletal Remains of Early Man* (Smithsonian Miscellaneous Collections, Vol. 83, 1930), p. 355.

I quite agree with Dr Hrdlička's statement that few modern skulls would fail to show some exceptional, anomalous, or primitive features. Therefore a skull should not be rated as primitive on any one feature; it should be so rated on the degree of primitiveness of many features. This, for instance, is the basis on which Dr Hooton ranks the primitiveness of crania.[27] A skull which has but one or two primitive features is a modern skull with certain individual variations, but a skull with many primitive features must be classed as primitive as compared with the modern population of the area.

Dr Hrdlička has given us individual Sioux skulls with one primitive feature in most cases, in a few cases two. His presentation of Sioux crania shows that the group as a whole is not as primitive as Minnesota Man, nor has he shown any one individual Sioux specimen with an equal number of primitive and anomalous features.

If one were to form an a priori opinion as to what he might expect a late Glacial Age American people to be, he would be justified in assuming that they need not exceed our modern aborigines in primitiveness to any greater degree than the late Glacial Age (Upper Palaeolithic) peoples of Europe—say, Chancelade and Cro-Magnon—exceed the modern Europeans. Such an opinion does not call for an exceptionally high degree of primitiveness for Glacial Age Americans. The hypothetical late Glacial Age Americans would also be expected to show a general resemblance to our modern aborigines, since they would have been included in the ancestry of these aborigines. I believe that Minnesota Man, while showing a general resemblance to various modern aborigines, as pointed out many times in my report, has sufficient primitive and anomalous characteristics to be considered a member of a late Glacial group.

I still present Minnesota Man as of Pleistocene age. There are too many coinciding facts for me to do otherwise. Note some of these facts: the find of a mineralized skeleton on the site of a documented glacial lake bed; the documented evidence in the office of the Minnesota State Highway Department as to the depth of the skeleton; the testimony of the intelligent witnesses of the find as to the undisturbed covering silt; the testimony of eminent geologists who have visited the re-dug site that the evidence points to a natural placement of the specimen in varved silt; the sterility of the lake-laid silt in close association with the skeleton; and the many primitive and anomalous features combining in one skull to make it a unique type.

The facts presented in the book, *Pleistocene Man in Minnesota*, cannot be brushed summarily aside. They are already accepted by numerous geologists and anthropologists. They can abide the test of time.

ALBERT ERNEST JENKS

UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MINNESOTA

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[27] Earnest A. Hooton, *Asymmetrical Character of Human Evolution* (American Journal of Physical Anthropology, Vol. 8, pp. 125–41, 1925).

THE HUMPBACKED FLUTE PLAYER OF THE SOUTHWEST

In her recent identification of the Hopi kachina Kokopelli and the humpbacked flutist of Southwestern pictographs and pottery,[1] Dr Hawley overlooks the fact that both are insects, possibly however not the same insect. Kokopelli, according to Fewkes, is "a certain dipterous insect;" which according to Titiev is humpbacked and does not desist from copulating when disturbed.[2] The Oraibi Kokopelli kachina female races and performs mock copulation with the man "she" overtakes. The male kachina, according to legend, sewed shirts and seduced girls. In his hump were blankets, belts, and seeds of which he gave a few to each girl.[3] At Hano Kokopelli is equated with Nepokwa'i', "a big black man" (Kokopelli's mask and body are painted black) who in the tales appears with a buckskin on his back from which to make moccasins for a bride. He is hunter and moccasin maker.[4] Fewkes associates Kokopelli with the Mustard (Asa) clan from the East. As Dr Hawley observes, but does not quite explain, Kokopelli has no flute.

The humpbacked flute player of the rock walls and potsherds is so obviously an insect, "once you see it," that no analysis is called for; but I might point out that among the pictographs near the Village of the Great Kivas (Zuñi Valley) the flutist is represented in company with other insects,[5] a plausible association. (This shortlived village is believed to have been settled by people from the Chaco where, as Dr Hawley points out, the flutist was depicted.)

Locust is the musical and curing patron of Hopi Flute societies. He is represented playing the flute on Flute altar tiles.[6] Hopi have locust medicine for wounds, inferably belonging to the Flute societies. This medicine is "explained" in the Emergence myth. When Locust was sent up from below to scout for an exit into the upper world, the Clouds shot their bolts through him and he just went on playing his flute.[7] In another version, after the Emergence when Locust was shot with arrows he died

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[1] Florence Hawley, *Kokopelli, of the Prehistoric Southwestern Pantheon* (American Anthropologist, Vol. 39, pp. 644–46, 1937).

[2] Dragonfly? A sacrosanct Pueblo insect, at Zuñi called Shumaikoli and functioning as the kachina patron of the Shuma'kwe society. By Zuñi workmen at Hawikuh Shumaikoli was identified with a face design on an awl they excavated (F. W. Hodge, *History of Hawikuh, New Mexico*, Los Angeles, 1937, fig. 21), so this might associate him with moccasin making. Dragonfly is a persistent copulator but a neuropterous insect. He is eye medicine (Zuñi, Hano).

[3] A. M. Stephen, *Hopi Journal* (Columbia University Contributions to Anthropology, Vol. 23, 1936), pp. 388, 1142.

[4] E. C. Parsons, *Tewa Tales* (Memoirs, American Folk-Lore Society, Vol. 19, 1926), pp. 206, 236. Compare the pictograph of a humpbacked figure killing a deer (A. V. Kidder and S. J. Guernsey, *Archeological Explorations in Northeastern Arizona*, Bulletin, Bureau of American Ethnology, No. 65, 1919, Pl. 94).

[5] F. H. H. Roberts, Jr., *The Village of the Great Kivas of the Zuñi Reservation, New Mexico* (Bulletin, Bureau of American Ethnology, No. 111, 1932), Pl. 61; see also fig. 27a.

[6] Stephen, *op. cit.*, Pl. 22.

[7] A. M. Stephen, *Hopi Tales* (Journal of American Folk-Lore, Vol. 42, 1929), pp. 5–6.

and then came back to life.[8] Locust, the unwinking, is a brave man, a suitable patron for societies that cure for lightning shock and, inferably, for arrow or gun wounds.

The Flute societies have locust medicine to dream coming events, possibly in war, and pieces of locust are thrown on the fire (by Flute chiefs?) to bring warm weather.[9] The Flute societies of Oraibi had charge of the sun from winter solstice to summer solstice. In Hopi folk tale the flute is played to melt the snow, by the Locusts when they are appealed to by the Snakes. They sing:

> Hao my fathers, hao my mothers!
> Drab Flutes, Blue Flutes (Flute societies)
> My fathers, beautiful living
> (In) summer will begin for us.
> (In) summer blossoms wave, (in) summer blossoms will sway.[10]

Insects are important medicine or spirits to the Western Pueblos, perhaps, if we knew, to all the Pueblos, as they were to early Aztecs and, I infer, to other Middle Americans, some of whom think of Saint Paul as a Bee god.

ELSIE CLEWS PARSONS

NEW YORK CITY

NOTE ON THE PIMA BERDACHE

The degree of social recognition and freedom within the cultural pattern accorded individuals of psychic or physiological peculiarities varies enormously among primitive peoples. As I have pointed out in connection with the Navaho, the transvestite enjoyed more opportunities for personal and material gratification and was more respected and revered than the normal individual.[1] At the opposite pole from the Navaho attitude was that displayed by the Pima. There, in a culture where any outward or public manifestation of individuality was considered a breach of good manners, the sexual invert had no cultural niche and such abnormal behavior was definitely stigmatized.

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[8] F. H. Cushing, *Origin Myth from Oraibi* (Journal of American Folk-Lore, Vol. 36, 1923), pp. 167–68. Locust's facility in shedding his skin figures in a widespread Spanish-Pueblo folk tale.—Folk tale, myth, medicine, ceremony, art, the usual admirable intertwining of Pueblo pattern!

[9] H. R. Voth, *The Traditions of the Hopi* (Publication, Field Columbian Museum, No. 96, Anthropological Series, Vol. 8, 1905), p. 220. [10] Voth, *loc. cit.*

[1] W. W. Hill, *The Status of the Hermaphrodite and Tranvestite in Navaho Culture* (American Anthropologist, Vol. 37, pp. 273–79, 1935). This status, while manifesting itself in different directions, is affirmed for many of the Californian tribes (A. L. Kroeber, *Handbook of the Indians of California*, Bulletin, Bureau of American Ethnology, No. 78, 1925, pp. 46, 190, 497, 500, 647, 748, 803; Ralph L. Beals, *Ethnology of the Nisenan*, University of California Publications in American Archaeology and Ethnology, Vol. 31, No. 6, 1933, p. 376) and probably for the Klamath (Leslie Spier, *Klamath Ethnography*, same series, Vol. 30, 1930, pp. 51–53). It may be implied with some diminution in intensity for the Quinault, Queets, Quilleute, and Humptulips (Ronald L. Olson, *The Quinault Indians*, University of Washington Publications in

According to Pima mythology transvestites first originated among the Papago. The account of this first transformation is as follows:

> Many years ago it happened that in the Pima country there was a shortage of materials for making bows and arrows. They sent word to the Papago. The Papago cut wood for bows and arrow-weed for arrow shafts. They also collected feathers and sinew. They put these materials in two net carrying frames. Two Papago boys placed these women's carrying devices on their backs and brought the materials to the Pima. When the boys returned home they became berdaches. They really began among the Papago, not the Pima.

The Pima word for male invert was wi·ƙovat, "like a girl." The term might also be used in a broader sense and was applied to an individual who was "frightened by small things." While female inverts occurred, no special name was applied to them. Nor was there an attempt made to distinguish between individuals who were hermaphrodites and those whose invert tendencies were due mainly to psychic causes.

There was no sanction for the sexual invert in Pima culture and the cultural pattern had never been modified to allow them a specialized role. They did not wear the clothes or perform the duties of the opposite sex and no marriages between individuals of the same sex were ever known to have occurred. Likewise, no sexual irregularities were reported. Their abnormal behavior manifested itself only in acting, talking, and expressing themselves like members of the opposite sex, showing an interest in the duties and work of the other sex, and a marked preference for their companionship. Male inverts sat like women, with their knees together.

Definite attempts were made to suppress the tendency toward inversion. During early childhood the sexes were separated as much as possible and children were not

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Anthropology, Vol. 6, No. 1, 1936, p. 99) and for the various Shoshonean tribes (Robert H. Lowie, *Notes on Shoshonean Ethnography*, Anthropological Papers, American Museum of Natural History, Vol. 20, Part 3, 1924, pp. 282–83). The cultural sanction among the Zuñi seems to take a less positive form While the ła'mana are accorded ceremonial equality, with a possibility of even special ritual prerogatives, reverence and respect for their status seems lacking, and in one case at least marriage to a transvestite was objected to by both families involved (Elsie Clews Parsons, *The Zuni ła'mana*, American Anthropologist, Vol. 18, pp. 521–28, 1916). Turning southward the attitude toward transvestites changes to one of general uneasiness. Among the Cocopa they were involved in no special functions, and while female inverts were accepted with passivity, male inverts were apparently disliked (E. W. Gifford, *The Cocopa*, University of California Publications in American Archaeology and Ethnology, Vol. 31, No. 5, 1933, p. 294). In the Yuma tribe they were given public recognition and no attempt was made to suppress the tendency. However, the parents of such an individual felt a definite shame (C. Daryll Forde, *Ethnography of the Yuma Indians*, same series, Vol. 28, No. 4, 1931, p. 157). The Maricopa attempted to curtail the development of transvestitism. Here they had the sanction of the men but were looked upon by the women with disapproval (Leslie Spier, *Yuman Tribes of the Gila River*, Chicago, 1933, pp. 242–43). Papago women, on the contrary, liked such individuals for their working abilities, while the men's attitude involved a friendly ridicule (Ruth Underhill, *The Autobiography of a Papago Woman*, Memoirs, American Anthropological Association, No. 46, 1936, pp. 43–44.)

allowed to play with toys characteristic of the opposite sex Should the tendencies manifest themselves in spite of these precautions, a test was made to allay or confirm the suspicion.[2] No ritual was included and no idea of curing was involved.

The test was performed only in the case of male children. A brush hut was erected and in it were placed a bow and arrow and a basket. The child was put in the hut and the hut was then fired at the back. As the boy fled, it was said, he would grasp either the bow and arrow or the basket. "If he took the basket, you knew that he would become a wi·ƙovat."

The Pima attitude toward the berdache paralleled very closely that in our own culture toward the same type of abnormal behavior. The boy who made the wrong choice in the test was disgraced and looked down upon. Another indication of this feeling was shown by the assignment of the origin of the berdache to the Papago, and still further by the fact that leniency was shown in cases of crime committed by these individuals because "they were not normal." However, their occurrence seems to have been accepted more or less fatalistically, as, except for ridicule and admonishments to "change their ways," no cure or coercion was attempted. The disgrace within a family, while a cause for real concern, was borne, true to the cultural pattern, with a quiet forbearance and resignation.

W. W. HILL

UNIVERSITY OF NEW MEXICO
ALBUQUERQUE, NEW MEXICO

REMARKS ON THE HISTORY OF PUEBLO SOCIAL ORGANIZATION

In a recent issue of the AMERICAN ANTHROPOLOGIST[1] Dr Florence Hawley suggested a new interpretation of Pueblo history on the basis of social organization in the course of which she took issue with the viewpoint expressed by Duncan Strong in his *Analysis of Southwestern Society*.[2] Dr Strong is doubtless capable of defending himself, but I cannot refrain from pointing out that he has already recanted in part the errors attributed to him.[3] At the time Strong wrote the paper criticized by Hawley, few modern works were in print concerning the Rio Grande. Naturally Strong fell into the error of assuming a functioning clan organization on the Rio Grande, as had previous field workers in that region. But the significance of the new evidence produced by Parsons has already been emphasized in a mimeographed publication which Hawley can hardly be blamed for overlooking.[4]

[2] This is interesting because of somewhat analogous tests cited by Spier for the Klamath (*Klamath Ethnography*, p. 52) and Maricopa (*Yuman Tribes of the Gila River*, pp. 242–43).

[1] Vol. 39, pp. 504–22, 1937.

[2] American Anthropologist, Vol. 29, pp. 1–61, 1927.

[3] W. D. Strong, *Anthropological Theory and Archaeological Fact* (in *Essays in Anthropology Presented to A. L. Kroeber*, pp. 359–70, Berkeley, 1936)

[4] Ralph L. Beals, *Preliminary Report on the Ethnography of the Southwest* (United States Department of the Interior, National Park Service, Field Division of Education, Berkeley, 1935).

In his recantation, Dr Strong recognizes the importance of the new data on the Rio Grande, but he finds in this further support for his original view. Strong says

> . . . that the so-called "vestigial clans" of the eastern Tewa are recent importations of little functional significance, whereas the older form of the bilateral family is still dominant, strengthens the case based on distributional grounds that this type of organization preceded the lineage or sib throughout the area.[5]

The inference from Hawley's views is that the sibs of the western Pueblos were brought in by migrant groups in very remote antiquity. In this case one must wonder from what area matrilineal sibs could be derived by a Shoshonean people. Strong's view suggests a more recent development within the Southwestern region from a more basic widespread type of organization known to exist among many peoples in America. Such a view seems more tenable as taking into account distributional evidence and the relatively small influence of western Pueblo social organization on the east, an influence far less, for example, than that exerted by the Kachina cults.

One may not quarrel with Hawley's point that the Pueblo groups are of diverse origin; the linguistic evidence alone is adequate to suggest that probability. Nor can Plains influence be denied. Yet one may wonder, among other things, why the Plains aspect of the suggested linkage of Keresan with the proposed Hokan-Siouan stock should *a priori* be any more suggestive than the Gila Valley-California aspects, particularly as the current view seems to be that the Siouan peoples are very recent arrivals in the Plains from a more eastern habitat.

Before social organization is used too extensively for reconstruction of the history of the Rio Grande Pueblos, there is still an important task to perform. That is an exhaustive analysis to determine whether the moiety system is really part of the social organization or is related to the ceremonial organization. My own feeling is that the Pueblo moiety has developed out of a tendency toward ceremonial dichotomy and only secondarily has taken over some of the trimmings of social organization. With this view Strong agrees, possibly because he feels it removes one of the difficulties in his historical reconstruction.

RALPH L. BEALS

UNIVERSITY OF CALIFORNIA AT LOS ANGELES
LOS ANGELES, CALIFORNIA

NOTES ON RACIAL TYPES OF THE MALAY ARCHIPELAGO[1]

The author spent the years 1927 to 1934 in a study of racial distribution in the Malay Archipelago, a territory which stretches from Burma to Australia.

He started with the island of Java, at the suggestion of the government of the Netherlands East Indies. But the relations between the races of Java proved too

[5] *Op. cit.*, p. 369.

[1] A summary of a communication to the Académie Malgache, Tananarive, Madagascar, July 15, 1937, entitled *Notes sur l'anthropographie de l'arc de la Sonde;* translated by Barbara Thrall. Not all place names have been transliterated to their English forms.

complex to be worked out without knowledge also of those of the nearby islands and of all the islands of the archipelago.

At least forty measurements were taken on each subject, woman or man, of twenty-five to forty-five years old, and the data were sent to various anthropological institutes in Europe. The material which the author has in Madagascar is not enough to warrant more than a few summary remarks on the question.

From southern Sumatra to Achin in the north, a tall, meso-dolychocephalic, Protomalaysian population has survived throughout the Barisan mountain chain and its slopes, plateaus, and foothills, as well as on the islands to the west, except, probably, a part of Menangkabau.

In Sumatra the Protomalaysian mesocephalic type has remained very homogeneous. But in almost all parts of the Malay archipelago the situation is more complex.

In western Java the mesocephalic Protomalaysians survive in southern Priangan, although the inhabitants of the Plateau of Bandung, and probably now also the Djampangs, are Postmalaysians.

The small brachycephalic inhabitants of the Tji Rompang Valley are similar to the small brachycephals of Mt Kidoul and are also probably Protomalays, like the peoples of the mountain range north of the Plateau of Bandung.

The peoples of the more isolated districts of central Java, the large volcanoes and the limestone Séwou Mountains, are Protomalays. Mt Slamet, Mt Dièng, Mt Sumbing, Mt Sindore, Mt Marbabu, the upper Kedu Valley, Mt Merebu, and Mt Lawu are inhabited by mesocephals with low (*basses*) heads, lighter eyes, and with less straight (*lisses*) hair.

The peoples of Bawang on the slopes of Dièng, of Mt Oungaran, of the Séwou Mountains, and of Mt Muria are also Protomalays, although often a little below mesocephaly.

The small brachycephals of Mt Muria and of Mt Kidoul are probably autochthonous, too.

In eastern Java also the mesocephalic populations are found in the isolated districts of the high mountains: the Klout-Kawi-Andjasmoro complex, Mt Smeru, and Mt Tengger and its southeastern slopes.

Although the peoples of Wilis Mountain are a little below mesocephalic, they must still be regarded as Protomalaysian, and so, likewise, must the small brachycephals of Mt Kidoul.

In conclusion, the population of Java and Madura is made up of mesocephalic Protomalays of middle, small, or high stature, with more curly hair and with light brown eyes on the volcanoes and other mountains.

The small or medium brachycephals of the limestone mountains to the south are also Protomalays.

There is a nucleus of Protomalaysian stock from the west to the east of the island of Java, surrounded by brachycephalic Postmalays of medium or large stature, with straight (*lisses*) hair and dark brown eyes, throughout the plains and on the fertile plateaus.

In Bali there are large mesocephalic Protomalays in the mountains and on Penida Island.

The brachycephals of medium stature (Bali aga) of the limesone mountains of the north are certainly Protomalay.

One must also consider Protomalaysian the large hyperbrachycephalic men of Dessa Panganan (southern Bali aga).

The brachycephals of the north and south are of a different race.

In Lombok the situation is more complex.

The large [tall?] mesocephals of the limestone mountains of the south are Protomalays, like the brachycephalic Bodha's of middle stature in the north.

The large brachycephals of the central plains, related to the peoples of the southern and northern plains of Bali and of the plateaus of west Sumbawa are probably newcomers.

Sumbawa besar (west) has been partially destroyed by the volcano Tambora, and later populated with large [tall?] brachycephals, although in some isolated parts of the mountains and distant valleys Protomalaysian mesocephalic men are found.

In east Sumbawa (Bima) mesocephalic Protomalays have survived better in the mountains of Dompo (Dongo) and Wawo, and, in fewer numbers, in the mountains of Rasanae and Sapi.

The small brachycephals in the isolated mountains of Monta, etc., are also probably autochthonous.

On the island of Flores the transition begins from Malaysian to Melanesian peoples, though woolly hair has already appeared sporadically on west Sumbawa.

Except for west Manggarai, where the population is sub-brachycephalic and non-homogeneous, Flores is inhabited by mesocephals and dolichocephals. The dolichocephalic element is not absent in the western parts of the Malay Archipelago and therefore one cannot consider the appearance of dolichocephalic peoples in the center of Flores as a sign of sudden racial transition from Protomalaysian to Melanesian, like the representatives of this race in the interior of northern Timor, where the population is exclusively dolichocephalic, with low (*basses*) heads and woolly hair. But it is impossible to trace exact limits there, either. Migrations have not followed different individual routes, but have overlaid each other in turn. All the eastern part of the archipelago must be regarded from the racial viewpoint as an area of transition.

The population of the "Bird's Head," in the extreme eastern part of Flores, is hyper-brachycephalic.

The population of the island of Adenara resembles that in central Flores.

That of the island of Alor is of middle stature and dolichocephalic.

The island of Sumba is peopled by middle sized or large mesocephals, a further difficulty in tracing the border between Malaysians and Melanesians across Flores.

The island of Savu has a brachycephalic population of tall stature like the Atoni of southern Timor.

That of Roti is less tall and dolichocephalic, resembling the Bélonois of Timor.

Southern Timor is inhabited by two very different elements. The Bélonois are

like the people of Tengger and Sumatra on the west; the Atoni, like the brachycephalic Smeru people.

In northern Timor dolichocephaly prevails almost entirely. The greatest difference is in height, weakening the supposition that here we have a homogeneous population.

The interior is inhabited by men of small stature, dolichocephalic, and in part very low (*fort basses*) headed, the coast by populations which are large or medium sized.

Malaysians extend here to Fuiloro in the extreme east.

Brachycephalic influence seems to have completely disappeared in this eastern part of the Malay Archipelago. That proves that this element came from the west and forces one to conclude that the populations of the eastern part of the archipelago are related to the substrata in the west.

These remarks allow the following general conclusions. The primitive layers of the whole Malay Archipelago are made up of meso- and dolichocephalic populations with low (*basses*) heads and light brown eyes, of tall or short stature. They are better preserved in the mountains and in some other isolated regions. Later came populations almost entirely brachycephalic, high headed, with dark eyes and straighter (*plus lisses*) hair, who submerged the aborigines, especially on the island of Java and as far as western Flores. The contrast between the first comers and the people of the new race cannot be better illustrated than in the meso-dolichocephaly of the Protomalays and the brachycephaly of the Postmalays.

D. J. H. NYÈSSEN

TANANARIVE, MADAGASCAR

NOTES AND NEWS

ANNUAL MEETING OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION, 1938

By vote of the Executive Committee the next annual meeting of the American Anthropological Association will be held in New York, presumably from December 27th to 30th, 1938. It was voted to meet in joint session with the Linguistic Society of America.

President Edward Sapir has appointed the following committees for this meeting:

Program Committee: R. F. Benedict, *chairman*, G. C. Vaillant, T. Michelson, and the Secretary.

At the 1937 meeting of the Council it was voted to give the Program Committee power to set the date and to call for only *abstracts* of papers instead of the full papers to be included on the program, and furthermore to empower this committee to demand a full paper when they were unable to judge the quality from the abstract alone (cf. pp. 297).

Nominating Committee: C. Wissler, *chairman*, A. V. Kidder, R. Linton.

Within three months of his election the President shall appoint a Nominating Committee . . . and transmit the names . . . to the Editor, who shall publish the names . . . , with an invitation for suggestions; after considering such suggestions the Nominating Committee shall report its slate to the Council, which shall pass on the recommendations, with such changes as are deemed advisable, to the annual meeting (from the Minutes of the Pittsburgh meeting, December, 1934, AMERICAN ANTHROPOLOGIST, Vol. 37, 1935, p. 333).

F. M. SETZLER, *Secretary*

RECENT DEATHS

Professor Waldemar Jochelson, long associated with Siberian ethnology, died in New York, November 1, 1937, aged 82. Exiled to Siberia as a revolutionary, he became interested in the Palaeoasiatic tribes, eventually becoming a member of the Yakut Expedition under Imperial Russian auspices. In 1900–1902 he took part in the Jesup North Pacific Expedition of the American Museum of Natural History, to whose publications he furnished reports on the Koryak. Since 1922 he resided in the United States, where he was associated with the American Museum of Natural History and the Carnegie Institution of Washington. An account of his life work appeared in the AMERICAN ANTHROPOLOGIST, Vol. 32, pp. 375–77, 1930.

BIBLIOGRAPHIC INFORMATION

The Bibliographical Society of America contemplates expanding the "Notes and Queries" section of its News Sheet to include as nearly as possible notices of all bibliographies planned or in process of compilation by members of the constituent societies of the American Council of Learned Societies and of other American scholars.

The record of published bibliographies is provided in various other ways, but in only a few of our disciplines is any systematic attention given to bibliographies in progress. The duplication of effort in such work is particularly tiresome, whether it be the work of compiling for publication or merely in preparation for some piece of research.

The Bibliographical Society of America, therefore, hopes to render an acceptable service in providing a current record of bibliographical projects.

Notes for publication in the News Sheet may be addressed to the Secretary's Office, Brown University Library.

HENRY B. VAN HOESEN, *Secretary*

NEW PUBLICATIONS

The University of California announces that hereafter publications dealing with anthropological subjects will be in two series. The "University of California Publications in American Archaeology and Ethnology," which was established in 1904, will continue unchanged in format, but will be restricted to papers in which the interpretative element outweighs the factual or which otherwise are of general interest. A new series, known as "Anthropological Records," will be issued in photolithography in a larger size. It will consist of monographs which are documentary, of record nature, or devoted to the presentation primarily of new data.

The "New Mexico Anthropologist," published by the students and faculty of the Department of Anthropology, University of New Mexico, is now offered in printed form as "a news sheet of anthropology in general and of the Southwest in particular, as well as a publication devoted in large part to student work." News and contributions of a scientific nature are solicited from individuals in other institutions. (Bi-monthly, September to June: subscription $1.25 for five issues per year: James Spuhler, *Business Manager;* Douglas Osborne, *Managing Editor*, Department of Anthropology, University of New Mexico, Albuquerque, N. M.)

The formation of the Hudson's Bay Record Society has been announced by the Hudson's Bay Company. The classification of the company's archives has been proceeding for several years with a view to publication. One volume, independently edited, will be published each year in association with the Champlain Society. The subject of the first volume, to be published in 1938, is Sir George Simpson's Athabasca Journal and Report, 1820–1821. Membership in the Hudson's Bay Record Society will be limited, and the subscription will be $5 per annum. Inquiries with regard to membership should be addressed to the Secretary, Canadian Committee, Hudson's Bay Company, Hudson's Bay House, Winnipeg, Manitoba, Canada.

AMERICAN SCHOOL OF PREHISTORIC RESEARCH

The annual summer term of the School will open in Berlin on July 1, 1938. The tentative program includes lectures, seminars, museum studies, practice in excavating, and excursions to prehistoric sites in various parts of Germany, Czechoslovakia, Austria, Hungary, and Yugoslavia. Dr V. J. Fewkes, who has been in charge of three previous summer terms, will again be Acting Director.

The program is so arranged as to cover practically every phase of prehistory, with special emphasis on the Neolithic and later epochs. Students will take part in excavating at Neolithic and Iron Age sites. The term will close in Prague, September 10th.

Preference will be given to applicants who have a knowledge of French and German and who already have at least a bachelor's degree. Graduate students will receive ample credit from their respective institutions for work well done during the summer term. Applicants, who are accepted for enrollment, will receive all necessary instructions before the time for sailing. The total cost to each student, including all necessary expenses while away from home, should not exceed $750.

Applications for enrollment and request for the promised instructions should be addressed to Dr George Grant MacCurdy, Director, American School of Prehistoric Research, Old Lyme, Conn.

THE INSTITUTE OF FAR EASTERN STUDIES

The Institute of Far Eastern Studies announces a session to be held at the University of Michigan, June 27–August 20, 1938. In addition to several programs of concentrated study in the Chinese, Japanese, and Russian languages, the Institute sponsors a large number of courses in Far Eastern Anthropology, Fine Arts, Economics, Geography, History, Political Science, Sociology and related fields.

A similar Institute was conducted last year and proved to be so successful that it was decided to repeat the program during the coming summer. A number of scholarships have been made available, and applicants may secure further information by writing to the Director, Dr Robert Burnett Hall, University of Michigan, Ann Arbor, Michigan.

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THE NATURE OF THE POTLATCH

By H. G. BARNETT

SO much has been written about the potlatch of the Northwest Coast tribes that almost everyone has some ideas about it. Generally, however, these ideas are not clear or consistent. As with every other complex institution, its various aspects and interrelationships have invited treatment from several different angles and points of reference. The result has been confusion in the minds of most students who have tried to reconcile the different emphases one with another and each with its cultural context. As Murdock says, too often it has appeared as an "excrescence." It seems justifiable, therefore, to attempt an evaluation of the essential facts, mainly with a view toward adjusting certain misunderstandings.[1] It should be stated that access to unpublished data from the Tlingit, Nootka, and Coast Salish, lately collected by Olson, Drucker, and myself, has stimulated this attempt.[2]

In its formal aspects the potlatch is a congregation of people, ceremoniously and often individually invited to witness a demonstration of family prerogative. Nominally, the entire kin or local group acts as host to the visitors. The composition of this body in terms of social units varies from time to time depending upon the character of the occasion and the importance of the principal in whose honor the celebration is held. The upper limit to the number of units which might thus act as host is conditioned mainly by the practical requirements of effective cooperation. The important fact, however, and one which has not heretofore received due attention, is that there is always a minimum unit which may undertake to entertain potlatch guests. This among the Kwakiutl is the so-called *numaym* or patrilineal kinship group which is united by a belief in descent from a common ancestor and by particular localized traditions and associations. The same situation exists among the Nootka and Salish. To the north the correspond-

[1] Read at the annual meeting of the American Anthropological Association, New Haven, December 1937. Based upon a more inclusive study of "The Nature and Function of the Potlatch."

[2] The field notes and manuscripts of Olson, Drucker, and Barnett have been drawn on to a very limited extent since it is impossible for the reader to check with them.

ing irreducible unit is the clan, or more exactly, the local segment thereof. In no case do members of these localized kinship groups receive at a potlatch given by any co-member.[3] They unite in pledging support to the donor, preparing for the reception, and assisting at the formalities upon the appointed day. Conceptually and potentially all are donors and as such they do not share in the distribution.

This introduces the question of participation and provides a clue for a better understanding of it with reference to the categories of age, class, and sex. Since the potlatch is by nature a mechanism serving restricted family and individual interests, one person (or at most a few who are closely related) declares his intentions, invites the guests, and assumes the role of host. He is, in consequence, to be regarded as the donor. A potlatch, however, is by no means always a simple affair with one donor. Actually, in most cases it is either a series of minor individual distributions clustering about and taking advantage of the congregation occasioned by the major event; or it is a conjoint enterprise with any number of lesser contributors who publicize and retain their personal connections with their contributions and benefit accordingly.[4] Thus it affords an opportunity for participation by all classes and degrees of property owners according to their means. These possibilities are open to any member of the society who has the least pretension to social prominence; and all parties, of high or low status, profit by the wider publicity and acclaim deriving from the cooperative character of the undertaking. The participation is direct and the return in prestige is immediate. Obviously the system allows for any degree of participation and it must not be supposed that those called commoners are excluded from it. They as well as the upper class members contribute through their chief and receive directly at potlatches. References to this fact are too numerous to be disregarded.[5] That they participate indirectly, though none the less positively, there can be no doubt, for the common man is bound to be drawn into the system in some measure and to expend his energies in the interests of it. Nor is this sheer conscription; for the common man, the poor relative, and the skilled artisan all voluntarily trade their loyalty and their services

[3] Boas, 1921, pp. 924–27, 978–80, 992, 1021, 1025, 1030, 1048, 1060–62, 1078, 1087; 1916, p. 537; 1925, pp. 133, 183, 297–309; Murdock, 1936, p. 14; Barbeau, 1929, p. 7; Mayne, 1862, p. 263. We must be careful to distinguish between the potlatch and the feast given by a chief to his group, a valid and important distinction made by the natives themselves.

[4] Boas, 1925, pp. 185 *seq.*; 1916, p. 538; Murdock, 1936, p. 8; Mayne, 1862, p. 264; Swanton, 1909 (2), p. 179; 1908, p. 442; Curtis, 1916, p. 91; 1915, pp. 217–18, 243; 1913, p. 70.

[5] Collison, 1915, p. 141; Curtis, 1913, p. 72; Boas, 1921, pp. 458, 541, 544, 772, 792, 878–80, 924–25, 980, 1026, 1049, 1339; 1925, p. 207. For indirect participation see Boas, 1921, pp. 432–33, 768–75, 878, 991, 1039, 1334, 1340–44; 1916, p. 538; 1925, p. 145.

for the patronage of a chief and the social favors he is able to bestow at a potlatch. None but slaves are excluded on any other basis than their own lack of industry or ambition. Even women and children participate freely, though the former usually have potlatches of their own separate from those of the men.[6] Doubtless the number of people with an *active* interest in the requirements and the end results of potlatching is greater than has been supposed. Not only both sexes, but those of all ages and free classes are brought into an intimate relation with it. It is not an obsession, nor even an unremitting preoccupation, but it is a persistent incentive and a goal to be striven for.

One advantage of such an institution to the individual in a pre-literate, geographically extended society is obvious. As it operates on the Northwest Coast, this institution, the potlatch, enables the individual to assemble an appreciative and purposeful audience outside his immediate localized kinship group. He and his heirs benefit directly from the publicity inherent in the situation. They speak, sing, dance, or otherwise put themselves before the public eye at the same time that some claim to social distinction is expressed or implied with reference to them. Claims are commonly embodied in family names, so that the assumption of the latter customarily signifies a claim to certain distinctions and privileges. The announcement or reassertion of these claims is in all cases the reason for the potlatch, and no potlatch is devoid of them, despite the fact that in some accounts they appear as incidental to, rather than provocative of, the occasion. Conversely, so firm is the association that no claim whatever can be made without a distribution of goods to formally invited guests. This is the concluding feature of the celebration and the signal for the unceremonious departure of the visitors.

The goods distributed consist almost entirely of treasure items. They have an arbitrary value unrelated for the most part to physical human needs. Their consumption utility, especially in recent times, has been negligible; they consist of cloth, blankets, and other surplus wealth which is manipulated solely upon the prestige level. Food, it is true, is consumed upon occasions which count in every way as potlatches; but the kinds and the quantities of food proper to such feasts preclude them from the category of subsistence economy.[7] This becomes more certain when we realize that the materials of the potlatch are not intended to satisfy the hunger and comfort wants of the guests, but first and foremost to satisfy the prestige demands of the host, and secondarily that of the individual guests. Clocks,

[6] Boas, 1916, p. 541; 1925, p. 91; Murdock, 1936, p. 11; Curtis, 1913, p. 71.

[7] Boas, 1921, pp. 329, 363, 366, 368, 369–70, 390, 432, 439, 463, 527–31.

sewing machines, tables, and shawls are bestowed in quantities out of all proportion to their practical utility. The economic loss suffered upon occasions when slaves are murdered or emancipated is not great; in bondage they are as much of a liability as an asset and are useful primarily as an overt demonstration of the ability to possess them.[8] The prestige value of potlatch goods was characteristic of them even in the days when they consisted mainly of such directly consumable commodities as meat, fat, and skins. A surplus in excess of need then, as later, was requisite for achieving social distinction. These facts have an important bearing upon the conclusions to follow, for it seems certain that the transfer of property at a potlatch bears but a remote resemblance to those exchanges which we ordinarily class as economic.[9]

In the first place, the goods are bestowed upon the assembled persons in their capacity as witnesses to the ceremony and the claims advanced. This is consonant with the public character of the proceedings and native statements leave no doubt about this aspect of the distribution. To that extent, therefore, it may be said to be a payment for services rendered.

It could further be argued perhaps that potlatch goods are given in return for the more tangible benefits of labor and ceremonial prerogative. Beyond question, compensation for services is a concomitant of the distribution everywhere. Houses are built, posts carved and raised, and ceremonial offices performed by guest members of the congregation over all the area. This appears most clearly in the north where the notion of reciprocating groups is prominent; but it is just as true of the Kwakiutl and the Salish. None of the latter would think of building his own house or asking his family to do it. That would be degrading. In theory at least, only guests may do the work, and here as elsewhere they are paid for their services. But the character of both payment and service is worthy of attention. Sometimes members of the host group do more real labor than those who are paid for it.[10] Again, imaginary services are paid for so that no one will be overlooked.[11] Regularly, those who have given potlatches receive more than others.[12] Chiefs always get more for their "services" than do common men—and very often do nothing. It is usual for them to delegate the performance of their duties to others.[13] The truth is that their services are nominal and

[8] Curtis, 1913, p. 74.

[9] It will be noted that this statement has nothing to do with the economic aspects of wealth production. It is an assertion about the transfer of property at a potlatch which the following paragraphs are intended to explain.

[10] Garfield, manuscript.

[11] Curtis, 1913, p. 72.

[12] Murdock, 1936, p. 11; Swanton, 1909 (2), p. 119; Boas, 1921, pp. 765–66.

[13] Boas, 1921, p. 1339; Murdock, 1936, p. 8; Barbeau, 1929, p. 7.

their pay is honorific. It is in recognition of an hereditary privilege and is not determined by the energy value, the necessity, or the intrinsic quality of the service. Finally, and conclusively, we have explicit statements as well as suggestive evidence that a man receives potlatch goods over and above his compensation.[14] All this makes it appear that we must interpret the distribution as something more than a means of getting work done. That assuredly could be accomplished without the prodigality which is the keynote of the day.

It is also clear that the sums given to guests are not loans. Some confusion has arisen over this point, for the institution of the loan with interest, quite comparable to our own, flourished among the Kwakiutl and is known, at least, to some Salish, Haida, and Tsimshian. The significant fact is that lending and repayment form no part of the potlatch distribution. They are preliminary to it, and are engaged in for the purpose of accumulating the amounts necessary for the distribution. Dawson recognized this, and more recently Curtis and Murdock have verified it in print.[15]

It follows, therefore, that potlatch presents are not capital investments, or are such in a secondary and derivative sense only. They may be considered as prestige investments; but their more immediate character is that of a gift, a favor unconditionally bestowed. This soon becomes apparent to anyone attempting an inventory of a series of reciprocating potlatches, and finds warrant moreover in native attitudes. It is in complete harmony with the emphasis upon liberality and generosity (or their simulation) in evidence throughout the area. Virtue rests in publicly disposing of wealth, not in its mere acquisition and accumulation. Accumulation in any quantity by borrowing or otherwise is, in fact, unthinkable unless it be for the purpose of an immediate re-distribution.

Informal gifts expressive of friendship and good will are a well known feature of this region. As an aggregate of formal gifts the potlatch achieves the same end, but the situation is complicated by its public character and by the unequal distribution factor. Representing as it does a convention of witnesses, the potlatch provides the means by which the individual may gain the desired publicity outside his own group. But publicity alone is not enough. He demands an active concern on the part of others with his worth. To achieve this he aims, by exploiting and virtue of liberality, to establish a basis of reputability in his associates' opinion. Until he has done this he has no social standing whatever; he has no name, no means of being recog-

[14] Drucker, notes (northern Kwakiutl); Boas, 1921, pp. 1339–40; Collison, 1915, p. 138; Barbeau, 1929, p. 54; Niblack, 1890, p. 365; Curtis, 1913, pp. 71–72.

[15] Dawson, 1887, p. 80; Curtis, 1915, pp. 143–44; Murdock, 1936, p. 4.

nized as a member of the society. Naturally, the basis which he aims to establish will be as favorable to himself as he can make it. He therefore makes an expenditure of wealth in accordance with the esteem in which he is held or wishes to be held; that is to say, in accordance with the status he holds or presumes to acquire. This is rather a close measure of his own self esteem, or will tend to become so, for he cannot long support his own self esteem in the face of the disesteem of his fellows, nor will it in the long run be less than that generally accorded to him by them. As a result, the totality of a man's potlatches, given by him or for him, is an acceptable gauge of the esteem in which he holds himself.[16] At the same time it posits a formal basis for recognition by others. Furthermore, any one of a man's potlatches is a fair, but not certain, indication of his self esteem since he constantly strives to outdo himself and those who have done for him. The stimulus to excel in this sense is everywhere active, even when other comparisons are not impelling. As Drucker phrases it, the conscious effort to improve upon one's heritage is the only kind of "rivalry" known to the Nootkans.

The factor of unequal distribution has important consequences too. Any gift expresses some esteem, some recognition of the recipient's worth; but in order to know how much, there must be some basis for a comparison. This standard of reference is what other people get. Gifts are distributed at a potlatch according to the rank of the receiver. Thus the donor gives expression to the esteem in which he holds each recipient with respect to every other recipient. The inequality in the gifts reflects a judgment of comparative social worth from the particular donor's point of view.

That this is not a philosophic construction to explain the nature of the potlatch gift can be shown by a number of facts. The selective character of the gift, for one thing, is indicative of esteem. Not everyone is so honored, nor in the same degree. There are many instances of gifts which discriminate between those who have given a certain kind of feast or entertainment and those who have not.[17] The Salish "feel good" when they receive a dollar, but "cheap" if the gift is a quarter while others get a dollar. The Tlingit always give potlatches to the other moiety to "show them respect."[18] The verbal responses of recipients are most significant. The most common ones are expressions of gratitude.[19] Indeed, the whole potlatching complex is not so alien to our own conceptions that it cannot be readily understood with a little reflection upon the real character of our Christmas gifts, our reciprocal entertainments, and our custom of "treating."

[16] Boas, 1921, pp. 542, 785, 841, 842, 880, 1279, 1286–92; 1916, pp. 355–56; 1925, pp. 93, 215, 309; Curtis, 1915, pp. 105, 242; Swanton, 1908, p. 442; Sapir, 1913, p. 75.

[17] Boas, 1921, pp. 765–66, 772, 786–87, 790–93; 1925, p. 132; Murdock, 1936, p. 11.

[18] Swanton, 1908, p. 435.

[19] Boas, 1925, p. 227; 1916, p. 356.

The expressions of esteem, both for self and for others, inherent in potlatch gifts are conventional *formal* expressions. They are customary and culturally approved modes of declaring estimability. There is no maintaining that every individual donor is prompted by the same emotions, nor even that a necessary ingredient of his emotional complex is esteem for his guests. He may be motivated by nothing more positive than the desire to conform to custom as he makes an unequal division of his goods. Nevertheless they are acceptable vehicles for signifying regard and this use of them is immediately comprehensible to everyone.

As tokens of esteem they are productive of good will. They compliment and gratify the recipient.[20] They flatter him by recognizing his social worth and gratify his wishes in establishing a basis for it. The result is necessarily a good will institution since its aim (recognition for the individual) could not be achieved otherwise than by voluntary concurrence. There is abundant evidence to show that the potlatch is fundamentally of this character and it is important in view of widespread notions to the contrary. In spite of the inimical demonstrations connected with it at times (see below), guests are always thanked for coming, watching, and making complimentary speeches.[21] It must be remembered too that it is the guests who labor and, in the north, perform the reciprocal ceremonial duties, all in a spirit of cooperation and good will.

It is apparent that the two factors (potlatching to establish position and receiving according to status) are complementary aspects of one fact. The second is but the fruition of the first. That is why the giving of a potlatch does not validate the status claims of the donor. He can only make a claim. Under ordinary circumstances such prestige claims are beyond question; they simply confirm publicly facts already conceded by everyone. Nevertheless, a closer analysis will reveal that validation of status must come from the other members of society—the potlatching members in fact—and it depends upon the good will which the claimant is able to establish among them.[22]

As a set of gifts, by an acceptable assignment, are capable of expressing esteem (i.e., recognizing status) for the individual recipients, so they can be effective, by a contrary use, in expressing disesteem.[23] As a device for precipitating insult situations the deliberate use of this is confined almost exclusively to the Kwakiutl. The characteristic response is an immediate reassertion of status by the affronted party. This takes the form of a signifi-

[20] Curtis, 1913, p. 69; Sproat, 1868, p. 111; Mayne, 1862, p. 263; Niblack, 1890, p. 365.

[21] Boas, 1921, pp. 788–93, 908–38, 1359; 1925, p. 301; 1930, p. 173; Swanton, 1909 (2), p. 118.

[22] Boas, 1925, pp. 93–97.

[23] Boas, 1916, p. 314; 1921, p. 751.

cant gift to the offender, or a more general distribution or destruction of property. If the slight happens to be accidental, as is usually the case elsewhere than with the Kwakiutl, the offender atones with a gift in excess of what would otherwise have been given. If not, the challenge is accepted and an extravagant contest with property develops. The so-called "face-saving" potlatch belongs to this same category since it is also effective in restoring esteem and reconstituting the ego. By means of it a person of consequence who has suffered a bodily injury or an indignity can "cover his shame" and prevent future reference to the matter by a distribution of property. This reaction to a shameful situation is known from the Tlingit to the Salish, with perhaps an over-development among the Kwakiutl.

It should be borne in mind that the recipient at a potlatch is not primarily concerned with getting back the amount he has previously given to his host. Receiving less is not prejudicial to his standing, and to insist upon an equivalence is contrary to the code of liberality.[24] The expressions of esteem and counter esteem (for the recipient in each case) need not stand in a one-to-one relationship. Each is a purely relative statement of the recipients' rating with respect to one another upon a particular occasion. The individual is interested above all in the amount he receives as it compares with that of the other guests. That is his recognition. The sum total of the gifts is the concern of the donor; that indicates his status. Attention to the matter of the return, whether it should be greater or less, is also the concern of the host, for it establishes his rating with respect to the particular guest. It is a matter of self esteem to return as much as or more than one has received; failure to do so reflects upon no one but the defaulter. This is the motivation at work in the spectacular rivalry potlatches.

Such contests are therefore latent in any potlatch, but as a patterned response their elaboration is abnormal from an areal standpoint. Their development is understandable in the light of what has already been said plus certain historic factors; but that they are the essence of potlatching, or even its most frequent manifestation, is a fallacy which can easily be demonstrated. As with the loan, its chief exponents are the Kwakiutl, mainly those about Fort Rupert. Some Salish, Haida, and Tsimshian are at least acquainted with this manner of reckoning with opponents. The Tlingit and Nootka know of it,[25] but for the most part it is foreign to their conceptions of potlatching. As an outgrowth of an invidious comparison between donor

[24] Curtis, 1915, pp. 143–44.

[25] Curtis, 1916, pp. 19–24; Swanton, 1909 (2), p. 426. It is highly probable that the intrusion of another economy (European) into the area is to be held accountable for the stimulation of contests with property.

and recipient it is almost wholly a contest of self appraisal. The factor of recipient esteem spoken of in connection with the ordinary potlatch and its multiple recipients does not enter. The motivation is quite different; the participants are often embittered and exert themselves to humiliate each other. Indeed, in the descriptions of the famous Kwakiutl contests attention is so completely centered upon the antagonistic attitudes of the two rivals that an important fact is lost sight of; namely, that they are only the principals in a drama, which like all dramas, is for the benefit of spectators. The spectators in this case are witnesses. Not only that, they are really judges. They, in the last analysis, choose the "winner" and make the final award which is formal recognition of the claims of one or the other of the rivals. This is the ultimate aim of all potlatching as has been shown before, and the present instance is no exception. Conquering a rival would be an empty victory—as it has been—without formal recognition of the fact by the other members of society. Their good will is essential for this, since each of them is a free agent under no compulsion beyond the dictates of his own conscience. Their majority decision is informally arrived at, and often one influential person can turn the tide of acceptance or rejection by being the first to acknowledge, at his potlatch, the right of one of the rivals to receive more, or in advance of the other. This, of course, is what is meant by formal recognition. Its expression, through the only possible medium of the potlatch, makes the latter an effective instrument of public opinion.

It is impossible to do justice to a subject so complex in a few pages, but it is hoped, at least, that sufficient evidence in its proper perspective has been offered to contribute to a better understanding of the potlatch. More is at hand and much of it is available to the patient reader of the published literature. Above all, the present summary points to a more refined and definitive concept, and consequently to a more circumspect use of the term. It signifies not simply an exchange of gifts, for that custom is too widespread and diversely associated to be the criterion of the potlatch. Neither is the latter fundamentally competitive. It is characterized by certain formal requirements, by an implied equation of social worth with institutionalized liberality, and by its function as a vehicle for publicizing social status.

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UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

PARTICIPATION IN CEREMONIALS IN A NAVAHO COMMUNITY

By CLYDE KLUCKHOHN

IN general, descriptions of the ceremonial behaviors of non-literate societies have tended to be restricted to accounts of observed ceremonies and descriptions of the formal ceremonial patterns with little attention to either the extent of participation or the affects of participants. I propose to treat the first of these somewhat neglected questions from data gathered among the four hundred odd Navaho in the region between Ramah and Atarque, New Mexico.[1] To what extent the trend of these data would be paralleled if material was gathered on similar questions among other Navaho groups is an interesting question and would, in my opinion, merit investigation. There is also the query: Would figures gathered in this society a generation or more ago have shown a comparable intensity of ceremonial activity. I doubt it. This inference cannot be proved, of course, but it is perhaps worth recording my feeling that the present almost hysterical frequency of ceremonials is related to the fact that only recently has this Navaho group felt the full impact of our culture.

The treatment will center on the following questions: What ceremonials are known? How many ceremonial practitioners are there? What ceremonials have been held during a specific period of time? What ceremonials have sample individuals held during their lifetimes? What proportion of family income is devoted to ceremonial activity? In addition, various supplementary information will be incorporated with a view to filling out a highly concrete picture of the extension and diversity of "religious" behavior and knowledge.

While the central aim will be to describe as concretely as possible ceremonial participation in this society, the discussion relates very readily to two connected problems of some general interest. In anthropological literature one continually reads such statements as the following: "The Navaho are a very religious people," or, more specifically, "The Navaho spend a great deal of their time in ceremonials." It would seem to me interesting and perhaps useful to examine such statements as these on the basis of fairly full information about this particular group of Navaho during a particular period of time. The results of the examination may perhaps also throw some light on an even more general problem in which anthropologists are much interested at present. The author of a general text on anthropology pub-

[1] The two seasons' field work which supplied the data for this paper were supported by grants from the Division of Anthropology of Harvard University. The paper has had the benefit of helpful criticism from Dr Leland C. Wyman and Mr Harry Tschopik, Jr.

lished recently states: "Every culture tends to have certain preferred modes of feeling and reacting." Now our problem may be phrased as follows: To what extent does an inductive analysis of the behaviors of the individuals making up a particular Navaho group support the generalization that a preferred Navaho mode of reacting is ceremonial? Comparably complete data for time and energy devoted to other activities are lacking, but I think that the data which follow give at least some crude measure of the amount of time and energy which goes—directly or indirectly—into ceremonial activities.

A very large number of ceremonials are (or in the recent past have been) carried out by the Navaho. The members of this group have participated in a much smaller number. Three varieties of ceremonial participation are open to them. First, they may attend or take active part in ceremonials given in other Navaho communities. This opportunity is relatively little exercised at present, although in years past individuals went rather frequently as far as the Navaho Reservation proper to attend such nine-day ceremonials as Mountain Top Way and Night Way. But during the past summer forty-one individuals (mostly young men) are known to have spent a total of ninety-three days attending four different performances of Enemy Way. During the preceding winter a party of nine individuals were present for the final day and night of a Night Way carried out north of Gallup. The ceremonial practitioners of this peripheral community are not in great demand outside, but two of the singers and three of the diagnosticians officiate from time to time in the three nearest Navaho societies. Data over a two year period indicate that each singer carries out about one five-night ceremonial a year among the Danoff and Two Wells Navaho and about one every second year among the Alamo-Puerticito Navaho. Each of the three diagnosticians apparently do motion-in-the-hand from two to five times yearly for Navaho from these outside groups.

Second, these Navaho may attend or assist in ceremonials given for members of their own community by singers from outside. (The ceremonial is almost invariably given at the home of the patient.) During the six months from March fifteenth to September fifteenth of this past year nine singers (mainly from the nearest Navaho groups) spent sixty-two days in conducting twenty ceremonials.[2] Outside singers are seldom imported to

[2] Within the last fifteen years singers have been brought from rather distant points on the Navaho Reservation to give such ceremonials as Red Ant Way and Plume Way so that most adults in the group have witnessed a considerably greater range of ceremonials than would be suggested by the data of the last two years. Inquiry revealed, however, sixteen individuals between about twenty and about thirty-five who had never attended any portion of a nine-night ceremonial.

conduct a ceremonial fully known to any member of the community.[3] In stubborn cases, outside diagnosticians are sometimes consulted. This occurred five times in the six months period referred to: once by star-gazing, once by listening, three times by motion-in-the-hand.[4]

Coming to the third form of participation, twenty song ceremonials are known by one or more living member of the society. Only seven of these last for more than part of a night or day. It is worthy of remark that only one individual knows one hunting ceremonial and that no living individual knows a war ceremonial. Moreover, it is to be noted that only one singer in the group knows the nine-day version of any ceremonial, or any ceremonial involving the presence of masked personators of the gods. Only one nine-day ceremonial has been given during the past five years. This is the more remarkable in that, according to the traditional ideology, children can be given their ceremonial initiation only at this kind of ceremonial. The connections of the fact are, however, probably primarily economic, for there are few families in this group who are even well-to-do by Navaho standards. But even after one has made all of these qualifications one is, I think, impressed by the elaboration of ceremonial knowledge in a culture which from other points of view—e.g., the technological—is relatively undifferentiated.

This impression is fortified by consideration of the number of individuals having direct ceremonial knowledge. Twenty out of the sixty-nine adult men of the community conduct ceremonials. In addition, nine women and seven men are diagnosticians. In short, thirty-six individuals are to some degree involved in this aspect of behavior. But there is wide variation among these in amount of ceremonial knowledge. The Navaho distinguish between true singers and what Morgan has called "curers."[5] The term "singer" tends—by this group at all events—to be reserved for those practitioners who know at least two ceremonials of three or more nights' duration.[6] Such ceremonials I shall hereafter, simply for convenience, refer to as

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[3] It is clear that at least four singers in the Danoff and Two Wells regions have a fairly regular practice among the Ramah-Atarque Navaho. They have been seen (e.g., at "chicken pulls" and "squaw dances") under circumstances which strongly suggested that they were "looking for business."

[4] For a description of these varieties of diagnosis see Leland C. Wyman, *Navaho Diagnosticians* (American Anthropologist, Vol. 38, pp. 236–46, 1936).

[5] William Morgan, *Human Wolves Among the Navaho* (Yale University Publications in Anthropology, No. 11, 1936). See also Leland C. Wyman and Clyde Kluckhohn, *Navaho Classification of Their Song Ceremonials* (Memoirs, American Anthropological Association, No. 50, 1938) for terminology generally and for phonemic recordings of Navaho terms.

[6] Dr Wyman tells me that, in his experience, one who knows thoroughly a single five-night ceremonial is called "singer."

major ceremonials. There are three singers in this society. One knows five major ceremonials[7] (and the legend for three of these) and two one-night ceremonials.[8] A second knows four ceremonials in the first category (with the four legends) and two in the second. The third knows two and one respectively (and one of the concomitant origin legends). Of the seventeen curers one knows one five-night ceremonial (without the legend) and one one-night, another knows one three-night ceremonial (but not the legend) and is learning a five. A third knows one two-night and two one-night rites. A fourth knows the brief form of three ceremonials. Three know only the two-night Blessing Way. The others know one one-day or one-night ceremonial only (mainly various "blackenings"). All of the diagnosticians know only the one means of divination, that of motion-in-the-hand.

There is a somewhat corresponding variation in the proportion of time devoted to ceremonial activities. The most popular singer stated that he sang about five days out of every two weeks. Actually my figures show that in the six months from March fifteenth to September fifteenth last year he sang eighty-one days in twenty-nine ceremonials.[9] Another singer sang eighty-two days in twenty-three ceremonials during this period. The third sang only twelve in seven, but he is in extreme old age. The data indicate that an estimate of five days out of every fourteen for the two singers is not far from correct. As for the curers, one spent nineteen days, another eighteen in the period which my data cover, while two others spent only a day each. The mean is about nine days in six months. According to my data, three of the diagnosticians were called upon about once a week, others once or twice in the whole period. My records include sixty-four instances

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[7] This does not imply, of course, all possible details, variations, and concomitant ceremonies connected with these ceremonials. Indeed my impression is that the knowledge of these singers is somewhat meagre as compared with that of certain singers of the Reservation. For example, this first singer knows a total of only seven sandpaintings for his four ceremonials. The second knows but five, the third but two. No curer can make more than a single sandpainting.

[8] Although he does not sing Blessing Way, this singer knows enough songs from it to conduct the girl's adolesence rite.

[9] These and subsequent statistics are based upon: (1) direct observation by the writer and by two graduate students (Harry Tschopik, Jr of Harvard University and John Adair of the University of Wisconsin) who were carrying on other investigations in the area but kindly kept careful notes on these particulars; (2) systematic and repeated interviewing of all singers, curers, and diagnosticians; (3) statements made by other members of the community in interview material on other subjects. So many cross checks were available that no datum was included which was not documented by at least three independent sources

of divination during the sample period. (Of these one was carried out to locate a lost animal.)[10]

Let us now approach the problem from another angle. I have a record which I believe to be substantially correct—except for some probable omissions—of the 148 ceremonials[11] held during this period.[12] (This includes, of course, ceremonials conducted by local and by imported singers, but an asterisk indicates that the ceremonial is not known by any member of this group.) There were 27 Chiricahua Apache Wind Way; 26 Shooting Way, Female Branch; 25 blackenings;[13] 23 Blessing Way; 8 Hand Trembling Evil Way; 2 Hand Trembling Way; 8 Life Way, Female Shooting Branch; 2 Enemy Way*; 2 Navaho Wind Way*; 2 (brief form) Eagle Way*; 1 (brief form) Mountain Top Way*; 1 Beauty Way*; 1 Big Star Way*. Three hundred eighty-nine nights (and portions of days) during this period were devoted to ceremonials. Now remember that at every ceremonial not only the singer and patient, but usually at least one assistant and some members of the patient's immediate family are present. Further, at the last night of any longer ceremonial more distant relatives and neighbors gather.[14] The average number present for the last night of the ceremonials I witnessed was thirty-one. Most of these people were present during the greater part of the final day also. On the basis of these and other data I have calculated

[10] I have a number of records for past years of motion-in-the-hand being used to find lost animals, children, jewelry, etc. No one in this group remembered its being used within the past generation for hunting. Some of the older men recalled its use in war.

[11] Of these, thirty-three are known to have been "repeats" of the cycle of four by the same singer. This must be borne in mind in comparing the number of ceremonials (148) with the number of diagnoses (63). If one adds to this last figure the number of repeats and the number of Blessing Ways (to which—at all events among these Navaho—diagnosis is only very exceptionally a preliminary), one gets 119. From this two must be subtracted, for in two cases two diagnosticians were called in before a ceremonial was decided upon. There were 31 cases (148–117), excluding Blessing Ways, in which diagnosis did not precede the first carrying out of a ceremonial by a given singer. Actually there are only three instances where a major ceremonial was not based upon the advice of a diagnostician. The other twenty-eight cases mainly are "blackenings" to which diagnosis, apparently, is not felt as a necessary prerequisite, although it was carried out in two recorded cases.

[12] As a matter of fact, I have records for the same six months' period in 1936. The figures for these and other facts treated in this paper differ but little for the two years, but since I have reason to believe that the 1937 data are somewhat more accurate in detail I present these only.

[13] Of these 8 were Moving Up Way, 4 Big Star Way, 3 Enemy Way, 2 Enemy Monster Way, 1 Evil Way, Male Shooting Branch. (All of these are known by members of this group.)

[14] Some of these, while not precisely "assistants," are in demand because they "know the songs."

that during this six months sample period, the average adult man of the community spent 0.32 of his waking hours in ceremonial activity, the average adult woman 0.18.[15] Obviously, these figures convey an impression of spurious accuracy. But I think I am safe in saying that adult men in the community tend, on the average (at least during this portion of the year),[16] to devote one-fourth to one-third of their productive time to ceremonials;[17] adult women one-fifth to one-sixth. The figure for men would probably have been higher in the not very distant past, for a larger number of younger men would almost certainly have been engaged in systematically learning the ceremonials. At present only four men under late middle age are studying—and two of these very half-heartedly.

It will be noted that the facts presented thus far deal entirely with the knowledge and behaviors relating to song ceremonials and diagnoses. To the best of my knowledge no member of the group knows any of the prayer ceremonials. During the sample period, however, at least one prayer ceremonial (lasting two nights) was carried on by a man from the Two Wells region.

Naturally there are other features of "religious" behavior in this Navaho society, but it has thus far proved impossible to secure comparably complete data. It is not that there are no purely individual religious activities nor that the religious behavior of these Navaho is never mainly spontaneous. But the facts are peculiarly difficult to secure, and, when secured, do not lend themselves to objective treatment, particularly since they can almost never be observed directly. What information I have on non-ceremonial religious activities may be summarized as follows.

[15] The wide individual range which went into these averages must not be forgotten. Some men do not average one day in two weeks.

[16] It is difficult to say whether the frequency of ceremonials is greater or less during the period from September 15th to March 15th. Statements of informants on the general question were conflicting, and attempts to secure a comparably complete record of actual ceremonials showed plainly that even singers could not be relied upon to give in June a trustworthy record of ceremonials they themselves had conducted during, say, the preceding November. On the other hand, numerous cross-checks indicated that the lists given for the three months immediately before the arrival of the observer in the field could be regarded as substantially complete and accurate. It should be remarked that, within the sample period, August shows a slightly greater concentration of ceremonials than can be explained on the principle of random sampling, and August is also, with little doubt, both the freest of the six months from pressing economic activities and also one of the most prosperous months of the year for the Navaho.

[17] This includes of course time spent (1) as singer, curer, diagnostician, or assistant, and travel directly arising out of these activities, including, e.g., trips to the mountains to gather plants; (2) as patient; (3) attendance at ceremonials, including travel to and from secular activities.

I have no evidence of overt manifestations of sentiments relating to the supernatural which can be described as strictly spontaneous.[18] But certain practices have a considerable element of spontaneity. Most notable among these are perhaps certain forms of "witchcraft." But while members of this society gave various generalized ideological data on this subject I got almost nothing on behaviors. A number of investigators have commented upon the unwillingness of the Navaho to attribute this type of anti-social behavior to any individual of their own acquaintance. They appear to dread the vengeance of the witch as a consequence of any such revelations. Almost without exception they are keenly conscious of several forms of witchcraft, but their anecdotes of specific instances deal without exception, in my experience, with individuals who lived at least a hundred miles away, and who are most often declared now to be dead. Most informants from this group stoutly denied that anyone in their own community was even suspected of witchcraft. Three informants did refer to the possibility that one man, generally regarded as worthless, might be a witch. One informant brought forward as a bit of evidence in favor of this hypothesis the report that the man had been seen to pick up human fæces. This was the closest approach to any account of actual behaviors.

And so we shall proceed to socially approved non-ceremonial "religious" activities. A large number of informants reported that they had secret "good luck" songs designed to protect or increase flocks and herds and other forms of property; indeed it would seem the normal pattern that an adult man should know one or more such songs. No rigidly set context appears to give rise to an individual's singing these songs. He may sing one when some minor disaster has actually occurred, when he feels a premonition of one, or simply when he is out alone attending to sheep or cattle or riding alone on a journey. But the behavior cannot be regarded as completely spontaneous since the song he sings is never improvised to suit mood or occasion.[19] The other known forms of individual religious activity are strictly formalized. A brief prayer is commonly recited as a rock is added to the wayside altars.[20] Nine of the older men of the community chant a certain prayer and sing a song when they build a sweat house and when they take a sweat bath. The same song is always sung and sung only under these circumstances. Likewise, several older men sing a song and say a prayer when they plant their

[18] Except possibly for brief verbal references to the "actions" of natural phenomena.

[19] Songs are, of course, improvised on various secular occasions and also in connection with the girl's dance of Enemy Way.

[20] Cf. Father Berard Haile, *Origin Legend of the Navaho Enemy Way* (Yale University Publications in Anthropology, No. 17, 1938), p. 72.

maize in the spring. Most of the men of middle age and older possess bags of pollen and on certain occasions[21] they scatter pollen and utter brief prayers.

As to brief ceremonies:[22] two of the singers know a number of optional ceremonies which may be incorporated in their ceremonials at the request of the patient or his family. But since they are never performed independently[23] they do not seem relevant to our present purpose. Formerly (and to some extent at the present time) each extended family group sent a party annually to collect salt at the Salt Lake some thirty miles to the south of the southern extremity of this community's territory. The party camped half a mile from the lake, and before visiting the lake (and preferably at sunrise) a short prayer was repeated by the members of the party who were familiar with it. One informant was of the opinion that only six adult men of the community know the prayer now. On reaching the lake, bits of turquoise were placed in crevices in the encrusted salt at the edge and the prayer was repeated. This ceremony has apparently not been carried out for several years. On the Navaho Reservation new hogans are frequently consecrated by the singing of the hogan songs from Blessing Way. This has not been done by any Ramah-Atarque Navaho for at least five years. One informant remembered a ceremony to bring rain which had been carried on in the Navaho country proper in his father's time. But no member of this society has ever witnessed or participated in such a ceremony.

Various life crises are also marked by ceremonies. During the sample period three girl's adolescence ceremonies were carried out by Blessing Way singers. In the Navaho country proper, marriage is often solemnized by songs and prayers preceding and following an eating together of man and girl and members of their families. But for some years the marriage ceremony (when any was held at all) in this area has been limited to the eating of mush from a basket. At death there is a minimum of ceremony. But those who have disposed of a body must undergo a four-day ritual purification. Immediately on returning, they wash in cold water and keep silence for at least fifteen minutes. They then remain together for four days in some one place to which no one else comes. Finally, they purify themselves with sweat baths.

Returning now to the ceremonials some little additional light may be

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[21] For example, at least two old men say a prayer and sprinkle pollen in front of their hogans at sunrise each morning.

[22] I use "ceremony" as opposed to "ceremonial" in the way recently proposed by Father Berard (*op. cit.*).

[23] An exception is the brief ceremony against bad dreams centered around a Blessing Way song. I know of this ceremony being carried out twice in the six month period.

thrown on our problem in another way. In how many ceremonials have typical individuals been patients during their lifetimes? Rather typical examples are a man and a woman who were putatively past sixty, who were neither rich nor poor by the standards of this community, who had in other ways shown themselves reliable informants with good memories. The woman had spent 83 days as the patient in ceremonials (women are rather more frequently patients than men), the man 71. These roughly represent the mode of about 50 case histories, making allowance for age differences. But the variation is enormous, of course. An old woman, who was perpetually ailing, had spent nearly 500 days in her lifetime—keeping both her immediate and extended families almost continually bankrupt! One of the singers, on the other hand, had had ceremonials held over him for only thirty-seven days of his life. And one man—presumably about fifty—had had but a single three-night ceremonial during his lifetime. Extensive interviewing failed to reveal a single individual over thirty who had not been the patient in at least one ceremonial. On the other hand, fully half of those under thirty had never had a ceremonial over them.

Besides approaching this problem from the point of view of time spent in ceremonial activities, it may also be approached from the point of view of proportion of family income (measured mainly, of course, on the basis of goods consumed) expended upon ceremonials. Fees paid to local individuals vary with degree of relationship[24] and various other factors, but seem to average about the equivalent of two dollars for diagnosis by motion-in-the-hand, the equivalent of five dollars for a one-night ceremonial, twelve dollars for Blessing Way, roughly three dollars and a half per night for Life Way ceremonials, thirteen dollars for a three-night ceremonial, twenty to twenty-five dollars for a five-night ceremonial.[25] They are considerably higher for outside singers[26] and diagnosticians. The fee for the same cere-

[24] From a son to a father, for example, only a token payment may be given, but some sort of fee is essential to the efficacy of the treatment.

[25] These fees are in addition to the basket and calico which must be given to any singer who sings all night.

[26] I was unable to obtain trustworthy information (i.e. with at least one independent verification) in more than about one-third of the cases. Here are some of the actual data: diagnosis—two dollars cash, one goat, "one cheap ring," two old ewes; one-night ceremonial—an old Pendleton blanket and a bracelet, five dollars cash, one big sheep, an unwounded buckskin, four strings of coral beads, a kid (from an older brother), a ewe with her lamb, a young, broken horse (to an outside singer); Blessing Way—big buckskin and string of beads, three sheep, six dollars cash and two lambs, six sheep and two dollars, saddle horse, eleven dollars cash; four-night Life Way—one old ram; six-night Life Way—ten dollars and two wether lambs; eleven-night Life Way—six dollars and four ewes (from a sister's daughter); five-night ceremonial—sixteen dollars cash, ten sheep, good saddle horse, shawl and five dollars cash,

monial repeated by the same singer is very small. Indeed the patient is considered to have a right to have the ceremonial repeated three times for a conventionalized gift of calico and a basket. But in every case the fee represents but a part of the total cost, for the singer, his assistants, and all visitors must be fed throughout the duration of the ceremony. My figures here are necessarily but approximations,[27] of course, but they suggest—for the six month period—a crude average of close to twenty percent of the annual income. Here also the figures would doubtless have been higher not many years ago because of the fees and "royalties" which learners pay to their teachers. The proportion varies from as high as about sixty percent of annual income for one family to zero for another—not counting time spent in attendance at ceremonials which might otherwise have been devoted to economically productive activities. There is a rough correlation with economic status, except in cases of really serious illness when a poor family will dispose of everything and borrow from relatives and neighbors to make possible a whole succession of different ceremonials for the sick individual. Last summer one of the poorest families in this group hired singers for almost forty days out of sixty. At all events one gets a decided impression that these families devote a higher proportion of their "budgets" to ceremonials than does the average family in our society to church, physician, and theatrical entertainment combined.

In short, the evidence which has been presented seems to create a strong presumption in favor of the hypothesis that ceremonials are a focal point of the actions of this Navaho society. It goes without saying that ceremonial behaviors are intimately bound up with other types, and that, while ceremonial action clearly seems to be a favored mode of conduct, it

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a yearling calf and five dollars cash, ten dollars and two sheep, a buckskin and seven dollars, five sheep, two sheep and a string of turquoise beads, a buckskin (from a sister's son), fifty dollars cash (to an outside singer), a heifer and a colt and twelve young ewes (to an outside singer). It is interesting to note that those who do Blessing Way appear to be best paid in proportion to the time involved and those who do Life Way least well paid. But the data are insufficient for generalization even as respects this group. It is perhaps worth observing explicitly that singers appear to be paid more per day than almost any Navaho can earn within our economic system. Several informants stated that fees were normally higher in winter—"because horses are poor."

[27] A careful study of the books of all trading stores in the region by Mr John Adair makes possible estimates of family income and expenditure which are considerably better than guesses. Actually, from a close study of the accounts one can usually tell when a family held a major ceremonial. I should like to express my gratitude to Mr Adair for his material and also to the traders in the region (notably Messrs Shephard, Hall, Williamson, Bond, Lambson, Ashcroft) for magnificent cooperation.

does not by any means always transcend other considerations.[28] It is true, of course, as Hill has shown,[29] that all ceremonies and ceremonials are, among other things, means of food production by controlling supernatural forces, and so, all "ceremonial" factors are, to some extent, also "economic" factors. Indeed, as Hill says, "So thorough have been the adjustments of the ritual and material sides of the culture that to the Navaho mind they appear indistinguishable." Nevertheless, to the observer, the fact that so much of the attack on problems which we may abstract as "economic" is in this Navaho culture ceremonialized remains interesting and important.

HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS

[28] To give concrete illustrations: (1) Unless there is some peculiar urgency, a family with many sheep will not arrange a ceremonial at the height of lambing or shearing seasons! (2) In the year following a big pinyon crop a marked increase in intensity of ceremonial activity has been observed.

[29] Willard W. Hill, *The Agricultural and Hunting Methods of the Navaho Indians* (Yale University Publications in Anthropology, No. 19, 1938). I am very much indebted to Dr Hill for allowing me to see this important work prior to publication. I did not read it until after this paper was already completed, and it was stimulating to me to discover that Dr Hill, working among other Navaho and mainly upon different sorts of material, had reached independently the same sort of conclusion which I have arrived at here. He says in fact: "From the point of view of Navaho psychology, success in any field appears to have been based on these ritual factors."

HAWAIIAN ASTRONOMICAL CONCEPTS[1] *By* MAUD W. MAKEMSON

THE Polynesians of old conceived of the sky as a dome or inverted bowl resting upon the rim of the hemispherical earth. One legend compares the universe with a calabash, the cover of which formed the sky, while the bowl was earth, land, and sea, the juice became rain, and the seeds were metamorphosed into sun, moon, and stars. Several writers divide into three zones the space between the earth—paa ilalo, the "solid below"—and the heavens—paa iluna, the "solid above." Kepelino's[2] work contains several allusions to the triple heavens, lani kaukolu, as in the chant:

> In the space above, heaven is held fast;
> In the space below, held fast is muddy earth.
> From the space of heaven to the space of earth, there is still space.

The Hawaiian text from Kepelino reads:

> O ka lewa iluna ua paaia he lani.
> O ka lewa ilalo, ua paaia Honua-kele.
> Mai ka lewa lani a i ka Honua-lewa, he lewa e!

The triple heaven thus consisted of three hemispherical zones, the highest being purely celestial, the lowest terrestrial, and between them was ka lewa "the air or space" (fig. 1).

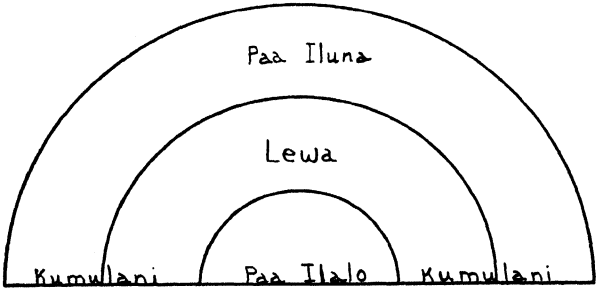


FIG. 1. The triple heaven of the Hawaiians.

[1] In the summer of 1935, I collected data on ancient Polynesian astronomy at the Bernice P. Bishop Museum, in Honolulu. The present paper is the first of a series on this subject. I am greatly indebted to Vassar College for a grant which made the research into original sources possible, to Dr H. E. Gregory, formerly Director of the Museum, who placed the facilities of that institution at my service, to Professor Martha W. Beckwith of Vassar for invaluable advice, to E. H. Bryan, Jr, Curator, K. P. Emory, Ernest Beaglehole, J. F. G. Stokes, and other members of the staff of the Museum, past and present, without whose aid the work would not have been possible.

[2] Martha Warren Beckwith (ed.), *Kepelino's Traditions of Hawaii* (Bulletin, Bernice P. Bishop Museum, No. 95, 1932), p. 28.

Malo[3] states explicitly:

Ka lani paa is that region in the heavens which seems so remote when one looks up into the sky. The ancients imagined that in it was situated the track along which the sun traveled until it set beneath the ocean, then turning back in its course below till it climbed up again in the east. The orbits of the moon and stars were also thought to be in the same region with that of the sun, but the earth was supposed to be solid and motionless.

In Malo's work each of the three principal zones is subdivided into three strata. We should consider all except the ninth as terrestrial. The lowest, luna ae, is the region immediately above a man's head when he stands upright; the sixth, luna a ke ao, is the "high place of the clouds." The last three zones are (1) ke ao, ulu, "the black clouds;" (2) ka lani uli, "the blue sky;" and (3) the highest or ka lani paa, "the fixed or solid heavens."

Neither Kepelino nor Malo mentions a rotating heaven. In their cosmogony the celestial bodies are constrained to move on tracks across the sky. Kamakau,[4] however, writes that at the extreme boundary or kukulu-o-ka-lani ("border of heaven") are found the fixed heaven, the rolling heaven, and the triple heaven. It is probable that Kamakau's version was somewhat influenced by his study of contemporary science.

In the Hawaiian cosmology, it was possible to journey to heaven by ascent of a tall tree or the rainbow. One could come within reach of the sun or moon by sailing out to the edge of the horizon and lying in wait at the point where they rose, to catch them unawares. Thus the sun was snared by Maui with cords or a rope of hair. In another legend the sun was caught and shut up in a cavern for two months, bringing terrible suffering on earth until his release. An interesting and very old legend found in various parts of Polynesia records that in the early days, the sky was so close to the earth that human beings were forced to crawl about like animals, being unable to stand erect. The method by which the sky was finally pushed up out of the way varies in different islands.

The general cosmological concept of a hemispherical heaven resting upon the rim of a hemispherical earth is reflected in the ancient names for the horizon and the cardinal points. The word kukulu, appearing in many phrases, originally signified a vertical erection of some kind. In the names of the cardinal points, kukulu evidently refers to the four great pillars, supporting the dome of heaven at these points. Kukulu also appears to have

[3] David Malo, *Hawaiian Antiquities* (Special Publications, Bernice P. Bishop Museum, No. 2, 1903), pp. 28–30.

[4] S. M. Kamakau, *Ke Au Okoa, Nov. 4, 1869* (Ms. translation in Bernice P. Bishop Museum).

the derived meaning of circle, as in the phrase for horizon, probably coming from the idea of a circular wall surrounding the earth and holding in the ocean.

Specific Hawaiian terms for the astronomical circles and reference points are the following:

1. *The horizon.* We speak of the celestial horizon and of the terrestrial horizon. So, too, the Polynesians, with their usual love of antithesis have two terms for the horizon:

(a) Ke kukulu o ka lani, "the circle of the heavens." Malo further specifies it to be "the walls of heaven; the border of the sky where it meets the ocean," while Kamakau adds, "the place above the dark clouds encircling the earth."

(b) Ke kukulu o ka honua, "the circle of the earth." Malo, "the compass of the earth;" Kamakau, "the edge of the ocean close to the sky where it circles the borders of the earth."

2. *The zenith.* Malo expresses direction upward in the vertical direction as mai kela paa a keia paa, "from this solid to that solid."

Ka ho'okui, "the juncture" (between the terrestrial and celestial zones) undoubtedly refers to the zenith according to both Malo and Kamakau.

Ka halawai, "the place of meeting," a synonymous term is believed by Emerson, Malo's commentator,[3] to signify the line where heaven and earth meet, i.e., the horizon. Kamakau,[4] however, also couples ho'o ka halawai with ka ho'okui and interprets them as names of the point upward in a vertical direction, equidistant from heaven and earth.

A line in an ancient chant, "Kau ka la i ka lolo," has been translated "Hangs the sun in the zenith," and Andrews' dictionary[5] gives lolopua, "rise up high," as the modern word for zenith. However, since the sun is near the zenith only in midsummer and may be as much as 40° south of the zenith at noon in the latitude of the Hawaiian Islands, i ka lolo is more correctly "at its highest point," and is then synonymous with the Maori phrase, poutu maro.[6]

Curiously enough, Tregear[6] gives Puanga, the name of the star Rigel in the constellation of Orion, as a synonym for zenith. Since New Zealand is 35° or more south of the earth's equator, and Rigel is only 8° south of the

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[5] Lorrin Andrews, *A Dictionary of the Hawaiian Language* (Special Publication, Bernice P. Bishop Museum, No. 8, 1922): lolopua, p. 381; awakea, p. 75.

[6] Edward Tregear, *Maori-Polynesian Comparative Dictionary* (Wellington, N. Z., 1891), pp. 361, 365.

celestial equator, such usage must go back to a time when the Maori inhabited a land in 8° south latitude. Precession of the equinoxes would have placed Rigel in the zenith of North Island 10,000 years ago.

3. *The meridian.* The celestial meridian is defined as the circle passing through the poles, the zenith, and the north and south points of the horizon.

In his *Instructions in Ancient Astronomy as Taught by Kaneakahoowaha,* Kamakau[7] refers to a line drawn on the sky from the North Star through the center (zenith ?) to the southernmost star of Newe. If Newe is the Southern Cross, as is usually accepted, such a line would correspond roughly to the twelfth hour circle, that is, a circle through the poles and the autumnal equinox. In the early evening of May and June it would coincide with the meridian. That Kamakau had the meridian or a fixed circle through the zenith in mind is evident from his subsequent explanation that the line divides the sky into halves. The eastern half of the sky he terms ke alaula a Kane, "the dawning or bright road of Kane," i.e., the half of the sky in which the stars are still rising. The western half is ke alanui maawe ula a Kanaloa, "the much-traveled highway of Kanaloa." Alanui is a highway; maawe, traveled; ula, red; hence, a path traveled so much that the red earth appears. The first phrase may be interpreted as signifying that the stars are entering the realm of the god of the upper regions; the second that they are descending to the region ruled by the god of ocean depths.

The Gilbert Island aborigines, who either had retained more of the earlier astronomical knowledge or had advanced beyond their fellow tribes in science, called the meridian te taubuki, "the ridge-pole of the sky-roof."[8]

4. *The cardinal points.* The four directions on the horizon were associated with the four kukulu, or supporting pillars of heaven, with the diurnal motion of the sun, and with the motion of the trade-winds.

North: kukulu akau, "right-hand pillar." The observer was thus thought to be facing west, possibly because the southwestern or leeward side of the Hawaiian Islands was considered the "front," or because tradition referred to a far western land as the original home of the Polynesian race.

Other names for north are luna or iluna, "up," and ko'olau, one of the names of the North Star. "After this star," Kepelino[9] writes, "Hawaii-nui [reputed discoverer of the islands] called the direction on the earth *ko'olau*

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[7] S. M. Kamakau, *Instructions in Ancient Astronomy as Taught by Kaneakahoowaha, One of the Counselors of Kamehameha I* (Thrum's Hawaiian Annual, 1891 [tr. by W. D. Alexander from the Nupepa Kuokoa, August 5, 1865]), pp. 142–43.

[8] Arthur Grimble, *Gilbertese Astronomy and Astronomical Observations* (Journal, Polynesian Society, Vol. 40, pp. 197–224, 1931).

[9] Beckwith, *Kepelino's Traditions,* p. 78.

or north, not *akau* or right, which is an introduced word." The Tongan word for north is identical, i.e., tokolau, according to Collocott.[10]

Kamakau gives the following synonyms for north: uliuli, ulunui, melemele and hakalauai. Since Malo lists Uliuli, Melemele, and Hanakalauai as geographical names found in ancient prayers, they are probably names of islands situated north of some land occupied by the ancestors of the Hawaiians in ancient times, thus giving their names to the direction. Uliuli, "dark blue of ocean depths," is also the name of a star which Kamohoula places in the southern sky. Hakalauai and Hanakalauai are also star-names, probably identical. Melemele, "beautiful," is a star-name throughout Polynesia. The connection between islands and stars follows as a matter of course, since stars guided navigators to the various islands and to each island corresponded the star-name which was its sailing direction.

South: kukulu hema, "left-hand pillar;" lalo or ilalo, "down;" kona, "the direction of the cross of stars, *na hoku kea*," according to Kepelino. Compare the Tongan word for south "tonga," which is the same word as kona.

Lipo, "darkness," and lewa, "space," were other synonyms for south. Kamakau names a point just above the southern horizon kuanalipo "standing in the dark." The words lipo and kuanalipo have as their opposites lio, "bright," and kuanalio, "standing in the light," which are applied to stars remaining continually above the northern horizon, perpetually encircling the pole.

East: kukulu hikina (from hiki, "rise," and the present participle ending). Other synonyms are ka la hiki, "sunrise;" ka la hiki ola, "life-giving day," and similar phrases on the same theme.

The Tuamotuan hiti and Maori whiti, "east," are identical with hiki.

West: kukulu komohana, "sunset pillar." Other words are ka la kau, "the sun lodged;" kaulana or napoo, "sunset," and so on.

Malo also gives local terms for the cardinal points referring to geographical features such as the uplands or the ocean and depending on the observer's location.

5. *The equator and ecliptic on the sky.* A people as advanced in the science of astronomy as the Hawaiians would be expected to have phrases describing the annual motion of the sun on the ecliptic. Kamakau, however, seems to be the only modern historian of the islands who offers any information on the subject. He gives two synonymous terms which have been interpreted as the celestial equator: ke alanui o ke ku'uku'u, "the highway

[10] E. V. Collocott, *Tongan Astronomy and Calendar* (Occasional Papers, Bernice P. Bishop Museum, Vol. 8, No. 4, 1922), p. 160.

of the spider," and ke alanui i ka piko a Wakea, "the way to the navel of Wakea" (the sky-parent).

The same phrase in Maori, te pito a Rangi, "the navel of the sky-parent," is said by Smith[11] to signify the ecliptic, and aramatua, "parent path," is given as a synonym. One of the Tuamotuan appellations for a planet, given to Emory by Fariua, also contains the word for spider, and is the only other such reference that I have found in Polynesian literature. It is Takurua a te tuku haga pō. I am inclined to the opinion that the path of the spider refers to the spiraling motion of the sun northward and southward during the year, i.e., to the ecliptic, and that the way to the navel of the sky-parent is the celestial equator as Kamakau states.

6. *Tropics.* A line parallel to the celestial equator and marking the northernmost limit of the sun in declination—corresponding to the Tropic of Cancer on the earth—Kamakau names ke alanui polohiwa a Kane, "the black-shining road of Kane." A similar parallel in declination 23½° south and corresponding to the Tropic of Capricorn, he terms ke alanui polohiwa a Kanaloa, "the black-shining road of Kanaloa."

Within this zone, he states, are found the "fixed stars ruling the various lands," na hoku ai-aina or na hoku (stars) o ke aina (lands). Outside the zone are the foreign stars, na hoku o ka lewa, "the stars of space," and the highways of the navigation stars, ke alanui o na hoku ho'okele. Reference to a distinct class of "stars ruling lands" is found in several Hawaiian authors. The skilled Polynesian navigators knew which stars passed through the zenith of a certain island. Hence if they sailed north or south, as the case may be, with the tradewinds, until such stars passed through their zenith during the night, they knew they were in the right latitude and would then lay their course east or west to their destination. This method of navigation was probably more useful on protracted voyages than the other method of lining up the canoe between a bow and stern star, thus laying a great circle course directly to the island. Which method would have the advantage depends on the direction of the wind.

Although the zone on the sky thus defined by Kamakau and corresponding to the Torrid Zone on the earth is not the Zodiac of the Chaldeans, it does contain within it the paths of the sun and planets, and the moon can only exceed it by a small amount. To critics who aver that Kamakau was influenced by a study of modern astronomy, it should be remarked that the Gilbertese Polynesians had a similar division of the sky into zones and the practice was probably much more widespread among the Polynesian astron-

[11] S. Percy Smith, *Lore of the Whare Wananga* (Memoirs, Polynesian Society, Vol. 3, 1913), pp. 167–68.

omer-priests than would be thought from a study of the few fragments of science that have come down to us.

In spite of the fact that scarcely twenty of the 30,000 natives of the Gilbert Islands had any knowledge of astronomy and these were most unwilling to impart it, navigation secrets being still prized the most jealously, Grimble[8] succeeded in obtaining a very illuminating account of the ancient method of keeping the calendar, based on the annual motion of sun and stars.

In Gilbertese astronomy, the sky or "roof of voyaging," uma ni borau, was bisected by the ridge-pole (meridian), te taubuki, and supported by imaginary rafters, oka, three on the east and three on the west, vertical to

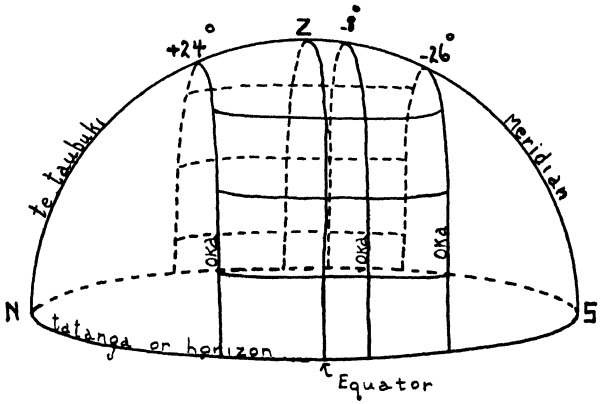


FIG. 2. The Gilbert Islanders' concept of the heavens.

the horizon. The northern pair met where the Pleiades cross the meridian, 24° north of the celestial equator; the southern pair had their apex where Antares transits, or 26° south of the equator.

From the horizon, tatanga, to the meridian were three crossbeams or purlins parallel to the horizon, forming four zones which were used in estimating the altitude of heavenly bodies (fig. 2).

The two outer "rafters" thus passed very near the solstices and were useful in keeping track of the progress of the sun in its annual motion in declination along the ecliptic. The central rafters were said to meet not in the zenith as one would expect, but at the point where Rigel crosses the meridian, i.e., 8° south of the celestial equator. Thus the central rafter did not coincide with the celestial equator, which is curious when it is remembered that the equator passes close to the zenith in the latitude of these islands. There is an obvious connection here with the usage of the star name for Rigel as synonym for zenith, found in the Maori, and noted above.

The Gilbertese astronomers noted the point of rising of the sun every ten days and further checked its annual motion by observing the eastern constellations just before dawn. Hence they must have formed a concept of the constellations of the zodiac through which the sun passes on its annual journey. When the Pleiades were on the first purlin in the east (altitude about 22½°) an hour before sunrise, they knew the sun was at its northern limit, or the summer solstice, which they called toki. The point where the sun rose due east in the fall was called kaitara, "face to face," and was the autumnal equinox. The winter solstice, where the sun starts north again in December, they called bike ni kanenei-ang, "islet of moving north." The word bike, "island or sandy beach," probably came to be applied to a sun-station as the result of the Polynesian habit of fixing a direction or bearing with reference to neighboring islands. Arrival of the sun back at the vernal equinox in March was verified by the position of Antares, Rimwimata, which is 180° away from the Pleiades, Nei Auti.

Grimble quotes Ke, a celebrated astronomer of Butaritari, as follows: "When you see *Rimwimata* in the middle, between the ridgepole and the first purlin to westward, you know that the sun is on his *bike ni kaitara* (islet of making face-to-face)." That is, Antares is about 10° west of the meridian at 5 A.M., when the sun is at the vernal equinox.

The Hawaiians, too, observed the annual motion of the sun for the purpose of the calendar, and in each locality the astronomers had doubtless worked out the azimuths of sunrise and sunset throughout the year, establishing them by means of fixed landmarks. The following fragment may be quoted from Kamakau as typical:

> When the sun crossed the equator, it stood directly over the islet of Kaula [which evidently obtained its name from the astronomical event: la, "sun," kau, "set"], and set at Kawaihoa. And because it set over Kawaihoa, the *Makalii* season was called *Kau*. And also for the resting-place, *Kaulana*, of Kane it was called *Kau*. When it set at Kaula and turned south, the *Kau* (season) was called *Hooilo*. And in the same way the people of Oahu reckoned from the setting of the sun at Puu-o-kapolei, until it set in the hollow of Mahinaona, it was called *Kau*. And from Puu-o-kapolei, the sun moved south.

While this paragraph corroborates the statement that the Hawaiians fixed the annual motion of the sun by landmarks, it also illustrates the difficulty to be overcome by the modern commentator who would interpret statements recorded and translated by people who did not understand them. If, for example, the sun "stood directly over," that is, passed through the zenith of Kaula, it was not at the equator, but at the summer solstice. This is corroborated by the statement that it then turned south. The second

sentence should then read "The *Kau* (season) was called *Makalii*" for that reason, i.e., because the sun would then have attained the same distance north of the equator as the Pleiades, which were called Makalii in Hawaii. This is consistent with the Gilbertese practice of connecting the summer solstice with the Pleiades.

There is a tradition in Puna district, Hawaii, as told to Professor Martha W. Beckwith by Kalawe, a justice of Kapoho on May 23, 1914, that a great temple once stood on Haehae, a hill on the east coast of the island. A large, flat altar rock had a line or groove running diagonally across it. When "the star" (probably the sun in its annual motion north or south) rose from the sea horizon at a point directly in line with this groove, a man was sacrificed. The heiau, which stood on the extreme eastern point of the island group, was so situated with respect to two high crags, that the astronomer-priest could sight from the observation platform of the temple by the northern rock to the point where the sun rose at the summer solstice, and by the southern rock to the point where the sun rose in December, when it was at the winter solstice. Kalawe added that between full and new moon one could still hear the beating of the drum.

According to Smith,[11] the entire structure of Maori philosophy was built on astronomy, and the prevalence of the number twelve is the result of the division of the zodiac, te ara matua, "the parent path," into twelve signs of constellations. Stowell gives the names of twelve stars which rule the months in turn. Of the seven identified, four lie at some distance from the ecliptic (Rigel, for example, more than 30°) but all are within 32° of the equator. If Stowell and Best's identification of the stars is correct (and there is reason to believe that it is) then the Maori "zodiac," like those of the Hawaiians and Gilbertese, must be a belt with limits parallel to the equator passing through or near the solstices, and enclosing the ecliptic, the sun, moon, and planets.

We come finally to the Hawaiian system of circles or zones on the sky, which must have constituted an important part of the astronomical teachings since they are described in detail by both Malo and Kamakau (fig. 3).

1. Kahiki moe, "the circle or zone of the earth's surface, whether sea or land, which the eye traverses in looking to the horizon" (Malo); "place from the land and from the ocean as far as the eye can see; also the lands of that circle" (Kamakau).

2. Kahiki ku (ku, "erect," as opposed to moe, "prone"), "the circle of the sky which bends upward from the horizon" (Malo); "edge of dark clouds which rises up and lies away at its back, to the base of the sky; also the lands of that circle" (Kamakau). Kamakau also gives kukulu o kahiki as

"all the lands far away from the Hawaiian group, at the back of the circle of kahiki moe and kahiki ku; also called kukulu o ka lani, "circle of the heavens," paia ku a lani, "standing-wall of heaven," and kumulani, "base of heaven." Fornander[12] interprets kahiki ku and kahiki moe as continents or large islands lying to the east and west respectively of a former habitat of the Polynesians. Kahiki means foreign land, literally "the border."

3. Kahiki ke papa nu'u, "zone above *kahiki ku*" (Malo). Apapa nu'u, "in the places where there are innumerable islands" (Kamakau).

4. Kahiki ke papa lani, "zone above *kahiki ke papa nu'u*" (Malo). Apapa lani: "same explanation as for *apapa nu'u*" (Kamakau).

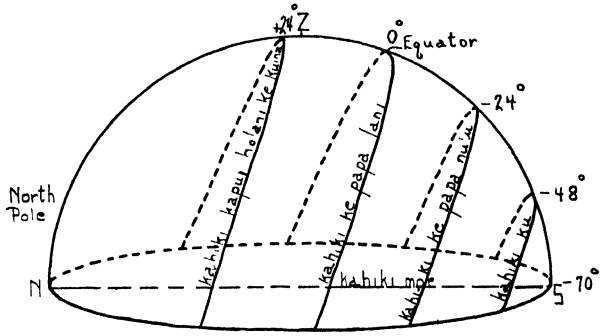


FIG. 3. The Hawaiian system of circles or zones on the sky.

5. Kahiki kapui holani ke kuina, "zone above *kahiki ke papa lani* and directly overhead" (Malo). There is no equivalent in Kamakau. Kuina, "a uniting," is also found in a Tongan star or constellation name, Tuinga-ika, translated by Collocott,[10] "a string of fish," and thought to be Orion's Belt, which is situated on the celestial equator. Malo gives Holani as a geographical name found in ancient chants. Emerson[3] notes that it is suggested (apparently by S. Percy Smith) that the Hawaiian Holani is the Herangi of the Maori, the name of a place formerly known to the Polynesians, believed to be in Malaysia. Kepelino,[13] it should be noted, calls apapa-nu'u, apapa-lani, kahiki-ku, and kahiki-moe, "the high places of the four corners of the earth."

Since the zones described by Malo and Kamakau are obviously on the celestial sphere, an attempt should be made to interpret them in modern

[12] *Fornander Collection of Hawaiian Antiquities and Folk-lore: Third Series* (Memoirs, Bernice P. Bishop Museum, Vol. 6, No. 2, 1919), p. 241.

[13] Beckwith, *Kepelino's Traditions*, p. 54.

astronomical terms. Since they "bend upward from the horizon," their identification as parallels of declination does not seem far-fetched, since they would then coincide with or lie parallel to the diurnal paths traced by the heavenly bodies from east to west, as the sky appears to revolve on an axis through the poles. The diurnal paths are directly observable. They are what Kamakau calls na alanui o na hoku ho'okele, "the great highways of the navigation stars." It is well known that the Polynesians were acquainted with the bearings of stars at rising and setting and with those stars which followed along the same path, i.e., lay on the same parallel of declination, which were said to rise from the same rua or pit. If they therefore wished to divide the night sky into zones, the most natural divisions would be by circles parallel to the celestial equator.

Furthermore, for the purposes of navigation, the Hawaiians were chiefly interested in that hemisphere which extended south from the zenith, since the inhabited lands with which they were acquainted lay to the southward.

If these assumptions may be accepted, Malo's circles, being four in number from horizon to zenith, divided the southern half of the sky in four zones each 22–24° wide, if equally spaced. Since it is obviously impossible to fix these circles with great exactness, we note that within a few degrees, as seen from any part of the Hawaiian Islands, kahiki ke papa nu'u corresponds to the parallel through the winter solstice which we have met before in Grimble's account of Gilbertese astronomy and in Kamakau's *Instructions in Ancient Astronomy*. Likewise, kahiki ke papa lani coincides with the celestial equator and kahiki kapui holani ke kuina with a parallel through the summer solstice. The similarity between these zones and those of the Gilbertese is very striking.

Kahiki ku, accordingly, incloses a segment of sky between the extreme southern horizon and a parallel of declination −48° approximately. Conspicuous stars within it are Alpha and Beta Centauri, the Southern Cross, Achernar, and Canopus, the last named lying close to the circle.

Kahiki ke papa nu'u, corresponding with the parallel through the winter solstice, forms the upper boundary of the second zone, which lies between declinations −48° and −24° approximately, and contains such constellations as Grus, Scorpio, Sagittarius, Phoenix, Corona Australis, and part of Centaurus. Antares lies on the circle and Fomalhaut not far below it.

The third zone has kahiki ke papa lani, corresponding roughly to the celestial equator, as its upper boundary, and contains Sirius, Mira, Rigel and the lower half of Orion, Alphard, Spica, and Deneb Kaitos as conspicuous objects.

The fourth zone extends from the celestial equator to the circle passing

through the summer solstice which is close to the zenith in the mean latitude of Hawaii.[14] Arcturus and the Pleiades lie practically on the circle of kahiki kapui holani kuina, and other conspicuous stars are Betelgeuse and Bellatrix in Orion, Aldebaran, Altair, Denebola, Regulus, and Procyon.

6. *Astronomical observations.* To the ancient Polynesian navigator, the sky, particularly the night sky, was compass, chart, and chronometer. Point out a star to him and he would tell you the islands to which that star would lead you, if you steered your canoe toward the point where it rose or set at the horizon. He could also point out the other stars which followed it along the same diurnal path across the sky, and which could be used as bow star after it had set. He could likewise tell you what stars stood in the zenith over a given island, so that if you sailed directly south until those stars passed nightly across your zenith, you would know that you had reached the same latitude as that of your destination. Kepelino[15] says, "The stars which act as guides to land are those which hang in turn over each land, as *Hoku-lea* [Arcturus ?] over the Hawaiian Islands and *Hoku-kea* [Southern Cross] over Tahiti."

The motions of the heavenly bodies across the sky informed the ancient Polynesians of the time of day or night. Na Hiku, "the seven" (Big Dipper), served as convenient hour-hand on the great dial of the sky, to mark off the watches of the night. We are also told that the change in the orientation of the Milky Way through the night was used for time determination. The phrases, huli ke kau, "the Milky Way has turned," and ua huli ka i'a, "the fish [Milky Way] has turned," denoted that the hour of midnight had arrived.

Awakea, "noon," was named for the god who opened the gates of the sun, according to Andrews' dictionary. In Maori, the same word is found in the phrase, kura hau awatea, signifying a solar halo (kura, "red") according to Best.[16] The Mangaians called the sun the "right eye of Awatea," the moon was the "left eye."

The kahuna, whose duty it was to keep account of the progress of the months and seasons by means of astronomical observations, held one of the most important offices in the Polynesian economy. If life was to be preserved, it was essential to recognize in advance the proper time for planting the various crops, when the winds might be depended upon for long voyages, when the common noddy flew farther from the island than usual and

[14] Compare kuina with ka ho'okui, "zenith," given above.

[15] Beckwith, *Kepelino's Traditions*, p. 82.

[16] Elsdon Best, *Maori Navigation and Star-lore* (Monograph, Dominion Museum, Nos. 1–7, Wellington, N. Z., 1922–24).

so might be relied upon to lead venturesome fishermen homeward, and the seasons of storm when it was safer to stay at home. There was Kaelo, the month when plover are plump; Kaulua, when mullet spawn; Nana, the month when the flying fish swarm; and Kaaona, the month favorable for opelu fishing. Finally there was Welehu, month of the great New Year festivities, for which extensive advance preparation must be made.

The importance of the stars to agriculture is emphasized in the following quotations from the Maori:[17]

> Rigel is looked upon as one of the "food-bringers," and also gives notice of approaching dawn. "The sun itself is pushing it up from behind," as an old native expressed it. The stars that are guides to the seasons are eternal, and are ever flashing in the heavens. Our forebears consulted these sign-giving stars in connection with the planting of the *kumara* crop. The principal stars so relied on were Rigel, the Pleiades, Orion's Belt or *Tautoru* ["the three"], and *Whakaāhu* [Castor, star of August; "spring growth"]. According to the manner of their rising, the crops would be planted early or late. I have spoken of these stars as a token of regard for the beings who directed our ancestors and elders, now lost to this world.

The first appearance of the Pleiades after sunset in the east marked the beginning of the New Year throughout the greater part of Polynesia. The Gilbertese word for year, ririki may shed light on the etymology of the word for Pleiades: Matariki in the south, Makalii in Hawaii. The Gilbertese name for this star cluster was Nei Auti; Auti being a woman's name and Nei her title (Grimble).[8]

A valuable hint as to how the bearings of sun and planets may have been fixed is supplied by Beattie,[18] who was told by a native informant that he recalled seeing an astronomer observe Wero-i-te-ninihi by putting sticks in the ground. This celestial body, whose name (wero, "tail") suggests a comet, was certainly a member of the solar system since it moved with respect to the stars, and its progress across the sky was considered important for astrological predictions: "If the observed 'star' moved south, the season would be bad; if north, the season would be dry and good."

The Gilbertese, Grimble records, made their astronomical observations from the top of a stone platform facing east. These platforms or buatarawa, prototypes of the great modern observatories, were three or four feet square at the base and rose to a height of from two to twelve feet, tapering gradually. Flat and smooth on top, they faced the unbroken sea-horizon to eastward, enabling the observer to note the points of rising of sun, planets,

[17] Best, *op. cit.*, No. 3, p. 39.

[18] H. Beattie, *Traditions and Legends Collected from the Natives of Murihiku (Southland, New Zealand): Part VIII* (Journal, Polynesian Society, Vol. 27, pp. 137–61, 1918), p. 145.

and stars. Posts or pylons may have been set up in the line of sight to the object as permanent markings for comparison in future observations. It is possible that the Gilbertese Polynesians were advanced beyond other tribes in the development of astronomical knowledge and scientific methods of observation, since they appear to be the only Polynesians, Grimble states, who had gone beyond the lunar calendar, differing in this respect even from their close neighbors of the Caroline Islands. He found that the nights of the moon which formed an essential part of the usual island calendars were much more vague in the Gilbertese than the stations of the sun. In fact he was unable to find any names for the nights of the moon beyond the twentieth.

The extreme accuracy with which the Polynesians were able to reckon time is illustrated by the fact that from remote times until the 14th century A.D., representatives of tribes forming the Friendly Alliance met periodically at Opoa, in the Society Islands, to do honor to the god Oro. Delegates came from distant islands, even far-away New Zealand. To quote from *Ancient Tahiti*:[19]

> These allied island kingdoms formed a convention for their priests, scholars and warriors to meet periodically at Opoa for great religious observances and international deliberation. The appointed time was exactly reckoned by numbering the year and naming the season, the lunar month and day of the month.
>
> The great double canoes carried deep-toned drums and conch-shell trumpets named "trumpet-sounding-over-the-sea-from-horizon-to-horizon," with which the canoes signaled each other, as they converged from all directions toward Opoa, on the given date.
>
> Upon approaching the sacred passage of Te-ava-moa, just at daybreak of the appointed day, the canoes united in procession, and out from the horizon, as if by magic, they came in double file, each representing a separate kingdom.

From all the above considerations, we can hardly escape the conclusion that far more of the jealously guarded knowledge of Polynesian astronomy has been lost than has been preserved for posterity.

VASSAR COLLEGE
POUGHKEEPSIE, NEW YORK

[19] Teuira Henry, *Ancient Tahiti* (Bulletin, Bernice P. Bishop Museum, No. 48, 1928), p. 123.

TRIBAL DISTRIBUTION IN EASTERN OREGON AND ADJACENT REGIONS

By VERNE F. RAY AND OTHERS

SEVERAL criticisms have been submitted for publication in this journal of the tribal units recognized and territories allocated them as recorded in *Linguistic Distributions and Political Groups of the Great Basin Shoshoneans* by Julian H. Steward[1] and in *Tribal Distribution in Oregon* by Joel V. Berreman.[2] In part the discussion turned on Berreman's inferences regarding Shoshonean occupation of eastern Oregon and his use of Teit's thesis that much of this area was once the home of those Sahaptin tribes (Klikitat, Yakima, etc.) which since the opening of the nineteenth century at least have been living in Washington.[3]

The discussions suffered from the unavailability of data known to the Editor to be in manuscript or field note form. Accordingly he invited the contributions printed below. For the sake of completeness it would have been well to have been able to include other manuscript material known to exist, but this has unfortunately not been submitted.

These statements are offered primarily as a record of facts as known to the contributors. They were asked to keep discussion at a minimum at this time. The Editor has not thought it desirable to resolve the conflict of testimony which appears here.

For convenience the data on tribes of eastern Oregon, Idaho, Wyoming, and the region immediately adjacent to the south is presented here, that on the Great Basin proper being reserved for the next issue of this journal.—EDITOR.

TRIBAL DISTRIBUTION IN NORTHEASTERN OREGON

In a previous paper[4] I offered tentative data on the mid-nineteenth century distribution of tribes of northeastern Oregon and adjacent regions. These data were based entirely upon native testimony, but some boundaries were as yet uncertain or unknown and only a few village locations had been obtained. Also, attention was not given to the possibility of variant distributions at an earlier date. Subsequent field study devoted specifically

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[1] American Anthropologist, Vol. 39, pp. 625–34, 1937.

[2] Memoirs, American Anthropological Association, No. 47, 1937.

[3] James A. Teit, *The Middle Columbia Salish* (University of Washington Publications in Anthropology, Vol. 2, No. 4, 1928).

[4] Verne F. Ray, *Native Villages and Groupings of the Columbia Basin* (Pacific Northwest Quarterly, Vol. 27, pp. 99–152, 1936).

to these questions permits filling some of the gaps and correcting some of the uncertainties.[5]

DISTRIBUTION AT THE MIDDLE OF THE NINETEENTH CENTURY

The Umatilla (yumati'la, from name of principal village, i'matɬam, "lots of rocks") occupied both banks of the Columbia River from the vicinity of Rock Creek (Washington) to a point a few miles below the mouth of the Walla Walla River. North of the Columbia the territory extended to the Horse Heaven Hills, southern boundary of the Yakima. In Oregon a much greater area was held, reaching south to the John Day River. Beyond lay the Paiute. The eastern and western boundaries were less definite due to greater intercourse with neighboring tribes. Rock Creek (Oregon) furnished an approximate western boundary but Umatilla families sometimes camped as far west as the John Day River;[6] reciprocally, the Wayampam or Tenino[7] enjoyed free movement eastward to Willow Creek. Even on the Columbia

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[5] This study was conducted for the Department of Anthropology of the University of Washington. A complete catalog of village locations was obtained for the Umatilla, Cayuse, Walula, and Palus, together with additions to a Tenino list acquired earlier. Thus tribal boundaries in this paper are based upon village locations as well as other distributional data. Where variance with my former mapping occurs, the present is the more definitive.

The informants responsible for statements in this paper are many, including representatives of every group mentioned (see Ray, *op. cit*, pp. 99–100). The most specific data comes from James Kashkash, Mrs Kashkash, Allen Padawa, Sam Armstrong, Charley Morrison, and Annie Morrison.

Kashkash was born ca. 1860 near Asotin, Wash.; father's father from Cayuse village near present Walla Walla; f's m from Nez Percé; m's f half Cayuse–half Nez Percé of Asotin; m's m Cayuse of Walla Walla. Kashkash went to Mackay Creek (Umatilla) in 1876; married Umatilla–Cayuse woman in 1879; later married present Nez Percé wife. Excellent memory; widely acquainted; well informed.

Mrs Kashkash: intelligent Nez Percé about 65; speaks no English; lived with Nez Percé until married.

Charley Morrison: Kittitas about 65; never went on reservation; born and lived continuously on old village site near Thorp, Wash.; f, m, f's f, f's m, and m's f born at same place; m's m from near Ellensburg; f's f's m from near Kittitas, Wash.; f's f's f from Puget Sound.

Annie Morrison: Wenatchi about 65; Charley's wife; lived with Wenatchi until middle age.

Allen Padawa; Sam Armstrong: see Ray, *loc. cit.*

[6] This accounts for the western boundary being placed at the John Day River in my former map.

[7] The western neighbors of the Umatilla have been known by both names. I have preferred and previously used Wayampam because this term has group reference (-pam, "people") whereas Tenino is a village name. However, Dr George Peter Murdock, who has worked with these people most extensively, favors Tenino. Therefore I propose to use the name Tenino exclusively hereafter.

River, where lines of demarcation were usually very definite, several villages were jointly occupied by Umatilla and Tenino.[8]

On the east the Umatilla-Cayuse division was equally vague except on the lower Umatilla River and near Ukiah. Both banks of the Umatilla River

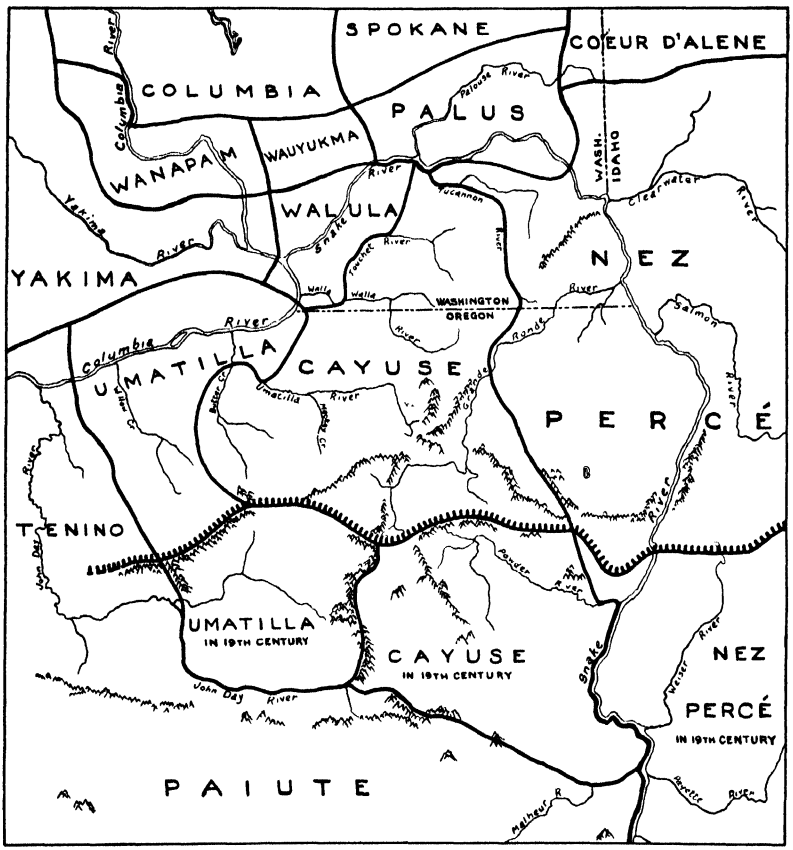


FIG. 1. Tribal distribution in northeastern Oregon and adjacent regions, by Ray. The serrated line represents the northern boundary of Shoshonean peoples in the 18th century and earlier.

below the mouth of Butter Creek, and the north side for several miles above, belonged to the Umatilla; but all of Butter Creek was held by the Cayuse. In the gathering grounds to the south the Umatilla occupied the

[8] In the present map this area is divided between the two.

Ukiah region, whereas the nearby Lehman hot springs belonged to the Cayuse. Village location largely determined these distinctions; though of mixed composition, the tribal affiliation of each of these villages was quite definite.

The irregular southern boundaries of the Umatilla and Cayuse were not arbitrary but conformed to topographical conditions. The Umatilla utilized the entire drainage area of the North Fork of the John Day River; the Cayuse used the slopes draining into the Umatilla and Powder Rivers.

Walula (walu'la [Umatilla name], wala'wala [Walula name], "little river;" name of largest village near mouth of Walla Walla River) territory adjoined that of the Umatilla at the bend of the Columbia, but these groups did not intermingle freely. In consequence, the line dividing them was quite definite. The uppermost Umatilla village included no Walula residents, although the principal Walula village was but a few miles distant. In addition to a short segment of the Columbia, the Walula occupied both sides of the Snake River from the mouth to Lyons Ferry.

The habitat of the Cayuse (wayi·'lɛtpu) did not touch the Columbia at any point and bordered on the Snake for only a very short distance at the northernmost extreme, near Starbuck. A portion of the territory consisted of bare, rolling hills, but much of the area lay within the Blue Mountains. A number of drainage systems were occupied, including those of the Walla Walla, the Umatilla, the Upper Grande Ronde, Powder, and Burnt Rivers, and the Willow Creek branch of the Malheur River. On the northeast the Tucannon River formed the boundary; on the northwest a segment of the Touchet River served likewise.

Cayuse villages were spread over the whole of the area but were not often located along the boundaries. Thus villages were seldom of mixed composition. Intercourse was extensive with the Nez Percé but the line of demarcation remained well defined. The southern boundary lay in relatively unoccupied country. Territory to the south was held by the Paiute and Bannock, with whom relations were at all times strained.

The western and northern boundaries of the Nez Percé, as shown on the map, are based upon non-conflicting data from Cayuse, Nez Percé and Coeur d'Alene informants. These new data agree substantially with those obtained by Spinden from the Nez Percé many years ago.[9] The Nez Percé-Palus boundary rests on Palus village locations and Nez Percé territorial claims. Though the Palus (palu·'s, name of village at mouth of Palouse

[9] Herbert J. Spinden, *The Nez Percé Indians* (Memoirs, American Anthropological Association, Vol. 2, pp. 165–274, 1908), pp. 171–75.

River) occupied the valley of the Palouse River from its mouth to Colfax, the principal villages were located on the Snake River.

DISTRIBUTION IN THE EIGHTEENTH CENTURY

Tribal territories as outlined above had persisted without material change, in Washington and northernmost Oregon, from time immemorial. But not so in the southern extensions of the area: Sahaptin peoples had acquired these regions only after the opening of the nineteenth century. Formerly Shoshonean peoples had occupied all of the upper drainage of the John Day River, all of the Powder River, and all of the Weiser and Payette River basins and the territory to the south. Throughout the span of traditional history the Umatilla had been bounded on the south by the range of hills spreading westward from Ukiah, the Cayuse by the Grande Ronde-Powder River divide, and the Nez Percé by the Wallowa and Seven Devils Mountains. During this period the eastern, western, and northern boundaries were essentially the same as in more recent times. A separate map for each period is therefore unnecessary; the earlier distribution may be indicated by a modified southern boundary.

DISTRIBUTION IN 1805–1806

The journals and maps of Lewis and Clark furnish a basis for determining tribal locations for the years 1805–1806. The explorers not only recorded native distributions along the route of travel, but obtained information from native informants concerning more distant peoples. These data were used in constructing maps and tables covering a large portion of the area under discussion.[10] These maps are surprisingly accurate, considering the manner in which they were drafted, but many of the names have remained quite meaningless since the English equivalents were undetermined. Transcriptions and translations obtained in the field in connection with the present study permit the interpretation of certain of these names and the checking of earlier attempts at identification based largely on geographical positions.[11] Tribal locations can thus be determined with fair certainty.

The data may be summarized in tabular form:[12]

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[10] R. G. Thwaites (ed.), *Original Journals of the Lewis and Clark Expedition, 1804–1806* (7 vols., atlas, New York, 1904).

[11] E.g., James Mooney, *The Ghost-Dance Religion, etc.* (Fourteenth Annual Report, Bureau of American Ethnology, Pt. 2, 1896), pp. 731–45.

[12] The entries here are not limited to Oregon since tribal locations in Washington are of significance also in the discussion which follows.

Lewis and Clark name	*Phonetic transcription*	*English equivalent*	*Location in 1805–1806*
Wah-how-pum[13]	χwa'łχwaipam[14]	Klikitat	North of the Columbia from Klikitat R. to Alderdale
You-ma-tol-am[15]	i'matɬam	Umatilla	Umatilla River
Wal-low-wal-low[15]	wala'wala	Walla Walla	Both sides Columbia from mouth of Snake to near mouth of Umatilla
Y-e-let-po[16]	wayi·'łetpu	Cayuse	Asotin [We-are-cum[17]] R. (between Snake and Grande Ronde)
Pish-quit-pah[18]	pɪc(ukalai)kitpa	Cayuse[19]	North bank of Columbia from Alderdale to mouth of Umatilla
Pal-lace[20]	palu'c, palu's	Palus	Palouse R. (Drewyers R.)
Wa-ner-po[21]	wa'napam	Wanapam	Priests Rapids-White Bluffs region
Tapteet, Tapteel[22]	ta·'ptat[23]	Yakima	Yakima River
Shan-wap-pom[24]	pcwa'nwapam	Kittitas	Headwaters of the Klikitat and Yakima R.
Wah-na-a-chee[25]	wana'itci	Wenatchi	Wenatchee River
Parps-pal-low[26]	pa·'a'pspa'lu	Southern Okanogan[27]	Lower Okanogan Valley
Hi-hi-e-nimo[28]	xayɛ·'nimu	Spokane	Spokane River
Wheel-po[28]	sxoie'łpu[29]	Colville	Kettle Falls
Coos-pel-lar[30]	ku·'spa'lu	Kalispel	East of Okanogan R. near Canadian boundary
Skeet-so-mish[28]	tski·'sumɪx	Coeur d'Alene	Coeur d'Alene Lake

[13] Thwaites, *op. cit.*, Vol. 4, p. 321; Vol. 6, p. 115; Atlas, map 32.

[14] Spier identifies Wahowpam with Wayampam (Tenino) rather than with Klikitat (Leslie Spier and Edward Sapir, *Wishram Ethnography*, University of Washington Publications in Anthropology, Vol. 3, pp. 151–300, 1930, p. 169). This may be correct. However, Melville Jacobs feels that Sahaptin phonetics favor the alternate interpretation (personal conversation). The territory ascribed to the Wahowpam has more recently been held in part by the Klikitat, in part by the Tenino. Both are Sahaptin speaking; cultural differences are slight.

[15] Thwaites, *op. cit.*, Vol. 6, p. 115; Atlas, maps 31, 40.

[16] *Idem*, Vol. 6, p. 115; Atlas, map 31.

[17] *Idem*, Vol. 6, p. 115; Atlas, maps 31, 44.

[18] *Idem*, Atlas, maps 31, 32.

[19] The identification of Pish-quit-pah with the Cayuse term pɪc(ukalai)kitpa is problematical. The latter is the name of a large Cayuse village recently located near Milton, Oregon. This is east of the Pish-quit-pah territory. The Cayuse term refers to a stream passing

The Nez Percé are designated by the name Chopunnish but the term is applied to several other Sahaptin groups as well, such as the Cayuse and Palus. Excluding the latter, the Nez Percé boundaries coincide almost exactly with the earlier distribution noted above.[31]

Shoshonean tribes are described as residing

on the S. fork of Lewis's [Snake] river and on the Nemo [Weiser], Walshlemo [Powder], Shallett [Payette], Shushpellanimmo [South Fork, Payette], Shecomskink [Malheur], Timmooennumlarwas [Sucker], and the Cop cop pahark [Boise] river branches of the South fork of Lewises river.[32] [Also] in Spring and Summer on the East fork of Lewis's river [Clearwater] a branch of the Columbia, and winter and fall on the Missouri.[33]

A further statement is less credible since it would bring the Shoshoneans north of the Blue Mountains:

Sho-Sho-ne (or Snake indians) residing in Winter and fall on the Multnomah

between high cliffs and may have been applied independently to a region on the Columbia. In any event, the name is definitely Sahaptin and any identification with the Salishan Pishquow (npskwa'us, Wenatchi) as by Thwaites (*op. cit.*, Vol. 3, p. 137) is certainly erroneous. Furthermore, Clark notes that these people "do not speak prosisely the same language of those above but understand them" (*ibid.*). Phonetic and geographical considerations discredit Mooney's derivation of Pish-quit-pah from the Yakima village name pɩ'sko (Mooney, *op. cit.*, p. 739; Ray, *op. cit.*, p. 145). Much more probably this was a branch of the Cayuse or Umatilla.

[20] Thwaites, *op. cit.*, Atlas, maps 31, 40.

[21] *Idem*, map 40.

[22] *Idem*, Vol. 4, p. 289; Atlas, maps 31, 40, 41.

[23] Ray, *loc. cit.* A large Yakima village at Prosser.

[24] Thwaites, *op. cit.*, Vol. 6, p. 119; Atlas, map 40.

[25] *Idem*, Vol. 3, opp. p. 118; Vol. 6. p. 119. This is a Sahaptin term appearing only as a river name in Lewis and Clark but used as the exclusive tribal name today. The explorers use the unidentified tribal name Cuts-sâh-nim (probably Salishan).

[26] *Idem*, atlas, map 40.

[27] The native term means "people of the fir tree country," but is applied rather specifically by the Umatilla to the Salish near the mouth of the Okanogan River.

[28] *Idem*, Vol. 6, p. 119; Atlas, map 43.

[29] Ray, *op. cit.*, p. 122.

[30] The location by Lewis and Clark is confused and uncertain; see Thwaites, *op. cit.*, Vol. 6, p. 119, and Atlas, map 43.

[31] *Idem*, Vol. 6, pp. 114–19; Atlas, maps 31, 40, 41, 44. These boundaries likewise agree well with those given by Spinden (*loc. cit.*). Spinden gives no time reference for his descriptions. With regard to the southern boundary the agreement is real only if Spinden is describing conditions in the eighteenth or very early nineteenth centuries.

[32] Thwaites, *op. cit.*, Vol. 6, p. 119.

[33] *Idem*, Vol. 6, p. 114.

river. Southerly of the S. W. Mountains, and in Spring and summer on the heads of the *To-war-ne-hi-ooks* [Deschutes], *La Page* [John Day], *You-ma-tol-am* [Umatilla], and *Wal-lar-wal-lar* [Walla Walla] rivers, and more abundantly at the falls of the Towarnehiooks, for the purpose of fishing.[34]

Perhaps "the heads" of these rivers merely means the mountain highlands. But the reference to the Multnomah (Willamette) River is even more difficult to accept since it lies well to the west of the Cascade Mountains. Another statement mentions "Sho-Sho-ne's on the Multnomah and its waters, the residence of them is not well known to us."[35] This quotation carries its own criticism. Furthermore, the journal entry on which this notation is based reads: "Some of them informed us that they had latterly returned from the war excurtion against the Snake Indians who inhabit the upper part of the Multnomah river to the S. E. of them."[36] The reference here is to the ambiguous "Snake," not Shoshone, and the Multnomah is said to be southeast whereas actually it is to the southwest. It is quite possible that the enemy was the Molale.

EVIDENCE OF TRIBAL MOVEMENTS

Sahaptin informants declare that from time immemorial conflict has existed with the Shoshoneans. The Tenino and the Umatilla were allied against the Paiute, the Umatilla and Cayuse against the Paiute and Bannock, and the Cayuse and Nez Percé against the Bannock and Shoshone. But the Sahaptin tribes never questioned the right of the enemy to the territory occupied in the eighteenth century. Neither side ever attempted to wrest *territory* from the other. Marauding parties carried away moveable property, but the main object of warfare was the attainment of glory. A man's principal opportunity to raise his status was through valor in warfare. Among the Umatilla, Cayuse, and Nez Percé, at least, the typical Plains pattern of counting coup was found and a type of chieftainship was awarded on this basis. In these contests the Shoshoneans often pushed as far north as the Columbia River, forcing the Umatilla sometimes to take temporary refuge on Blalock Island or the north bank of the river. But the invaders never remained long and in no case established permanent camps. Any attempt would doubtless have resulted in failure, for the balance of power was at all times very even and the Sahaptins were on home ground.

After the turn of the century this balance began to shift in favor of the northerners. The acquisition of the horse and the introduction of new weapons by the whites were undoubtedly contributing factors. These superior weapons were available to the residents along the Columbia trade

[34] *Idem*, Vol. 6, p. 118. [35] *Idem*, Vol. 6, p. 119. [36] *Idem*, Vol. 4, p. 282.

route in much greater quantities than to their more isolated enemies. At the same time motives were introduced for territorial expansion. The encroachments of the whites and the depletion of game near the river may be mentioned. Several decisive battles were fought in Shoshonean territory in which the Sahaptins were the victors. Thereafter the Shoshoneans were pushed farther and farther southward and finally held beyond the boundary indicated above for the nineteenth century.

The territory thus acquired was valuable for hunting and gathering but less suitable for permanent settlements. Its control added economic security and widened the span between the large Sahaptin villages and the enemy. No vital change in habitat and economy was involved, as would have been the case if Shoshoneans had attempted to settle the Columbia Valley.

The tribal movements thus indicated are in no sense momentous, but they are in exactly the opposite direction to those reported by James A. Teit[37] and accepted and amplified by Joel V. Berreman.[38] Without analyzing or criticizing the sources of Teit's information, I wish to examine some of the contentions where they are contradictory to data presented above.

Teit assumes that a Salishan tribe called the NeKETEme'uẋ formerly resided at the Dalles.[39] Despite persistent inquiry among the peoples along the Columbia I have failed to find anyone who had ever heard of such a tribe or of any Salish speaking group in that vicinity. However, Kashkash suggested a possible explanation for the confusion. A Umatilla term, nikåtimiu'x, is commonly applied to an alien people; it means "persons who do not act sensibly."

A similar confusion may account for Mooney's contention that a Shoshonean tribe, the Lohim, occupied a portion of Willow Creek in Umatilla territory until as late as 1870.[40] Elderly Umatillas today deny that Shoshoneans ever lived on Willow Creek, but explain that laxi'am means "stupid, untrustworthy people." The term was often applied to the Yakima.

Berreman notes that

> The Henry-Thompson journals report a band of "Scietogas" in the Willamette Valley, who were said to have dwelt west of the Nez Percé. This name has been sometimes considered that of a Snake band, but the description he gives of the party leaves their identity uncertain.[41]

The "Scietogas" were more probably Sahaptin, since Shoshonean speakers designate Sahaptins collectively as sa'idoka, "white-tailed deer eaters."

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[37] Teit, *The Middle Columbia Salish*, pp. 89–108.
[38] Berreman, *Tribal Distribution in Oregon*.
[39] Teit, *loc. cit.* [40] Mooney, *op. cit.*, p. 743. [41] Berreman, *op. cit.*, p. 60.

Teit writes of a Salish group called Tiā'kETuχ or Stia'kETEmuχ being carried by the assumed migrations to the mouth of the Yakima River.[42] Umatilla, Kittitas, and Wenatchi informants independently interpreted these terms in the same way. Sahaptin forms are ιstiaxå' (Umatilla) and stiała'ma (Kittitas); the reference is to a semi-mythical people "from the north, who appear at night in heavy fur clothing and steal things, then disappear before daylight." All denied that the terms designated a tribe.

In this connection Teit states that

> The Sanpoil have a name Nai'akutchEn or .nia'qETcEn, which appears to have been applied to all the Indians living along the Columbia River from the Wenatchi to near The Dalles. . . . This name seems to be the same as that of the tribe called Akai-chie by Hunt, who found them inhabiting the country around the mouth of the Umatilla River, January, 1812.[43]

Rather, Akai-chie seems to be a'kaitci, "people who eat salmon," a Bannock word used for Sahaptins, specifically the Tenino, but perhaps also others in the salmon area.

A part of the Columbia River assigned by Teit to the Salish is the Priest Rapids-White Bluffs regions, now occupied by the Wanapam. Of all Sahaptin groups this is today the most conservative. The survivors occupy the ancient village at Priest Rapids, having stubbornly refused to go upon a reservation. They contend that this has always been the home of their people and that it always shall be.

But the Umatilla are scarcely less emphatic in denying that a Salish tribe ever held the Umatilla Valley, either jointly or exclusively. Teit contends that the valley was occupied by the ·nkee'us;[44] Berreman gives the southern Umatilla territory to the Cayuse.[45]

Fortunately the documentary evidence from Lewis and Clark bears directly upon these problems and proves conclusive in many instances. At every such point the contentions of the natives are supported. The explorers were present in the years 1805–1806. These were critical years, for Teit states that, "The northwesterly movement of the Snake seems to have about reached its height in the early years of last century, probably 1800–1830."[46] Berreman agrees: "This was the high water mark of Snake invasions, and appears to have been reached sometime between 1800 and 1820."[47] Thus the voluminous records of the explorers should contain manifold references to such movements, had they existed. But actually, not one unequivocal statement of such nature is to be found. The statement most often quoted reads: "No Indians reside on the S. W. side of this river for

[42] Teit, *op. cit.*, pp. 94, 102 f.
[43] *Idem*, p. 94.
[44] *Idem*, pp. 94, 102 f.
[45] Berreman, *op. cit.*, p. 14.
[46] Teit, *op. cit.*, p. 100.
[47] Berreman, *op. cit.*, p. 59.

fear (as we were informed) of the Snake Indians, who are at war with the tribes on this river." But this further sentence, *in the same paragraph*, is neglected: "They [of the Columbia River] go to war to their [Snake] first villages in 12 days."[48] In other words, the local Sahaptins (Tenino) were the aggressors in this struggle with sufficient initiative to travel twelve days to the south in order to meet the enemy. A few miles downriver, at The Dalles (city), the distance to the enemy is estimated as four days' march, much less but yet considerable. A recent battle is mentioned, presumably conducted on Shoshonean ground.[49] These notations were made by the explorers on the downriver trip. Upon their return the following year they found the Indians of the vicinity still on the offensive: "They had latterly returned from the war excurtion against the Snake Indians. . . . They had been fortunate in the expedition and had taken from their enimies most of the horses which we saw in their possession."[50] Mooney aptly summarizes conditions for this period and later:

> Most of this region, on the south or Oregon side of the Columbia, was formerly held by Shoshonean tribes of Paiute connection, which have been dispossessed by the Shahaptian tribes and driven farther back to the south. . . . The Tenino themselves conquered the present Warmsprings reservation from the Snakes. The expulsion was in full progress when Lewis and Clark went down the Columbia in 1805, but had been practically completed when the first treaties were made with these tribes fifty years later.[51]

Teit and Berreman use the term "Snake" as a specific tribal designation, and assume that in so doing they are following native practice. Their entire reconstructions stand or fall upon the validity of this assumption. Yet Sahaptin informants emphatically declare that they never used Snake as a tribal name, and that they are quite unaware of any such tribe. Instead, the term is used collectively for the Shoshone, Bannock, and Paiute. The name came into familiar usage among the whites because it is the exclusive designation in sign language, the symbol being the same as that used for the reptile. In verbal speech specific names are applied to the various groups.

The distances separating the Shoshoneans from the Columbia River, as indicated in the texts and maps of Lewis and Clark, demonstrate that they were at least as far south in 1805 as during the early distribution outlined above.[52] And yet this is the period at which Teit and Berreman contend

[48] Thwaites, *op. cit.*, Vol. 3, p. 149. See also *idem*, Vol. 3, p. 168.

[49] *Idem*, Vol. 3, p. 163.

[50] *Idem*, Vol. 4, p. 282. See also above.

[51] Mooney, *op. cit.*, p. 742.

[52] Except perhaps in the region of the Blue Mountains. See above.

the "Snake" invasions reached the "high water mark." Teit summarizes his reconstruction of antecedent events:

The pressure of the Snake seems to have resulted, first, in a displacement of Shahaptian by them; second, in a displacement of Waiilatpuan tribes [the Sahaptin Cayuse and Molale] either by Shahaptian or Snake or both; third, in a displacement of Salish tribes by Shahaptian and Waiilatpuan, but chiefly by the former.[53]

The last of these conditions, at least, if fulfilled could not have failed to result in profound chaos at the point of juncture, to set up reverberations reaching far northward into Washington, and to create deep seated enmities between Sahaptin and Salish, as well as between Cayuse and other Sahaptins. But Lewis and Clark saw nothing of chaos on the river. They demonstrated that conditions were stable in 1805 in all of eastern Washington, since virtually no change in either Sahaptin or Salish distributions took place subsequently. They found the Cayuse and other Sahaptins, not engaged in bitter conflict, but entirely friendly, as they are to this day. They found the Nez Percé and Palus enjoying peaceful trading relations with the Salish Coeur d'Alene, not attempting to seize their homelands. They observed no instance of Sahaptin-Salish enmity, thus supporting the contention of natives today that warfare between the two has never been known.[54]

VERNE F. RAY

UNIVERSITY OF WASHINGTON

NOTES ON THE TENINO, MOLALA, AND PAIUTE OF OREGON

The following notes are offered by way of comment upon the tribal distributions in central Oregon recently compiled by J. V. Berreman.[55] The information and inferences given below are based upon field work by the author among the Tenino on the Warmsprings Reservation in the summers of 1934 and 1935.

THE TENINO

The Tenino or Warmsprings Sahaptin occupied the banks of the Columbia River between the Upper Chinook (Wasco and Wishram) on the west and the Umatilla on the east, as well as the lower reaches of the Deschutes

[53] Teit, *op. cit.*, p. 101.

[54] Not only were tribal locations stable in the area under assumed pressure, but particular families of the "intrusive" Sahaptin have lived in particular villages for as long as five generations (see footnote 5; Morrison's f's f's m was born near Kittitas, Wash., at least as early as 1810).

[55] *Tribal Distribution in Oregon.*

and John Day Rivers. They were divided into four sub-tribes or rather pairs of villages—one, with rather flimsy and temporary buildings, located on the river and used during the fishing season in the warmer months; the other, with substantial permanent dwellings, located several miles distant, usually away from the river, at a spot which provided water, fuel, and

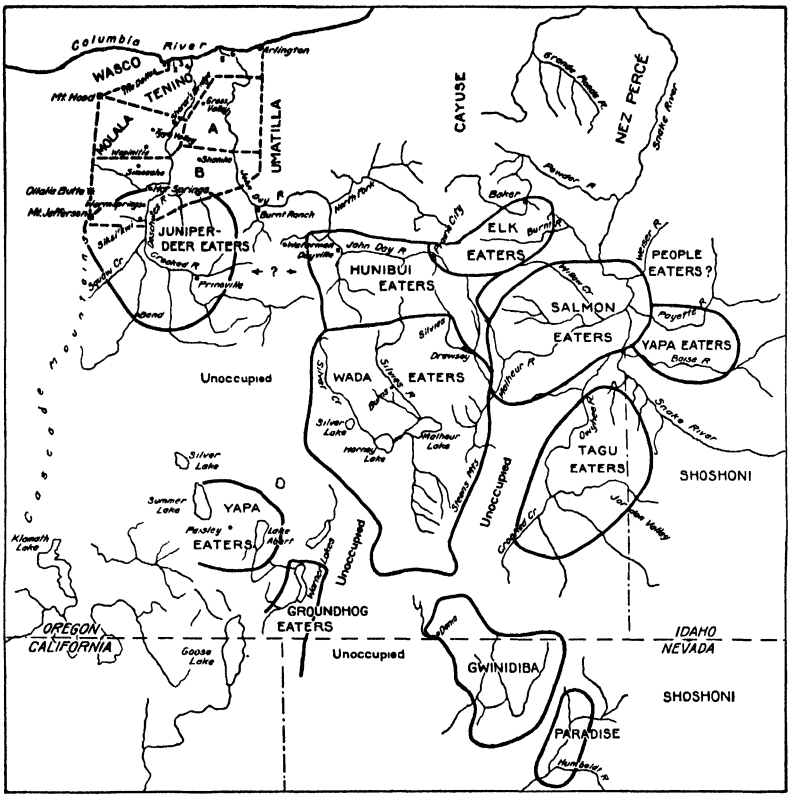


FIG. 2. Territory of the Tenino, Molala, and Oregon Paiute. Tenino-Molala territory (broken lines) by Murdock. A, disputed territory of Paiute, used by John Day Tenino for hunting; B, originally Paiute territory, from which the Paiute were displaced by Tenino. (Numbers near the Columbia indicate native sites mentioned in the text.) Northern Paiute territory (solid lines) by Blyth.

shelter from the winds during the colder half of the year. The four subdivisions, originally independent though always friendly, were:

1. The Tenino proper, who during the summer occupied the village of

tinai'nu (1)[56] about four miles east of The Dalles on the left bank of the Columbia, and who wintered six miles inland at tɑqa'xtɑqax (2).

2. The Wayam or Deschutes, who summered at waya'm (3: modern Celilo) and wintered at wanwa'wi (4) on the left bank of the Deschutes not far from its junction with the Columbia.

3. The John Day, whose summer and winter villages (tɑkcpɑ'c [6] and maxa'xpa [5]) were both located on the lower John Day River within a few miles of the Columbia, and whose territory adjoined that of the Umatilla near Arlington.

4. The Tygh, an early nineteenth century offshoot from the Tenino proper, who expelled the Molala from their former territory and occupied their villages: taix, their winter village at modern Tygh Valley, and tɬxni', their summer fishing site at modern Sherar's Bridge on the Deschutes. The "Tygh" and "Tilquni" of Mooney[57] are thus not two sub-tribes but merely two names for the same sub-tribe derived from its two villages.

The John Day, who alone of the four sub-tribes seem to have had a permanent foothold on the Washington bank of the Columbia, habitually went to Mt Adams for berries, whereas the other three groups frequented Mt Hood during the berry season. All four, however, ranged south from the Columbia for game and roots. Complete freedom of trade and intercourse prevailed between the Tenino and the Wasco, Wishram, Umatilla, and Sahaptin tribes of Washington. With the Paiute alone, whom they raided for slaves, were they on terms of chronic hostility. After the treaty of June 25th, 1855, the Tenino removed to the Warmsprings Reservation, where they have been settled ever since in the vicinity of Simnasho. Since their establishment on the reservation they have called themselves mɑliła' (cf. Mooney's "Melilema"), which is merely a Sahaptin adaptation of "warm springs."

THE MOLALA

According to Tenino sources, the Molala, whom they call tai'tilpam or mo'lalis, were a small tribe, possibly one-third as numerous as the Tenino, who spoke a language which neither the Tenino nor the Wasco could understand. In culture they differed markedly from the Paiute and resembled the Tenino, although they did not keep slaves. They had only one winter village, on the site of modern Tygh Valley, and moved every spring to a summer fishing village at Sherar's Bridge on the Deschutes. They dug roots in the vicinity of modern Wapinitia and gathered berries on the eastern

[56] Numbers in parentheses refer to similarly numbered sites indicated on the accompanying map, Figure 2.

[57] Mooney, *The Ghost-Dance Religion*, pp. 741–42.

slope of Mt Hood. They sometimes hunted to the south, in the region of Simnasho, but this was really Paiute territory. The Molala and Paiute were hostile, although the Tenino preserve no tradition of particular wars between the two tribes.

THE PAIUTE

The country south of the Molala, including the berrying grounds around Ollalie Butte and Mt Jefferson and the entire area of the present Warmsprings Reservation, has been Paiute territory, say the Tenino, from time immemorial. In this region the Paiute formerly had at least three winter sites: la'xwaixt wanai'tat or modern Hot Springs, citai'kt or modern Warmsprings, and siksi'kwi on Seekseekwa Creek. The rich root-gathering country around Shaniko was also exploited by the Paiute. On the John Day River the Paiute came in contact with the John Day sub-tribe of the Tenino. The lower middle reaches of this river, directly east of the Molala country, seem always to have been used to some extent by the John Day, although they admit that the country properly belonged to the Paiute.

THE DISPLACEMENT OF THE MOLALA

Sometime during the decade 1810–1820, or within a very few years thereof, the Molala were driven out of their territory by the Tenino. A circumstantial account of this Tenino-Molala war was obtained from informant Johnnie Quinn, who had heard the story as a youngster from his grandfather, an actual participant as a young man of nineteen or twenty. The approximate date may be worked out from the fact that, according to agency records, Quinn was born about 1853 and the corroborative evidence that he still retains memories of pre-reservation days. The war began with an act of aggression by the Tenino proper, the Wayam and John Day sub-tribes not participating. Coveting the productive fishing site of the Molala at Sherar's Bridge, the Tenino moved in early one spring before the Molala had left their winter village. We are not concerned here with the details of how the Tenino met the Molala attack, rescued their leader when he was wounded in the knee with an arrow, and eventually put the enemy to flight. The important fact is that the Molala were driven in a body westward across the Cascade Range, whence they have never since returned, and that their territory and villages were taken over by a group of Tenino colonists who eventually came to form the Tygh sub-tribe.

TENINO ENCROACHMENT UPON THE PAIUTE

Having displaced the Molala, the Tenino began to drive farther southward against the Paiute. Gradually, in part through slave raids but mainly through the ruthless extermination of Paiute groups encountered on hunt-

ing expeditions, the Tenino advanced ever deeper into the territory of their traditional foes. By the time of the establishment of the Warmsprings Reservation they had expelled the Paiute from the berrying grounds near Ollalie Butte and Mt Jefferson, from the wintering places at Hot Springs, Warmsprings, and siksi'kwi, from the root-gathering grounds around Shaniko, and from the entire John Day Valley almost as far south as the great bend of that river. Hunting expeditions ranged still deeper into Paiute territory.

POST-RESERVATION PAIUTE REPRISALS

By 1857, most of the Tenino were settled on the Warmsprings Reservation, which was, as the Tenino are still fully aware, carved entirely out of territory won from the Paiute and properly belonging to the latter. The tables were now turned. The Tenino villages were no longer remote from the Paiute centers of population but were within striking distance. Their inhabitants were scattered on homesteads which the government was trying to teach them to farm. The presence of livestock, provided in large part by the government, offered a constant temptation to plunder. The Paiute quickly seized the opportunity for retaliation against their previously victorious foe. Raid followed raid for years after the establishment of the reservation, as a few selections from letters examined by the author in the Warmsprings archives will show:

Jan. 26, 1858, from A. P. Dennison, Indian agent, to General I. W. Nesmith: "the Snake or Sho-sho-nie [i.e., Paiute] tribe of Indians . . . have lately made several attacks upon other tribes of Indians in the vicinity of John Days River killing several and stealing their Horses . . . . "

July 14, 1859, from Dennison to Edward P. Geary, Superintendent of Indian Affairs at Portland, reports 150 head of stock lost in Paiute raids of that year.

Aug. 10, 1859, from Dr Fitch, reservation doctor, to Captain Black at Fort Dalles, reports a raid by 250 Paiute resulting in the seizure of 150 horses and 40 cattle, the massacre of one white man and 13 Indian women and children, and his own capture and escape with four others.

Sept. 28, 1860, from Dennison to Geary, reports the loss of 40 horses in a Paiute raid.

Oct. 16, 1861, from William Logan, Indian agent, to Captain Whittlesey at Fort Dalles, reports a Paiute raid in which 100 cattle were taken and two men slain.

Similar reports continue for several years. This early post-reservation period with its record of almost continual Paiute raids is worth reporting for two reasons; first, because it is the only period of successful Paiute aggression of which the Tenino preserve any recollection and, second, because it probably bequeathed to the next generation an exaggerated impression of

the danger which the Paiute constituted to the more settled tribes of the Columbia region at an earlier date.

CRITICISM OF TEIT'S HISTORICAL RECONSTRUCTION

In view of the foregoing facts and of others to be summarized below, the reconstruction of tribal movements in central Oregon advanced by Teit and followed by Berreman seems to the present writer to be almost wholly without foundation.

Teit's sources, in the first place, are so weak as to be undeserving of credit. He derived his information, he tells us, from three informants: a white sub-agent at Nespelem, an Interior Salish interpreter with one-quarter French blood, and a mixed Polynesian-Nisqually who was a government official for several years at Warmsprings. Such sources would scarcely seem to constitute an adequate basis for a definitive reconstruction of the history of the Tenino, Molala, and Paiute.

Teit's theory, in the second place, is uncorroborated by subsequent field workers in central Oregon. Except for the approximate location of the Molala, the present writer found not a shred of support for any part of Teit's theory in the course of his work among the Tenino, and he understands from personal communications from Verne F. Ray, Melville Jacobs, and Beatrice Blyth that they have had no greater success in this respect among the Umatilla, Molala, and the Oregon Paiute respectively.

Teit's theory, in the third place, is specifically contradicted at nearly every point by the author's information from the Tenino, as may be clearly seen by presenting the theory and conflicting evidence in parallel columns:

Teit	*Tenino*
1. In the early eighteenth century both banks of the Columbia River above The Dalles were occupied by Interior Salishan tribes.	1. No recollection or tradition of any Salishan people settled in this region; no knowledge of the Nekutameux.
2. South of the Salish, in a band from the Cascade Range to the Blue Mountains, dwelt the Waiilatpuan tribes—the Molala west of the Deschutes River, the Cayuse to the east.	2. Corroborated, at least for the Molala.
3. At that time there were no Sahaptin tribes in the present state of Washington.	3. No scrap of tradition that the Washington Sahaptin ever lived far from their present habitat.

4. All the Sahaptin tribes, except the somewhat divergent Nez Percé, were confined to central Oregon, "probably with the Cascade Mountains and the Klamath on their west, the Waiilatpuan on their north, probably the Nez Percé on their northeast, and the Snake [i.e., Paiute] on their other boundaries."

4. Flat denial that the Tenino—or any other Sahaptin people—have inhabited central Oregon within the memory of man; denial borne out by Tenino culture, which differs markedly from the Basin type suited to the environment of central Oregon, and which affiliates with both the Plateau and the lower Columbia, as witness, for example, dugout canoes, semisubterranean earth lodges, elaboration of river fishing techniques, slavery, village political units, strong emphasis upon trade, social importance of wealth, prophet dance, and prominent first salmon rite.

5. The Paiute, expanding to the north and northwest, exerted steady pressure upon the Sahaptin, which reached its height in the years 1800-1830.

5. The Tenino, expanding to the south and southeast, exerted steady pressure upon the Paiute, which reached its height in the years between 1810 or 1820 and 1855.

6. As a result of this pressure, the Sahaptin were forced northward down the Deschutes River, through a gap between the Cayuse and the Molala, to and across the Columbia, where they displaced the Salishan peoples and gave rise to the recent Sahaptin tribes of Washington.

6. As a result of Tenino pressure, the Paiute were forced southward up the Deschutes and John Day Rivers, relinquishing a portion of their former territory.

7. The Tenino, who constituted the last wave of fugitive Sahaptin migrants, partly settled among the Wasco near The Dalles and partly moved westward across the Cascades into the Willamette Valley.

7. The Tenino, allegedly, have long lived near—not among—the Wasco, and they remember no mass movement by part of their number into the Willamette Valley.

8. The displacement of the Sahaptin from central Oregon brought the Paiute for the first time into contact with the Molala.

8. The Molala, residing south of the Sahaptin, have allegedly been in contact with the Paiute from time immemorial.

9. Paiute pressure then forced the Molala to migrate west of the Cascades.	9. The Molala were driven west of the Cascades by the Tenino, not by the Paiute.
10. These movements brought the Paiute north almost to the Columbia.	10. These movements carried the Paiute farther and farther south away from the Columbia, which they now approached only on occasional long forays.
11. In consequence of Paiute raids the south bank of the Columbia River was practically cleared of Salishan and Sahaptin peoples from The Dalles east to Umatilla.	11. The Tenino, to their recollection, were never thus driven from the south bank of the Columbia; the apparent lack of occupation was presumably due to the fact that all their permanent villages were located several miles or more to the south, away from the river.

In conclusion, it would seem high time to abandon a theory which was based in the first instance upon undependable evidence, which has been unsubstantiated by any subsequent field worker in central Oregon, and which is flatly contradicted by an abundance of opposing evidence.

GEORGE PETER MURDOCK

YALE UNIVERSITY

NORTHERN PAIUTE BANDS IN OREGON

The people of Harney Valley, Oregon, are a band of Northern Paiute known as the Wada'tïka (Wada, seed; tïka'[a], eaters).[58] They wintered in Silver Creek, Harney, Diamond, Blitzen and Catlow Valleys in Harney County, southeastern Oregon. The southernmost winter camp remembered was at Roaring Springs, Catlow Valley, although some conflicting evidence indicates the presence of a winter camp on Wild Horse Creek, southeast of the Steens Mountains. No winter camp north of the boundaries of Harney Valley was remembered. The westernmost wintering place was Suntex in Silver Creek Valley. The Steens Mountains and the plateau forming the wall of Harney Valley were the eastern boundaries, except for the problematical camp at Wild Horse. The hunting and gathering grounds of the band extended north to the vicinity of Silvies, west to Wagontire, southwest to the neighborhood of Beatty Butte, south to the limits of

[58] During the summers of 1936 and 1937 I did field work at Burns, Oregon.

Catlow Valley, southeast to Alvord Lake and northeast to Drewsey.

These boundaries are far from definite; neighboring bands frequently wandering farther from their winter bases and the Wada Eaters likewise venturing, at times, a greater distance from Harney Valley. Furthermore, the bands were extremely fluid in character, and there were occasional small camp groups which wandered from band to band and which do not seem to have wintered with any definite nuclear group. There was no feeling of band ownership of the hunting and gathering grounds. Any group of people might utilize the produce of the terrain without trespassing. There was a tendency, however, for the Wada Eaters to frequent the same places from year to year. During the summer wandering, they would often encounter people of different groups.

The Wada Eater knew well and had frequent intercourse with seven surrounding bands. They located these bands by their winter camps. In some instances they gave specific information as to the places they were likely to be found during the summer season. In mapping these regions, there is land which they did not assign to any definite group. Such territory was undoubtedly utilized by all adjacent bands, like all hunting and gathering grounds.

Directly north of the Wada Eaters were the Hu'nipwi'tĭka (huni'bui, root) whose winter camps, according to my informants, centered around Canyon City Creek, the town of John Day, and the valley of the John Day River to the west. They hunted as far south as Seneca and Izee, and at least as far west as Dayville. I have no information as to their northern boundary, but it was stated that they wintered on both sides of the John Day River and as far north as Waterman. As to the easternmost extension of their terrain there was disagreement. Some informants cited a separate band of Elk Eaters (Pa'tĭhĭchi'tĭka) to the east of the Huni'bui Eaters in the vicinity of Prairie City and Baker. Others, however, stated that these people were part of the Huni'bui Eaters band. In any case, the information would seem to indicate the presence of camps as far east as Baker.

To the northwest of the Wada Eaters, wintering on the east side of the Deschutes River, were the Juniper-Deer Eaters (Wa'dĭhĭchi'tĭka: wa'pi, juniper; dĭhĭ'chə, deer.) The northernmost place mentioned as inhabited by them was Gateway, the southernmost, Bend. To the east Prineville is the last definitely located site. Mount Jefferson, to the west, was mentioned as a hunting ground.

West of the Wada Eaters and south of the Juniper-Deer Eaters, in the vicinity of Paisley, were the Yapa'tĭka (yapa, epos), or Goya'tĭka (craw-

fish).[59] Southwest of the Wada Eaters, and separated by the plateau to the southeast of Catlow Valley, were the Gidü'tikadü[60] (Gidï'tïka, Groundhog Eaters). In the vicinity of Denio and McDermitt, to the south of the Wada Eaters were the Gwi'nïdï'ba (no meaning?). According to informants there were no strictly Paiute bands between these people and the Shoshoni. In the vicinity of Paradise Valley and the railroad to Winnemucca, however, there was a group known as the Paradise Indians, who were half Paiute and half Shoshoni.

In the Owyhee River Valley and the vicinity of the present site of the town Jordan Valley, east from the Wada Eaters, were the Tagu'tïka (tagu, root). There were no pure Paiute bands farther to the east.

Northeast of the Wada Eaters were the Salmon Eaters (Agai'tïka). They wintered on the north and south sides of the Malheur River and fished on the Snake. Some informants distinguished two bands of Salmon Eaters, those living north and those south of the Malheur River. The camps of this band extended as far west as the North Fork of the Malheur. Two informants stated that they also wintered on the east side of the Snake. This was denied by others. All informants agreed, however, that they camped on both sides of the river in the spring and summer.[61]

One band, described as being east and north of the Snake River, were known vaguely to the people of Harney Valley. The information indicated that they probably wintered near the Boise River. The members of this band, according to one informant were half Paiute and half Shoshoni. One informant mentioned another band of People Eaters (Nïwï'tïka), but did not make it clear whether they lived in the hills to the north or south of the Boise. It was evident that east of the Snake there was a great deal of intermixture of people of Shoshoni and Paiute bands.

These locations were obtained from informants of about seventy-five years old and pertained to the time of their parents, that is approximately 1840–1850. By 1865 pressure from the Umatilla, Cayuse, Tenino, Shoshoni, and the United States Army had driven the Huni'bui Eaters south, the Salmon Eaters west, and the Juniper-Deer Eaters south and east. The bands on the periphery seem to have suffered tremendous losses in the period directly preceding the establishment of the reservation in 1872.

This mapping does not conflict with Steward's distribution of the Sho-

[59] In the case of all the bands there were two or three variant names cited as well as names for sub-groups.

[60] See Isabel T. Kelly, *Ethnography of the Surprise Valley Paiute* (University of California Publications in American Archaeology and Ethnology, Vol. 31, No. 3, 1932), p. 70.

[61] Information indicated a large percentage of intermarriage with the Shoshoni.

shoni tribes.[62] It disagrees with Ray's mapping of the Umatilla,[63] which gives to the latter terrain on both sides of the John Day. My information does not in any way substantiate Berreman's classification of the peoples in central eastern Oregon about 1850 in which he postulates Snake and Bannock groups in the north as opposed to Northern Paiute to the south.[64] The bands to the north and northeast, according to the information I secured from the Harney Valley group, were very similar to the Wada Eaters. The dialectic differences were slight. Their cultures differed in aspects of the food quest and material culture. The bands to the north and northwest made much more use of bark and juniper berries. The bands on the Snake had access to a larger quantity of fish, had dugout canoes, and more elaborate fishing techniques.[65] Intermarriage between these groups and those to the south in Nevada and Surprise Valley was common. The population was fluid; families of one band often becoming affiliated with neighboring groups. Furthermore, the group looked upon itself as a unit as opposed to Shoshoni and Bannock peoples. I secured no information which indicated the presence of a permanent Bannock group west of the Snake River in 1840–1850. The Bannock, according to the Wada Eaters' version, were a Northern Paiute group who migrated east across the Snake when the buffalo withdrew from Oregon. My material also disagrees with Berreman's allotment of the region around Gateway on the Deschutes River to the Tenino. I have no evidence which indicates the expansion of the Paiute bands at the expense of Sahaptin groups in the first half of the nineteenth century, except for occasional raids.

BEATRICE BLYTH

YALE UNIVERSITY

NORTHERN PAIUTE

The name, Northern Paiute, is preferable to Paviotso for the Indians of the western Great Basin, because they call themselves Paiute, are called Paiute by their Indian neighbors, and are so termed in government reports; also because they form a cultural and linguistic unit much more extensive than Powell's Paviotso.

The Northern Paiute occupy the western part of the Great Basin in California, Nevada, Oregon, and Idaho. The northern and western bound-

[62] Steward, *Linguistic Distributions*, fig. 1.

[63] Ray, *Native Villages and Groupings of the Columbia Basin*, map, p. 5.

[64] Berreman, *Tribal Distribution*, pp. 47 f., 63 f., fig. 2.

[65] The northern and eastern bands seemed also to have owned and made more use of the horse.

aries closely coincide with the edges of the physiographic province. The Nevada and California portion of the area has long been assigned to the Northern Paiute, but that in Oregon and Idaho has been in the past allotted

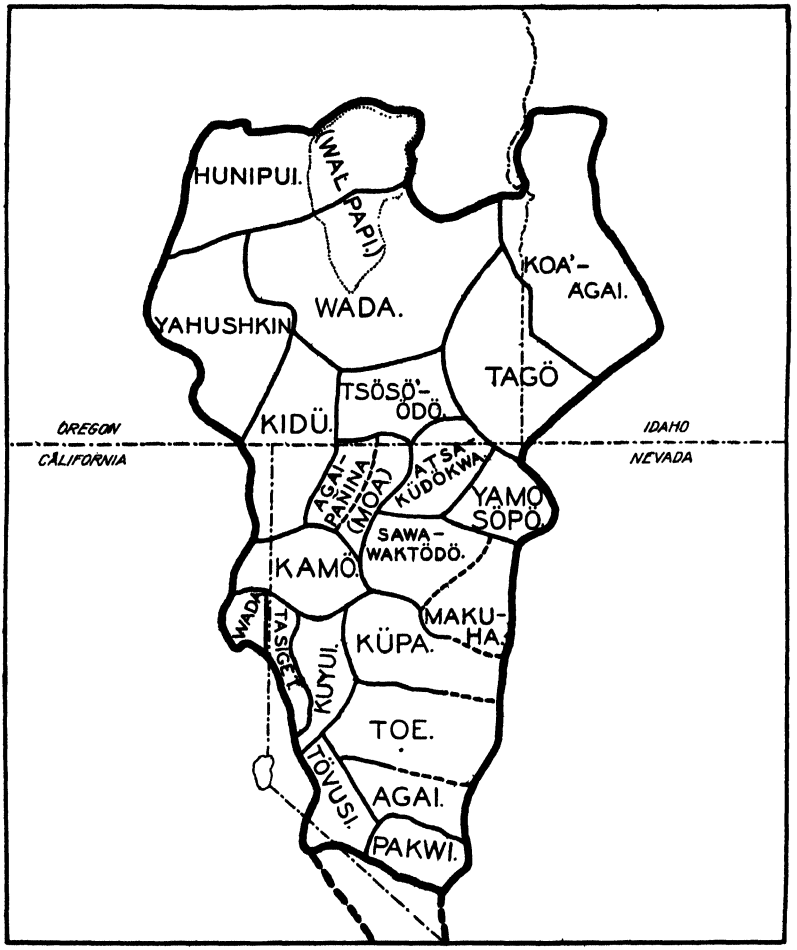


FIG. 3. Territory of Northern Paiute bands, exclusive of Owens Valley and Mono Lake, by Stewart.

to the Snake and Bannock. Powell and Kroeber established the linguistic unity of this Northern Paiute area, and a recent culture element survey demonstrated its cultural unity. Although the bands formerly living along the Snake River near Boise, Idaho, have been classed with the Bannock,

they were culturally distinct from the eastern Idaho Bannock when first visited, and have since been politically allied with the Northern Paiute of Nevada. Those bands formerly known as Oregon Snake recognize their affinities with the Nevada Northern Paiute and share very few culture traits with the other Shoshoneans formerly called Snake.

Except for the raids on the Deschutes River Sahaptins which occurred about 1850,[66] all evidence points to a long, continuous occupation by the Northern Paiute of the area here assigned to them.

The Lemhi or Lohim Bannock, located on Willow Creek in Umatilla territory, appear to be a group which migrated from central Idaho after 1856. That their migration followed the above date is suggested by their name, which is apparently a corruption of Limhi, a Book of Mormon name given to a fort established on the Salmon River by Mormon missionaries among the Bannock in 1856. It is quite possible that other Shoshonean Indians followed the same route at an earlier date to give rise to the accounts of Snake depredations along the Columbia reported by Lewis and Clark.

Teit's and Berreman's theory that mounted, war-like Indians forced Sahaptin peoples from southeastern Oregon between 1750 and 1850[67] rests upon a lack of understanding of the culture of the occupants of that area. Since the earliest travelers in that area—Fremont, Ogden, Farnham, Wallen, and others—found only "root diggers," since Rinehart, in 1876, named the bands there, gave the extent of their territory, and called them Paiute, and since no inhabitants of southeastern Oregon have ever been found except those with a typical Northern Paiute culture, the only conclusion possible is that the Oregon Snake were Northern Paiute. The raids which Teit learned about were those which followed 1850, raids which living Indians saw and participated in.

OMER C. STEWART

UNIVERSITY OF CALIFORNIA

WESTERN SHOSHONI

The following observations relate primarily to two groups of Western Shoshoni: White Knives or Tosawi[hi] and Salmon Eaters or Agaidika, now resident on the Duck Valley Reservation in Nevada.[68]

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[66] A Wasco woman still lives at the Warm Springs Reservation who was captured during one of the Paiute raids.

[67] Teit, *Middle Columbia Salish*, p. 98 f.; Berreman, *Tribal Distribution*, p. 55 f.

[68] Field work, summer of 1937, at Duck Valley Reservation.

I have the following criticisms of the distribution of Great Basin groups as shown on Steward's map.[69]

The distribution of the White Knives "districts" is similar to my own, with certain exceptions. My informants insisted that the western boundary of this group should be extended as far west as Winnemucca. Moreover, the winter camps were not only along the banks of the Humboldt River and its tributaries, but also along those of neighboring rivers: South Fork of the Owyhee River, Lake Creek, and Bruneau River. Steward's distribution of the winter "districts" gives no indication of the summer range of these people—rather important since the range was travelled seven or eight months of the year. During the summer, the White Knives went as far east as the western shores of Great Salt Lake, north to the Snake River, south to Eureka and Austin, and as far west as Winnemucca, through the Santa Rosa Mountains and the southeastern corner of Oregon. Of course, not all White Knives covered this area. Each camp group was economically habituated to a more or less definite geographic summer orbit.

It must be understood that there was a constant territorial overlapping of group and tribal boundaries. Paiute camp groups often came east into Shoshoni territory, and Shoshoni camps went west into Paiute area. Because of the mobility of these groups, any strict territorial delimitations convey a false picture of restriction. Boundaries under these conditions can probably best be shown on a map by cross-hatchings.

Contrary to Steward's statement that the Shoshoni groups of Nevada were designated only as inhabitants of a named locality,[70] my information shows that, similar to the northern Shoshoni groups, they were also known by their chief source of food. These people were variously known as Fish Eaters, Pine Nut Eaters, Squirrel Eaters, Rabbit Eaters, Snake Eaters, Water Grass Seed Eaters, etc. However, since a group's name could change with the seasons of the year and the corresponding food they ate, I agree that the best designations of these groups are by locality names. The northern Shoshoni groups whom Steward has designated by food names may also be known by other names, but my informants corroborated Steward's that these people were organized into bands dominated by a more central authority.

The White Knives were so called because these people living in the vicinity of Golconda and Tuscarora used arrow heads, scrapers, and knives made of white flint found in this area. But they were also known by a number of food names.

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[69] Steward, *Linguistic Distributions*, fig. 1.

[70] *Op. cit.*, p. 631.

The Salmon Eaters of the Snake River, while located in villages approximately covered by the words "Salmon Eaters" on Steward's map, often ranged as far east as American Falls. Because their chief source of food was fish, their movements were more restricted than those of the White Knives, who covered a much wider range in their foragings for plants, seeds, roots, and wild game.

Other criticisms of Shoshoni group distributions: (1) My informants would place the group Steward calls the "Huki Eaters" (my recording is hüka) somewhat more to the north, around American Falls, and including part of what is now the Fort Hall Reservation. (2) Steward's native term for the Wyoming Shoshoni is different from the one which I have repeatedly recorded. Steward has Kohogo'e. The term as I have it, is kɔgɔhɔi, which means "gut eaters." (3) None of my informants identified the Pine Nut Eaters in the area northwest of Great Salt Lake where Steward has shown them to be. However, I have repeated identifications of Pine Nut Eaters living about Austin, Nevada.

I also have a number of criticisms of Steward's discussion of political groups. Because of space limitations, however, I shall confine myself to a brief discussion of two points.

First, the pine nut was not the chief source of food for the White Knives or Salmon Eaters, although it may have been for the groups in south central Nevada. Thus, although a number of camp groups would gather for the pine harvest, there were rarely more people than would come together to live in a winter community. Consequently, for these people this was not the "most important factor bringing together people from neighboring areas."[71] Steward, however, has overlooked the seasonal Gwini ceremonies which were held from two to four times a year. At these ceremonies and dances, from one hundred to four hundred people would converge from neighboring areas, and would include those of different groups who happened to be in the vicinity. These religious fertility ceremonies were probably the most cohesive force these Shoshoni experienced.

Secondly, for the White Knives and Salmon Eaters, winter village cohesion and political authority seems to have been even looser than Steward indicates for this area. My informants among these groups denied that one man, during the temporary village life, would assume even such informal leadership as to be designated "headman." The summer camp group, composed of from one to three or four related families, would probably have the wife's father as the one who had more authority than the

[71] *Op. cit.*, p. 629.

others, and who would direct the movements of the camp. But even this was of the most informal nature. As one informant expressed it, "We all knew when the food was gone. Why did we need someone to tell us when to move to look for more food?"

JACK HARRIS

COLUMBIA UNIVERSITY

BANDS AND DISTRIBUTIONS OF THE EASTERN SHOSHONE

1. Hɜk *Eaters* (Hɜ'kandɪka: hɜk, an unidentified seed).[72] Also called Sɜ'niβedɪka, "Wheat Eaters," after the introduction of this cereal by the whites. Another modern name used by the Bannock and some other Shoshone for this group is Ségωiogωɔi, "Muddy Creek," a derisive substitute for Bannock Creek, in which valley they reside, and which was the center of the aboriginal territory of the band. The location is immediately north of that given by Steward, and is in the very center of the territory designated for the Rabbit Eaters by him.

2. *Salmon Eaters* (A'gaidɪka). As given by Steward.

3. *Mountain Sheep Eaters* (Tu'kuɾɪka).[73] These people were aboriginally distinctly separate from the Salmon Eaters, tending to hold more to the mountain fastness about the headwaters of the Lemhi River, while the Salmon Eaters were located about the headwaters of the Salmon River farther north and west. The Sheep Eaters used dogs to corner antelope long after other bands had horses.

4. *Elk Eaters* (Pa'ɾahiadɪka). This band ranged the western slopes of the Teton Range.

5. *Mountain Dwellers* (Dɔ'yia[n3]). This was a very small division scattered throughout the mountains of the Yellowstone country. It had no band organization whatever, but lived in independent small family groups.

6. *Groundhog Eaters* (Ya'handɪka). By my informants placed about the source of the Port Neuf River, "south of the present site of Pocatello, Idaho." Steward places them at the western extreme of the Shoshone territory.

7. *Squirrel Eaters* (Sɪ'ptɪka). The same as the Red-Squirrel Eaters (Engəsɨptɪka)? This extremely poor band was located just over the Nevada line at the headwaters of the Raft River in what is a northern portion of the territory Steward gives to the Pine Nut Eaters. The Idaho Shoshone were impressed that these people had no horses, and declare that many never saw a buffalo.

[72] The phonetic system is that of the International Phonetic Association.

[73] All r's in Shoshone are the flapped r (ɾ).

8. *Rabbit Eaters* (Ka′muſɪka). Localized south and west of the Port Neuf River. Agrees with Steward except that he gives them a wider extent (embracing the territories of the Hɜk Eaters and Groundhog Eaters).

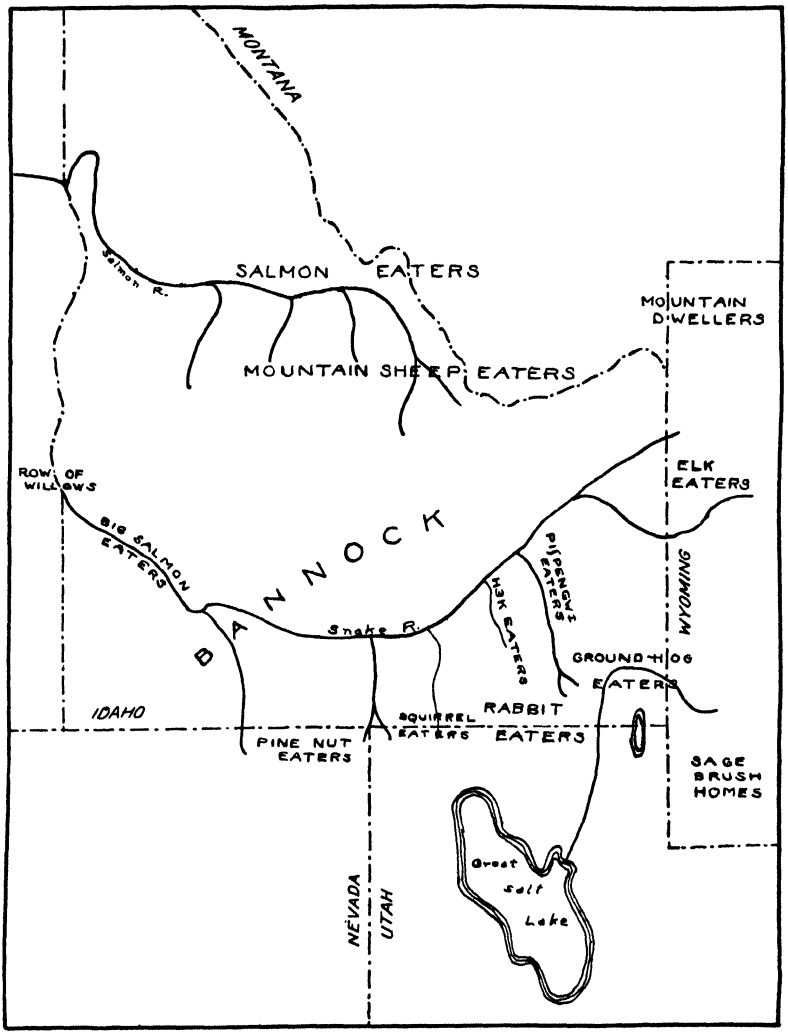


FIG. 4. Distribution of the Eastern Shoshone, 1825(?)–1875, by Hoebel.

9. Pɪſpengωi *Eaters* (Pɪ′ſpengωidɪka). The pɪ′ſpengωi were a small swamp minnow flourishing in several places of the Snake River bottoms. In

the winter they burst through the ice in great numbers and lay on the surface where they were gathered for food and dried for future use. The band location was along the Port Neuf from the Snake River to McCammon, Idaho. Steward's Fish Eaters?

10. *Pine Nut Eaters* (Tɜ'βətɪka). Located in the Black Pine Mountains at headwaters of the Raft River, as given by Steward. Were also called Ku'ʃiutə by the Idaho Shoshone, and are identified by them with the Deep Creek Gosiute.

11. *Big Salmon Eaters* (Pia'-a'gaidɪka). Also called "Those Who Do Not Roam" (Tɜ'ʃiβiωa). These people clung to their habitat in the canyon of the Snake River, from the junction with the Bruneau River westward. They never fared forth on offensive raids, hence the name. They were famous as makers of arrows for trade with other Shoshone bands.

The location given by my informants corresponds to Steward's, except that it is slightly farther down the Snake River. They are nicknamed Boise Indians by other Shoshone of today.

12. *Row of Willows* (Sɜ'hɜωɔki). A small band named from the creek, a tributary to the Snake River, on which they lived, near the Weiser River. This would make them the westernmost of the Snake River Shoshone.

13. *Sage Brush Butte* (Pɔ'hɔ'gɔi), the Bohogue' of Steward. Steward declares[74] that this was a single band of Northern Paiute and Shoshone occupying the greater part of southern Idaho. According to my Shoshone informants this is a modern term for the Fort Hall Indians *in toto*, excepting those living on Bannock Creek, the Hɜkandɪka. The aboriginal Bannock, according to them, consisted of four bands (Sɔ'hɔagaidɪka, "Cottonwood Salmon Eaters," Tɜ'hɜhadɪka, "Deer Eaters," Sɪ'ptɪka, "Squirrel Eaters," Tagɸndɪka "[?] Plant Eaters"). These were not consolidated, and according to Henshaw[75] this is substantiated by early travellers. Henshaw states that it is almost impossible to give the Bannock a definite location because of their nomadism. Some Shoshone travelled with various Bannock bands at different times, but the consolidation of a single Bannock-Shoshone band under aboriginal conditions is to be doubted.

Yampa Eaters. Steward locates a band of Yampa Eaters in western Idaho. I have no such band for the Shoshone, though I was given the term Ya'mparɪka a number of times over as theSho shone name for the Comanche. One of the four most important Comanche bands is the Yapai (Comanche term), meaning "Yep Eaters." More suggestive is Henshaw's naming

[74] *Linguistic Distributions*, p. 633.

[75] F. W. Hodge, ed., *Handbook of American Indians North of Mexico* (Bulletin, Bureau of American Ethnology, No. 30, 2 parts, 1907–10), Part 1, p. 129.

of a Yambadika band for the Bannock. This may be what Steward has recorded.

Wind River Shoshone. Presumably there was more than one band in this group, but the Idaho Shoshone do not identify them. The oldest name by which the Wind River people are known to the Idahoans is Pɔ'hɔgani, "Sage Brush Home," because of the nature of their territory. Kɔ'gohoii, "Gut Eaters" is a more modern name, as is also Ku't∫ɪndɪka, "Buffalo Eaters."

The location of Shoshone bands (Nos. 11 and 12) at the western extreme of Idaho shifts Steward's linguistic line slightly westward at this point.

E. ADAMSON HOEBEL

NEW YORK UNIVERSITY

WIND RIVER SHOSHONE GEOGRAPHY[76]

The geographical position of the Wind River Shoshone (po'hoɪnö, "sage brushers:" Comanche name) cannot be stated in terms of definite area or boundaries.[77] A deep-rooted nomadism, the great mobility given by the horse, nearly constant wars with non-Shoshonean peoples, and easy contact, travel, and intermarriage[78] with other Shoshoneans, all contributed to a permanently unstable position. For example, while the tribe consisted normally of four bands which split to go to separate localities for the fall and winter buffalo hunts, and united again for travel together in the summer, any one of these bands would, at any time, change its route, going, say, to the Bear River rather than to the Greybull River for the winter. Or the entire tribe would summer at Deer Lodge Valley[79] rather than at Black's Fork. To all of this must be added the fluidity of social organization: individuals and groups changed their band affiliations according to personal tastes; or they even wandered off independently, going as far as the territories of the Flathead (ta'tasiwani), Dakota (ba'mbidjimina) and Ute (iyuta·'ni).

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[76] Sincere thanks are due Professor A. L. Kroeber and Dr A. Métraux for assistance with and criticism of my paper.

I should remark that my study of the Shoshone is as yet unfinished: gaps exist particularly in information about the country northwest of Yellowstone Lake.

[77] But see my map for the region claimed by the Eastern Shoshone in the treaty of July 2, 1863 (C. G. Kappler, compiler and ed., *United States Indian Affairs—Laws and Treaties, Vol. II: Treaties*, Washington, 1904, p. 849).

[78] Seventeen out of 209 individuals in my genealogy were Bannock.

[79] E. N. Wilson, *The White Indian Boy* (Yonkers-on-Hudson, New York, 1926), p. 23.

Consequently, the most valid definition of the geographical position of the Wind River Shoshone that I can make is in terms of primary centers (rich valleys), primary routes travelled by the whole tribe or normally by a band (along river courses), and a vast general area through which the Shoshone would wander on irregular occasions.

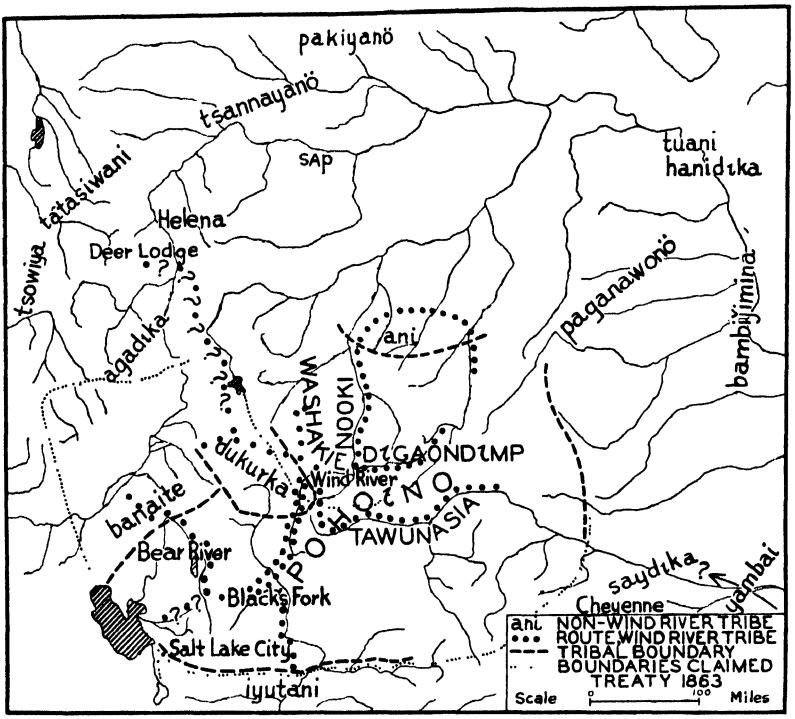


FIG. 5. Location and routes of travel of Wind River Shoshone in Wyoming and adjacent regions, by Shimkin.

The primary centers were around Black's Fork (wo'nŋogwey) and around Wind River (yu'warai ŋǫ'möhört), Wyoming. The entire tribe would generally stay at Black's Fork in the summer, then travel via Big Sandy Creek to Washakie Pass (*in du'kurka territory*), and then down Trout Creek to Wind River Valley. There they would stay until early in the fall, when they would break up: (1) Washakie's (we'djitų'iyapë) band went up Wind River and over to the head of Greybull River, to winter there; (2) no''oki('s) band went down the Big Horn Mountains (*through Crow ter-*

ritory), and south again to the Powder River Valley; (3) dï'ga'ondïmp('s) band went straight to the east, to the headwaters of Powder River; (4) ta'wunasi'a('s) band followed the Sweetwater River to the head of the North Platte. In the spring, the bands usually united again at Wind River.

My information on the historical movements of the Wind River Shoshone[80] may be summarized as follows. They believe themselves to have come originally from the Lemhi (agadɨka) region. Thence they went southeast to the Black's Fork country; then, over the Wind River Mountains, to the north and east, pushing out the Crow even from the Big Horns. At an early time, the Comanche (yamba''i) left the main group, but retained friendly connections with it. A part of the Comanche (? dza'coconi) returned to Black's Fork, introducing the horse. During the first half of the nineteenth century, terrific epidemics of smallpox hit Wyoming, causing a decimation and scattering of the population. The du'kurka of the Wind River Mountains (who, incidentally, never had horses) were nearly wiped out, while some of the Wind River Shoshone fled as far as the Comanche, among whom they later formed a separate band.[81] This, and probably the increased aggressiveness of other Plains tribes with the spread of firearms as well, led to a recession of the Shoshone and their retreat to the west in the middle of the nineteenth century.[82] A final wave of expansion onto the Plains came with white aid following the treaty at Fort Bridger, July 3, 1868.[83]

D. B. SHIMKIN

UNIVERSITY OF CALIFORNIA

[80] See also C. Wissler, *The Influence of the Horse in the Development of Plains Culture* (American Anthropologist, Vol. 16, pp. 1–25, 1914).

[81] Called pohoi (Hodge, *Handbook of American Indians North of Mexico*, Part 1, p. 328).

[82] *Annual Report of the Commissioner of Indian Affairs for 1870* (Washington, 1870), pp. 174–75.

[83] Kappler, *op. cit.*, pp. 1020–24.

MAYA DATING BY HIEROGLYPH STYLES

By LINTON SATTERTHWAITE JR

THE archaeology of the lowland Maya country receives much attention because of remains of stone sculpture, stone and lime-mortar architecture, hieroglyphic writing and astronomical science which far surpass those of any other New World region. These are found in numerous ancient religious centers called "cities" in the peninsula of Yucatan, and in large adjacent areas to the south, east, and west.[1] While similar in fundamentals, many of these centers have been in the past classified and assigned to one of two great groups. These were called Old or First and New or Second Empires respectively, on the supposition that the differences noted are due to differences in age, one group post-dating the other, with a time-gap of several centuries between them.[2]

Most of the Old Empire sites are in the southern part of the peninsula and adjacent parts of the mainland. All of the New Empire sites are in northern Yucatan, with poorly known or undescribed sites between. With recent exploration and excavation some of the distinctions between Old and New Empire sites are breaking down, and sites of Old Empire type have been identified in New Empire territory. After the Old and New Empire concept was formulated, the widely accepted Spinden proposal for correlating Maya and Christian calendars confirmed the existence of a time-gap; but new proposals call for reducing the absolute age of the Old Empire sites.[3] Such changes in fact and opinion make it less probable that a single group of Maya produced the Old Empire sites and then, shifting its locale, produced the New Empire sites of northern Yucatan.

An alternative is the postulation of regional groups of high culture Maya, contemporary during part at least of Old Empire times, but nevertheless developing diverse modifications of the fundamental pattern.[4] Such a picture has recently been fortified by definite evidence of apparently middle to late Old Empire trade with pyramid-building groups in the Pacific highlands to the south.[5]

[1] See map, Ricketson and Ricketson, *Uaxactun*, fig. 1.

[2] Spinden (*Ancient Civilizations*, pp. 148–49) allows 335 years for a transitional period in architecture. Morley (*Guide Book*, p. 16), although he helped to develop it, has recently deserted the formerly orthodox correlation of the Maya and Christian calendars. He now believes the Old Empire high culture ended shortly after 889 A.D., but does not begin a "brilliant cultural recovery and renaissance, particularly in Yucatan" until the eleventh century.

[3] Vaillant (*Chronology*) and Thompson (*Maya Chronology*) summarize the correlation problem.

[4] Thompson, *Archeological Investigations*, pp. 230–31; Vaillant, in Merwin and Vaillant, *Ruins of Holmul*, p. 96.

[5] Kidder and Jennings, *Annual Report*, p. 10: Lothrop, *Zacualpa*, p. 98.

Some such process must have been at work within the Old Empire region itself, which splits into at least three sub-regions: a central, a southeastern, and a western.[6] Type sites of the first two of these, Uaxactun and Copan respectively, are under investigation by the Carnegie Institution of Washington; and of the third, Piedras Negras, by the University Museum, University of Pennsylvania. These were contemporary during several centuries, as proved by series of carved and dated monuments at each. The relation of one date to another is certain, since the system used includes a count of so many days from a common starting point. This system is the "Long Count," which makes use of the tun, a unit of 360 days, which for our purposes may be considered a year.

Such a neat and convincing dating method cannot be applied to New Empire sites. Here the long count of days is usually omitted. Because of this, placement of the recorded dates varies with the method of interpretation. The few long count inscriptions found are either read with uncertainty or their association with New Empire buildings is uncertain. For instance, at the New Empire type site Chichen Itza, extensively investigated by the Carnegie Institution and by the Mexican government, there is only one long count inscription. Thompson believes this records the contemporary date of the carving. Beyer does not, and carries the latter foward over 260 tuns.[7] The inscription is on a stone lintel which might easily have been moved from an older building.

Despite the failure of the calendrical record left by the Maya, as understood up to now, to bridge satisfactorily the supposed time-gap between Old and New Empire manifestations, it remains important to know if such a gap existed, and if so, how long it was. A new method of approach to such a problem has recently been developed. It relies in part on inscriptions at the important New Empire site Chichen Itza, and is here briefly outlined and applied to newly discovered material at the Old Empire site Piedras Negras. This process seems to indicate a period of contemporary high culture occupations at these two sites. Criticisms of the method are then referred to and some additional data presented which may assist in its final evaluation.

In 1932 Dr Hermann Beyer of Tulane University, the eminent student of Maya hieroglyphs, published a new method for determining, within broad limits, the relative ages of Maya inscriptions. This is based on supposed chronological changes in the styles of writing four particular hieroglyphs, common in both the Old Empire "long count" and the New Empire inscriptions. These selected glyphs are named *Cauac*, *Ahau*, *Kin*, and

[6] Butler (*Piedras Negras Pottery*, p. 24) recognizes an Usumacinta ceramic area.

[7] Thompson, *New Method*, p. 186; Beyer, *Studies*, p. 169, table 7.

Yax. The method can be applied to any inscription containing these common glyphs, whether or not a precise date is included in the inscription. Although all four of these glyphs appear in records of known calendrical import the first three at least are also common elsewhere. The system is simple and intended for use by ordinary students without special epigraphic training.[8]

Beyer divides Maya time into five periods or epochs. The first was a postulated time of evolution from unknown beginnings. The forms of *Cauac*, *Ahau*, *Kin*, and *Yax*, thus developed, were used during the second epoch, which included the period of the Old Empire monuments, and some unknown time thereafter. The forms of this second epoch are termed collectively "*Type A*," that is, a *Type A Cauac*, a *Type A Ahau*, and so on. During a third transitional epoch these went through a process of change. Evidence of this Beyer finds in the inscriptions at Chichen Itza, most of them associated with buildings at that New Empire site. During a fourth epoch the selected glyphs had again become standardized into modified forms which he labels *Type B*.[9] These are found in the Maya Books or codices. Applying the *Type B* criteria, Beyer finds them on wall paintings at Santa Rita, which show Mexican influence and affinity with the Perez Codex, and in post-Conquest drawings by the Spanish Bishop Landa. Degenerate forms are found in a fifth post-Conquest epoch.

During the epoch of transition the four glyphs did not all change from *Type A* to *Type B* together, so that during this period the *Type A* form of one may be found in the same inscription as the *Type B* form of another.[10] Beyer has just published a detailed study of the Chichen Itza inscriptions. From this it appears that the glyph *Ahau*, with which we shall be especially concerned below, persisted in its essential *Type A* characteristic throughout the time of the Chichen Itza inscriptions, with a single exception, which is not *Type B*. Without claiming to be surely correct, he uses an unproved method of interpreting certain glyphs and by this means assigns precise datings to many of his transitional style inscriptions. These datings are so many days, in each case, after the same beginning point used in the Old Empire long count. They give a sequence at Chichen Itza itself which is consistent with a supposed evolutionary style trend during the period of transition. The two approaches taken together—style analysis and epigraphic theory—require the *Type B Ahau* first to come into existence more

[8] Beyer, *Stylistic History*, p. 74.

[9] Beyer (*ibid.*, p. 73) speaks of the epochs of *Types A* and *B* as "periods of stable standard glyphs." Such stabilization appears to be fundamentally necessary to the system.

[10] Beyer, *ibid.*, p. 83 and table 3.

than five and a half centuries after the latest known Old Empire dated inscription.[11]

The chief purpose of this paper is to present apparent *Type B* or fourth epoch examples of the glyphs *Cauac* and *Ahau*, which are two of the four selected glyphs, recently discovered at Piedras Negras. Since one of these is *Ahau* their presence seems to imply an unexpectedly very late occupation of this Old Empire site, provided both the style system and the Beyer datings of the transition period inscriptions at Chichen Itza are correct. If only the style sequence is correct, there is still implied a

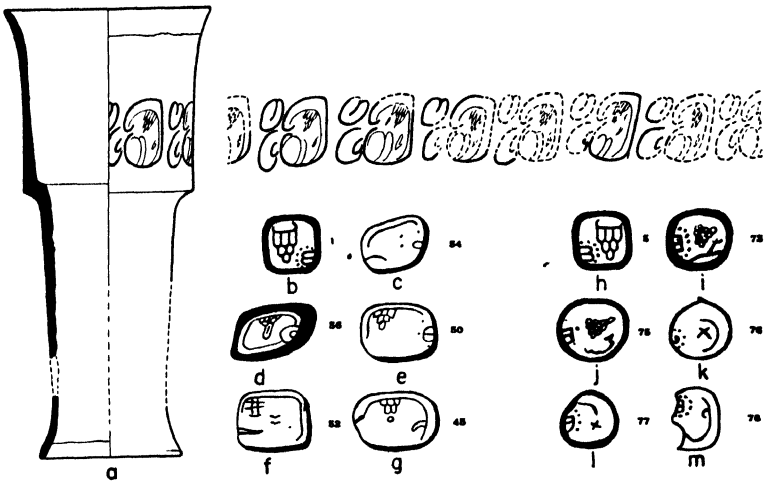


FIG. 1. Forms of the glyph *Cauac*.

period, short or long, during which Piedras Negras and Chichen Itza buildings were simultaneously in use. Either of these situations would eliminate any time-gap between the end of an Old and the beginning of a New Empire site.

Determination of the supposed *Type B* forms at Piedras Negras must therefore be made with care, but the criteria used are very simple. Figure 1, b, shows Beyer's simplification or generalized form of *Cauac*, a storm or

[11] Beyer, *Studies*, pp. 159–62 and tables 1 and 7. He says the sign *Ahau* at Chichen Itza and vicinity "on the whole is identical with its Old Empire type, but minor differences can be detected." The minor differences do not affect the nose form, on which he solely relies in distinguishing *Types A* and *B*, except in one instance, similar to our Figure 3, c. This, No. 20 in table 1 he does not attempt to date precisely and he concedes that it does not fit into the style sequence. Datings for the others carry the Old Empire Ahau nose to 11.12.5.0.0 at Yula and to 11.9.13.0.0 at Chichen Itza itself (Temple of the Four Lintels). The latest Old Empire date is 10.3.0.0.0 in the long count.

water symbol.[12] This is his early *Type A*. There are two elements, an upper group of circlets and, projecting from one side, juxtaposed loops surrounded by a semicircle of dots. Figure 1, c–g, illustrate actual non-stylized examples of this type, from Beyer's publication. They show wide variety in practice. In Figure 1, d, the loops of the side element are replaced by concentric semicircles: in g, by a single loop; in f, they are omitted. The upper element of circlets may also be omitted, as in Figure 1, c. Despite the variability of the side element it appears normally as if attached to the outline of the glyph.

Figure 1, h-m, show the *Type B* or fourth epoch forms of this same glyph. Again variation is wide. The only difference in the types is the shift of the side element from the right to the left. Compare Figure 1, b and h, Beyer's own simplifications, which are otherwise precisely alike.

Figure 1, a, shows a drawing of a partly restored Piedras Negras pottery object, probably a small drum, maximum diameter about 10.5 cm. Extended to the right, above the glyphs just considered, is a band of incised symbols from this vessel. The pendent circlets[13] identify the glyph *Cauac* with certainty. There are two loops springing from the left side of the outline, the *Type B* position. Unfortunately the semicircle of dots is here omitted. There is a small extra element opposite the main side element, in reversed position when compared with those of Figure 1, f, a *Type A glyph*.

Were the dots of the side element present, there would be no question but that this is a *Type B Cauac*, and we have seen that these may be omitted. As to size, position, and form, allowing a little for the cursive calligraphy employed, the loops correspond with the loops of Beyer's simplified side element. Although the tiny extra element corresponds in none of these ways, it is toward the right side of the field, and we should dispose of it as best we may. Note that in Figure 1, g, and in the second glyph of our band there appears to be a single circlet, detached as if falling from the main agglomeration. In the Piedras Negras glyph the extra element toward the right seems to be similar in form to this "falling" element in the upper left, though very much larger. But in the first hieroglyph of the band, where there is only one extra element, the correspondence with the circlets holds good for size as well as form. Whether these extra ele-

[12] Numbers in Figures 1 and 2 are figure numbers in Beyer, *Stylistic History*. Figures 1, a, 2, i, and 3, a, c, and d are drawn with great care from the originals by Miss Tatiana Proskouriakoff, of the University Museum's expedition staff.

[13] "Circlets" is used to include agglomerations of small units which vary considerably in shape.

ments have more than a decorative value or not, in the absence of contrary evidence they appear to be nothing more than circlets detached from the main group at the top, and unrelated to the main *Cauac* side element. In any case the presence of extra non-attached small elements opposite a main side element does not affect classification as either *Type A* or *Type B*, as one may see by comparing Figure 1, f, with Figure 1, j, k, l, or m.

In Figure 2 are examples of the glyph *Ahau*, a conventionalized face. Figure 2, a, is the *Type A* or Old Empire form, stylized by Beyer. Figure 2, b, c, and d, are actual *Type A* glyphs as classified by him. Figure 2, e, f,

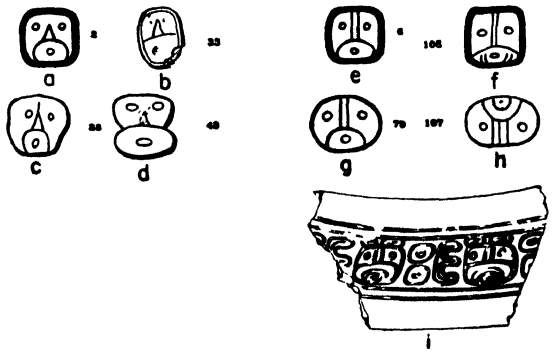


FIG. 2. Forms of the glyph *Ahau*.

g, and h, are the corresponding *Type B* forms. Figure 2, h, is inverted; a common occurrence with this glyph. Variation is wide but the sole criterion for the style grouping is easily recognized. These *Type B* forms substitute two parallel lines or bars for the triangular nose of *Type A*.

Figure 2, i, is drawn from a Piedras Negras potsherd. A red painted band includes two examples of *Ahau*, in the inverted position. To facilitate comparison the sherd is inverted in the figure so that the *Ahau* face is shown right side up. The nose is clearly not a triangle and just as clearly is formed by two parallel lines, the *Type B* or late diagnostic in the Beyer sequence. The closest correspondence with the other glyphs illustrated is with Figure 2, f, in which the nose rises from a curved line running from side to side of the glyph. This latter is from the Perez codex.

The drawing of the *Ahau* sherd, and a photograph also, are published in Satterthwaite, *Thrones at Piedras Negras*. Dr Beyer advises the writer that to him these glyphs are not clear, and require a lengthy discussion. The *Cauacs* he thinks are not typical but that the little "floating" elements to the right make it clear that these are not *Type B* forms. If he is correct in

refusing the *Type B* identifications offered above, the beautiful simplicity of the style system seems to evaporate. If we may not conclude from inspection that in the *Ahaus* of Figure 2, i, the artist intended to represent the nose by two parallel lines, surely the system should be used only by expert epigraphists. The probable correctness of the *Type B* identifications is considerably enhanced by tendencies in that direction on Piedras Negras carved monuments, which will be referred to below.

It appears necessary to deduce from the style system as it stands and the presence of these *Cauacs* and *Ahaus* that high culture Maya were present at Piedras Negras a long or short time after a number of Chichen Itza buildings were erected; or else low culture tribes were there during such a period and received these pots in trade. If the Chichen Itza inscriptions belong to a period of transition, they pre-date development of the *Type B Ahau*, since they use the triangular nose throughout, with the single exception noted.

There are two reasons for supposing the sherds were left by high culture occupants. One is the presence of the main central glyph of Figure 3, a. This occurs, with others, on sherds from another pottery drum, found with that of Figure 1, and of the same form, paste, and color, the glyphs being incised in the same cursive style. Dr Beyer writes me informally as follows concerning this glyph: "There occurs twice a hieroglyph which is very characteristic for that place [Piedras Negras] and which is not found at any other ancient city." This suggests a survival of local glyph writing and therefore of high priestly culture down to the time of the decoration of the *Cauac* vessel.

The second reason is archaeological.[14] The *Cauac* sherds were found upon the upper of several floors of Structure J-11, structurally the most advanced palace building of the city. They were therefore deposited at least as late as the last regular use of the building. This might, however, have been long after the final remodeling of this structure, since it had a masonry roof which often lasts for centuries. The *Ahau* vessel is one of many which had been left in profusion immediately upon the latest of the several floors of Structure J-12, a neighboring palace, and on the thrones which it contained. The sherds have provided material for recontructing several complete pots and there is no doubt that many more can be completely restored. The presence of large numbers of complete vessels on the floors and thrones, a circumstance lacking in the other building, proves

[14] Unpublished records of University Museum expeditions, used by kind permission of Mr H. H. F. Jayne, Director, and Dr J. Alden Mason, Curator, American Section. The *Cauac* sherds were excavated by the writer; the *Ahau* sherds by Francis M. Cresson, Jr.

this palace to have been in active use at or shortly before its complete abandonment. The possibility of deposit by late low culture tribes is ruled out by the quantity of fine pottery involved, and by the character of the roof, which was either of thatch or concrete laid on wooden beams. The pottery was deposited before the roof fell. The life of even a beam-and-concrete roof must have been strictly limited, once repairs ceased. The shallow deposit of debris from this roof gave little protection to the sherds, so that nearly all painted decoration has weathered away, with the fortunate exception of our *Ahau* bowl.

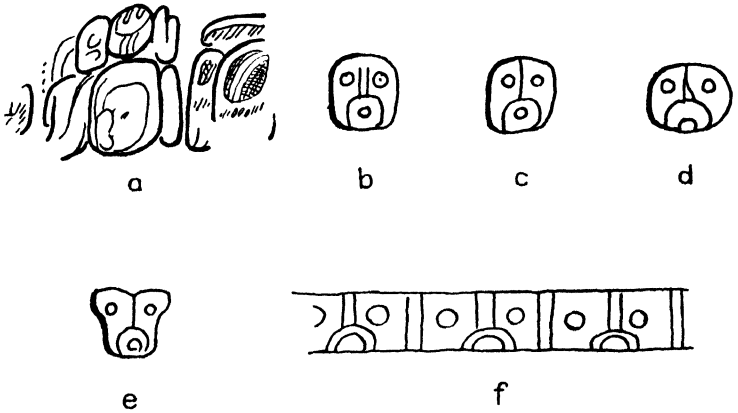


FIG. 3. Unnamed glyph and forms of the glyph *Ahau*. a, Unnamed; b-f, *Ahau*.

We are dealing then, with an occupation, probably continuous with that of the dated stone monuments, in which fine painted and incised pottery and hieroglyphic writing were used, and masonry palaces were at least kept in repair. Stratigraphically this occupation is as late as archaeological methods can be expected to make it. The sherds were on the latest floors of their buildings; these are on the latest level of Court 2 of the Acropolis;[15] and this post-dates a long series of building periods as shown by overlapping excavation cuts reaching bed-rock in Court 1.

In our present state of knowledge, there is no reliable way of limiting the Old Empire occupation to pre-New Empire times, except by the assumption that it ended shortly after the cessation of date-carving on stone. That assumption is no longer unchallenged.[16] Granting the possibility of

[15] Except that the platform of Structure J-12 was based on an earlier court floor in its earliest phases.

[16] Thompson, *Archaeological Investigations*, p. 230; *Maya Chronology*, p. 70. Mrs Ricketson believes Uaxactun in the Peten may have been occupied as late as 11.0.0.0.0, 340 tuns

a long post-monument occupation, the application of the Beyer system to our sherds seems to yield reasonable results which perhaps he would expect, since he considers that *Type B* forms of glyphs, during their late epoch, spread over all or most of the Maya area.[17]

We must, however, turn to the question of the validity of Beyer's Chichen Itza datings, and the reliability of the style sequence itself, since both have recently been questioned by J. Eric Thompson, now of the Carnegie Institution of Washington. Using a new method of his own for interpreting the Chichen Itza dates, he places fourteen out of seventeen within a period of nineteen tuns or approximate years, beginning twenty-two tuns before the latest Old Empire inscriptions.[18] These fourteen are all on building lintels, so that we are safe in saying the buildings were not erected after the inscriptions were carved.[19] If the inscribed dates are correctly read by Thompson, and are contemporaneous with their carving, as is generally assumed, they eliminate any time-gap between New and Old Empire architecture. Beyer makes clear his lack of certainty regarding his attempted precise datings, and they are perhaps not essential to his style sequence. But the Thompson readings affect the sequence in two ways.

According to the Beyer readings of dates, the *Type A Ahau* was in use at Yula (near Chichen Itza) 585 tuns after the latest Old Empire date; according to Thompson this inscription is much earlier, and the latest inscription containing the *Type A Ahau* nose is that on a column of the High Priest's Grave. This he places only 110 tuns after the latest Old Empire date. Thus the way is cleared to begin the supposed transformation of the *Ahau* nose more than four and one half centuries sooner than is permitted under the Beyer readings.

Beyer has worked out a logical sequence of changes in *Cauac* during his transitional period at Chichen Itza. If the sequence of inscriptions is adjusted to conform to the Thompson readings, the logic is destroyed. For instance the supposed intermediate *Cauac* forms of the Casa Colorado and Halakal must be placed before the *Type A* forms of the Akatzib and Monjas buildings. However, the Thompson date readings are so close together

after the latest carved date (Ricketson and Ricketson, *Uaxactun*, p. 283). Morley (*Guide Book*, pp. 33–34) recognizes but disagrees with this school of thought.

[17] Beyer, *Stylistic History*, pp. 79–80.

[18] Thompson, *New Method*, pp. 179–80. Tabulations of his readings are on p. 186. Those of Beyer (*Studies*) are tabulated on p. 169; *Ahau* and *Cauac* forms for the various inscriptions are illustrated in his table 1, opposite p. 160.

[19] Ignoring the possibility that already carved lintels may have been moved from obsolete buildings and re-used in new ones. It seems unlikely that this occurred in so great a number of cases.

that the gylph variations might be considered to result from mere instability during a short period. The presence of such a period between long periods of differing standard forms does not seem unreasonable. Disagreement between contemporary old and young priests, for instance, might account for the carving of an old style glyph after a transitional one, although a new form was shortly to become standardized.

Thompson's new date readings require great changes in Beyer's attempted dating of his epochs in terms of the long count, but do not, it seems to the writer, necessarily invalidate his main concept of sequent style periods.

Thompson questions this also, indicating his belief that the supposedly late Yucatecan forms are not late at all in Beyer's evolutionary sense, but instead are peripheral survivals of early forms once known in the Old Empire.[20] If this view is sustained our sherds remain interesting but do not at present affect the important question of the existence of a time gap between New and Old Empires. It then becomes possible that the Piedras Negras *Type B* glyphs result from influences from any region where they may have survived. This could occur during the latest Piedras Negras occupation, as required by the archaeological evidence, but still within the recorded long count period.

It is clear that the Beyer style system of relative dating must be justified by more detailed material than has yet been offered before it can gain general acceptance.[21] If Thompson's fundamental criticism stands up, a changed and more complicated style grouping may emerge. Meanwhile the chronologic position of the end of Piedras Negras occupation remains very uncertain.

Before closing it seems worth while to throw into the discussion a little evidence indicating lack of stability of the *Ahau* nose on objects surely or probably dating from Long Count (Old Empire) times. Figure 3, b, is drawn from a clear photograph of an inverted *Ahau* near the end of the long bag held by the figure on Stela 15, Piedras Negras.[22] The parallel lines of the nose do not quite reach the top of the glyph, which is without an outline. The same style is used for *Ahau* as day-sign in the final date

[20] Thompson, *New Method*, pp. 190–92.

[21] Beyer (*Stylistic History*, p. 75) leaves it to the reader to convince himself that all Old Empire inscriptions use *Type A* glyphs, a postulate which he states on p. 78.

[22] Stela 15 is in the Museo Nacional at Guatemala City. Throne 1 and Lintel 3, referred to below, are in the University Museum, Philadelphia. Published photographs of these monuments do not show glyph details clearly. An excellent restored drawing of Lintel 3 appeared in Baker, *Lintel 3 Restored*. All three will appear in *The Inscriptions of Peten*, by S. G. Morley, now in press (Carnegie Institution of Washington).

on the right side of the right leg of Throne 1, Piedras Negras; and also as infix in the second glyph-block of the right column of the back-screen of this same monument. In one of these cases the glyph is outlined. A similar form is figured by Bowditch from Stela C, Quirigua.[23] Maudslay draws this also, but his photograph is not clear.[24] These nose lines stop short of the top of the glyph; a short extension would produce *Type B.*

In the first surviving block of the seat edge and in the last block of the first column on the front of the left leg of Throne 1, above referred to, the form of Figure 3, c, occurs as infix. In his first paper Beyer suggested this as a theoretical transition form of *Ahau.* Figure 3, d, represents an *Ahau* as infix in the first block of the central panel of the back screen of this same monument, in which the triangular or *Type A Ahau* is used, but it touches the top of the glyph, an unusual thing. The *Ahau* of Figure 3, c, appears as main sign on Lintel 3, Piedras Negras, as the thirteenth glyph in the lower row above the design panel, except that the single nose line does not quite reach the top of the glyph, which is without a marginal band or cartouche. That of Figure 3, d, occurs on this monument in the fourth block of the left of two columns to the right of the design panel.

The monuments above cited are dated by Morley without question marks at 9.16.10.0.0 (Lintel 3) and 9.17.15.0.0 (Stela 15 and Throne 1).[25] These Maya dates are 130 and 105 tuns respectively before the latest Old Empire date recorded. Variation in the *Ahau* nose was clearly permissible at this time and one may, if he wants to, see tendencies in the direction of the *Type B* form.

These *Ahau* variations, on Lintel 3 and Throne 1 at least, are associated with *Type A Cauacs*, reversing the situation at Chichen Itza, where the *Type A Ahau* nose is associated with varying *Cauacs. Type A Kin* occurs on both these monuments, together with a small variant used as infix, in which there are single short strokes at sides, top and bottom. This *Kin* variant Beyer was aware of and assigned to the Old Empire.

Apart from the central Peten itself, to the east, Piedras Negras was in contact with Tabasco and with the Alta Vera Paz, to the north and south respectively.[26] The peculiar form of the pottery drum with *Cauac* glyphs occurs at Jonuta, Tabasco,[27] an important cross-roads on the water high-

[23] Bowditch, *Numeration*, pl. 6, Ahau form 9.

[24] Maudslay, *Biologia-Centrali-Americana*, Vol. 2. of plates, pl. 19.

[25] Maya dates from ms. list kindly supplied by Dr Morley. The Stela 15 reading was published by him in Carnegie Institution of Washington Year Book, No. 28, p. 327.

[26] Butler, *Piedras Negras Pottery*, pp. 25–26.

[27] Purchases on the spot by the writer.

way toward Yucatan, suggesting contact with the coast during the period of the *Cauac* inscription.

Figure 3, e, is after Dieseldorff's drawing of the relief[28] design on a pottery vessel from Chacjar, Alta Vera Paz, published by him on two occasions, first the drawing and later by photograph.[29] An *Ahau* with single-line nose depends from the headdress at the front. Figure 3, f, is after a drawing by Dieseldorff, reproduced with his kind permission, showing part of the design on a vessel from Sachamach, near Chama, Alta Vera Paz. This clearly is made up of repeated inverted Ahaus, with the *Type B* nose, formed by two parallel lines.[30]

Thompson, at a time when he apparently accepted the Beyer system, pointed out the occurrence of a single-line *Ahau* nose and of the *Type B Kin* at Holmul, in the Peten; and a possible *Type B Ahau* still farther east at Arenal, all on figure-painted vessels.[31]

The occurrence of variability and of *Type B* glyphs on pottery in these surrounding Old Empire regions is entirely consistent with the Beyer hypothesis, provided the objects can be assigned post-long count dates. But the variability on moderately late Old Empire monuments suggests that a post-monument period dating for them is not necessary, even if a change in glyph style is involved. A thorough analysis of all Old Empire inscriptions and of the codices, on which Beyer relies for his *Type A* and *Type B* forms repectively, seems desirable.

The application of the Beyer style formula to specific Old Empire material seems to produce interesting and important chronological conclusions; but doubts recently cast on the method itself make the conclusions correspondingly doubtful. Data presented may be useful in further discussion of the method, which, if it can stand the test of use, with or without revision, will be of the utmost possible value. Perhaps the attempt to use it will serve non-Mayanists as a concrete illustration of the present uncer-

[28] Butler (*Piedras Negras Pottery*, pp. 10, 18–19) surmises a late dating for relief decoration (carved ware) at Piedras Negras. This has since been confirmed by sherds combining glyph bands with human figures. Vaillant (*Chronology*, p. 135) cites Lothrop for Vera Paz associations of vase carving and painting. Figure painting he assigns to the closing period of the long count (p. 134).

[29] Dieseldorff, *Welchem Gott Stellen*, p. 49; *Kunst und Religion*, pl. 32. The drawing is reproduced also in Villacorta and Rodas, *Manuscrito*, pp. 388–89.

[30] Beyer (*Stylistic History*, p. 95) notes the supposedly earlier *Type A* form of *Cauac* at Nebaj, in the same general region.

[31] Thompson, *Maya Chronology*, p. 69. The first two are illustrated in Merwin and Vaillant, *Ruins of Holmul*, plates 29 and 30. This makes three out of the four glyphs found in *Type B* form in Old Empire country on pottery vessels late at their sites. The *Kin* at Holmul parallels the *Cauac* and *Ahau* at Piedras Negras, the sites being in different sub-regions.

tainty in respect to Maya chronology as soon as one tries to apply the Maya time machine to anything more than the Old Empire monuments themselves.

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THE NORTHWARD SPREAD OF HORSES AMONG THE PLAINS INDIANS

By FRANCIS HAINES

THE problem of the spread of the horse to the western tribes of North America, outlined by Clark Wissler some twenty-four years ago,[1] has been rather neglected since that time, although many people working with individual tribes have included some local material on the horse. In the first paper of this series[2] an attempt was made to determine the probability of stray horses from either the Coronado or DeSoto expeditions furnishing the basic stock for the Indian herds, with the conclusion that the available evidence was against it. This paper continues the discussion, taking up the subject at about the year 1600, and dealing with the northward spread of the horse from the Spanish settlements, with attention to the rate of spread, the lines of distribution, and the approximate dates when the various tribes secured their first animals. Special attention has been paid to the geography of the West, including such features as mountain masses, Indian trails and trade routes, rivers, and deserts.

While it is possible that the Pueblo villages along the Rio Grande had a few horses before Oñate established his settlements there at the opening of the seventeenth century, they must have been quite unimportant, since no mention is made of them. None of the Plains tribes had been able to acquire the animals which later became such an important factor in their daily lives. The center from which the horses spread to the Indian tribes was the stock-raising area about Santa Fé, and from here they spread very slowly at first but later more rapidly until the entire plains and plateau country had been supplied.

The initial obstacle to be overcome in converting the Indian to the use of the horse was his ignorance in the care and use of the strange animal. This was overcome by the constant contact between the Indians and the horse-using Spaniard, rather than by the chance acquisition of a stray animal by some tribe. To such a tribe the stray would have suggested a dinner rather than a servant. While the Spaniards did not intend to make horse-users of the Indians of New Mexico, and were actually opposed to

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[1] Wissler, *The Influence of the Horse in the Development of Plains Culture*, p. 6.

[2] Haines, *Where Did the Plains Indians Get their Horses?*

According to Professor Arthur S. Aiton, University of Michigan, the Coronado muster roll shows that of five hundred fifty-eight horses taken on the expedition, only two were mares, further reducing the possibility that strays from the expedition might have supplied breeding stock for the plains.

This raises the interesting question concerning DeSoto. Did he likewise refuse to take mares? If so, the matter would be quite definitely settled.

such a result, as is shown by the laws against Indians riding horses, their method of farming soon achieved that end. On the various farms run by the missions or by private individuals the Indians were the servants who did all the work, including the care of various kinds of livestock. Under

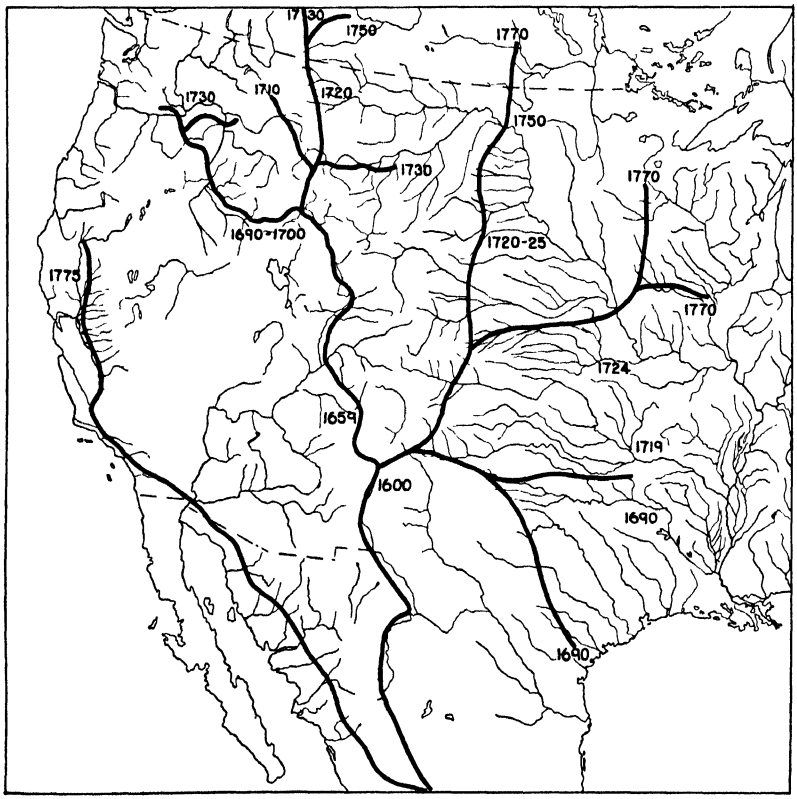


FIG. 1. Map showing the northward spread of the horse in western United States. Lines indicate the approximate routes followed by horses; the dates, the approximate time the horse reached each area.

such circumstances the herdsmen soon learned the methods of training and using horses, with the mission farm offering him the greater opportunity of learning to ride.[3]

[3] Bolton (*Rim of Christendom*, pp. 491–524) gives a good account of the standard mission practice of raising stock with Indian herdsmen. Denhart (*The Indian Acquires the Horse*, p. 24) gives the story more in detail. Both accounts are based on Spanish documents.

Once the mission Indian had learned to use the new servant he was but little better off than before. Only by seeking refuge among the nomadic tribes could he escape from the constant labor imposed upon him and be assured of safety from the soldiers whose duty it was to return him to his task and to fitting punishment. What would be more natural than for a herdsman to make his escape with some of the horses entrusted to his care? Frontier history abounds in such incidents.[4]

If the fugitive was able to join one of the nomadic tribes before disaster overtook him, he might become an important man among his adopted people because of his knowledge of the white ways and his possession of the strange animal. Sometimes, however, he became a slave, worse off than before.[5] In either case, the wild tribe would have horses and someone to teach them how to use the new servants. Warriors, who previously would have had no incentive to steal a horse except possibly for food, would now be interested in securing mounts and pack animals of their own. The tribe would gradually acquire more horses by barter or theft, but it would take many years before an adequate supply could be procured. Benavides,[6] who has given a rather detailed description of the various tribes of New Mexico and the adjoining regions, made no mention of horses being used by the Indians, although he wrote thirty years after the first settlement.

By 1659 the Navaho Apaches to the northwest of the settlements are reported as making raids on the ranch stock.[7] Five years later an account states that this has become a constant practice, and that the Apaches to the east bring in Indian captives from other tribes to trade for horses.[8]

While it is evident that the gradual process outlined above would eventually have distributed horses throughout the entire west, the movement was greatly speeded up by the Pueblo revolt in 1680. When the Spaniards were driven out, many thousand horses, cattle, sheep, and hogs were captured by the rebels. Of these, the horses would be traded off to the Plains tribes since they would bring higher prices in trade and were of less value to the Pueblos. Most of the horses would probably go to the east in exchange for buffalo robes and dried meat, standard articles of trade in the region when the white men first appeared. The resulting distribution of horses probably was heavier to the southeast into Texas because of the close trade relations with the tribes in that direction.

This supposition is supported by the distribution of horses found in

[4] *Carta del padre Fray Silvestre Velez de Escalante*, as cited by Thomas, *Spanish Expeditions Northeast of New Mexico.*

[5] Diego de Vargas, *Journal*, cited by Thomas.

[6] Ayer, *Memorial of Benavides.*

[7] Scholes, Troublous Times in New Mexico.

[8] Posedas, cited by Thomas.

Texas by 1690. When Fernando del Bosque had explored along the Rio Grande from the mouth of the Conches to the Pecos River and some distance eastward into Texas in 1675, he found no trace of horses or of horse-using Indians.[9] Eight years later the Mendoza-Lopez expedition also found the banks of the Rio Grande barren of horses, but as it progressed to the northeast it soon encountered Indians with a few horses. The farther north the expedition proceeded the more animals they found,[10] indicating that the horse frontier was moving from north to south in Texas and had not quite reached the Rio Grande at that time.

This is quite different from the movement of horses in the next century, when the Plains Indians, particularly the Comanche, raided deep into Mexico, driving thousands of animals north each year. The Spanish missions and presidios also brought their stock in by the road from Monclova, while the road to Santa Fé was blocked by the wild tribes.

When the Spanish, in 1690, went to Matagordos Bay to expel the French left there by La Salle, they found a few horses near the mouth of the Colorado River of Texas, under conditions suggesting that the animals were a rather recent importation. Few of the Indians had horses to ride, and dogs were still used to carry the meat.[11]

To the north the situation was quite similar. Tonty, in 1690, found about thirty horses among the Cadadoquis along the Red River near the Arkansas-Texas boundary. A few days' travel to the south-west he met the Naouadiche, who had many horses, each lodge posessing four or five.[12] This indicates that the horses were spreading from west to east in that section, and that the Cadadoquis marked the extreme limit of their advance. It would seem, then, that by 1690 all the Plains tribes of Texas had horses, but that the animals were quite scarce to the south and east, indicating that they had but recently reached those areas.

North of Texas there is less data. Tonty's report of his first trip down the Mississippi, as given by Margry,[13] indicates that he knew of horses on the Missouri in 1682. However, his manuscript as translated by Falconer[14] does not indicate any such observation. The passage was probably written after 1695, and was based on Tonty's findings in 1690.

Du Tisne gives the first reliable account of horses among the Pawnee. When he reached two of their villages in Oklahoma near the Arkansas River in 1719, it is evident he was in contact with the horse frontier. He

[9] Bolton, *Spanish Explorations in the Southwest*, p. 296.
[10] *Ibid.*, p. 315. [11] *Ibid.*, p. 359.
[12] Falconer, *On the Discovery of the Mississippi*, pp. 88–89.
[13] Margry, *Mémoires et documents*, Vol. 6, p. 248. [14] Falconer, *op. cit.*

found that the two villages possessed a total of three hundred horses, which to Du Tisne, accustomed to the Indians of the wooded regions who had none of the animals, seemed like a great number, and he so reported it. His statement that the Pawnee villages had a great number of horses has often been quoted without comment, leaving the impression with the casual reader that horses were as common there at that time as they were later when the Pawnee were the noted horse traders of that section of the country. Actually Du Tisne's figures show that the three hundred horses had to supply more than four hundred warriors, or less than one horse per man, while normal figures for such villages in later times would have been five to ten horses per man, or a total of from two to five thousand horses in all. Another indication that horses actually were scarce is Du Tisne's statement that they were highly valued and not for sale.[15]

Bourgmont, on his trip up the Missouri River to the plains in 1724, likewise crossed the border of the horse area as is shown by his account. The Kansas Indians who accompanied him to the plains did not take horses on the trip, the detailed account listing fourteen war chiefs, three hundred warriors, three hundred women, five hundred children, and three hundred dogs, but no horses. Later, Bourgmont met some of the Kansas tribe farther west who did have a few horses, and he managed to buy seven animals at a high price.[16] This would indicate that the edge of the horse area had just reached the neighborhood of the junction of the Kansas and Missouri Rivers at that time.

The next definite account of white men coming in contact with the northward moving border of the horse area is found in the writings of the Vérendryes. From their various journals covering the period 1735–1743, it is clear that there were no horses north and east of the Missouri River in the Dakotas until one of the sons brought two of the animals from the vicinity of the Black Hills to the Canadian posts.[17] Horses had as yet appeared only occasionally on the southern bank of the Missouri opposite the Mandan villages. The real limit of horse using Indians was the Black Hills country, the Mandans having acquired no horses yet although they had been trading with horse Indians for several years.

The Missouri should not be considered as a serious barrier to the spread of the horse in this region. During the low water of late summer it would have been comparatively easy to swim horses across the stream, especially with the aid of the "bull boats." May not the Mandans and some of the Sioux have delayed in acquiring horses because the animals did not fit into

[15] Margry, *op. cit.*, Vol. 6, p. 312. [16] Chappell, *History of the Missouri River*, p. 260.
[17] Burpee, *Journals of Vérendrye*, p. 387.

their plan of living? At any rate, Carver found a few horses at Prairie du Chien in 1766, but the Sioux whom he met in central Minnesota that same year were using canoes rather than horses.[18] This is important for the purpose of this paper because Peter Pond, trading in the same area six years later, found horses in common use among the Sioux who, he says, are the same ones visited by Carver.[19] David Thompson, writing in 1796, reported that the Sioux were then using horses instead of canoes,[20] indicating that they had made the change in comparatively recent times or it would not have been worth the emphasis he gave it.

All the evidence considered above, in combination with the previous article dealing with the earlier period, would indicate that Santa Fé and the ranches in its vicinity was the center of distribution for the horses of the plains area. East of the mountains the horses spread in a fan shaped area, with the movement into Texas being the more rapid. The less rapid movement to the north and the northeast may have been due to the greater number of Indians to be supplied, or to the southward movement of the tribes, which nullified to some extent this northward movement of the horse, but these are merely guesses on the part of the writer. The spread of the horse to the plains area began about 1630 and reached its northern limits, except for a small extension into the timbered area, by 1770. Very few horses could have been owned north of central Kansas before 1700.

The presence of horses in the Blackfoot country, mentioned by St Pierre in 1751, confronts us with a new phase of the problem since it is highly improbable that the Blackfoot secured their horses by the way of the plains. By 1754 horses were in general use in this tribe both for pack animals and for riding. Although bands of wild horses were common in the Blackfoot country fifty years later, it is probable that the two seen on the range by Hendry in 1754 were strays escaped from some camp. The Assiniboin just to the east of the Blackfoot had a few horses which they used for packing but they had not yet learned to ride.[21] Those farther to the east had no horses at all, indicating that the spread was from the eastern slope of the Rockies to the east, rather than from south to north.

We have much more definite information concerning the first horse in the Blackfoot country than we have for any other of the tribes discussed, since David Thompson was a friend of the chief who saw the first horse, and who helped introduce the animal to the tribe. In 1787 Thompson spent a long time visiting the tribe. An old war chief, whom he estimated to be between seventy-five and eighty years old at the time, gave him a

[18] Carver, *Travels*, pp. 50, 294–95. [19] Gates, *Five Fur Traders*, pp. 53, 58.
[20] Tyrrell, *David Thompson's Narrative*, p. 178. [21] Hendry, *Journal*.

detailed account of the first horse he had seen, and stated that the tribe had acquired their first animals from the Shoshone or Snake while the chief was a young man, but some years after his marriage. This event took place almost simultaneously with the acquisition of firearms by the Blackfoot.[22] Since the chief was estimated to be seventy-five or eighty in 1787. he was probably born between 1700 and 1720 (allowing a great deal on each end for an error in Thompson's estimate). He heard of horses among the Snake for the first time when he was sixteen, but his tribe did not acquire any until after he had been married several years. Thompson gives the usual age for marriage as twenty-two for men in the tribe. Accepting Thompson as accurate in his estimates, this would place the acquisition of the horse between 1732 and 1737. I favor the earlier date because of the progress made in the use of the animal, and the numbers owned by the tribe in 1754. From all the evidence, it would seem more probable that the chief was older rather than younger than the estimated age. Note that the Snake were using the horse in war against the Blackfoot when the chief was sixteen, or about 1722. At this time the animal had not spread north of the Black Hills, some seven hundred miles away and on the line of distribution from the southern plains to the Blackfoot country.

Flathead tribal tradition holds that they had horses before the Blackfoot secured any, and that the Blackfoot got theirs from the Shoshone. The Flathead also say that their own horses came from the south and southeast.[23] Keeping in mind that this account was given near Flathead Lake in western Montana, it is clear that the horses are indicated as coming from the headwaters of the Missouri River above Three Forks, Montana, or from the upper valley of the Snake River. The Flathead corroborate the Blackfoot story of their great fight against the Shoshone when the latter had horses but the former did not. Since the old chief told Thompson that the first horses came from west of the mountains, the story must be substantially correct, having been obtained from two independent sources.

Although the Flathead account placed the date of their acquisition of the horse at about 1600, it was probably about 1710–1720, or at about the time the Blackfoot first saw any. Working back, this would indicate horses among the Shoshone in Idaho about 1690–1700. Comparing this with our dates east of the mountains, the Shoshone had horses by the time the animals had reached the Oklahoma-Arkansas border, and twenty years before they reached the forks of the Kansas and Missouri Rivers. Now it is hard to believe that horses could have spread north along the

[22] Tyrrell, *David Thompson's Narrative*, pp. 330–34.

[23] Teit, *Salishan Tribes of the Western Plateaus*, p. 351.

eastern slopes of the Rockies to the North Platte, and thence by South Pass to the upper Snake country as quickly as they spread from southeastern Colorado to the mouth of the Kansas River.

Another indication that horses were in western Montana before they reached its southeastern corner is the Crow tradition that their first horses came from the west, from the Nez Percé, before they could get any horses from the east or south.[24] From the North Platte-South Pass route to the Crow country is less than two hundred miles—another indication that there could hardly have been horses that near the Crows for thirty or forty years without their having secured some.

This discussion all indicates that there were two great lines by which the horses from Santa Fé were distributed to the north. One of these, well known for many years, was by way of the great plains. The other was to the west of the continental divide, and followed the same route later used so much by the mountain men. It went from Santa Fé to the Snake River by way of the headwaters of the Colorado, the Grand and Green Rivers. Along this path the Navaho Apaches, the Ute, and the Shoshone took horses to the Pacific Northwest. Thus the Shoshone of southern Idaho were the means of furnishing horses to the Cayuse, Walla Walla, Yakima, Palouse, Nez Percé, Coeur d'Alêne, Flathead, Blackfoot, Crow, and many other tribes before horses were common among the Sioux and the northeastern Assiniboin. It is interesting to note that the horse thieves of later years usually stole from the tribes from whom they traditionally secured their first animals.

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[24] *Bradley Manuscript*, pp. 216, 220.

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THE ALASKAN WHALE CULT AND ITS AFFINITIES

By MARGARET LANTIS

THIS paper is devoted to the ritual aspects of the whale hunt in the North Pacific and Bering Sea areas and in the American Arctic. The area covered extends from Bering Strait down through northeast Siberia to the Ainu; in America it extends through the Alaskan Eskimo and Aleut, and the Nootka, Makah, Quilleute, and Quinault Indians, which were the most southerly whale hunting tribes on the North Pacific Coast; and finally from Alaska across the Arctic coast and islands to Greenland. Although some elements of the material aspect of whaling will inevitably enter the discussion, the primary problem here is to establish the boundaries of the whale hunting cult, its elements and their regional diversity, and a few general conclusions suggested by these data.

I

The whale cult of the entire area is so complex that some kind of tabular summary must be used, to avoid taking up too much space. Yet it is often exceedingly difficult to list, group, and equate culture elements. Hence many of the traits or small complexes of traits necessitate explanatory notes.

Elements 1 to 14, 30 and 31 relate to prerogatives and honors accorded the whalers and to their secret knowledge and appurtenances which contributed to their power and honor. Elements 15 to 22 inclusive relate to the special behavior *with a magical basis* carried out just before and during the hunt, with the intention of facilitating a successful hunt. Elements 23 to 29 inclusive deal with the dancing, singing, feasting, and solemn rituals following the bringing in of the whale, which were apparently intended to honor the whale as well as the whalers in practically all cases. Element 32 is a particular belief. Although this attempt has been made to arrange the whole group of elements as a sequence proceeding from the preparation through the hunt itself to the celebration and disposal of the animal following the hunt, it is admitted that the arrangement is at times distorted. Customs observed at different stages of the hunt may be basically related and should be grouped together. Cross-references from one element to another will in some cases call attention to such connections.[1]

[1] The following have been consulted in preparing the comparative summary:

Boas, 1907, pp. 499–500 (west coast of Hudson Bay, tribal name not given but probably Iglulik; Iglulik will be used).

Boas, 1930, pp. 260–69 (Nootka).

1. *High social position of the whaler*—Nootka and Makah, Quinault, Quilleute, Kodiak,[2] King Island, Little Diomede Island, Cape Prince of Wales, Arctic coast of Alaska, Siberian Eskimo, Maritime Chukchee, Maritime Koryak.

Bogoras, 1910, pp. 323–25, 378, 404, 406–408, 479–80 (Chukchee, chiefly Maritime Chukchee).

Crantz, Vol. 1, p. 120 (Greenland).

Curtis, Vol. 10, pp. 29, 283–88 (Kwakiutl); Vol. 11, pp. 16–40, 103–110 (Makah and Nootka); Vol. 20, pp. 101 (King Island), 113–15 (Little Diomede Island), 137–41 (Cape Prince of Wales), 163–64 (Kotzebue), 195 (Noatak), 212 (Kobuk).

De Laguna, pp. 46–47, 154 (Koniag and Cook Inlet Eskimos).

Drucker, Ms. (Nootka).

Egede, p. 125 (Greenland).

Frachtenberg, pp. 322, 342–45 (Quilleute).

Gunther, p. 204 (Klallam).

Hawkes, 1916, pp. 139–40 (Labrador Eskimo).

Holmberg, pp. 107–12 (Koniag). Holmberg's material is taken largely from Davidof who visited Kodiak Island several times between 1802 and 1808. He himself visited the island just before 1850.

Jewitt, pp. 84, 87, 102, 134–37 (Nootka).

Jochelson, 1905, pp. 38, 65–77 (Koryak, chiefly Maritime Koryak).

Koppert, pp. 56–60 (Nootka).

Lisiansky, pp. 174, 202, 209 (Koniag). Lisiansky visited Kodiak Island in 1805 as a member of the Krusenstern Expedition.

Murdoch, pp. 240, 272–75, 430, 435–39 (Point Barrow).

Nelson, p. 438 (Unalit).

Olson, pp. 44–48 (Quinault).

Osgood, 1937, p. 39 (Koniag).

Parry, pp. 362–63 (Iglulik area, tribe not specified).

Petrof, p. 215 (Bering Strait area).

Pinart, Ms. (Koniag).

Pinart, 1873, pp. 679–80 (Koniag).

Porter, pp. 139–41, 147–48 (Point Barrow area).

Rasmussen, pp. 310–14 (Point Barrow).

Sarytchef, pp. 64–65 (Aleut).

Sproat, pp. 59–60, 226–27 (Nootka).

Stefansson, pp. 182–83 (Point Hope), 347 (Kotzebue Sound), 389–94 (Cape Smythe, i.e., Point Barrow region), 138, 168, 327, 329, 359, 378 (mouth of Mackenzie River, chiefly the Kittegaryumiut).

Thornton, pp. 113, 165–69 (Cape Prince of Wales).

Von Wrangell, pp. 54–55 (Koniag).

Waterman, pp. 38–40 (Makah and Nootka).

Weyer, pp. 309–10 (Koniag); 336–40 ("Observances Accorded Animals Analogous to Mourning Customs" and "Sacrificing a Part for the Whole" among various Eskimo tribes); 367–72 ("Taboos Pertaining to Game Animals" and "Taboos against the Use of Iron").

[2] The terms Koniag and Kodiak will be used interchangeably. Koniag is the tribal name of the Eskimos who inhabited Kodiak Island (near Cook Inlet and the Alaska Peninsula) and a small part of the adjacent mainland.

Regarding this and the three following points, note that among the Koniag and in the southern center the whale cult was worked into the caste system, and the number of whalers was very limited (Lisiansky, Sproat, Olson). (By "whaler" is meant in this case not just any member of a whaling crew but only the man privileged to use the harpoon.) Among the Nootka only chiefs and brothers of chiefs could captain a whaling expedition (Drucker). Among the Clayoquot of the Nootka, none could harpoon a whale until the head-chief had done so (Jewitt, Koppert).

On Little Diomede Island (unfortunately there is no information for St Lawrence Island), a pattern similar to that of the Chukchee prevailed: the whale ceremonies were duplicated by all the whaling families, each family's privately owned ceremony differing from another's only in details (Curtis). At Cape Prince of Wales, "the whaling crews were composed of the sturdiest and bravest men of the village; in fact, they were regarded as a class by themselves." " . . . The whale crews, who hold their positions permanently, are usually relatives of the boat-owners, who steer when on the hunt" (Curtis). Here and north to Pt Barrow the umialik (boat owner) was the man who came nearest to being formal chief. There were neither hereditary nor elected chiefs, but one umialik usually stood out because of his wealth and prestige as a hunter. Most men owned umiaks in which to transport their families and goods, but only a few of them had the necessary equipment, amulets, songs, and personality to captain a whaling crew (Rasmussen, Murdoch). At Pt Barrow, moreover, "when a man had got his first whale, it was his duty, at the great whaling festival, to throw away all that he owned of furs and other things . . . " (Rasmussen).

2. *Boat-owner, harpooner, and others held rights to particular parts of the whale in distribution*—Nootka, Quinault, King Island, Cape Prince of Wales.

This undoubtedly was part of the whaling complex elsewhere but has not been reported. The Nootka or Quinault whaler, i.e., the leader, received the "saddle" as his portion but he himself could not eat it nor any part of his own whale (Drucker). Note that among the Nootka and Quinault, boat-owner, harpooner, and leader were all the same person. In northwest Alaska (and in northeast Siberia?) the boat owner was organizer, steerer, and the one who got the most credit, *but he did not wield the harpoon.* He resembled the Nootka whaling leader in that it was his personal whaling songs which were sung by his crew.

3. *Initiation of young whaler*—Nootka, Makah, Quilleute, Quinault(?), Kodiak.

This question is not clear. Apparently this does not mean initiation into a society, but rather a cult initiation, a long and arduous period of instruction in which the young whaler learned the ritual preparations, songs, etc. Revelation of the hiding place and ceremonial use of the human mummies and skeletons was an important part of the instruction (see Nos. 4, 9, and 10). The seeking of a vision apparently was always part of it. The young whaler must have gone through a period of instruction in the other areas also, but the data are not so specific. The southern center and the Koniag seem actually to have had a more secret and elaborate initiation.

Frachtenberg claims that the Quilleute had a Whale-Hunters' Society which was said to have been adopted from the Makah around 1850. However, the ritual of it was "modeled wholly after the native Hunting ceremonial [i.e. of the Quilleute] with which it shares in common special features" (Frachtenberg). Pinart said of the Koniag, "Not anyone who wanted to, could become a whale hunter; the novice had to pass through a number of initiatory ceremonies. Whalers lived in certain villages situated in inaccessible spots, it might be on a high cliff, it might be in the midst of the forests surrounding the coasts." De Laguna has referred to a whalers' secret society (pp. 46–47) but we have no other evidence of such a society.

4. *Appurtenances of whaling inherited, including esoteric knowledge*—Nootka, Quinault, Kodiak, Little Diomede Island, Cape Prince of Wales, Iglulik.

True not only of incantations but also, at Cape Prince of Wales especially, of the cache of whaling amulets. Knowledge of the hiding place of such a cache and the use of the various amulets was carefully transmitted from father to son (Curtis). See No. 6.

On Kodiak Island, possession of the mummies was the most important whale hunting legacy. Lisiansky said, "Of these whalers a story prevails, that when the fishing season is over, they conceal their instruments in the mountains, till wanted again; and that they steal, whenever they can, the bodies of such fisherman as die, and were known to have distinguished themselves in their calling, which they preserve in caves" (p. 174). Then "a father at his death bequeaths this cavern to the son whom he appoints to succeed him in the whale fishery, and the son endeavours to augment the precious collection; so that a whaler may be found possessing upwards of twenty of such corpses" (p. 209). The use of human remains in connection with whaling was also inherited esoteric knowledge among the Nootka (Curtis). (See below, pp. 455 regarding inheritance of a worm whaling amulet among the Nootka.)

Kodiak material on incantations is not very full. There were undoubtedly individual vision quests in which songs and formulæ were obtained; and there may conceivably have been purchase of such things. However, the data reiterate *inheritance* and say very little about the other possibilities. In fact, inheritance of the esoteric adjuncts of whaling was essential in the southern center and in the whole Alaskan whaling area.

For Iglulik, see below, No. 26.

5. *Individual ownership of whaling songs*—Nootka, Kodiak, Cape Smythe (Pt Barrow), Cape Prince of Wales.

Probably true elsewhere, but there is not much specific information.

6. *Special whale-hunting amulets, chiefly of animal origin, which are secreted except during the hunt*—Nootka, Kodiak, Cape Prince of Wales, Pt Barrow, Koryak(?).

Whaling amulets of the Koryak have been described but without a statement as to their disposal. Probably they should be included here. The amulets of one Pt Barrow whaling umiak noticed by Murdoch consisted of two wolf skulls, a dried

raven, axis vertebra of a seal and numerous feathers. The skin of a golden eagle or the tip of a red fox's tail were considered especially powerful amulets. Also "the captain and harpooner wore fillets of mountain sheepskin, with a little crystal or stone image of a whale dangling at each side of the face, and the captain's fillet was also fringed with the incisor teeth of the mountain sheep;" and both had little stone whales fastened to their jackets (Murdoch). A cache of whaling amulets and equipment at Cape Prince of Wales was examined by the Curtis Expedition: several stuffed birdskins, a wolf and a fox skull, including jawbones; caribou hoof and shin bone; wolf claw to which two small stones were tied; head band with blue bead in center; wooden box for talismans, containing a pebble, a blue bead, other beads wrapped in intestinal parchment, and a roll of parchment; several long sinew belts from which hung sewn skin bags, each about 6″ long and 1″ wide, all containing dried whale meat; a wooden harpoon rest, a large wooden ladle, harpoon points and heads, and a wooden bird, which was hollowed out to hold spare harpoon points. Apparently limited to Nootka and Koniag was the use of worm amulets. See below, pp. 455.

7. *Whaling season a special ceremonial and tabu season particularly for the whaler*—Kodiak, Cape Prince of Wales, Pt Hope, Pt Barrow, Kittegaryuit (Mackenzie area).

The whaling season at Pt Barrow lasted approximately from April 1st to June 1st. "During the months the whaling lasted, all the men lived uninterruptedly out at the edge of the ice, despite much inconvenience arising from the tabu system. Tents were forbidden, and they had therefore to be content with storm shelters made of skins, or seek some protection from the elements under the boat. It was also forbidden to dry clothes, and raw food was tabu; all meat had to be boiled" (Rasmussen). In the Mackenzie region during the whaling season the men took all of their meals in the kajigi (ceremonial house) (Stefansson). The Koniag lived apart from the community in isolated houses (Pinart), and during the whaling season (which was July and August according to Holmberg) "the whalers were reckoned unclean, and nobody would eat out of the same dish with them, or even come near them" (Lisiansky). Here, not only could no profane eye look upon the mummies which the whalers secreted, but also no one but a whaler could touch the kayaks used in this hunt or even look into them (Weyer).

In the whole northern area tabus imposed on the stay-at-homes at this season related chiefly to skin dressing and sewing. Jewitt said Nootka women did as little cooking as possible but there are no statements regarding sewing. Note that here the period of preparation was the strict tabu period, not the whaling season itself (Drucker). See Nos. 21 and 22 for tabus during actual hunt.

8. *Sex tabus for whalers*—Quinault, Nootka and Makah, Kodiak, Cape Prince of Wales, Pt Barrow.

Olson has stated that previous to the whaling season the Quinault whaler went through a month of "training," during which time he was strictly continent and every night bathed in the ocean or the river. Drucker found in recent fieldwork

among the Nootka that to them such a statement meant this: a whaler usually began his training several months before the hunt; he did not, however, take ceremonial baths and remain continent all this time. Each one had his own procedure dictated by the supernatural revelations obtained by his whaler-ancestors and by himself, and he had his own period for following this procedure. He might remain continent, bathe, whip himself, etc., for four days, then "rest" for several days before going through his four-day routine again, this alternation of tabu and free periods continuing until the actual hunt. In this area and in northern Alaska, not all participants of a hunt were required to observe a long tabu period; e.g., the Quinault harpooner warned his crew to be continent only for ten days just preceding the hunt, whereas he himself had to observe a thirty day period (Olson).

9. *Use of human corpses in connection with ceremonial bathing and whipping or rubbing*—Nootka, Quinault, Klallam(?), Kodiak.

Ritual bathing and whipping was a strong Northwest Coast trait which apparently became secondarily attached to the whaling complex. The Klallam whaler fasted and bathed to obtain a whaling spirit, but there is neither positive nor negative evidence in regard to the use of corpses at the same time. See below, pp. 452 for further discussion.

10. *Practice of carrying human remains in whaling canoe during hunt*—Quinault, Nootka(?), Kodiak, Aleut(?).

The further elaborations (1) of drying pieces of flesh or extracting oil from the flesh and (2) of smearing this substance on harpoon points were limited to Aleuts and Koniag. See below, pp. 452.

11. *Complete repair and cleansing of boat, hunting implements, and clothing before whaling season*—Little Diomede Island, Cape Prince of Wales, Pt Barrow, Greenland.

This is the only specific information on religious practices connected with whaling in Greenland. All members of a whaling crew had to wear clean clothing, as the whale was driven away by uncleanliness (Crantz, Egede). See No. 12.

12. *Special implements, used only in the whale-hunt*—Nootka, Kodiak, Cape Prince of Wales, Kobuk, Kotzebue.

In north Alaska, discarding of clothing at the end of the whaling season (see No. 30) and the use of implements never used in other kinds of hunting probably were connected more with the tabu on mixing products of land and sea than on any other consideration. In particular the people tried to keep separate the things having to do with caribou hunting ("deer" hunting) and whale hunting; e.g., at Cape Smythe no one could scrape deer skins after the return of the sun in spring if he intended to have anything to do with whaling in the coming season (Stefansson). Kodiak: special implements, secreted when not in use (Lisiansky); no statement regarding clothing.

13. *Special headgear*—Nootka, Pt Barrow.

Probably true elsewhere, but not reported. The Nootka whaler and his wife wore headgear representing the "saddle" of the whale. See Nos. 2 and 6.

14. *Special face-painting for whalers*—general southern area (?), Cape Prince of Wales, Pt Barrow (Cape Smythe).

At Cape Smythe whalemen's wives also had special face-painting (Stefansson). The Alaskan custom of face painting may be connected with the Mackenzie area practice of tattooing the whalers. See No. 31.

15. *Imitating a whale during the preparations*—Quinault, Nootka.

Very likely true elsewhere, but not reported. This trait has a very clear magical basis, e.g., a Nootka whaler during his ceremonial preparatory bathing would move slowly and quietly so that the whale would be quiet and allow the hunters to approach (Curtis). (See footnote 61, p. 461).

16. *Imitating the killing of a whale and the distribution of meat*—Little Diomede Island, Cape Prince of Wales.

Nos. 16 and 17 are parts of the same ceremony.

17. *In the ceremony of opening the whaling season, a woman symbolizes the whale-spirit*—Little Diomede Island, Cape Prince of Wales.

In the launching of the boat, a woman took the prominent part. (Thornton's account suggests that she was not the whaler's wife; the Curtis account indicates, but does not say explicitly, that she was.) After solemn repair and replenishment of gear, singing of whaling songs, and donning of new clothes, the crew went through a ritual enactment of launching the boat and spearing the woman, i.e., the whale. The whale was then cut up and distributed, this time in the form of reindeer fat moulded into the shape of a whale. Boys of the village scrambled for food, this representing the distribution of whale meat. The woman sprinkled ashes on the ice to drive away evil spirits. There was appropriate singing at various stages of the imitative hunt (Curtis). See below, pp. 449.

18. *Special whaling songs*—Nootka and Makah, Kodiak, Little Diomede Island, Cape Prince of Wales, Pt Barrow (Cape Smythe).

In north Alaska, songs were sung before and after the hunt. There is no mention, positive or negative, of songs during the hunt. In the southern center and on Kodiak, songs were sung during the hunt as well. When the Kodiak whaler was ready to leave, he called to his aid the sun, moon, or the sea, or called upon his bag of talismans, which he took with him. As he started out, he made a speech to his bidarka (kayak) using the name he had given it. Later when the whale was sighted, he made "different figures in his bidarka." All the hunters sang an incantation when they left the shore, others when they sighted the whale and again just before throwing the spear. The song which the hunters sang when they hit the whale was the incantation that a great kashak (priest) was supposed to have used when he first created the whale (Pinart, Ms.).

19. *Stone harpoon-point (not iron; usually flint specified) used in taking beluga* (at least the first wound had to be made with stone)—Kodiak, Bering Strait region, Pt Hope, Pt Barrow, Unalit (no iron used in cutting up whale or in the village), Koryak.[3]

[3] Bogoras refers to this Koryak item in his *Chukchee: Material Culture.*

20. *Whaling-ground must be free of contamination*—Kodiak(?), Pt Hope (by anything from graveyard), Kotzebue (by anything connected with bear hunt).

21. *All those left in village during actual whale-hunt not allowed to sleep or work*—Kotzebue, Kobuk, Pt Barrow (no pounding or sewing specified), Kittegaryuit, Iglulik(?). See No. 7.

22. *Whaler's wife must remain very quietly at home and not eat during hunt, to draw whale to her*—Nootka, Kodiak, Cape Prince of Wales, Kittegaryuit, Iglulik(?). See below, pp. 459.

23. *Whaler's wife in ceremonial dress comes to meet the whale, dances and sings*—Nootka, Cape Prince of Wales.

Among the Nootka, just as the whale was brought ashore, she put bird down on its blow hole (Curtis). This may be a remnant of the custom of giving the whale a drink. At Cape Prince of Wales, she put fresh water and fur from her parka on its head (Curtis). See No. 24.

24. *Whale is given a drink*—Nootka, Cape Prince of Wales, Pt Hope, Cape Smythe (Pt Barrow), Maritime Chukchee, Maritime Koryak.

In northwest Alaska the whaler's wife performed this office when the whale was beached. Among the Chukchee the whale was given a drink at the boat owner's house, not on the beach. Of course in this case a part of the whale had to represent the whole. In the Maritime Koryak ceremony honoring the whale, a cup of fresh water was placed before a wooden image of a whale on the shrine (Jochelson). (The Reindeer Chukchee had one pattern for the ceremonial treatment of all large mammals: when one was slain and brought to the settlement, it was given both a drink and a bed.) Iglulik boys poured fresh water over the bow of the kayak(!) as it returned from the hunt (Boas). Inclusion of the Nootka here depends chiefly on a song addressed to the whale, which tells it to go to the shore where it will obtain "sweet water." However, water was not actually poured on the whale when it was brought ashore (Drucker).

25. *Ceremonial treatment of certain parts of the whale*—Nootka (saddle or hump), Cape Smythe (nose and fins), Unalit (bones), Buckland River (bones), Chukchee (pieces of fins, nose and lips, eyes, whalebone), Koryak (pieces of nose and lips, fins, tail).

These cannot all be equated. The Nootka custom of bringing the hump into a place of honor in the whaler's house, putting bird down on it, etc., can be equated to the special treatment of nose and fins of whales in the Arctic: these parts represent the whole animal in the festival honoring it (and celebrating the catch). The ritual treatment of bones, on the other hand, is connected with the idea that the whale's remains must be so treated that its soul will be uninjured and can be released to go back to the sea. Consult Weyer for fuller discussion.

26. *Part of ceremony conducted inside ring of stones or whale bones*—Iglulik, Cape Prince of Wales.

Parry noticed in the Iglulik region over 100 years ago large oval rings of loose stones set up in walls, enclosing the house sites. Eskimos explained that these

outer circles were used only when a whale had been secured. A good part of the animal would be dragged into the enclosure where some of the men cut it up, throwing pieces over the wall to the others, while women stood around the whale (inside the wall) and sang. Note that each of these structures was the private property of an individual. Later Captain Comer obtained more information: half-circles of stones could be seen at several places on the west coast of Hudson Bay. Whale skin and meat were piled up in the center and cooked whale meat was also brought there. There were feasting, shamanic performances, games, dancing, and singing, all inside the circle of stones (Boas). At Cape Prince of Wales when the messenger approached the village with news that a whale had been taken, the whaler's wife danced inside a circle of whale bones (Thornton). This can hardly be taken as a coincidence since another peculiar little "coincidence" is found in these two places: when the whale was being taken, children at the village tied their legs together as for a three-legged race and walked around (Thornton, Boas).

27. *Ritual period following whale catch same as mourning period for man*—Nootka, Unalit, Kotzebue, Kobuk (all 4 days); Iglulik (3 days for whale and other animals that came from Sedna's fingers); Kodiak (5 days). Consult Weyer.

28. *Ritual intended to return the whale's spirit to the sea*—Nootka(?), King Island, Kotzebue, Noatak, Chukchee, Koryak.

Especially prominent in Maritime Chukchee and Koryak whale cult. It followed in general the pattern of the bear cult in eastern Siberia. The Koryak ceremony is so long that it cannot be given in full but some features should be noted. The women first welcomed the whale as an honored guest and then all danced in a circle on the beach. Parts of the whale (see above, No. 25) and a whale image taken in the tent and placed on a shrine with family sacred objects. Food offered to the whale and the people feasted. A mourning period (?) of three days observed, ending with feasting and frenzied dancing. The morning of the fifth day food in traveling bags given to the whale for his homeward journey. Divination to see whether this was accepted and whether he would go home. Women took considerable part in reciting incantations but had to wear masks as their spirits were not strong enough to look at the whale. Whale head and food were left on the roof for the homeward journey, but later bags and masks were taken into the wilderness. The Chukchee ritual was much the same except that there was more care taken to please the whale: "guest" never left alone, no loud noise allowed to disturb him, children not allowed to cry (all this was the same for bear or whale). (In general in the American Arctic, children were not allowed to cry during a whale hunt.) Note that after the feast, crumbs of meat, hair, etc., were thrown in the sea, which restored the whale to life (Bogoras). Among the Nootka, remnants of the whale flesh and blubber after the feast were cast in the ocean where they could not wash ashore and be eaten by dogs. In contrast to this care in returning to the sea parts of the whale which had been honored in the feast, dogs were permitted to eat the remains of the carcass on the beach (Curtis). This was presumably the case among the Chukchee also. Among the Nootka just as in the American Arctic, the same tabus were observed during the hunt as were enforced by the Chukchee during the ritual period

following the hunt: children not allowed to cry, no shouting or other loud noises (Koppert).

29. *Whale's eye cut*—Alaskan Eskimo (tribe?), Chukchee, Koryak.

Hawkes has said "the Alaskan Eskimo" slit that eye of the animal which was uppermost or out of the water when the whale was being cut up, so that it would not see what was being done. Koryak women covered the whale's head with a plaited grass hood which Jochelson surmised was to prevent the animal seeing how it was going to be carved. The Chukchee, on the other hand, cut the eye of whale or bear to obtain the fluid which was mixed with soot and used in painting the paddles in a special manner. Also the pupils (*sic*) of the eyes were preserved by the successful hunters as amulets and tokens of prowess (Bogoras).

30. *Whaling implements or clothing destroyed at end of season*—Pt Barrow (implements destroyed), Buckland River (clothing destroyed), Iglulik (clothing abandoned).

31. *Tatooing as sign of having killed a whale*—Maritime Chukchee, Diomede Islands, Mackenzie region.

A Diomede Islander added a tattooed dot above the upper lip for every whale killed (Bogoras). In the Mackenzie area, in whale-killing as in man-killing, the harpooner was entitled to a tattoo line across the face. The steerer was tattooed with one line on each shoulder, on the occasion of a dance and feast given by himself. (See No. 1.) Also a man (noted by Stefansson) wore a crowskin, with beak and claws attached, on his back for several months after he steered a successful hunt.

32. *Belief in connection of Wolf-spirit with whales*—Nootka, Cape Smythe (Pt Barrow), Maritime Chukchee(?).

The Northwest Coast concept that the same spirit can be a wolf on land and a killer-whale in the water is well enough known. Two items should be brought into conjunction with this. In the Clayoquot whaling origin myth and in the story of a Nootka ceremonial house (see below, p. 455), it is related that it was the Wolf-spirit that first appeared to a man and revealed the details of the whale cult. In the former myth, the supernatural being that gave directions regarding the ritual procedure said to the man, "Umik, my friend, I am the Wolf, who has one heart with the whale of the lake." The whale of the lake was the "owner" or spirit of all the whales (Curtis). (This point should not be stressed as Dr Drucker has found that Nootka whalers do not ordinarily get their inspiration from the Wolf-spirit, although of course some of them may do so.) At Cape Smythe, a boat owner always took the last bone of a bowhead whale and tied it to the head-skin of a wolf. This was hidden in the cache except during whaling when it was placed in the stern of the boat (Stefansson). It may be that the wolf was associated with all whales as well as with the killer-whale. (Incidentally, the Chukchee associated the wolf and killer-whale as on the Northwest Coast.)

II

(a) It is very evident from the survey in Part I that nothing is included from the considerable stretch of coast between Kodiak Island and Van-

couver Island, for the good reason that the tribes in this region were not whalers. Von Wrangell said that the Kenai (Tanaina), who were supposedly an inland people only recently arrived on the coast in the region of Cook Inlet, did not hunt whales;[4] and Veniaminov and Holmberg said that the Tlingit, with the exception of the Yakutat, did not even like whale flesh, which Krause somewhat doubted. At any rate it is clear that the whale hunt was decidedly not prominent in Tlingit culture, if it ever existed at all.[5] There are suggestions that whaling was once done on what is now Kwakiutl territory,[6] but it cannot therefore be claimed that the Kwakiutl themselves were whale hunters.

Perhaps the best explanation we can give now as to how the Nootka, Makah, Quilleute, and Quinault obtained or retained the whaling complex, when tribes to the north of them apparently had none of it, is that the Tlingit and Haida and other tribes north of the Nootka were originally interior people, intrusive on the coast. Not being a specialist on Northwest Coast ethnography, I do not wish to hazard further explanations regarding the Northwest Coast distribution of whaling.

(b) There is another gap between the Mackenzie Eskimo and the Iglulik, but this again is probably explained by the irruption of the Copper Eskimo from the interior onto the coast. When the Thule culture was still active in this area, there was certainly whaling, it being a very prominent feature of the Thule culture. Whether it was accompanied by any of the elements of our whale cult is another question, and one that would be difficult to answer with certainty.

(c) At the eastern edge of the whaling area we have only hints of the former presence of a whale cult in Labrador. Hawkes said that the early Moravian writers told of a festival given every time a whale was obtained. It included the usual elements of an Eskimo festival: athletic contests, singing and dancing, shamanistic performances, and "rowdyism involving women" (probably wife-exchange).[7]

There is an item regarding whaling in Greenland given by Thalbitzer, who simply states that on the east coast on an island where the people used to assemble for the summer whaling, there was an old, large house above the camp (Thalbitzer has equated this house to the ceremonial quagse or kashim of other Eskimos) where the young men and women would go and play, the playing being apparently chiefly of a sexual nature.[8] This, of course, offers nothing specific and comparable to whaling elsewhere. However, if Thalbitzer has proved that the ceremonial house was

[4] Von Wrangell, p. 113. [5] Krause, pp. 180–81. [6] Curtis, Vol. 10, pp. 29, 283–88.
[7] Hawkes, pp. 139–40. [8] Thalbitzer, 1925, p. 242.

formerly a part of Greenland culture although quite unknown in recent times (as he seems to have done by this and other evidence), it is quite possible also that a whale cult formerly existed but has now died out in Greenland.[9]

(d) As for the possible western boundaries, Jochelson has pointed out Krasheninnikov's statement that in the Kamchadal fall festival a grass whale filled with blubber and other provisions was tied to the back of one of the women and then all those taking part grabbed the whale, tore it up and ate it, apparently in imitation of a successful hunt. (In comparison with this, consider the mimic whale catch portrayed by the Eskimos of Little Diomede Island and Cape Prince of Wales. See above, No. 17.) Also at this time the Kamchadal had confession of transgression of tabus, which suggests the Eskimo confessions of tabu-breaking that were necessary to mollify the angered supernatural powers and effect the release of the sea mammals.[10] This information on the Kamchadal is so meagre that we cannot say any more than that probably the Kamchadal festival is related to the whale cult of Bering Strait.

It has been known for some time that the Ainu hunted whales, but I have not so far found any statement of rituals surrounding this hunt. The following religious belief and custom should be noted, however.

One of the principal deities of the sea is

"the god upon the waves of the sea who receives fetishes." Whenever he allows himself to be seen, it is said to be in the form of a whale. He is looked upon as the head of all sea-deities, and has many servants, of whom the tortoise and the albatross are his favourites. Prayers are said to this god quite frequently, and the two servants just mentioned are said to act as go-betweens.[11]

It is my fervent hope that more information regarding whaling in this area can be produced. We need to know the southern boundary of whaling on the west side of the Pacific and we need to know more about the ceremonial side of whale hunting there. Then we can begin to talk with more assurance about the probable origins of the whale cult. In the meantime, however, a little discussion of the distribution of the whale cult elements will be attempted, thus leading up to the few conclusions of this paper.

III

Up to this point we have been trying to analyze the whale cult into its components and trace the distribution of each one separately. But we should remember that back of the specific items of ritual procedure was a

[9] *Ibid.*, pp. 239–43. [10] Jochelson, 1905, pp. 65–66. [11] Bachelor, p. 244.

fundamental attitude which characterized all the whaling tribes and drew them together: the solemnity, the precautions, the honor accorded the profession of whaling and the men who successfully practised it.

Lisiansky said of the Koniag whom he observed in 1805, "they gave me to understand, that the flesh of the whale was deemed the best," and that the whalers had great respect paid to them and were regarded "as the purveyors of their country."[12] Jewitt, during his captivity among the Nootka in 1803–1805, observed,

> The whale is considered as the king's fish, and no other person, when he [the head-chief] is present, is permitted to touch him until the royal harpoon has first drawn his blood, however near he may approach; and it would be almost considered as sacrilege for any of the common people to strike a whale, before he is killed, particularly if any of the chiefs should be present.[13]

Curtis said that of all the ceremonies on Little Diomede Island, the one in preparation for the whale hunt was "the most intricate, symbolic, and ritualized."[14] Murdoch's observations of the Point Barrow Eskimos in 1883 evidently warranted his saying mildly enough,

> Now, the whale fishing at Point Barrow, in many respects the most important undertaking in the life of the natives, is so surrounded by superstitious observances, ceremonies to be performed, and other things of the same nature as really to assume a distinctly religious character.[15]

Finally, Birket-Smith has summed up,

> . . . There is on the whole no animal, either among these [the Eskimo of southwest Alaska] or other Eskimos, whose hunting is so hedged by strict taboo, magic formulas, and the use of amulets. And considering the size of the animal and the dangers attached to the hunt, this is not surprising.[16]

Undoubtedly the dangers have served to preserve and intensify the religious and social adjuncts of what might have been only an economic activity; but is it simply the danger of the hunt which has brought forth all this ritualization and granted such high honor to the man who can carry it out successfully? It seems unlikely. The extensive distribution of some parts of the cult and the nature of their elaborations indicate great historical and cultural force back of the cult, as well as the emotional force of individual encounters with the powers of nature. So if we want to fully understand the whale cult, we must go back to our analysis and see what we can get out of it.

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[12] Lisiansky, pp. 174, 209. [13] Jewitt, p. 84. [14] Curtis, Vol. 20, p. 113.
[15] Murdoch, p. 240. [16] Birket-Smith, p. 89.

(a) The most unexpected revelation made by this survey is the very close similarity between the whale cults of the Nootka on Vancouver Island and the Koniag on Kodiak Island. Considering the relative uniformity of Arctic Eskimo culture, we cannot be very surprised to find the same customs among the Iglulik and the Eskimos of northern Alaska. But when we find the Indians of Washington and of British Columbia and the Eskimo of southwest Alaska having the same whaling customs, in spite of the distinct distributional gap between them, that is something to ponder. Because of the historical importance of such a connection between widely separated areas, the elements which substantiate it will be reviewed and explained somewhat more than was possible in the tabulated survey.

In the first place, these two centers shared the remarkable feature of use of human remains to obtain whale hunting power. Now what were the details of this use? Kodiak whalers secreted the mummies of former successful whalers in caves (see above, Nos. 4, 9, and 10)[17] where they fed them and cared for them.[18] A story given to Osgood by a modern informant indicates that the corpse of any person of high position would serve the purpose.[19] A hundred years earlier, though, Lisiansky said definitely that the bodies of *former whalers* were taken; Holmberg quoting Davidof specified the same.[20] Both statements undoubtedly were generalizations made by the natives and representing the ideal condition.

On this point what are the data from the southern center? The Quinault whaler used the bones of a male ancestor, "probably the one who had the whaler's guardian spirit."[21] Although in later times among the Nootka, no one particular corpse was required, one origin myth (from the Clayoquot) accounting for the Nootka whale cult shows clearly that the body of a *former whaler* was used by each succeeding whaleman.[22] One cannot trust such myths as historical evidence too completely, but in the light of other similarities it is significant to find the same idea among Nootka, Quinault, and Koniag: that in theory at least, the corpse should be that of a man who had had whaling power.

Next, Holmberg said that the Kodiak hunters "before proceeding upon a whale hunt would carry these dead bodies into a stream and then drink of

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[17] Lisiansky, pp. 174, 209. [18] Pinart, 1873, pp. 679–80.

[19] Osgood, 1937, p. 39. [20] Holmberg, p. 111. [21] Olson, p. 46.

[22] Curtis, Vol. 11, pp. 25–30, 39, 103–10. See Curtis, Vol. 10, pp. 29, 283–88, for a Kwakiutl tale of the origin of whaling which is very similar to the Clayoquot myth. In recent fieldwork Drucker was unable to confirm this story of the origin of Nootka whaling. Every whaler had his own family legend to account for his own ritual procedure, and it may be that a private legend has been confused with one of tribal scope.

the water thus tainted."[23] One would say offhand that drinking of water tainted by the body of a whaler (or ritually bathing and submerging oneself?) could hardly have been done after the first washing of the corpse in a stream (which was one of the early steps in the Kodiak process of mummification) because after this the body was smoke- and sun-dried, stuffed and wrapped up.[24]

The data from the Nootka partially confirm this. There, a corpse was taken into the water by the whaler as part of his ritual bathing before going hunting, but only during the first four days after the death. After decomposition of the flesh, a skeleton might be put together and carried on the whaler's back during this ceremonial bathing. (It was, of course, carefully preserved between the times when it was used.) Among the Makah the flayed and dried skin would be worn in the ritual submergence.[25] A Quinault whaler before going into the river or the ocean "would rub himself with human bones, the bones of the fore-arm being preferred. These were usually the bones of one of his male ancestors. . . ."[26] The bones apparently were not assembled although used in the same way as by the Nootka.

In comparison with the Nootka information particularly, note the following from de Laguna. A certain well informed Kenai Indian thought the rock shelters around Kachemak Bay (east side of Cook Inlet) "were the secret places where the whalers used to boil out the human fat from which they made poison for their lance blades. Afterwards the bones had to be *reassembled* (with pitch, he hazarded) and fed regularly, otherwise the skeleton would pursue the whaler and devour him."[27] This pertains to the Eskimo who preceded the Indians in this region.[28]

The statement that human flesh was actually boiled to obtain a whale-poison has been made by a number of observers of the Koniag ever since Lisiansky's time. He said some of the Koniag told him "that a juice or fat is extracted from them [the bodies of distinguished whalers], into which if an arrow be dipped, the whale, when wounded by it, dies the sooner."[29] Holmberg, quoting Davidof, said,

> On the occasion of the death of a whaler his fellows would cut the body to pieces, each man taking one of them for the purpose of rubbing his spear-heads therewith. These pieces were dried or otherwise preserved, and were frequently taken into the canoes as talismans.[30]

[23] Holmberg, *loc. cit.* [24] Pinart, 1873, p. 680. [25] Curtis, Vol. 11, pp. 25–40.
[26] Olson, *loc. cit.* [27] De Laguna, p. 154. Italics mine.
[28] Also from the Kenai or Tanaina, Osgood got the statement that "the Kaniagmiut poison these spear points by rubbing them in the decaying remains of a 'fat man' (sic) over which an incantation has been made" (Osgood, 1937, p. 39).
[29] Lisiansky, p. 174. [30] Holmberg, *loc. cit.*

That this is not just an old men's tale is indicated by some indirect evidence as follows. According to an English edition of his book, Sarytchev in 1792 witnessed a performance by an Aleut shaman (in the Unalaska district) in which the latter sought to ascertain the cause of a woman's illness. Finally the shaman's helper-spirit revealed that the woman's father had smeared the spinal marrow of a whale on his spear point when he was whaling and this had offended the spirits. The father now being dead, punishment was being inflicted on the daughter.[31] Bogoras evidently used a different edition (the Russian one supposedly) and the following somewhat different story has been quoted by him from Sarytchev. The shaman's spirits told the sick woman "that her malady was caused by her father, who, when in pursuit of sea-mammals, used to take the brains out of dead men's skulls in order to smear his harpoon-points with them."[32]

Apparently in the North Pacific area there was a little culture complex which included various uses of human flesh (or the oil extracted from it) as a magic poison. For example, the Indian shamans around Iliamna (west of Cook Inlet) used human ashes to make poison "which was applied to hunting spears and points," although this tribe, of course, did not engage in whale hunting.[33] Bogoras said the Chukchee believed that human flesh was a strong poison and hence used it in sorcery. There is no mention of its use in hunting.[34] Human oil obtained from boiled human fat was used by one Nootka shaman in sorcery against another shaman.[35] To sum up: definite statements that poison extracted from human flesh was used in *whaling* pertain only to the Kodiak Islanders and the whale-hunters on the neighboring mainland. However, the Sarytchev story suggests a similar practice among the Aleut.

Even though the use of human oil may have been limited to southwest Alaska, the use of some part of the human body as a whaling amulet was more widespread; and again the southern center is linked with the Koniag. We remember Holmberg said pieces of human flesh "were dried or otherwise preserved, and were frequently taken into the canoes as talismans." The Quinault whaler took the skull from a male ancestor, wrapped it in cedar bark or a blanket, and carried it with him in his canoe.[36]

Here is another pair of statements: of the Koniag it was said, "The poison was so powerful that if a duck flew over a group of whale killers' bidarkas lined up on the beach, it would fall dead."[37] The Nootka believed

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[31] Sarytchev, pp. 64–65.

[32] Bogoras, 1910, p. 480, quoting Sarytchev, Vol. 2, p. 142. [33] Osgood, 1933, p. 704.

[34] Bogoras, 1910, p. 479. [35] Curtis, Vol. 11, p. 49. [36] Olson, *loc. cit.*

[37] Weyer, p. 310. Information furnished by deLaguna.

the unfortunate bird that flew over a whale-hunter's harpoons secreted in the forest also would fall dead.[38] These are simply specific statements of one general concept.

And another: Pinart said it was claimed that Koniag whalers used to leave the requisite materials at the cave where they kept the mummies and later would find ready-prepared lance points for whaling.[39] The Nootka apparently did not even pretend to do such a thing, yet a Clayoquot myth tells that the young harpooner, in the days when whaling first began, would leave his old harpoon at a certain place in the forest as directed by the patron-spirit and on his return would find a new one in its stead.[40]

The only statements from the Arctic concerning any use of human remains in whaling should be compared with the Koniag customs. When a whale had been hit, the Koniag hunters would drop the famous poison in the water behind them as they paddled to shore; then "the whale was supposed to wash up on the shore where they landed."[41] In 1885 an instance was observed at Pt Hope (on the Arctic coast of Alaska) as follows. When a woman died, the heart was taken from the body and dropped in the water through a hole in the ice. It was said that unless this was done, the whales would pass by and not come in there. The next day a big whale was secured![42] In comparison with the elaborate care and ritual use of mummies or articulated skeletons on the part of Nootka and Koniag, this is very meager. Yet it shows a concept specifically similar to the Kodiak one and hence is not to be overlooked.

Finally, a concept either secondarily derived from the whaler-corpse complex or else secondarily attached to it, presents to us a very specific and hence very significant link between Nootka and Koniag. In addition to the "eagle-feathers, bear's hair, and different stones and roots" which were among the magic materials of Koniag whalers,[43] Pinart said that sometimes instead of using human fat on spear points, the Koniag used a certain kind of worm. This, secured in the mountains, they dried and fastened at the end of the spear. Or they used worms from a dead body,

[38] Drucker, Ms.

[39] Pinart, 1873, p. 680. [40] Curtis, Vol. 11, pp. 25–30.

[41] De Laguna, in Weyer, pp. 309–10.

[42] Woolfe, in Porter, p. 141. A possibly related custom has been reported from Pt Barrow: "Another powerful agent to keep a whale from sinking was an avatakpûk made from the skin of an unborn seal or ugrug. Into each of the fore-flippers of this avatakpûk should be lashed the first of the phalangeal bones of a man's hand. These are easily found in graveyards. If this sort of an avatakpûk got attached to a whale along with a large number of other floats he would not sink (Alalik)" (Stefansson, p. 390). The magical concept of a hand holding up the whale is clear. [43] Lisiansky, p. 209.

or a certain poisonous root.[44] (The poisonous root did the work and the magic poison got the credit.)

One should compare with this a statement by Curtis and a somewhat involved Nootka myth.

The most successful whalers are those who, even though they inherited the profession, have found an object which represents the supernatural whale. This object is either a double-headed, black worm eleven inches long and an inch and a half thick [the sisiutl?], or a certain species of crab. Seeing either of these creatures, a man must throw his spear at it. If it be the worm, he takes it up and preserves it as a charm. . . [45]

The Clayoquot whaling origin myth already referred to contains elements which probably are attempts to explain this use of a "whale-worm:"

Umik, the first great whaler, was instructed by his tutelary spirit which he encountered at a lake to harpoon the "whale of the lake" which was the master or spirit of whales. This supernatural animal was "as small as a slug, or four finger-breadths long." When he had obtained it, he was instructed to wrap it in cedar-bark and put it in the bow of his canoe when he went whaling. Later when Umik was killed, his father *cut open the body, placed the little whale inside it,* and secreted the corpse in the woods. Then when Umik's son was about twelve years old, he went to the same lake and the same spirit directed him to put his father's skeleton on his back when submerging himself, in order to obtain whaling power. The remainder of the story deals with the attempts of one person after another to secure knowledge of the ritual preparation and also to get possession of this skeleton that contained the whale-spirit.[46]

Remember that Pinart said the Kodiak sometimes took worms from a dead body to insure success in whaling. If only we knew whether they had any myth to the effect that the whale-power was once upon a time placed in a corpse in the form of a worm.

In contrast to all this is the whole Sedna complex of beliefs found in the Canadian Arctic which expressly prohibits that anything connected with death shall come in contact with the sea mammals. This is so important in the present connection that a passage on this subject will be quoted from one of Boas' reports on the Eskimo of the west coast of Hudson Bay (Iglulik).

[The souls of seals and whales] can see the effect of contact with a corpse, which causes objects touched by it to appear dark in color; and they can see the effect of

[44] Pinart, Ms.

[45] Curtis, Vol. 11, p. 16.

[46] See Curtis, Vol. 11, pp. 21, 24–25. A very similar Kwakiutl tale is recorded in Curtis, Vol. 10, pp. 29, 283–88.

flowing human blood, from which a vapor rises that surrounds the bleeding person and is communicated to every one and every thing that comes in contact with such a person. This vapor and the dark color of death are exceedingly unpleasant to the souls of the sea-animals, that will not come near a hunter thus affected. The hunter must therefore avoid contact with people who have touched a body, or with those who are bleeding, more particularly with menstruating women or with those who have recently given birth.[47]

In northwest Alaska, notwithstanding the Pt Hope instance cited above, we find similar ideas. The whaling ground could not be contaminated by anything from a graveyard (see No. 20); death in a family precluded the partaking of any of its members in the hunt; even the canoe of a whaler in whose family a death had occurred could not be used for whaling until after the first animal had been caught; and

a woman giving birth to a child 6 months before the season for whaling begins is not allowed to leave the village during the time the hunting is in progress, and if the delivery takes place within 3 months of the period her husband is also debarred from participation in the work.[48]

Of course in the southern center of whaling there were similar tabus on women. In fact such restrictions due to uncleanness are the expectable elements of the cult. So it is in all the greater contrast to this expected horror of life-crisis contaminations—birth or death—that we find the Koniag in particular risking personal danger (from the relatives of the deceased and from the dead themselves) in order to steal corpses, cutting them up to make amulets, and so on. Indeed such treatment was an honor, as the following frequently repeated story shows, although according to the folklore it was an honor often resisted by the mourning family:

One famous whaler of Kadjak who desired to flatter Baranof, the first chief manager of the Russian colonies, said to him: "When you die I shall try to steal your body," intending thus to express his great respect for Baranof.[49]

Now if one, impressed by these contrasts, wanted to apply the age-area concept in this connection—I do not say that it should be—then the Kodiak region and the eastern Aleutians would be picked as the original center of dissemination of this part of the cult, because it is here that we find (1) the least fear of the dead and the highest development of mummification aside from the whale cult, and (2) the greatest use of corpses within the cult, with such specializations as the human-oil poison. We might say that in southwest Alaska there was simply a transfer to the whale cult of ele-

[47] Boas, 1901, p. 120.
[48] Woolfe, in Porter, p. 140; Stefansson, p. 183.
[49] Holmberg, *loc. cit.*

ments already existent in the culture. Finally, though, it is for the archaeologists to say how ancient are such culture elements for which there are material evidences, e.g., the cutting of human flesh from the bones.

To return to our regional comparisons. From the tribes of northeast Siberia the use of human remains in connection with whaling has not been reported. However, it would not be so impossible as among the Eskimo because the Siberians did not have the full rigorous system of tabus relating to sea mammals which the Eskimo had to observe for fear of contaminating and angering Sedna, keeper of the sea animals. The northeast Siberian province, we shall see, probably should be included with the southern center rather than with the Eskimo of the Arctic coast.

Another striking difference between north and south is that whereas a Nootka or Koniag woman would not dare even to look in a whaling canoe or to touch the whaling gear at any time, in Greenland and in northwest Alaska women might be employed to help man the boats for whaling as for other kinds of sea hunting (of course when they were not individually tabu)[50] and perhaps this was true in intervening areas. Whether this was a fairly modern development, a weakening of old tabus, cannot be determined from the data available.

In addition we find a little group of customs among the Central and Western Eskimos which were not known to the Nootka and have not been reported from the Koniag, namely the dancing and feasting inside a ring or semicircle of stones or whale bones, coupled with the item that children tied their legs together as for a three-legged race during the hunt or just as the whale was being towed ashore (see above, No. 26). Thus the area from Bering Strait to Hudson Bay shows a certain unity within itself, and it shows some remarkable differences from Kodiak and the southern center.

(b) Linking the Siberian unit of whaling tribes (probably also the adjacent section of Alaska) and the Nootka is the special ritual treatment of parts of the whale and the return of the "crumbs" of the animal to the sea after the feast. Taking a portion of the animal into the whaling captain's house, decorating it and honoring it, and then returning part of it to the sea might not be considered so important, since there are not many specific and arbitrary resemblances, if it were not for the fact that Hallowell found resemblances in the bear cult of these two areas as well.

The offering of food made to the bear is not characteristic of the Algonkian ceremonies but connects the Nootka and Kwakiutl of the northwest coast of America with the Asiatic Eskimo, Koryak, Kamchadal, Gilyak, and Ainu, all of whom lay considerable emphasis upon this practice.[51]

[50] Woolfe, in Porter, p. 147; Crantz, Vol. 1, p. 120; Egede, p. 125. [51] Hallowell, p. 147.

In the return of the whale to the sea, we have probably a very important element, more important than the available data would indicate. Unfortunately we cannot truly evaluate what data we do have. For example, we cannot say definitely that the Nootka instance is the only occurrence of this element of the cult in America. We have no information from the Koniag on the treatment of the whale after it was brought ashore and cut up. It is expectable, though, that they belonged with the Nootka in regard to this particular little ritual complex in view of the many other close similarities between them. If so, then the gap between Bering Strait and Vancouver Island might be partially filled in. Also there is not enough information from the Central Eskimo on the ceremonial treatment of the dead whale to say definitely that a festival on the Chukchee-Koryak pattern was present or absent in this region. Still, the fact remains that the Nootka whale cult has a remarkable similarity to that of northeast Siberia, regardless of what the other areas did or did not have.

There is another aspect of this relationship to be considered. The accounts given by Bogoras and Jochelson for the Chukchee, Koryak, and Siberian Eskimo stress the family ownership and maintenance of the whale rites, and this was also especially characteristic of the whale ceremonies of Little Diomede Island (see No. 1). This may represent the tendency to organize all phases of religion according to the accepted pattern, which among the Koryak and Chukchee was the dominance of the family unit in religious matters. Although, of course, the bringing of the sacred family fire-board and other family "idols" into conjunction with the whale ritual was a trait of these people alone, still if we look at the form rather than the detailed content of the whale cult there, we see something very similar to Nootka or Kodiak or Cape Prince of Wales form (see footnote 22, p. 451). The inheritance of the songs and the amulets, in fact the whole economic, social, and religious position of the whaler stresses *inherited prerogatives*.

Again we must regret that we do not have more information from the Central Eskimo area. Yet Parry's suggestive statement that each of the rings of stones in the Iglulik region—inside which the whale festivals were held—was the private property of an individual (see No. 26) gives us a hint that there also the whale cult may have been very much a matter of individual rights and privileges. Thus in regard to the relationship between whaling and the social structure, we link the southern center with Kodiak, the Bering Strait region and northeast Siberia, and reserve decision on the place of the Canadian Eskimo in the scheme.

(c) Other distributions to be specially noted are the following. From

Kodiak to the mouth of the Mackenzie, whalers were required to live apart from the community during the actual whaling season (see above, No. 7). From the Quinault to the Pt Barrow Eskimo, there are definite statements that sex tabus were enforced upon the whalers (see No. 8). These statements undoubtedly do not cover the total distribution. From Vancouver Island to Kotzebue (between Cape Prince of Wales and Pt Barrow), whalers used special implements and gear (see No. 12), not just because of the special technical requirements of whale hunting but because whaling was something apart from the rest of life—more sacred and more dangerous.

In the tabular analysis of the whale cult, the reader can see the distribution of other tabus. It should be remembered always that the distributions given are the recorded ones; the actual limits are not now known. It can be seen that the tabus are quite uniform throughout, hence without any special regional significance.

(d) Finally, cutting across all regional divisions in the American distribution of the whale cult were the requirements and tabus surrounding the whalers' wives. In the middle of the nineteenth century Holmberg said in regard to the Koniag practices which he had quoted from Davidof:

> Whether these usages are still observed on Kadjak, I have not ascertained. . . . Only once had I occasion to notice anything of the kind. This was in the settlement of Igak, where I entered a hut, in the corner of which a young woman lay covered with bear-skins. I asked if the woman was sick, and learned that her husband had gone to hunt whales, and that the wife was obliged to remain prostrate without food until his return in order to give him good luck.[52]

If a woman lay still and ate nothing, she could not have handled knives or other sharp implements. So it is just possible that some of the tabus on use of sharp implements, so familiar among other Eskimo groups, obtained here too and were the cause of this behavior.[53] But, more important than this is the probability that she was enticing the whale to herself and by this means giving her husband good luck. The following passage from Rasmussen's account of whaling practices at Pt Barrow makes the idea clear:

> The whale is dangerous to hunt, but is also amenable to advances from human beings, especially women. Thus, for instance, a chief's wife, on learning that her husband's crew has harpooned a whale must at once take off one boot and remain quietly in her house. This preliminary step towards undressing was supposed to affect the soul of the whale and draw it towards the house. . . .
>
> The chieftain himself mostly took the part of the steersman. . . . He would choose

[52] Holmberg, pp. 111–12. [53] Weyer, pp. 367–72.

for his harpooner a young and powerful man, whose duty was to drive the harpoon into the whale as soon as he gave the signal. On the day before going down to the ice edge to begin the whaling, the young harpooner had to sleep in the forepart of the boat, and would be visited there in the course of the night by the chief's wife. . . . This meeting with a woman put the young man into high spirits, and the soul of the whale also was supposed to be attracted by the idea of being killed by a man coming straight from a woman.[54]

It has also been stated that at Cape Prince of Wales both the boat owner ("chieftain") and harpooner remained outdoors all night before the start of a whale hunt while the remainder of the crew stayed indoors singing the boat owner's whaling songs, but there is no accompanying statement giving the motive.[55]

If we go the very considerable distance to the west coast of Hudson Bay, we find the following bit of information supplied by Captain Comer to Boas. Whenever the men went out after a whale, the *young women* had to loosen their belts and lie down in their tents, whereas the old people could watch the progress of the hunt.[56] Then as we retrace our steps, we find in the Mackenzie region (Kittegaryuit) that the wife of the leader of a whaling crew "must not go outdoors from her tent until the last whale had been killed or had escaped."[57]

Among the Quinault the wives of the whole crew had to remain faithful to their husbands while they were away. "Should a woman be unfaithful while the hunt was on, the whale would be wary and 'wild,' and the men would be unable to kill any." There were no food tabus for the wives, however.[58] For the Nootka, there is somewhat more striking information. The whaler's wife had to lie down, all covered up, and sleep while her husband was on a whaling trip. She could not eat or drink, just as among the Kodiak.[59] Moreover, Drucker obtained the following whaling song which perhaps preserves the concept Rasmussen reported from Northern Alaska, although the modern Nootka themselves seem to be unconscious of it:

Nootkan (Hesquiat) Towing Song
(My) spouse go (toward).
Where is (my) supernatural power?
Swim (to) where is (my) supernatural power.

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[54] Rasmussen, 1927, pp. 313–14.

[55] Curtis, Vol. 20, p. 140. While the hunt was in progress, this woman who symbolized the whale (boat-owner's wife?) had to remain at home fasting.

[56] Boas, 1907, p. 499.

[57] Stefansson, p. 327.

[58] Olson, *op. cit.*

[59] Curtis, Vol. 11, p. 35.

The informant who translated this from the text stated specifically that "supernatural power" in this instance referred to the whaler's wife. The song is, of course, addressed to the whale.

In relation to the hunting of all the larger creatures such as bear, mountain goat, whale, and sea-lion, the wife of a Nootka hunter had to observe great care in her actions because of the underlying concept of imitative magic. Sometimes her behavior affected her husband, sometimes it affected the animal he was hunting.[60] In fact there was a prominent element of imitative magic in the behavior of the whaler himself as well as his wife.[61] (See above, No. 15.) Since we find this to be the case, it can be questioned whether the lying down of the Nootka whaler's wife was done simply to make the whale quiet, or whether there was truly the idea that the wife was drawing the animal to her. The song which has been quoted suggests more than anything else the latter idea. Also there is an element in a story about a Nootka ceremonial house which suggests that the wife really is the power bringing in the whale. One particular and well known shrine which formerly was used for rites intended to bring game—whales especially—was first constructed and used in this way: a shaman (not a whaler) secretly built a purifying house in a secluded place. He put four pieces of his wife's excrement in the house and they turned into spirits which brought four whales to the beach. Also in the course of time he stole many new-born babies (so that they would cry and call the whales ashore), skulls from graves, and whole corpses, putting them all in his shrine. Although the house and its contents were not revealed to the villagers, the shaman took his wife there because she had been faithful to him. Finally when he died, he gave the house and its contents to his son.[62] This man was not a whaler but a shaman. However, these elements of the story reflect the practices and concepts of those who actually hunted whales and they must be considered. Among the Nootka apparently more than in any other whale hunting group, the harpooner's wife participated in his ritual preparations and shared the secrets of his whaling power.[63] Yet in the Bering Strait region too, women took a prominent although somewhat different part in the preparations, there playing the role of the whale itself in a mimic hunt. (See No. 17.)

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[60] Drucker, Ms.

[61] Curtis, Vol. 11, pp. 20, 25, 38, 39; Quilleute–Frachtenberg, pp. 342–44; Quinault–Olson, *op. cit.* An example from the Quinault: for the whaler's ritual bathing, "it was desirable to go to a place in the river where bubbles came up as one walked—so that bubbles would come up from a sounding whale and show the hunter which way to go."

[62] Boas, 1930, pp. 260–69. [63] Curtis, Vol. 11, p. 38.

There may be two quite different concepts underlying the behavior of whalemen's wives in the northern and southern centers: the woman physically enticing the whale in the former area, and in the latter area supernaturally compelling the animal to come to her by reason of her faithfulness, knowledge of and participation in her husband's secret preparatory rites, and a rather vague identification of the woman with the whale. (This last idea also suggests the mimic hunt performed at Cape Prince of Wales, just referred to.) Finally, though, we should remember that in spite of any such ideological differences, the *behavior* of the women during the hunt is so uniform throughout the total whaling area in America that we can question whether these concepts are anything more than secondary, derived explanations; hence the behavior pattern is not a case of convergence but represents a genuine survival of an ancient connection.

In conclusion we need not hesitate to say that elements of the whaling ritual so overlap each other in distribution that they are like a chain connecting the whaling tribes in the whole area from Kamchatka to Hudson Bay (perhaps some day we can say with certainty: from Japan to Greenland) and from Point Barrow to the coast of Washington.

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UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

AN ANALYSIS OF BASKET MAKER III SANDALS FROM NORTHEASTERN ARIZONA

By GORDON C. BALDWIN

THERE is not a great deal of published information concerning the sandals of the Basket Maker III (Modified Basket Maker) period. Kidder[1] has given a very detailed account of a single sandal of this period, dealing particularly with the different techniques employed in weaving and decorating the sandal. But there is no single report concerning the various types of sandals made and used by these people. We have a very complete picture of the characteristic square-toed sandals of the Basket Maker II (Basket Maker) period,[2] and also a rather complete outline of the twilled, notched-toed sandals of Pueblo III (the Great Pueblo Period).[3] Therefore additional information on the sandals of the intervening periods is greatly needed at present.

There are in the Arizona State Museum at Tucson a large number of sandals secured a number of years ago by Dr Cummings from Basket Maker III sites in the Kayenta area in northeastern Arizona.[4] From a study of these, with the additional few illustrated by Cummings,[5] Guernsey,[6] Kidder,[7] and Morris,[8] the writer offers the following tentative classification of the sandals of the Basket Maker III period:

1. Round-toed type of yucca leaves
2. Round-toed type of heavy yucca cord
3. Scallop-toed type of heavy yucca cord
4. Scallop-toed type of fine cord
5. Round-toed type of fine cord.

Type 4 is by far the most common type of sandal and may be considered

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[1] A. V. Kidder, *A Sandal from Northeastern Arizona* (American Anthropologist, Vol. 28, pp. 618-32, 1926).

[2] A. V. Kidder and S. J. Guernsey, *Archaeological Explorations in Northeastern Arizona* (Bulletin, Bureau of American Ethnology, No. 65, 1919), pp. 157–60.

[3] *Ibid.*, pp. 100–107.

[4] These sandals come principally from four sites. Slabhouse Ruin in Duggaggei Canyon, an unnamed pithouse near Marsh Pass, Vandal Cave in the Lukachukai Mountains, and Ruin 5, Deer Track Canyon, Lukachukai Mountains. There are fifty sandals in the collection.

[5] Byron Cummings, *Ancient Inhabitants of the San Juan Valley* (Bulletin, University of Utah, 2nd Archaeological Number, Vol. 3, No. 3, Pt. 2, 1910).

[6] S. J. Guernsey, *Explorations in Northeastern Arizona* (Papers, Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. 12, No. 1, 1931), pp. 76–77.

[7] *Op. cit.*

[8] Earl H. Morris, *Exploring in the Canyon of Death* (National Geographic Magazine, Vol. 48, No. 3, 1925, pp. 263–300).

as the characteristic form for the entire Basket Maker III period, or, roughly, from about 400 to 700 A.D. The round-toed types seemingly represent later variations, as they are tending toward the form which became characteristic in the following period, Pueblo I (Developmental Pueblo).[9]

TYPE 1

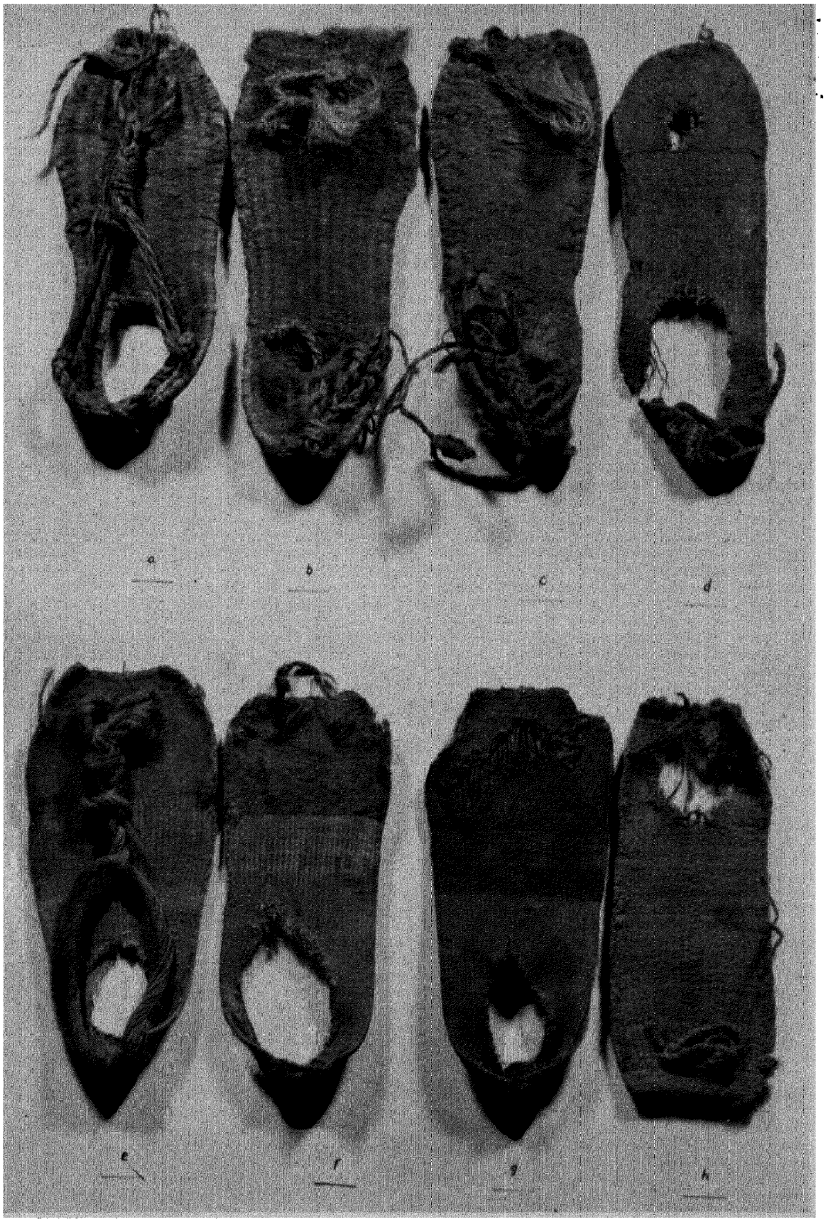
This type is made of crushed yucca leaves, four leaves being used for the warps. The weft, also of crushed yucca leaves, is twined woven (fig. 2, d), forming a very coarse heavy sandal. Both the toe and the heel are rounded, the latter being drawn up into a slight pucker that is characteristic of the sandals of this period. This pucker is formed by pulling the warp ends tightly together in the center, causing the outer corners to be drawn up. The warp ends are then tied together and serve as the heel loops, two being carried forward on either side and fastened to the edge of the sandal. Toe loops are always present and are multiple, being formed of either two or three cords set back from one-half to one inch from the toe. This type of sandal seems to have been comparatively rare, there being none in our collection. Guernsey, however, illustrates one sandal of this type and briefly discusses several others.[10]

TYPE 2

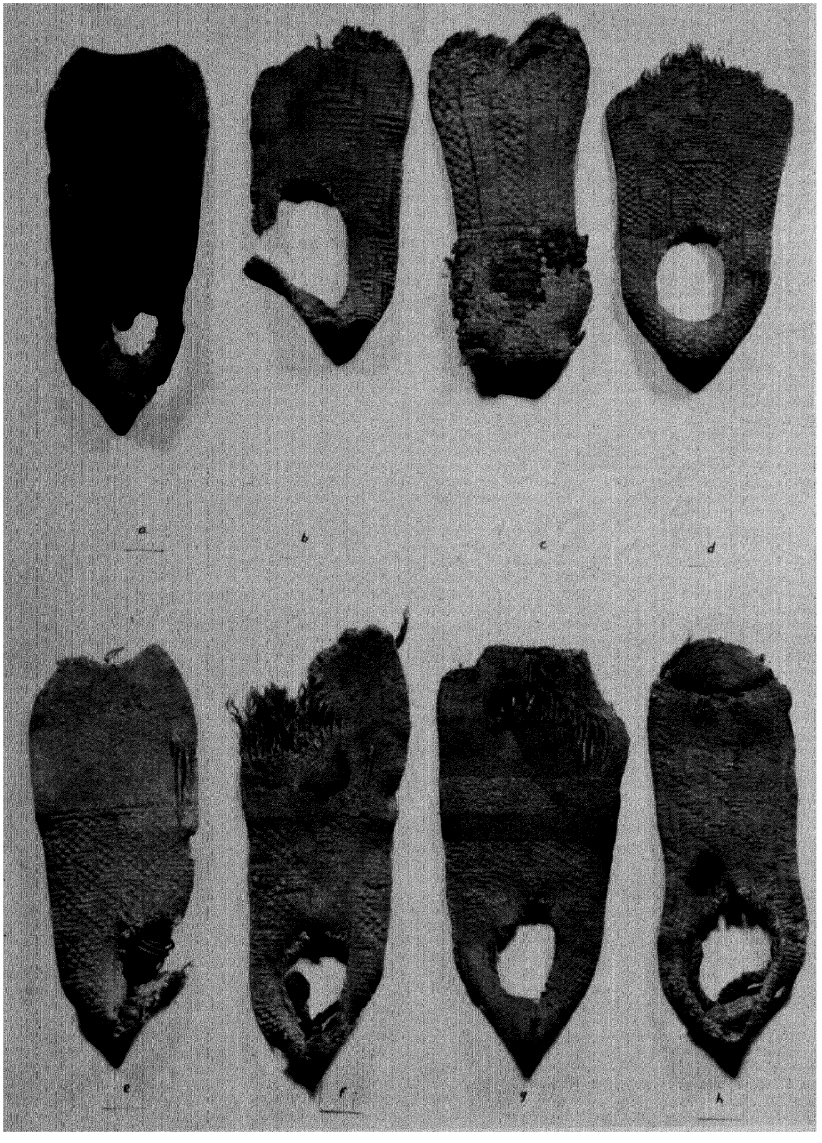
The round-toed type of heavy yucca cord is in twined weave also. The warp is formed of very heavy two-strand yucca cords, either ten or, more commonly, twelve in number. These are tied together at the front, the shredded ends projecting slightly, forming a toe fringe and rounding off the toe (plate 6, a, b). Without this fringe the toe would have a very shallow scallop similar to Types 3 and 4 (fig. 4, a). The weft is of somewhat finer single strand yucca cord woven in with the regular twined weave. At the heel the ten or twelve warp elements were laid out parallel to each other as they emerged from the final weft crossings. The outer warp on either side was then laid across the remaining warps, forming a double cord across the heel at the back edge of the woven part. Each individual warp element was brought over and under this double cord, wrapped around itself to the right, and then pushed through to the upper side of the sandal (fig. 3, b). These warp ends, including the two that formed the heel cord, were then gathered together and twisted into two heavy cords to form heel loops, being carried forward several inches on either side and forced through the fabric between the first and second warp elements. These two cords are

[9] Earl H. Morris (*Archaeological Background of Dates in Early Arizona Chronology*, Tree Ring Bulletin, Vol. 2, No. 4, 1936, p. 35) mentions twined sandals with slightly concave or round toes occurring in sites dating in the sixth and seventh centuries.

[10] *Op. cit.*, p. 77, plate 9, and fig. 24, d.



Type 2, 3, 4 and 5 sandals: upper surface. a, b, Type 2; c, Type 3; d, Type 5; e–h, Type 4 (h inadvertently placed with toe pointing downward).



Raised decoration on the sole of Type 4 and 5 sandals. a–g, Type 4; h, Type 5.

either braided together or tied with another cord in the center in order to draw up the heel into the characteristic pucker. Toe loops are always present and are formed of two or three cords, each of three two-strand cords. This type of sandal seems to have been somewhat more common than Type 1 as there are three in this collection.[11]

TYPE 3

Unfortunately there is only one sandal of this type in the collection, so that the various weaves cannot be determined at this time. There are twelve warps of heavy two-strand yucca cord, and the twined-woven wefts are also of heavy two-strand cord (plate 6, c). The warps appear to be doubled in the front section for about two inches or more, with a very shallow scallop across the toe. This front section seems to have been woven in the twilled over-two-under-two twined weave as in Type 4 (fig. 2, b). The fastening of the warp ends at the heel is formed in the same way as in Type 2, with heel loops on either side, one of which has been repaired with a rawhide thong. There is a toe loop of two heavy yucca cords, each composed of three three-strand cords.

TYPE 4

This type is the most common and the most characteristic sandal of the Basket Maker III period. There are forty-four of this type in this collection.[12] Its distinguishing features consist of a scallop across the toe, a puckered heel, fine cord warp and weft, and a raised and colored decoration (plate 6, e, f, g, h). It is twined woven of very fine yucca or *apocynum* cord weft over a fine two- or three-strand yucca cord warp. The latter range from fourteen to thirty-six in number, averaging between twenty-six to thirty-two. Those sandals having only from fourteen to twenty warps are usually small sandals made for children, ranging from four to six inches in length. Most of them range from eight and one-half to eleven inches in length and from three and three-quarters to five and one-quarter inches in width at the widest point.

[11] *Ibid.*, fig. 24, c, illustrates one sandal that is undoubtedly of this type.

[12] Kidder (*op. cit.*, plate 1) illustrates one sandal of Type 4; Morris (*Exploring in the Canyon of Death*, p. 300) illustrates five; Guernsey (*op. cit.*, plates 9, 47, 57) illustrates nine; Cummings (*op. cit.*, p. 10) describes and illustrates several. G. Nordenskiöld, *The Cliff Dwellers of the Mesa Verde* (D. Lloyd Morgan, tr., 1893) illustrates one from Step House. Byron Cummings (*The Textile Fabrics of the Cliff Dwellers*, reprint of paper presented before the National Association of Cotton Manufacturers, Boston, April 28–29, 1915, fig. 3) illustrates one sandal of this type. Numbers of others can be found in the American Museum of Natural History, Brooklyn Museum, Peabody Museum, Southwest Museum, etc., but have not as yet been described.

Toe Arrangements. These warps run the full length of the sandal and are commonly doubled in the front section (fig. 1, a). This was accomplished by running in from ten to eighteen rows of twilled over-two-under-two twined weaving (fig. 2, a), forming a small section of fabric one-half to three-quarters of an inch in width near the upper ends of the warps. A two- or three-strand yucca cord of the same size as the warp strings was now laid across the center of this woven element and the latter was doubled or bent over the cord, causing the front or shorter warp elements to extend back parallel with the upper ones. The twilled twined weaving was now continued, but over the pairs of doubled warps instead of over pairs of single warps as before (fig. 2, b). This weaving over the doubled warps was continued for from two and one-half to three inches, and then the second or

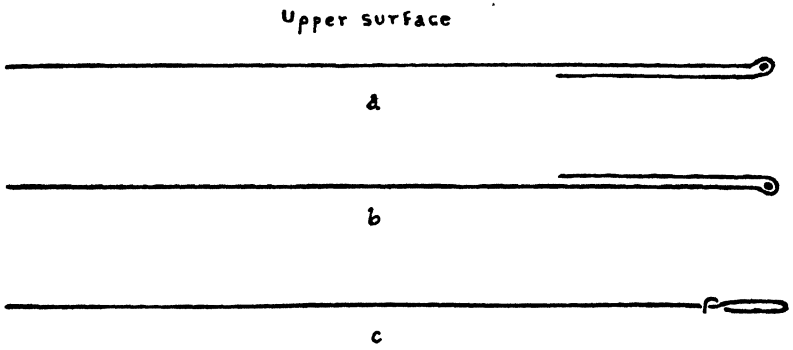


FIG. 1. Side view from the right of single warp, showing toe arrangements of Type 4 sandals. a, Doubling at toe on the bottom; b, Doubling on top; c, Short doubled front section with bottom warp wrapped about upper one, forming pad on sole.

bottom warps were cut off evenly. In sandals having colored decoration this normally occurs at the back of the forward decorated zone (plate 6, g). In several instances these secondary warps were brought back on the upper side of the sandal and cut off evenly, forming a slight ridge across the sandal (fig. 1, b). The cord across which the warps were doubled was undoubtedly long originally, possibly serving to attach the sandal to a stick or other support during the process of weaving. As Kidder has suggested the scallop or crescent form of the toe may be due to the pull exerted on this string during the weaving.[13] This cord was eventually either cut off close at either side of the sandal, as several were found still in place in the tube, or was pulled entirely out, leaving a hollow tube at the toe end.

[13] *Op. cit.*, p. 623 and fig. 5.

While this was the most common method of forming the toe of this type of sandal, there were at least two other arrangements in use. In the first of these a section about one to two inches in length was woven as before, with the warp ends protruding slightly in front. Then this woven portion was bent in the center, probably over a cord, although none were found in place, pulling the outer corners of the toe up, and the ends of the front warps were fastened to the other warps at the back of the woven section. This was done by drawing the bottom warp through to the left of its upper mate, over it to the right, and back through to the bottom of

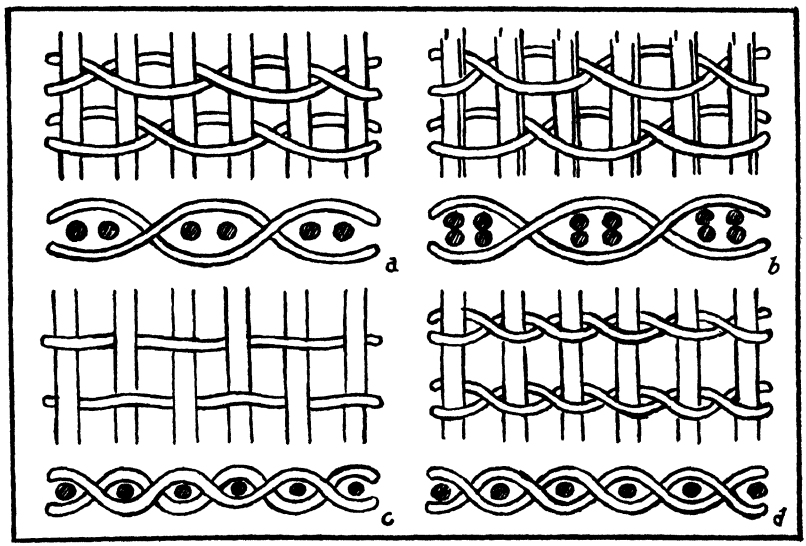


FIG. 2. Top and end views of four of the common weaves employed in Basket Maker III sandals. a, Twilled twined weave over pairs of single warps; b, Twilled twined weave over pairs of doubled warps; c, Plain over-one-under-one weave; d, Plain twined weave.

the sandal where it was cut off short and shredded out, forming a soft pad under the toe (fig. 1, c). These warp ends were held tightly in place by the first twining of the weft forming the remainder of the sandal. This arrangement was found in six of the forty-four sandals of Type 4. It is particularly marked by having a very shallow scallop and by the pad of shredded warp ends on the sole just in back of the toe (plate 6, h).

The third method was quite rare, only one sandal of this form occurring. A section about one-half an inch in width was woven and bent in the center, probably over a cord which was later pulled out. Then the weft was

woven over the doubled warps for about an inch and the secondary or bottom warps were gradually dropped out, not being cut off evenly as in the first method.

Weaves. As has already been shown the plain twined weave was not the only one employed in the weaving of these sandals. Kidder[14] lists nine different weaves in his dissection of a single Type 4 sandal, and seemingly these constitute the usual number to be found in those sandals having raised and colored decoration. These include twilled over-two-under-two twined weave over pairs of single warps and over pairs of doubled warps, twilled lock-weave over pairs of doubled warps, plain over-one-under-one weave, plain twined weave, "a" weaving, "b" weaving, double-wrap knot, and single-wrap knot.[15] A number of these weaves, as the twilled lock-weave, "a" and "b" weaving, and the double and single-wrap knots, were used to produce the raised and colored decoration, and are not found on plain sandals. Perhaps the most common weaves are the four illustrated in Figure 2.

Dropping of Warps. In order to shape the sandals, that is, to bring in the back part corresponding to the form of the foot, warp elements were sometimes dropped out. Four instances were found in which this occurred, all coming at the back of the second decorated zone, between one-half and two-thirds of the distance from the toe to the heel of the sandal. One sandal dropped out a single warp element, two two elements, and the fourth three warps, all spaced at about equal distances across the sandal. Warps were also sometimes added at the junction of the double and single warp sections near the toe, evidently in order to broaden out the sandal at the ball of the foot. None of this type was found in the present collection but Kidder mentions a single warp being added in one sandal.[16]

Methods of Fastening Warps at Heel. After the insertion of the last row of twined weft elements at the heel of the sandal, some sort of tie was necessary to hold the warp ends in place and to prevent the fabric from unraveling. Kidder[17] states that a yucca cord was laid across the top of the warps and these were then wrapped about the cord, the end of each being held in place by the first turn of the next warp. The ends were then trimmed off close. He further states that, since the outside corners of the heel were worn away, he could not determine how the outer warps were held or how the ends of this locking cord were fastened. From the dissection of a number

[14] *Ibid.*, pp. 621–30.

[15] For a detailed description of these weaves consult Kidder, *A Sandal from Northeastern Arizona*, pp. 621–30, as further discussion here would be needless repetition.

[16] *Ibid.*, p. 625. [17] *Ibid.*, p. 630.

of sandals these questions have been fully answered. The cord across the heel was formed of the outer warp elements on either side as in Type 2. These were bent at right angles at the corners of the heel and laid across the top of the other warp elements, extending out on either side and overlapping for their entire distance across the heel. Sometimes the first and second warp elements, or the first, second, and third on either side were utilized, forming a four or six cord element across the heel. I am surprised that Kidder found only one cord across the heel of his particular sandal as there would have to be at least two, one warp element from either side; either one must have been pulled out at an earlier time or we will have to assume an entirely new method of fastening, a method not occurring in any one of the forty-four Type 4 sandals in this collection.

From this dissection it was further discovered that there were at least five different methods of fastening the warp elements to the cord across the heel to hold them in place. As none of these five types agrees with Kidder's description above, we will have to add a sixth method, unless the incomplete nature of Kidder's sandal caused him to place the wrong interpretation upon the fastening. Of these types the most common was one in which the outer warp element on either side, sometimes the outer two warp elements, was laid across the top of the remaining warp elements, and each of these latter was brought over these heel cords and pushed through to the left to the bottom of the sandal, over itself and the next warp, and then pushed through to the top of the sandal, where it was either cut off close or used for a heel or tie cord (fig. 3, a). This carrying of the warp element over itself and the next element on the bottom of the sandal produces a characteristic ridge across the heel of the sandal at the edge of the woven part. It is also found in types b and c, but not in types d and e. Type b differs from a only in that the warp element passes around itself on the bottom of the sandal and is then pushed through to the top, omitting entirely the next warp element (fig. 3, b). Type c has the warp element brought over the heel cord and through to the right, then over the next two warps and through to the top of the sandal (fig. 3, c). Types d and e differ in having the outer warp elements forming the heel cord laid on the bottom rather than on top of the remaining warps. In type d the warp end is brought underneath the heel cord and pushed through to the right to the top of the sandal and cut off (fig. 3, d), type e differing only in having the warp pushed through to the left (fig. 3, e). Of these five types a occurred in twenty sandals, b in fourteen, c in two, d in six, and e in two.

Heel Arrangements. There were also at least five different methods of fastening the heel to form the characteristic pucker and to form heel loops,

the tie cord, or an attachment for an ankle loop. In the first of these (fig. 4, d) either the first or the first and second outer warps on either side were used as the heel cord. After the remaining warps had been fastened around the heel cord and cut off, the warp forming the heel cord was joined with the second warp which was not cut off (or the third if both the first and second were used for the heel cord), brought across the top of the sandal and lightly twisted with those from the other side, forming a single heavy cord across the heel. The two or three cords coming across from the right

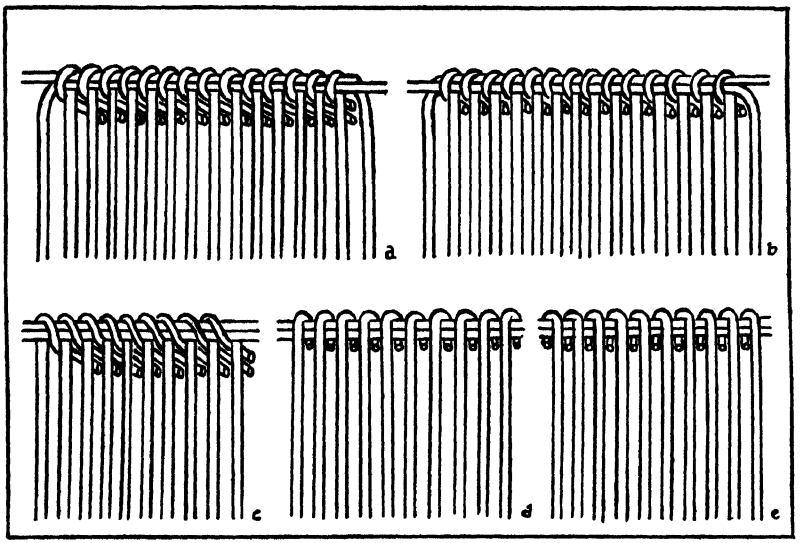


FIG. 3. View from above, showing methods of attachment of warps at the heel. a, b, Showing complete heel and utilization of outer warps for the heel cord; c, d, e, Center of sandal, showing partial warp attachments; d, e, Heel cord lying on the bottom of the remaining warps, the others on top.

were then pushed through the woven sandal on the left side between the second and third warps about one-quarter of an inch from the back of the sandal, carried over another quarter of an inch, pushed through to the top of the sandal and cut off close. Sometimes, however, these cords were carried over a way, pushed through the fabric again to the bottom, over, and up to the top to be cut off, thus making doubly sure that the ends would not pull through. The loose warp ends coming across from the left side of the sandal were then treated likewise on the right side of the sandal. By pulling these cross cords rather tightly before fastening them through the fabric the corners of the heel were pulled up into the characteristic

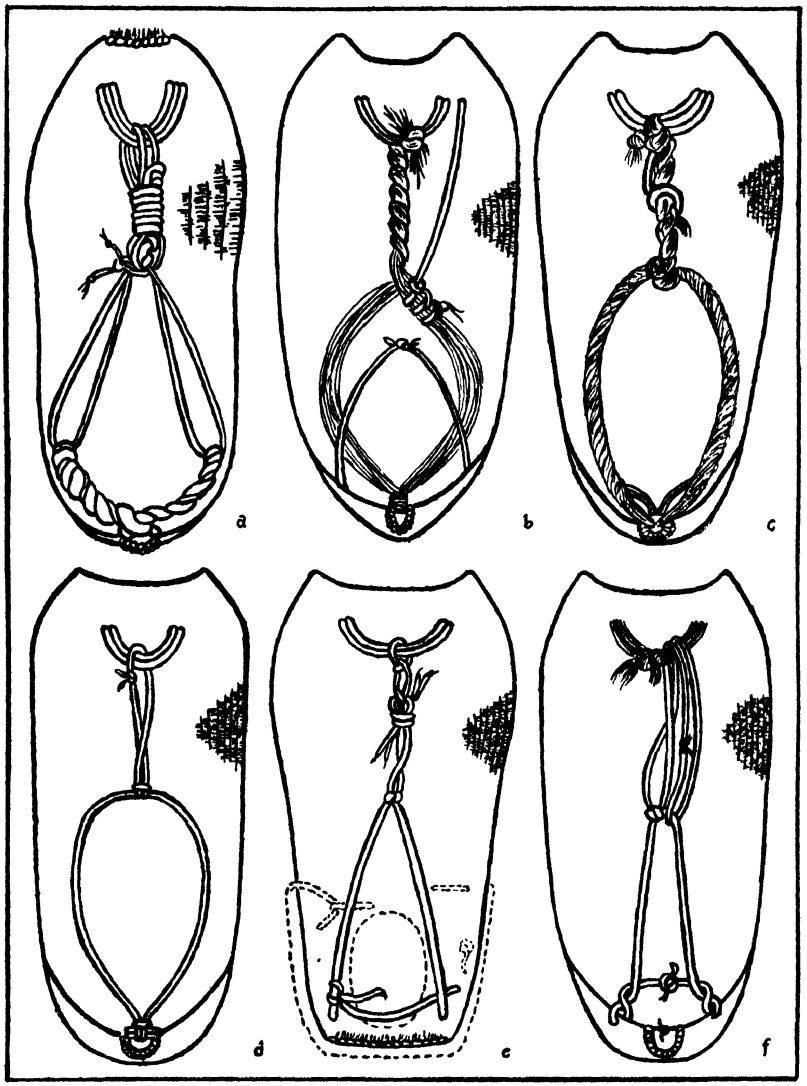


FIG. 4. Sandal shapes, types of heel pucker fastenings, and methods of attaching sandals to foot. a, Type 2; b–f, Type 4.

pucker, causing the back of the sandal to assume a semicircular shape, bordered on the top or straight side by the heel cords. To the center of this cord was often attached an ankle loop (fig. 4, d). This was the most common

method of fastening at the heel, there being twelve sandals having this type. Sometimes these heel cords were merely brought together in the center and tied, as in Figure 4, f; this variation occurred in three sandals. A second type is the same as the first except that the cords come across the bottom of the sandal, are pushed through to the top, back to the bottom, and are there cut off close. There were only two sandals showing this type.

A third method had the second and third warp elements (which were not cut off after they were fastened about the heel cord) join the outer warp element forming the heel cord as it emerged at the corner. These three cords were twisted into one heavy strand, went across the top to the other side, through the fabric between the second and third warps at the corner of the heel, and across the bottom to the first side. There they were pushed through to the top and carried over to the center of the heel where they were met by the three warps from the other side which had repeated this performance, and the six cords were braided into a single heavy strand and then divided to form an ankle loop. Of the three examples of this type found, one differed slightly in not having the cords join in the center to form an ankle loop, but instead they were fastened to the edge on either side, forming a loop on both the top and bottom of the heel (fig. 6, a). A fourth method was almost as common as the first, eight of this type occurring. The two outer warps on either side were laid across the heel and used as the heel cord. The rest of the warp ends were not cut off but were used as an ankle loop or as heel loops. This was accomplished by gathering them into one bundle and using one warp as a wrapping element, binding the bundle about five times and then being pushed back through and knotted at the end to prevent it from working through (fig. 4, b). The two outer warps on the right, after they had passed across the heel to the left and served as the heel cord, were brought on the back side of the rest of the warps to the right, passed through the fabric to the bottom and back up to the top. The other two elements, as they emerged on the right from forming part of the heel cord, went on top of the braid to the other side, through the fabric to the bottom and back up to the top. There they either joined with the first two, were tied in the center, and used as a loose ankle or heel loop, or they were pushed back through the fabric to the bottom of the sandal and cut off. This type of fastening is very common on those sandals having a side loop tie arrangement, being found on five of the seven sandals of this type. There is, however, a good deal of individual variation in certain of the details (fig. 7, a).

A fifth type, of which there were four examples, had the three outer warps on either side used as the heel cord. These were brought across each

other and tied in the center with a heavy yucca cord. Then they joined the rest of the warp ends which came out through the heel hole and formed the ankle loop (fig. 4, c).

Heel and Toe Loops. Heel loops are not very common on this type of sandal, occurring on only eight of the forty-four Type 4 sandals. And of these eight, six are of the side loop tie arrangement where heel loops are of greater necessity. Kidder states that the attachment for the heel loop is present at one corner of the heel in his sandal,[18] but what he has mistaken for the heel loop is nothing but the remains of the fastening of the warp ends forming the heel cord and being pushed through the fabric and pulled tight in order to pucker up the heel. These warp ends may have formed a heel loop, but if so there would have been some evidence of the forward part of the fastening on either side several inches from the heel. But none of these fastenings appear to be in evidence from his description or from the photograph. These corner heel fastenings of the warp elements are very easy to mistake for fastenings of heel loops, but, from the scarcity of heel loops in sandals of this type, undoubtedly do not represent true heel loops.

Heel loops are commonly formed by the warp ends. That is, as was pointed out in the discussion of the fourth type of heel arrangements, the warp ends were not cut off after they had been tied about the heel cord but were gathered into one cord, either braided and divided again into two heavy cords or were wrapped with one or two warps and then divided into two cords (fig. 7, a). Each of these cords was carried forward on either side two to three inches, pushed through the fabric between the second and third or third and fourth warps, brought back up to the top and there cut off, forming a loop on either side of the heel. Often, however, in the case of the side loop arrangement, these heel cords also formed the side loops. Occasionally the heel loops were formed of an entirely separate cord, being fastened on either side of the heel pucker and going forward several inches and fastened to the edge as before (fig. 6, a). In one case the heel loops were formed of the two outer warps utilized for the heel cord, being fastened at the corners of the heel pucker and then carried forward and fastened to the edge of the sandal.

Toe loops are almost invariably present, being set back about one-half to one inch from the center of the scallop. Occasionally they do not occur on sandals having side loop arrangement, but otherwise they are always

[18] *Ibid.*, p. 620 and plate 1. For a larger photograph of this same sandal see A. V. Kidder, *An Introduction to the Study of Southwestern Archaeology with a Preliminary Account of the Excavation at Pecos* (Department of Archaeology, Phillips Academy, Andover, Mass., 1924), plate 36, b.

present. And they are always multiple (fig. 4). Of the twenty-eight sandals with toe loops intact or with sufficient left to be able to determine the type, twenty of these toe loops were double, composed of two separate cords, each of either two, three, or four strands twisted together, more commonly of two strands. Four were of three cords, three of two-ply cords, and one having each of the three cords composed of three two-ply cords. Two had four separate two-ply strands, and one had five two-ply cords.[19] The last had a toe loop made of four narrow strips of unshredded yucca leaves; these were passed through the fabric, over several weft elements and up to the top, joining the other end of the strips to form an eight strand cord. These were tied in the center to the eight crossing over from the other side. Although these toe loops are all multiple, formed of two or more cords or strips of yucca, they are actually one cord in each case. That is, one long cord is used, being run up through the fabric an inch or more from the side, across a span of from one and one-quarter to one and one-half inches, through to the bottom, passed over several weft elements, and then through to the top and over to the other side. Here it is passed through the fabric beside the first emergence to the bottom of the sandal, and both ends are pushed back through to the top and cut off close. Sometimes they are run through the fabric again in order to hold them more tightly. At other times they seem to have been knotted at the top or on the bottom to prevent their pulling through. Sandals having toe loops composed of three, four, or five cords were made in the same way, the cord crossing the toe end the requisite number of times.

These toe cords were undoubtedly forced through the fabric with an awl after the sandal had been woven, the tightness of the weave holding them firmly in place.

Decoration. Type 4 sandals are characterized by a raised and colored decoration. This elaborate decoration sets off these sandals quite sharply from the other four types of sandals of this period and also from those of the earlier and later periods. Of the forty-four Type 4 sandals in the collection seventeen have both raised and colored decoration, twenty-two a raised decoration only, and five have no decoration.

The colored decoration normally occurs in two areas, a forward and a middle zone. The forward zone extends from just in back of the toe through the double warp section (fig. 5, a, and plate 6, g), the middle one from this junction back one and one-half to two inches toward the heel of the sandal.

[19] All of the sandals of this type illustrated in other publications appear to have multiple toe loops also.

In some, however, a single zone is found in the center of the sandal in back of the doubled toe section (fig. 5, b). In one there were two zones, a central zone and a rear zone located just in back of the first.[20] Each of these zones

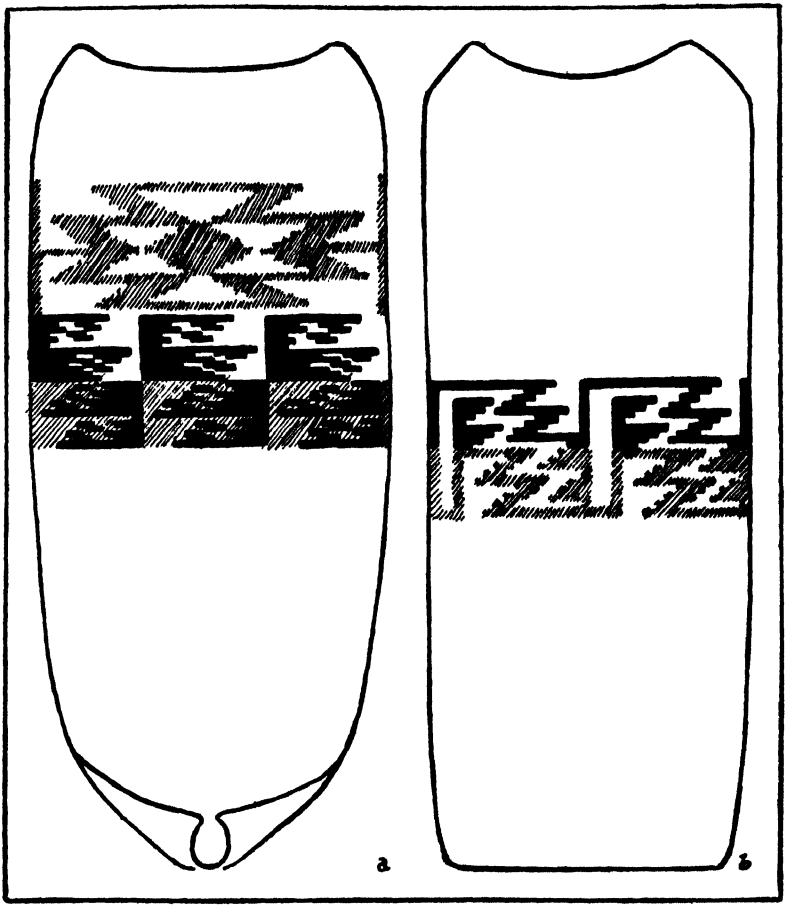


FIG. 5. Colored designs on Type 4 sandals. a, Normal pattern with two decorated zones; b, Single decorated zone in center of sandal. (Shaded areas designate red, solid areas black.)

[20] Morris (*Exploring in the Canyon of Death*, p. 300) shows two sandals with decoration in three zones instead of two. This third zone is located just in back of the middle decorated zone, and in one example is the same size as the latter. In the other, however, the third zone extends back almost to the heel of the sandal. Morris does not state how common this method of decoration was in the Cañon del Muerto area. One sandal shows the normal two zone pattern as above.

may be again divided into two separate design areas (fig. 5, a), although the designs are usually the same in both but use a different color and are reversed. This decoration appears on both surfaces of the sandal. The designs are produced by utilizing one dyed and one natural colored weft. The lock weave here employed allows the colored weft to be kept on either surface, but it is always visible on one side.[21] Thus the design on the bottom of the sandal is the exact reverse of that on the upper surface.[22]

Unfortunately most of the sandals in this collection are so badly worn that it is almost impossible to make out the complete patterns. However, the two that are shown in Figure 5 may be taken as typical designs of Basket Maker III sandals. The stepped element is the characteristic design element used on sandals, as it was also on the colored belts or headbands of this period, occurring in some form on almost every sandal having colored decoration.[23] The zigzag element is also very common. Black and red are the two colors commonly employed in these designs, with the natural tan colored yucca or *apocynum* fiber for the background. Both of the sandals shown here, however, have added decoration in yellow. Figure 5, a, has the natural color for the front section, and then a red design on the natural tan for the forward decorated zone. The front half of the middle zone is in black on natural, while the back part is in black on red, the black design being turned upside down in contrast with the front design. The entire back part of the sandal is a bright yellow on both sides, formed by dyeing both weft strands. There is also a raised design on the bottom of the sandal extending from the back of the second decorated zone to the heel. The second sandal, b, has a bright yellow front section, then a black design on natural colored weft, and a red design on a yellow background, the red design reversing the upper black design. The back part of the sandal is yellow, with a raised design on the bottom. Three other sandals also had this added yellow color. On two it occurred on the back part of the sandal from the back edge of the middle decorated zone to the heel of the sandal, and on the third only under the back half of the middle decorated zone. All of the other sandals that were decorated in color had black and red designs on the natural tan fiber. Raised decoration is more common than colored, occurring on all seventeen of the colored sandals and alone on twenty-two sandals. On sandals

[21] See Kidder, *A Sandal from Northeastern Arizona*, pp. 624–27, for a detailed discussion of this weaving.

[22] *Ibid.*, p. 619, fig. 1, a, b.

[23] See the following for other decorated sandals: Kidder, *A Sandal from Northeastern Arizona*, p. 619; Morris, *Exploring in the Canyon of Death*, p. 300; Guernsey, *op. cit.*, plate 47, a, b; Cummings, *Ancient Inhabitants of the San Juan Valley*, p. 10; Cummings, *Textile Fabrics of the Cliff Dwellers*, fig. 3.

having colored as well as raised decoration, the latter is found only on the rear half of the sole of the sandal, extending from the back edge of the middle colored zone to the heel of the sandal (plate 7, g). On sandals with no colored decoration the raised pattern sometimes covers the entire sole of the sandal (plate 7, c). Usually, however, it only extends from the back edge of the doubled toe section to the heel (plate 7, e). This raised decoration is formed by using Kidder's single and double wrap knots,[24] and also plain weave and plain twined weave (fig. 2, c, d). This produces either round bumps or short raised bars at the places where the double or single wrap knots are introduced. As the wefts are pulled very tight, these protuberances are visible only on the sole of the sandal.

As can be seen in the illustrations, the designs so produced are in the form of stepped and zigzag patterns, similar to those found in the colored decorations.[25] These raised designs were undoubtedly useful in providing a firmer and surer grip on smooth surfaces, but it seems strange that such intricate designs were placed where they could not readily be seen.

Fineness of Weave. These sandals are very finely woven. The warps vary from seven to ten to the inch, nine perhaps being the most common. The finer sandals have as high as thirty-four wefts to the inch, but most range from twenty-six to thirty-two wefts to the inch.

Many of these sandals when found are worn through at the heel, this part of the sandal evidently receiving the most wear. That the Basket Maker III people patched at least some of these worn out sandals is clearly shown by one of the Type 4 sandals in this collection(fig. 4,e, and plate 7,c). The patch to repair this worn heel was cut from the front decorated part of another Type 4 sandal. It was placed on the bottom of the sandal to be repaired and attached by means of a cord at either corner of the heel; each of these cords was pushed through both pieces, the ends being kept from pulling through by a small knot at the end of each, and the loose ends were then used as an ankle loop. The patch was also fastened in front by a cord on either side and also by a knotted cord on the right side (fig. 4, e).

TYPE 5

This type is characterized by a fine cord warp and weft, a rounded toe, a puckered heel, and a raised decoration on the bottom (plate 6, d). There are twenty-four warps, formed of twelve looped cords, the open ends at the heel (fig. 6, b, c). These warps are of two- or three-strand yucca cord. The wefts,

[24] Kidder, *A Sandal from Northeastern Arizona*, pp. 627–30.

[25] For other raised patterns see Guernsey, *op. cit.*, plates 9 and 47, a, b. Morris (*Exploring in the Canyon of Death*, pp. 270, 300) mentions raised designs on sandals, but he does not describe or illustrate them.

woven in with the twined weave, are of fine yucca or *apocynum* cord. The two knotted types of weave are also employed on the back two-thirds of the sandal to produce the raised design on the sole. This type is not quite as finely woven as the preceding type, averaging from seven to eight warps and twenty-two to twenty-four wefts to the inch. At the heel the outer warp on either side forms the heel cord and the remaining warps are fastened about this as in type a fastening (fig. 3, a). The second and third warp elements are not cut off, but join with the outer warp and are tied tightly in the center with those from the other side, pulling up the corners of the heel.

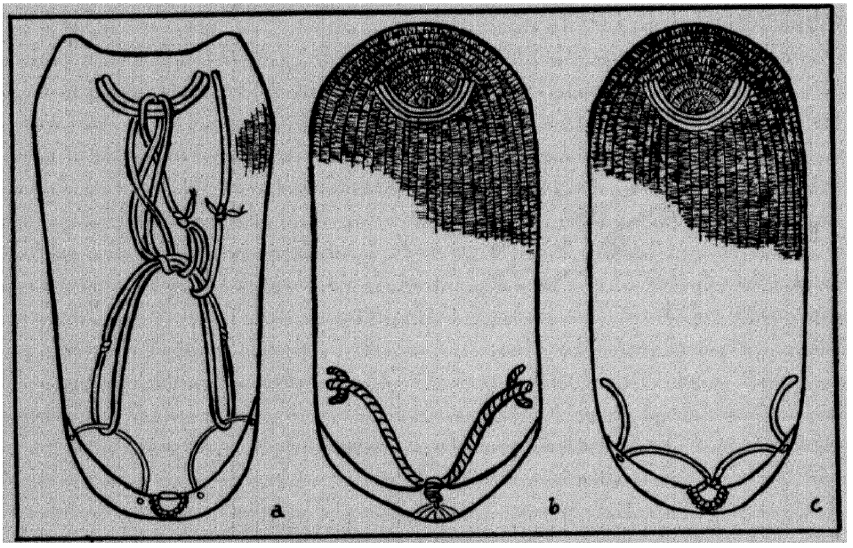


FIG. 6. Sandal shapes and methods of attaching sandals to the foot. a, Type 4; b, c, Type 5, showing heel and toe loops.

Then they are divided into two strands to form heel loops, being fastened on either side between the first and second warps in the manner previously described for Type 4 sandals. One of the sandals differs in this respect, having the middle six warps serve as the heel loops. The rest of the warps, in pairs, as they emerge on the inside after passing around the heel cords, cross to the opposite side and through the fabric to the bottom of the sandal where they are pulled tight and fastened. This forms a very tightly drawn up heel, with no hole left in the center as is usual (fig. 6, b). The heel loops on this sandal are somewhat different also, being divided into three parts just before they enter the sandal between the second and third warps. The toe loops on both are of three four-strand yucca cords.

The raised decoration on the sole of the Type 5 sandals is similar to that of Type 4. The area so decorated covers the back two-thirds of the sandal, the rounded toe section not being decorated (plate 7, h).

There are only two sandals of this type in the collection. Guernsey[26] illustrates one sandal that appears to be of this round-toe type; it has a raised zigzag decoration covering the rear two-thirds of the sandal. Morris[27] speaks of round-toed sandals coming in toward the latter part of the Basket Maker III period, and possibly he is referring to this type. As Morris' researches have shown, this form of sandal seems to have been a late development in this period, as it is tending toward the round or pointed toe form which became characteristic in Pueblo I.

There is a distinct possibility that the coarse, square-toed, square-heeled Basket Maker II sandal carried over into the early part of Basket Maker III, making a probable sixth type for this period. Two sandals, each having six warps of crushed yucca leaves, wefts of shredded yucca leaves in plain over-one-under-one weave (fig. 2, c), the butt ends of the wefts forming a pad on the sole, and a toe fringe of shredded leaves, were found in Slab-house Ruin under conditions which make it seem that they were used during the Basket Maker III period. This was practically a pure Basket Maker III site, with little or no evidence of earlier or later intrusions, and it is quite likely that these sandals should be placed in the early part of Basket Maker III.[28] The toes of these sandals are slightly rounded, although the protruding toe fringe makes them appear square.[29] Both are thickly padded with shredded cedar bark and have a side loop tie arrangement, with five loops to the side, including the heel loop.

METHODS OF ATTACHING SANDALS

Type 1.[30] This sandal type has a toe loop and two heel loops. The toe loop enclosed the second and third toes. The sandal was fastened to the foot by means of a single long tie string. This tie cord was wrapped about one

[26] *Op. cit.*, plate 57, e.

[27] *Archaeological Background of Dates in Early Arizona Chronology*, p. 35.

[28] Guernsey (*op. cit.*, p. 28), from a later examination of the same site, reports a number of scallop-toed sandals and other Basket Maker III material. However, he also reports finding several finely-woven, square-toed Basket Maker II sandals in the talus beneath a large rock. These do not come from the main site as do those mentioned above and, as Guernsey says, probably represent a cache.

[29] See Kidder and Guernsey, *op. cit.*, p. 158 and plate 67, b, for a complete description of this Basket Maker II type of sandal.

[30] Guernsey, *op. cit.*, fig. 24, d, and p. 77. Figure 24, e, which he has labeled as possibly Pueblo I, may be Basket Maker III. It has a heel loop of a single cord knotted on either side, and an ankle loop composed of six warps that emerge at the heel; it is finished like Figure 4, b, above.

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Type 1.[30] This sandal type has a toe loop and two heel loops. The toe loop enclosed the second and third toes. The sandal was fastened to the foot by means of a single long tie string. This tie cord was wrapped about one

[26] *Op. cit.*, plate 57, e.

[27] *Archaeological Background of Dates in Early Arizona Chronology*, p. 35.

[28] Guernsey (*op. cit.*, p. 28), from a later examination of the same site, reports a number of scallop-toed sandals and other Basket Maker III material. However, he also reports finding several finely-woven, square-toed Basket Maker II sandals in the talus beneath a large rock. These do not come from the main site as do those mentioned above and, as Guernsey says, probably represent a cache.

[29] See Kidder and Guernsey, *op. cit.*, p. 158 and plate 67, b, for a complete description of this Basket Maker II type of sandal.

[30] Guernsey, *op. cit.*, fig. 24, d, and p. 77. Figure 24, e, which he has labeled as possibly Pueblo I, may be Basket Maker III. It has a heel loop of a single cord knotted on either side, and an ankle loop composed of six warps that emerge at the heel; it is finished like Figure 4, b, above.

heel loop, through the toe loop, about the other heel loop, through the toe loop again, and then was brought back to the instep and tied. A short supplementary heel loop crosses the back part of the heel loops.

Type 2. A multiple toe loop and heel loops invariably formed of warp ends are always present on these sandals. Figure 4, a, illustrates the characteristic method of attachment.[31] The tie cord is of very fine yucca cord, consisting of two loosely twisted cords, one having five and the other four strands. The ankle loop of the tie cord is permanent, extending from the ankle around the left heel loop, back to the center, around the right heel loop, and back to the center where the two ends are tied, one being left much longer than the other. Both of these ends are passed under and over the toe loops, the short one stopping there. The long cord is carried under and over the ankle loop and back almost to the toe loop where it joins the short cord and the two are wrapped about each other three times. The short cord is laid on top of the four strands connecting the toe and ankle loops, and the long one is wrapped about the whole six times, the short cord then passing around the right ankle loop and being tied to the end of the long cord in a double knot (plate 6, a).

Type 3. Heel and toe loops are formed in the same way as in Type 2. However, the tie cords are so incomplete in the single specimen that it is almost impossible to determine the exact method of fastening (plate 6, c). There seems to have been a short supplementary heel loop of fine cord as in Type 1. The ankle loop is of heavier two-strand cord and is closed, being tied in the center at the ankle. A still heavier two-strand yucca cord connected the toe loop and this ankle loop.

Type 4. There are two distinct methods of fastening the sandal to the foot in this type of sandal, the common heel or ankle loop and toe loop arrangement and the side-loop type, the former being the more common.

As this type of sandal generally lacks heel loops (the latter appearing on only eight sandals, six of which have the side-loop arrangement), the fastening ordinarily consists of the toe loop and an ankle loop. Since the fastenings are only complete on a limited number of sandals, it is hard to say which method was most commonly used. The three types illustrated in Figure 4, b, c, d, are probably the most common, the other two, e and f, representing more individual forms. In b the ankle loop is formed of all the warp ends except those forming the heel cord. These warps are gathered into two loose

[31] *Ibid.*, fig. 24, c, illustrates a Type 2 sandal. The tie cord is wrapped twice about the left heel loop, crosses the back of the heel and is wrapped twice about the right heel loop; then the two ends are brought around the ankle to the instep and are twisted together to the toe loop where they are tied as in Figure 4, b, above.

cords, pass around the ankle, and are then twisted together to the toe loop where they are tied. A short heel loop is formed of a cord from either side of the sandal tied in the center. A further supplementary tie is formed by a cord fastened to the sandal beside the right side of the toe loop and extending back to the ankle loop, wrapped about this several times, and tied. This feature is seen on a number of sandals, the cord often being formed of one of the ends of the toe cord. In c the ankle loop is again composed of the protruding warp ends. These are knotted about the ankle, twisted to the toe loop, and tied. The right end of the toe loop is not cut off but runs up through this knot at the toe loop and is tied midway between the toe and ankle (plate 6, e). Figure 4, d, illustrates a very common method of fastening. To the center of the cords across the heel is attached a long tie cord. This goes around the ankle and is tied in the center; then it passes under and over the toe loop and is tied again. Occasionally the ankle loop is composed of a single cord and a second cord is used for the tie between the toe and ankle. Figure 4, e, is practically the same as the last except that the ankle loop is formed of two cords holding the patch on the bottom of the sandal and there is a short heel loop across the back of the sandal. Figure 4, f, shows a somewhat different method. A single long cord is forced through the fabric about one-half an inch from the corner of the heel, twisted about itself, and goes around the back of the heel, where it is tied to a similar cord from the other side. These cords go around the ankle, are tied at the instep, and laced back and forth around the toe loop and knotted.

Figure 6, a, represents a typical sandal where heel loops are present. The latter are formed of warp elements or, as in this case, of separate cords. A closed double cord forms the ankle loop, and a second cord is laced back and forth several times between this and the toe loop and knotted. A supplementary tie, consisting of the end of one of the toe loops, extends back and is fastened to one of the ends of the toe and ankle cord.

The side loop arrangement is found on seven sandals in the collection.[32] It usually consists of two heel loops, from two to five side loops on either side of the sandal, and a tie cord. Toe loops were present in only two of these sandals. The heel loops are formed of the warp ends, being divided into two equal strands and fastened between the second and third warps on either side of the heel (fig. 7, a). The side loops are usually merely a continuation of these heel loops, being carried along the edge of the sandal to the toe. Otherwise, where heel loops are not present, these side loops are

[32] Morris, (*Exploring in the Canyon of Death*, p. 300) illustrates one sandal with side loop arrangement; Guernsey (*op. cit.*, plate 9) also shows one sandal with remains of side loop attachments.

formed of a single long cord on either side run in and out of the fabric from just in back of the toe almost to the heel. Sometimes cnly one long cord was used, going across the back of the heel and serving as a single heel loop cr support (fig. 7, c). These side loops are usually formed of heavy yucca cords, warp elements, although in one instance they were of narrow strips of yucca leaves.

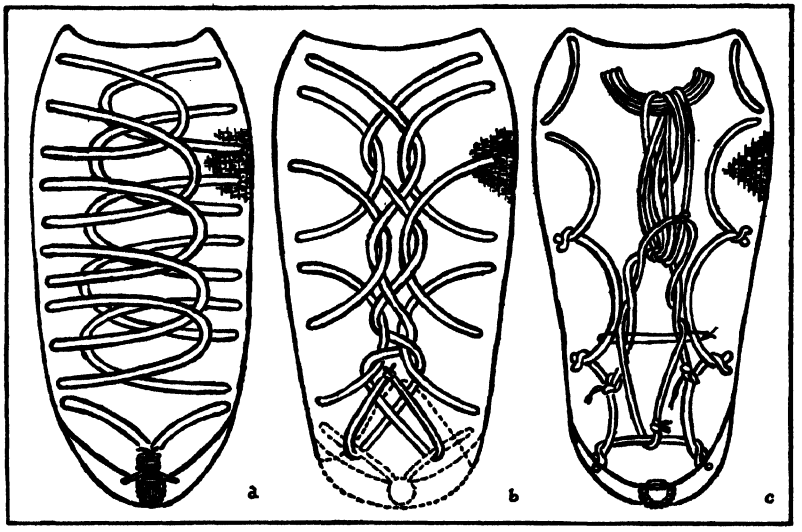


FIG. 7. Side loop arrangements on Type 4 sandals.

The tie cords, consisting of fine two or three strand yucca cord, are not complete enough in most cases to give a clear picture of the method of fastening the sandal to the foot. Figure 7, b, shows one method. The tie cords are fastened to the fabric on either side of the toe and are laced back through the side loops to the heel and tied around the ankle. Figure 7, c, illustrates an incomplete tie, or, rather, a sandal that was put away to be used later. The tie cord is now run loosely between the heel and toe cords, but originally was laced through the side loops also. A separate tie cord, one not attached permanently to the sandal, seems to have been most commonly used, being laced back and forth across the side loops and tied around the ankle.

Type 5. No ties are present in the only two sandals of this type in the collection. Heel loops and toe loops are found, however (fig. 6, b, c), and no doubt the sandal was fastened to the foot by means of a long tie cord as in Figure 4, a, or Figure 6, a.

CONCLUSIONS

Thus, this brief summary shows that there were at least five different types of sandals used during the Basket Maker III period, the round toe type of yucca leaves, heavy yucca cord, or fine yucca cord, and the scallop toe of heavy or fine yucca cord, with a possibility of a sixth, a modification of the coarse, square-toed Basket Maker II type. Of these the scallop-toed type of fine cord is by far the most common and the most characteristic of the period. This scallop or crescent across the toe is probably the best identifying feature for these sandals. Other characteristics are the puckered heel, the use of warp ends as heel loops or as tie cords, multiple toe loops, and raised and colored decoration. If the multiple heel locp of human hair is characteristic of the Basket Maker II sandals, certainly the multiple toe loop of yucca cord is of the Basket Maker III sandals. Every sandal positively identified as of the Basket Maker II period has had a toe loop consisting of at least two two-strand yucca cords, with the exception of one sandal which had multiple strands of yucca strips.

This brief report is not intended as a final summary of Basket Maker III sandals. Our collections are not complete enough to warrant such a conclusion.[33] They are, however, sufficiently diversified both as to type and range that they present a good outline of the various types of sandals made and used by these people. Morris' remarkable collections from northeastern Arizona should add a great deal to the above account. However, this should serve as a convenient starting point or basis upon which further work can and should be done on these complex Basket Maker III sandals.

ARIZONA STATE MUSEUM,
TUCSON, ARIZONA

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[33] Since this account was written there has come to light in the Arizona State Museum another collection of thirty-seven Basket Maker III sandals. Of these twenty-seven are Type 4, nine Type 5, and one a new type. It is hoped to discuss these sandals and certain other details of Basket Maker III and Pueblo I sandals at some length in a future report.

BOOK REVIEWS

NORTH AMERICA

The Younge Site: An Archaeological Record from Michigan. EMERSON F. GREENMAN. (Occasional Contributions, Museum of Anthropology, University of Michigan, No. 6. 172 pp., 33 pls., 9 figs., 10 maps. $2.25. Ann Arbor: University of Michigan Press, 1937.)

This report deals with a pre-Columbian site in the east central part of Lapeer County, southeastern Michigan. Even though no European objects were present, the two wooden structures and the burial customs would seem to indicate that it was occupied by Indians closely related to those occupying the area when the first European settlements were established.

The most significant feature from this site—which may constitute a diagnostic burial trait for the focus—is the drilling of the skulls and the ends of the long bones after death and prior to final inhumation. There is little doubt but that this procedure played an important part in maintaining a certain amount of articulation of the skeleton prior to interment. The heads of femurs were even cut down to fit into the natural openings of the pelvis (*obturator foramina*) in order to support the leg bones when suspended from a pole or horizontal bar.

In tracing this practice through the early historical accounts Greenman refers (p. 93) to a drawing made by J. F. Lafitau which illustrates very clearly the hanging of skeletons on horizontal bars encircling a pit to be used as an ossuary. This drawing by Lafitau is credited to a description by Le Jeune and Nicolas Perrot since Lafitau himself had never witnessed such a ceremony (Huron Feast of the Dead). The reviewer, with the help of T. Michelson, could find no specific report dealing with a description of drilled bones or suspended skeletons in either the works ascribed to Le Jeune, who lived about a century before Lafitau, or those of Perrot, who lived contemporaneously with Lafitau. Other descriptions dealing with either Algonquian or Iroquoian burial customs mention only the "packages" of bones, which were usually in skins and laid or suspended around an ossuary pit during the Feast of the Dead. One is therefore forced to conclude that the drawing by Lafitau is either an imaginative embellishment or else this detail was described to him by Perrot in person and never recorded or published. The archaeological verification of such an illustration made in 1724 may serve as the proof that such ăn unusual procedure did exist, even without documentation. This preburial treatment of the skull and long bones is so unusual that this trait alone makes the Younge Site paramount.

The scanty material culture is briefly compared to the Owasco Aspect in New York and to the material from the Uren site in Oxford County, Ontario. No comparison is made and perhaps none exists between the Younge and other northern Mississippi Valley sites since so few villages of this general period have been excavated. The Owasco Aspect in New York is an Iroquois-Algonkin contact manifestation wherein the Algonkin traits and physical types have been intermingled with

the later Iroquois traits, bringing about a very interesting mixture of culture elements and physical types. Since both Algonquian and Iroquoian linguistic groups inhabited the southeastern section of Michigan during the early historic period, Greenman concludes that the Younge Site together with a site near Mount Clemens, Michigan (to be published) will constitute the Younge Focus of the Owasco Aspect, and that they may represent either the Algonquian or Iroquoian stocks inhabiting the region in the 17th century. Greenman places this Owasco Aspect under a *Woodlands Phase*, while Ritchie's classification calls it the Northeastern Phase of the Woodland Pattern. This change in terminology is confusing to the reviewer.

There are two lengthy appendices: "Pottery," by Frederick R. Matson, Jr; and "Human Remains," by Byron O. Hughes. Lack of comparative data in both sections detracts from the report as a whole.

A continued thorough investigation of this interesting phase in Michigan will certainly contribute to the pre-Columbian and even historic period of Indian habitations in Michigan and enable other investigators to unravel this complicated period in adjoining states. It will also establish diagnostic traits according to the classification system now in use.

FRANK M. SETZLER

UNITED STATES NATIONAL MUSEUM

The Oto. WILLIAM WHITMAN. (Columbia University Contributions to Anthropology, Vol. 28. xvi, 132 pp. $2.00. New York, 1937.)

At last we have a much needed monograph on the Oto and it must be said that it is excellently done. The only adverse criticism I can make is in the bibliography. For I am amazed not to find Morgan's schedules of Oto kinship terms either noted or evaluated. And J. O. Dorsey's *Siouan Sociology* is twice cited as being in the 5th Annual Report of the Bureau of American Ethnology whereas it is in the 15th (pp. 16, 131). The volume is mostly descriptive, not comparative, and such comparisons as are made are usually with other Siouan tribes. And yet clearly one must go beyond these. Thus, surely the fact that the chieftainship is in the Bear gens (p. 20) is to be correlated with similar rules among the Iowa, Prairie Potawatomi, Fox, and Menomini. Again, if each gens, as is probable, had its own special haircut (p. 69), so did not only the Omaha, Ponka, and Iowa (Schoolcraft) but also the Fox. (This last item is usually unknown; I recall no published statement concerning it; it had ceased to function long before 1911, but I do not know the precise date.) So too, when mother's brother's son is classed with mother's brother as far as kinship-terminology is concerned, we can hardly consider this as being unconnected with, e.g., the Fox classification. On p. 16 we are told that in the old days each gens lived in a separate village; according to Atwater the Winnebago did the same thing in 1829.[1]

TRUMAN MICHELSON

BUREAU OF AMERICAN ETHNOLOGY

[1] See American Anthropologist, Vol. 37, 1935, p. 446.

The Ethnography of the Tanaina. CORNELIUS OSGOOD. (Yale University Publications in Anthropology, No. 16. 230 pp., 14 pls., 32 figs. $3.00. New Haven: Yale University Press, 1937.)

The Tanaina, the native inhabitants of the region about Cook Inlet, Alaska, are the most westerly tribe of that little known but strategically located group of American Indians, the Northern Athabascans. With the exception of the now extinct Tsetsaut, the Tanaina are the only Northern Athabascan group contiguous to the sea, which fact naturally distinguishes their culture somewhat from the Athabascan pattern in general. This maritime location has likewise resulted in early white contacts beginning with the voyage of Captain Cook in 1778 and including the period of Russian occupation. Strangely enough, however, until Dr Osgood's field trip in 1931 they had escaped the serious attention of anthropologists.

It is fortunate that Dr Osgood arrived when he did, for in his careful monograph one senses a culture that is rapidly disappearing, a culture indeed that has already disappeared only to be recaptured by Osgood's patient interrogation and re-interrogation of a variety of informants. In such a salvage job the author's varied background in the Northern Athabascan field serves him in good stead. The material culture is described with conscientious detail further clarified by many line drawings. For instance, nowhere else in the literature of the field, to the best of my knowledge, may one find such a careful description of the method of netting snowshoes as that on pages 79–83.

As might be expected details of social organization do not lend themselves so well to such reconstruction. The clan system, since it no longer functions, is confused in the minds of the informants, a situation similar to my own experience with the Upper Tanana Indians. Nevertheless it is clear that the Tanaina, like the Upper Tanana, the Ahtena, the Carrier, Tsetsaut, Tahltan, Ten'a and Kutchin did possess matrilineal clans grouped into exogamous moieties. This trait, together with many others, definitely sets off the more westerly Athabascans from those of the Mackenzie River region. The potlatch, another western feature, still functions in simplified form and is carefully analyzed by the author. Religion and a considerable number of religious beliefs are described. A few representative myths are given in abbreviated form.

The Tanaina, bounded as they are by the Eskimo to the west and the Tlingit to the east, possess many non-Athabascan traits: seal hunting with kayaks and harpoons, ceremonial masks, former use of pottery, and basketry, to mention only a few. When such extraneous elements, however, are sifted out, the basic Athabascan culture, which Dr Osgood knows so well, appears. While this Tanaina culture possesses many elements in common with the Athabascan culture of the entire northern area, it is further distinguished by other traits which in the opinion of this reviewer, at least, set off the culture of the more westerly tribes from that of the Mackenzie area: e.g., matrilineal clans and phratries, potlatch, cremation, sitting cradle, bowed two-piece snowshoe, etc.

The usefulness of Dr Osgood's study is further enhanced by the inclusion of a

table in which is listed the presence or absence of specific traits in the six sub-sections of the Cook Inlet region. One is struck by the variations which appear within the single area. In this connection it is the culture of the so-called Upper Inlet area which most nearly resembles that of the Athabascans farther inland.

The Ethnography of the Tanaina is the third Athabascan monograph by Dr Osgood to appear in the *Yale University Publications in Anthropology*. The series itself is a valuable one and thanks to studies of this kind is becoming peculiarly useful for students of the Northern Athabascans.

ROBERT MCKENNAN

DARTMOUTH COLLEGE

Handbook of Northern Arizona Pottery Wares. HAROLD SELLERS COLTON AND LYNDON LANE HARGRAVE. (Bulletin, Museum of Northern Arizona, No. 11. xiii, 261 pp., pl., 62 figs. $4.00. Flagstaff, Arizona, 1937.)

The outgrowth of a check-list of Southwestern pottery types, this bulletin describes 150 types which occur in northern Arizona, in about one fourteenth of the approximate 350,000 square miles littered with Southwestern sherds. Seventy-two new types are presented and 68 old types are re-described for uniformity and comparison.

The stated premise of the book is to subdivide the sherds into as many categories as possible (p. xi). Replacing the biological classification terms, the presentation is systematized into types, series, and wares, the latter of which are very well considered. A key system is included which hinges on color and on surface alteration. Reds, browns and yellows are stated to denote an oxidizing atmosphere during firing (110 types), while a reducing atmosphere results in black, gray, or white. The key is given as essential to all those not familiar with type names, but only normal sherds may be considered. Some of the key routes work better than others. The difference between Kayenta and Betatakin black-on-white (p. 216), warrants the attention of every Southwesternist who cares to know precisely how this material has been split.

The first seven chapters (pp. 1–28) include adherence to the 1927 Pecos Conference terminology, disregarding the important modifications of Roberts and Kidder "until some radical change is made" (p. xiii). Thus, the beginning of Pueblo V period is given as 1600 A.D., rather than 1700. *Ware* and *series* could perhaps be more strongly defined, and chapters on pottery-making techniques and methods of sherd study refer to tests, files, and notes which remain undescribed. The design chapter sets forth another directory of design "elements," but there is recognized a promising series of *styles*. Chapter V is called "Naming Pottery Types and Priority in Naming," and includes rules possibly intended for use in defining the next 150 types from the second fourteenth of the Southwest.

The authors consider their organization to be the synthesis which "is only as accurate as the analyses which preceded it." We discover that Winona red-on-tan, which is defined on the admitted basis of one sherd (pp. 54–55), is of known "genet-

ic" affiliation. It "differs from San Lorenzo red-on-brown and Mogollon red-on-brown in style of design" (apparently determined from a single sherd). One of the more deplorable complications of pottery type splitting is the emphasis upon normality in type examples. Except statistically, or in large proportion, freaks are probably insignificant. But variation tendencies cannot be overlooked if genetic or chronologic emphasis is strong. Had the single Winona red-on-tan sherd not come from a decorated area of the vessel, the style of design could not have been cited; and had the sherd not been a normal one, it could not have formed the basis of such highly significant statements.

In undertaking the laborious task of uniformly describing the types, the authors naturally risk duplication and complacence. It would occasionally seem that this is aggravated by tendencies to classify the *descriptions* rather than the sherds. Genetic relationship is defined for ceramic use only as "having a common derivation" (p. 1). The reviewer was unable to find a single instance of proof of such a situation. A weakness of conception or definition results in "genetic" values and chronologic significance being irretrievably confused. The over-emphasis of the former term is an outstanding evidence of persistent adherence to biological conceptions of ceramic development and diffusion.

Other features which appear as shortcomings to this reviewer invite mention. First, the quantities of sherds used to determine each type have not been cited. Whether one sherd, a handful, or tens of thousands formed the basis for type, normalcy, and style of design observations, must be unequivocably set forth for accurate evaluation. Second, some will consider arbitrary Dr Colton's contention that the taxonomic organization is an *end*, or that it is essential to understanding excavation. Third, this student believes adequately proven Miss Shepard's thesis that megascopic identification of temper is at best unsafe.[1] The only effect of this able testimony is to force admission that temper is often too small for accurate identification with a 10× lens. Fourth, one's faith in chemical or mineralogical terms is shaken by notes like "when used in description 'quartz' means having the appearance of quartz" (p. 45). Does this include its appearance under the binocular microscope? Does "basaltic sand" simply mean black, angular sand? There are similar uncertainties. Fifth, the terms and values "feel" and "look" undoubtedly have a use in superficial work, if only to further a "hunch." But they result from definite, visible combinations of surface finish characters, and with average patience should be explicitly describable. These terms, it would seem, must soon be pigeonholed with the mystic hokus pokus of making significant interpretations or "hunches" on a few sherds. Sixth, the section on rim forms is not the only system in the *Handbook* to stimulate suspicion that the potters of northern Arizona must have been parsimoniously impeccable in their adherence to ceramic creeds.

From page 2 we learn that paste texture cannot vary within a pottery type, and that there is a paint called "*iron-carbon.*" A *series* is defined on the basis of

[1] A. V. Kidder and A. O. Shepard, *The Pottery of Pecos, Vol. II* (New Haven, 1936), p. 461, note.

unproven genetic relationship. Paste hardness is given and slip hardness ignored. The *errata* list of February, 1938, was necessary but incomplete. Insofar as conservative, careful research is concerned, it is left to the authors to tell us where they are getting us. For some, however, the *Handbook* appears to be a valuable reference work, which is organized to taxonomic perfection.

PAUL REITER

MUSEUM OF NEW MEXICO, SANTA FÉ

The Northeastern and Western Yavapai. E. W. GIFFORD. (University of California Publications in American Archaeology and Ethnology, Vol. 34, No. 4. 7 pls., 25 figs., map, 1936.)

This publication is the second of Mr Gifford's studies on this group of Arizona Yumans, the first having been *The Southeastern Yavapai* published in the same series. At the date of publication it was the last, but one, of a series of papers treating all the Yumans of Arizona and California, published by various members of the Department of Anthropology of the University of California and by Leslie Spier. This series now forms one of the most complete, comparable, and therefore valuable, ethnographic studies in the Southwest.

Of all the Yuman groups, the Yavapai were unique in that they occupied a vast territory in west central Arizona, ranging from an elevation of a few hundred feet to seven or eight thousand feet—from the Colorado River to the Bradshaw and Mazatzal Mountains. They were primarily hunters and gatherers, and because of the vast range of geographic environment, offer an unusual opportunity for a study of the adaptation of a people to their environment.

In the abbreviated field notebook literary style adopted by the University of California, Gifford considers: (1) Yavapai groups and territory, population, predecessors and neighbors, and trade relations; (2) subsistence; (3) material culture; (4) postures and actions; (5) social organization and customs; (6) religion; (7) the universe; (8) time.

The Yavapai were hunters and gatherers depending principally on wild plants and animals, forced into a nomadic life by the scarcity of food plants in any one place and their virtual neglect of agriculture. The Western Yavapai farmed more than the Northeastern or Southeastern groups. All lived in caves if available, or in dome-shaped thatched huts (rectangular earth lodges on the Colorado River). Only the Northeastern Yavapai used the sweat house. Men and women wore buckskin clothing and boots, but the amount depended on the climatic zone they inhabited. Social and political groups were organized on the principle of the family and simple bands. Though the Northeastern and Western Yavapai are without clans, their kinship system is the same as the river Yumans with patrilineal clans and the Southeastern Yavapai with matrilineal clans. Observances of life crises were widespread and strict rules governed the behavior of married people. The dead were cremated without special mourning ceremonies. Religion was not developed ceremonially or ritually, and shamanism was its dominant feature. Witchcraft was at-

tributed to young women rather than to shamans. The shamans (rattlesnake, weather, and bear) attained their powers from the culture-hero god and his grandmother. "The origin legend and importance of fertilization concept show definite Southwestern color."

Appendix A gives thirteen Northeastern Yavapai war tales, and Appendix B some additional notes on the Southeastern Yavapai.

Gifford concludes that the Yavapai, with the Havasupai and Walapai, form a cultural unit that has many similarities to the Great Basin type of culture in general, and to the California mountain Yumans in particular, in that it lacks specialization, while the Colorado and Gila River Yuman culture is specialized. The separation between the Yavapai-Havasupai-Walapai and the California Yumans seems to have occurred before the secret of acorn-leaching was learned, as the former groups have no knowledge of it. The Southeastern Yavapai especially, and the Northeastern and Western Yavapai to some extent, show resemblances to Western Apache culture, probably due to their twenty-five years of residence together on the San Carlos Apache Reservation.

The Yavapai believe their ancestors lived in the stone structures, now in ruins, that dot their country. Gifford, however, feels that the Yavapai came into the region within the last few hundred years and learned to exploit their habitat in a relatively short time. At the present time, archaeological evidence seems to indicate that the Yavapai, Havasupai, and Walapai are the descendants of the original inhabitants. The cultural evidence from sites occupied prior to 1100 A.D. indicates a definite affinity with Yuman rather than with Pueblo culture.

KATHARINE BARTLETT

MUSEUM OF NORTHERN ARIZONA

CENTRAL AND SOUTH AMERICA

Coclé, an Archaeological Study of Central Panama. Part I: Historical Background; Excavations at the Sitio Conte; Artifacts and Ornaments. S. K. LOTHROP in collaboration with H. B. Roberts, M. Hutchison, F. Johnson, W. C. Root, R. J. Gettens and V. G. Mooradian. (Memoirs, Peabody Museum of Archaeology and Ethnology, Harvard, Vol. 7. xvii, 327 pp., 4 pls., 271 figs. $10.00. Cambridge, Mass., 1937.)

This volume attains a standard of interest rarely reached by archaeological reports for (1) it reports a fully recorded excavation carried out by modern methods; (2) it deals with an archaeologically important and extremely wealthy site; (3) it is sumptiously illustrated; (4) the principal author has an unrivalled knowledge of the historical and archaeological setting of the many areas which have contributed to the evolution of the culture studied.

Speaking generally, first rate archaeological reports most frequently deal with third rate cultures, while full and interpretative reports on the wealthiest and strategically most important sites are almost non-existent. For many years collections from Panama and eastern Costa Rica, principally of gold and pottery,

have flooded the market, but having been made almost without exception by professional or amateur grave robbers, have had little archaeological value. With the recent work of Linné and the excavations in Coclé, we are at last obtaining thoroughly documented data on parts of that important region.

The finds at Sitio Conte, Coclé, the subject of this report, are almost as spectacular as those of Ur of the Chaldees. The finest burials, huge square pits with an average of nine skeletons (in one case twenty-one) lying prone around the centrally seated figure, generally contained well over two hundred vessels apiece and immense quantities of other funerary furniture, such as ivory, shell, and gold. Lothrop assigns the material chiefly to the fourteenth and fifteenth centuries because of close correspondences with specific ornaments, weapons, and methods of disposal of the dead described by the Spaniards as occurring in this area. Lack of differentiation between earliest and latest strata leads him to postulate a short occupation. He is inclined, too, to believe that the small site was inhabited by a chief, his family and personal retainers, forming a permanent group of about two hundred. This belief is based on mortuary data, since house sites were not encountered.

Conditions of excavation were difficult owing to damage by water, for all deep graves were below the water table in the rainy season. To add to difficulties, diggers of later graves not infrequently sank their shafts through earlier graves, and with an unexpected lack of filial piety robbed the graves and treated with scant respect the bones of their forebears. Lothrop reconciles his evidence for the family community with this disrespect for the immediate ancestors by supposing a belief that the soul, having once reached the other world, no longer needed mundane trappings. This assumption, however, is hardly in accord with the general Middle American concept of funerary furniture being for the enjoyment of the deceased in the next world.

Father Adrian de Santo Thomas reports a belief of the neighboring Guaymi that the deceased lived in the next world for ten times his span in this one, adding that the deceased took with him to the next world the objects placed in the grave. Had such a belief been current at Sitio Conte, with the sojourn in the next world materially reduced or not strictly observed, spoliage of graves by immediate relatives could be more easily explained.

Father Adrian's account of the Guaymi might profitably be included as an appendix in the forthcoming volume on Coclé pottery. It contains much ethnological material, clearly showing Guaymi culture to be of the general Panamanian pattern, and on some subjects, religion for instance, fills gaps in Oviedo and other earlier writers. It would be interesting also to include the account given in *The Defence of the Scots Settlement at Darien Answer'd* of a novel method of fire making, which, so far as the reviewer is aware, has escaped general attention.

Of particular interest in the Coclé report is the section on metal working—a happy blending of the author's wide knowledge of art styles with the results from the many analyses on alloys and researches on techniques, the work of several collaborators. For example, metal of nine pieces believed on stylistic grounds to

have been imported from Colombia or Ecuador, was analyzed. One was of pure gold; the silver content of the rest was from 9 to 25% of the gold, whereas of those of local style examined only nine had silver exceeding 6% of gold content. These last the authors consider represent local manufactures from imported ores or remelted imported objects, the local ores having no silver or less than 6%. Such results taken, as here, in conjunction with stylistic differences will aid immensely in segregating centers of metal working.

Many explanations, such as hardness and color properties, have been offered in the past for the prevalence of *tumbaga*, the copper and gold alloy. Root and Lothrop, finding all of these unsatisfactory, advance the very cogent theory that the popularity of the alloy lies in its melting point being about 200° less than that of either of its constituents. Of equal interest is a very able discussion of the methods employed in gilding, for careful scrutiny of specimens confirms historical accounts of the process in which copper on the surface was destroyed by vegetal acids, and definitely establishes the existence of a gold leaf technique. The use of mercury in an amalgam process is fairly certain.

Decorative art shows strong South American influences. Indeed, the whole culture is markedly South American, and in the surviving material culture only iron pyrite mirrors and an occasional specialized metate are definitely Central American. It is strange that to balance the flow of trade from Panama to Mexico and the Maya neither obsidian nor flint, absent locally, were imported, for utilitarian stone work of Coclé is poor, and what there is of it—petaloid axes for example—suggests South America. However, historical sources indicate one fairly clear Central American trait. Father Adrian describes a ceremony in which the participants were joined together by a cord passed through their foreskins, the blood drawn being offered as a sacrifice. The whole is very reminiscent of a Maya ceremony. Frying pan incense burners, found in caches at Sitio Conte, would also appear to have a Central American origin (i.e. northwest of Panama). Puzzling is the way certain Maya-Mexican traits, such as bee-keeping and cacao, seemingly skipped Panama to reappear on the north coast of eastern Colombia and Venezuela.

Such flows and counterflows of traits through the bottle neck of Panama make this area of tremendous strategic importance, and it must certainly be a matter of congratulation for all Americanists that every phase of this attack has been in such good hands, for, if one may change the simile, everyone concerned has certainly gone to town on this report.

J. ERIC THOMPSON

CARNEGIE INSTITUTION OF WASHINGTON

Las Mayas: Contribución al Estudio de las Instituciones Americanas Precolombinas. RAMÓN F. VÁSQUEZ. (Buenos Aires: J. Lajouane y Cía., 1937.)

So accustomed have we grown to the culture-historical point of view in anthropological studies coming out of South America that it is something of a shock to encounter in the present work a study undertaken by a writer who is definitely committed to the cultural evolutionary theories of Morgan and McLennan, Post

and Mazzarella. Despite the leanness of source material connected with pre-Columbian Maya society, Vásquez finds little difficulty in demonstrating (to his own satisfaction) that, at the time of the Conquest, it had progressed out of an early stage characterized by mother right, totemic matrilineal clans, agrarian collectivism, and communal clan ownership of all property well along the road to the patriarchal family, individual ownership, and social stratification.

In support of this thesis, he points out, as survivals of matriarchy: (1) the practice which required a man to pay a dowry to the family or clan of his bride; (2) the occurrence of the marriage ceremonies at the home of the bride; (3) the obligation of the young husband to work for a time in the service of his father-in-law; (4) the instability of marriage; (5) the fact that an adulterer was delivered over to the betrayed husband, while an adulteress suffered no punishment other than social disapprobation: (6) the worship of an earth goddess to whom only young men, never young women, were sacrificed.

The ease with which the Mayas tolerated concubinage is offered as evidence of early sexual promiscuity!

It was the legendary culture hero Kukulcan who first divided up the clan lands among the men of the tribe, thereby initiating private ownership and accelerating the evolutionary process toward the patriarchal family. That the family was undergoing such a transition at the time of the Conquest is shown by the existence of bilateral totemism. (And speaking of totemism, the plants and animals represented in the Maya sculptures are assumed to be totems.) The patrilineal family had not yet become firmly established, for there was no cult of the dead. Nevertheless, the occurrence of house burials marks a definite trend in this direction.

Finally, in his concluding chapter, Vásquez makes a supreme concession to diffusionism by postulating that Kukulcan was one of those Confucian priests who, forced out of China by the rising tide of Buddhism, were compelled to wander far and wide in search of a more congenial atmosphere, and he enjoins us to ransack the ancient archives of China for more light on the origins of the high civilizations of Middle America!

C. W. WEIANT

NEW YORK CITY

Die Feuerland Indianer; Ergebnisse meiner vier Forschungsreisen in den Jahren 1918 bis 1924, unternommen im Auftrage des Ministerio de Instruccion Publica de Chile. Band II: Die Yamana; vom Leben und Denken der Wassernomaden am Kap Hoorn. MARTIN GUSINDE. (xx, 1500 pp.; 105 figs., 4 colored plates, 49 half-tones on 8 pls., 2 folded maps. Mödling bei Wien: Verlag Anthropos, 1937.)

The Yamana (Yaghan), whose population in 1870 the author estimates at 2,500 had shrunk to 70 on his last visit, and today there are barely 25 survivors (pp. v, 222–30). He has thus salvaged otherwise irrecoverable data on a remarkable primitive culture.[1]

[1] Since this work will doubtless remain unavailable to many of our readers, this digest is given here in extended form.—Editor.

Following the scheme of his earlier treatise on the Ona (Selk'nam), he gives first an illuminating sketch of geographical conditions and an exhaustive list of sources from the chronicle of l'Hermite's discovery of the Yamana in 1624 to S. K. Lothrop's and Baldwin Spencer's observations in 1925 and 1929, respectively. We welcome the excerpts from earlier travelers and the discriminating commentary, which, e.g., does full justice to the French expedition of 1882–83. But in subsequent sections the quotations and refutations of judgments by superficial observers seem unduly copious.

Gusinde conveys a graphic and truly "functional" picture of aboriginal ecology (pp. 365–626), in part correcting current views. In contrast to her Ona sisters, the Yaghan woman appears as a very important economic factor: she collects the mytilus shells which are the natives' staff of life; and it is she who paddles and moors the canoe on her husband's hunting trips (p. 538 sq.; 676 f.). These duties, incidentally, involve swimming, an art entirely unknown to males, as it is to the Ona of both sexes (p. 617). An Ona girl would be totally unprepared for the daily Yamana routine, one cause for a restriction of intertribal marriages (p. 236).

Certain features that commonly evoke contempt for these Indians are set in a new light. The insubstantial character of the dome-shaped and conical huts is a function of nomadism, which rarely permits tarrying more than a few days in one spot; they primarily serve to shelter not man, but his fire, the real essential for his survival (pp. 367–99). As for the scant dress (pp. 399–416), the longer Ona cloak would not be suitable lest it impede the canoe-traveler's movements or shut out the heat from the fireplace (p. 410); against unusual cold the skin is smeared with a heavy layer of fat and earth (p. 411). Gusinde also properly sets forth the skill required for making a good bark canoe; notwithstanding its frailty this simple craft in everything but durability excelled the dugouts that began to supplant it in 1878.

Gusinde further revises ideas as to the dog and the bow. Deferring a definitive judgment on the derivation of the Fuegian dog, he demonstrates the total lack of documentary reference to Yaghan dogs prior to the nineteenth century. In view of their recent obtrusiveness, this is a striking fact suggesting late introduction. The Ona situation radically differs, since their trained dog is essential for the guanaco hunt. In Yaghan territory guanacos are restricted to the shores of the Beagle Canal and to Isla Navarino, and even there the chase is limited by the lack of *trained* dogs and the Yaghan aversion to prolonged marches. In the south and west where the Yaghan hunted otters for their fur, the progressive intrusion of dogs caused bow and arrow to recede. But since the earliest reports constantly mention these weapons, their significance for the Yamana should not be underrated, especially considering their occurrence among the southern Alakaluf. The facts may be summarized as follows. Bow and arrow were most serviceable against guanacos, which were lacking in most of the Yaghan habitat; less adept in the manufacture of these implements than the Ona, the eastern Yaghan obtained many specimens from their neighbors in trade. Further to the west the bow was decidedly rarer, for from a canoer's point of view it was inferior to slings, clubs, and harpoons in hunting any quarry except otters. However, it was not lacking. Thus, we are here dealing with

a highly interesting medley of functional, geographical, and historical factors (pp. 461–70, 534–37, 560–68).

Equally admirable is the treatment of trade and its correlates. Corroborating earlier accounts, Gusinde describes the Yaghan passion for presenting gifts—a custom not paralleled among the Ona—and the recipient's obligation to accept and return the gift (p. 980 f.).

Intertribal intercourse is amply discussed (pp. 233–46)—with some notable results. Lacking canoes and barred by lofty ranges from the southwestern part of Isla Grande, the Ona could meet the Yamana only along a narrow strip along the north shore of the Beagle Canal—say, between Puerto Brown and Bahía Valentín. Relations were further limited by the dearth of good landing-places for the Yaghan, while the Ona shrank from needless exposure to the coastal winds. This deterrent for both groups was enhanced by the awe in which the Yamana held their towering neighbors. The strongest positive stimulant to intercourse was trade, the Yamana exchanging their seal-skins, whalebone spear heads, snail necklaces, and pigments for Ona bows, arrows, and quivers. Gusinde convincingly indicates why intermarriage could not have been common: the women of one tribe, especially of the Ona, were not trained for the tasks incumbent on them in the other, and the Ona had aesthetic objections to their stunted neighbors. Nevertheless, the author seems to minimize unduly such miscegenation. Citing the curious progressive decrease of stature in passing from the Ona proper, to the Haus Ona, eastern Yaghan, and southern Yaghan, he concludes: "*Hierbei waren gegenseitige Heiraten sicherlich nicht allein tätig*" (p. 239).

We reasonably ask what other factors figure, an answer presumably to be offered in the forthcoming monograph on Fuegian somatology.

Considering the slight contacts of the two peoples in recent times, the distinctive similarities in myth, ritual, and daily usages are noteworthy. The author stresses the coincidence of numerous inconspicuous details in the care of infants and rightly concludes:

Auch hierin äussert sich die nahe Kulturverwandtschaft beider Stämme" (p. 736). How, then, are we to interpret this close affinity? Has there been a steady seepage through the centuries, inconsequential within a generation but cumulative in its effects? Or do the two tribes share a substantial archaic substratum antedating their cultural specializations? These are presumably among the historical problems reserved (p. 1482) for the third volume of these reports.

Alakaluf-Yaghan intercourse may be more succinctly defined. The exceptionally perilous west coast of Brecknock Peninsula forms a barrier rarely passed by the Alakaluf, virtually never by the Yaghan. In recent periods the latter's suspicion of Alakaluf cannibalism further limited relations, for which the virtual identity of material equipment provided no goad. This very circumstance, however, suggests more intimate contacts in the dim past (pp. 241–46). Specifically, certain types of songs must be considered, on traditional and linguistic grounds, loans from the Alakaluf (pp. 1469, 1471).

With regard to Fuegian shell-heaps (pp. 596–611) the author infers that the

lowest strata were deposited many centuries ago, but that the upper layers lack distinctive features that would indicate an earlier mode of life. When Mr Junius Bird presents the evidence for the stratigraphic scheme announced in *Science* Guisinde will doubtless offer comments. Incidentally, he contrasts the exceptional occurrence of laurel-leaf points in the Cape Horn archipelago with their frequence on Isla Grande (p. 481).

Sociologically, several features merit mention. Public opinion is the only authority (pp. 1005 f., 1025), there being neither chiefs nor classes nor clans; the family is the dominant social and economic unit (p. 777 sq.). Beyond this the individual has a very vague sense of solidarity with one of the five dialectic branches which coincide with geographical divisions; and a closer bond with his local group, which bears a topographical designation (pp. 199–208, 798 ff.). Though the males of a patrilineal line almost invariably remain rooted to the same district (p. 800), I gather that the local grouping is less definite than among the terrestrial Ona. Interesting excerpts from Bridges' *Dictionary* demonstrate specific terms for "the country of my mother's mother, my father's mother's country" and "two persons belonging to one's grandmother's country." Unfortunately the ample kinship nomenclature—the only disappointing feature of the volume—was entrusted to Dr Ferdinand Hestermann (pp. 785–97), whose collation is linguistically oriented and largely ignores sociological interests. Thus, he fails to bring out that mating with the same woman makes two men brothers-in-law, as we learn in another context (p. 1259). Again, the father, imü, is set off from the father's brother, indārūwa, who in turn is distinguished from the maternal uncle, imman. But we are not altogether happy over the former distinction, for the father is also called tānūwa, a point requiring elucidation; and the stepfather, tūmāgūdārūwa, is separated by two pages from the paternal uncle. Rearrangement seems indicated. As it is, we note that relative seniority is important, the first-born in a family bearing a specific designation, as do the eldest brother and the younger brother. Further, the cousin of either sex is called mökus if the child of an uncle younger than the connecting parent, while kušana simultaneously applies to my younger brother, my male cousin, my child, my nephew.

Notwithstanding the family tie, boys and girls are early separated from each other even in a canoe; and, most remarkable, the tie between siblings generally is weak, each boy preferring his own company (p. 738 f.). Initiation is a prerequisite to marriage, most boys in fact undergoing a second performance prior to wedlock. Most unions occur within the dialectic group, but all blood-kin are barred. This implies some tendency to local exogamy but evidently not the Ona desire to go as far afield as possible in the choice of a mate, for we learn: *Auf grosse Entfernung zu Heiraten, fällt den jungen Leuten . . . schwer* (p. 653).

The levirate rests primarily on the duty towards the bereaved nephews and nieces; the sororate is also in vogue, and polygyny is mainly sororal (pp. 645 sq., 651). Residence is independent in a domiciliary sense, but in principle patrilocal (p. 1234). Oddly enough, henceforth the husband's paternal uncle and the wife's maternal aunt become the couple's mentors, taking precedence of the parents

(pp. 657, 662). In one myth a wife's loyalty to her own kin as against her husband is noteworthy (p. 1189).

The avoidance rules are typical in form except that, as among the Ona, they are more stringent for affinities of the same sex. The reverence due to a father-in-law is forcibly illustrated in myth (pp. 658 ff., 1239, 1269).

Gusinde notes an approach to the true couvade not paralleled among Ona and Alakaluf: the father remains at home all day, joins his wife in a restricted diet, and abstains from work, avoiding his normal implements (p. 710 ff.), while the mother usually stirs about a few hours after delivery.

In the life cycle the Puberty Initiation festival (čiē'xaus) looms large (pp. 805–961). Its obvious difference from the Ona klóketen lies in the admission of boys and girls (after their first menses) on equal terms, hence the lack of misogynist traits. However, independently of the čiē'xaus the Yaghan have a close parallel to the Ona institution, viz. the kina, which youths who have passed through their second initiation may—and, for the most part, do—enter (pp. 1312–82). Here, as among the Ona, there are spirit impersonations to cow the women, who supply food for the occasion; and the neophytes submit to various austerities, including restrictions on sleep and diet. The Yaghan, less rigorous than their neighbors, admit a few trusted women pledged to secrecy. Yet here, too, the origin myth records the pristine hegemony of women based on their spirit impersonations, the Sun's discovery of their deception, and the consequent revolution culminating in masculine ascendancy; while all participants were transformed into trees, animals, or astral bodies (pp. 1337–45).

The far-reaching similarities of kina and klóketen prove a common origin; and the Mödling ethnologists rightly derive the Yaghan institution from the Ona. This is borne out by the Yaghan origin tale; by the use of a conical lodge such as the southern Ona and the *eastern* Yaghan share as a normal dwelling; by the comparatively attenuated nature of the Yaghan ceremonial and its incongruity with the position of Yaghan women in daily life.

However, Father Schmidt and his disciples further regard the Ona festival as a fusion of a puberty initiation with misogynist masculine mummery, while the joint initiation of boys and girls by the Yaghan is held very ancient; and this inference seems less convincing. Reading Gusinde's admirably full report of the čiē'xaus proceedings, I am impressed with the far greater prominence of the men and boys. Thus, there is no true equivalent for the girls of the boys' wrestling combat with a supposed evil spirit on entering the lodge (p. 851). More important still is the meticulous insistence on secrecy. Why a constabulary force to keep away the uninitiated if these embraced only immature children who are anyway guarded by a few adults delegated for the task (pp. 839, 844, 895)? Why must the male initiates who go on hunting trips during the festival be taken to spots hardly approached by women or children if women are full-fledged initiates (p. 902)? Again, all food remains are carefully burnt lest outsiders, who are sporadically admitted to the lodge on purpose, suspect the tale that a certain spirit consumes all the provender

taken to the hut (p. 914). Are these outsiders, whose suspicions are deemed of such importance, simply the immature children?

The precautions become intelligible, however, if they are survivals of a period in which the Yaghan excluded all women from the čiē'xaus, though perhaps without stressing sex dichotomy on the klóketen model. In short, the hypothesis seems tenable that a distinctively masculine initiation festival is ancient both among the Ona and Yaghan; and that the Yaghan introduced women by merging menstrual observances and tribal initiation rites. Actually, according to Gusinde, the girl's instructions in the čiē'xaus lodge simply supplement those she has already received when undergoing her first menses: the fasting, the ethical admonitions, the vocational training, the restriction of sleep, the rules of silence and immobility are strikingly parallel (pp. 753–57, 903). Naturally, dogmatism is out of place, but the alternative suggestion here propounded seems to merit further scrutiny.

Details of historical importance are the čiē'xaus novice's use of a drinking-tube for sucking up his meagre daily allotment of water and the bestowal of a head-scratcher, somewhat anomalously at the *close* of the festival (p. 953). The head-scratcher is now known to occur very widely in South America; according to Nimuendajú's unpublished notes, e.g., it figures in the Canella boys' initiation and in other ceremonial situations.

While even ordinary mourning involves many fixed usages, such as fire-signals, name taboos, dirges, and special patterns of face and body paint (pp. 1111–26), the fortuitous assemblage of many natives after a death develops a major ceremonial in which every family possibly participated at least three times a year (pp. 1127–38). There is protracted chanting and wailing, which embraces not only the recently deceased but any dead kinsmen recalled by the celebrants. The formal close involves a mock-combat between two groups formed on no fixed principle unless a recent murder naturally pits the victim's kin against the culprit's.

Bewailing of dead relatives is a common episode of the initiation festival, and invariably so among the western Yaghan, regardless of whether any recent death has occurred (pp. 923 sq., 1121).

Gusinde's account of the high-god concept is essentially convincing (pp. 1040–86). There are no specifically Christian elements, e.g., the Supreme Being creates neither man nor the cosmos (p. 1051). Several differences from the Ona arouse interest. Unlike their neighbors, the Yaghan lack a specific designation for God, whom they refer to descriptively as "the ancient one who changes not" (Watauinēiwa), "my father," etc. Their God, instead of being otiose, regularly concerns himself with mundane events; and while the Ona address Temaukel rarely and then in freely phrased speeches, the Yaghan use many fixed formulæ for a variety of occasions (pp. 1054–74, 1080). The abuse hurled at Watauinēiwa by mourners in the paroxysm of grief refutes missionary influence.

With the greater emphasis on the Supreme God concept, shamanism appears less dominant than among the Ona and certainly lacks their systematic elaboration of its philosophy (pp. 1383–1435). Curiously enough, the shamans, though unor-

ganized, train neophytes during a several months' seclusion, which involves fasting, stiff posturing, little sleep, and drinking through a bone tube (p. 1404). The aim is spiritual concentration and ability to summon one's tutelary by a song. But mere schooling is inadequate: the prospective practitioner requires a vision or dream in which one of several visitants is especially kind and blesses him with a song. When thereafter the visionary is heard singing in a reverie, his call is recognized by the community, and the training by an old-stager follows. Women engage in minor feats of supernaturalism, but none is known to have reckoned as a full-fledged shaman wearing the feather diadem emblem.

Watauinēiwa is in no way connected with the medicine-men's school, and no rationalization smooths out the inconsistency of his absolute control over human life with the sorcery of evil shamans, who hurl darts at a victim's soul or even capture it. The shamanistic healer dreams the facts, sucks to extract the missile, or tries to liberate the captive soul. By his chant he lures on the tutelary, before whom his own soul recedes, the spirit taking over the song. In his ecstasy the shaman describes his experiences, e.g. of extracting and laying down the hostile dart. Apart from curing, a shaman may prophesy, produce good weather, and cause the stranding of a whale. He depends on two categories of spirits. The yefáčel he shares with all other Yamana, but only he is able to entertain intimate relations with this guardian. The haučella are essentially evil, but also more powerful, hence able to assist their protégé in arduous undertakings (pp. 1429–33).

The myths (pp. 1139–1277) form one of the most valuable sections of the volume. As indicated, the Yamana lack a cosmogony, their country being an ultimate datum. There are simply tales of wanderings thither by the Sun (senior and junior), Rainbow, Moon, and other primeval and not truly human immigrants, who after sundry events either ascended to the sky or turned into animals (pp. 1144 f.). The younger Sun overthrew women's ascendancy by unveiling their kina practices (p. 1147), and his truculent father once caused a world conflagration by making the ocean boil (p. 1145). To the malevolent Moon—Rainbow's wife and ruler during the gynecocratic era—one version imputes the deluge, from which only a few people saved themselves by climbing five towering peaks (pp. 1152–54). More commonly, the catastrophe is ascribed to an over-sensitive bird: offended by mankind, he caused universal glaciation, followed by a flood when the ice began to melt. Here, too, five mountain-tops prove men's salvation (p. 1155 f.).

The Yoálox family (pp. 1159–85), consisting of two brothers, their elder sister and their mother, includes the culture-heroes. Relevant tales are not told to young people before their initiation. Though the sister is rated the most intelligent of the lot and the elder of the two brothers caused the first human menses by cohabitation, it is the younger who proved most influential. Fire-making, harpoon heads, the use of paint, the period for berry-picking, along with many other customs and arts, were introduced by this family. Chronologically its members antedate their Yamana pupils, but seem to follow the era of Sun and Rainbow; they turn into stars, but receive no worship and are barely connected with the Supreme Being; they certainly

are not his deputies after the manner of the Ona hero Kenós (pp. 1160, 1184 f.).

In the Yoálox cycle two features arrest attention. (1) Precisely as in Basin and Californian mythology the younger brother persistently argues against saving mankind labor. Thus, his senior, after inventing fire-striking, wants the fire to remain ablaze for man's convenience; but the younger Yoálox opposes the suggestion and triumphs. Correspondingly, he prevents the killing of birds by a mere glance, thwarts the plan of unbreakable harpoons, etc. (2) The junior introduces death into the world by not permitting his senile mother to be restored from her death slumber, as her elder son proposes.

A pair of contrasted heroes, often brothers, is common enough. But I have vainly searched accessible Brazilian literature for the traits mentioned. In Nimuendajú's unpublished Apinayé material, e.g., Sun is constantly playing tricks on Moon, but of a struggle over man's comfort and immortality there is no trace. The Canella equivalent has one incident that superficially seems homologous, but on examination proves to be distinct. After instances of Moon's gaucherie and inferiority to his mischievous companion, we read:

"Sun went out alone again He staked off a bit of woodland, made a stone ax, and let it chop down the wood. He himself went home while the ax worked on by itself. . . . Moon got suspicious and followed the trail. When he got to the woods, he heard the ax at work. He cried aloud, 'Who is there?' At once the ax fell down, remaining motionless. After a while Sun came to inspect the job. He raised the ax and tried to make it work again, but it remained motionless. *If Moon had not meddled, our axes would still work by themselves and we should not bother about chopping down trees.*"

The parallel is evidently not a true one, because the essential concern with mankind's interests is absent. At best it would be less close to the Yamana variant than the California-Basin myth because the spoilsport does not affect human mortality. So far as I can learn, the Bororó and Tupí stories of Twins differ rather more; and Gusinde's own earlier collation[2] yields nothing closer. Until, then, some version from an intervening region is brought to light, the differential similarities between the Yaghan and the California-Basin myths stand and challenge explanation.

Quite as extraordinary is the story of the Lecherous Father (p. 1240 ff.), which is shared by the Ona. A widower living with his two daughters covets the older girl, feigns impending death, orders his daughters to bury him, but so as to leave head and feet free, and to marry a man resembling himself whom they are to meet. When they are gone, he makes a big détour, hurries to meet the young women, one of whom remains suspicious, and gratifies his lust. Finally, all three turn into guanacos. The parallels to "Coyote and his Daughters" are obvious.

While perhaps not exactly a mystic number, five seems to me to figure rather too frequently in myth to be interpreted as due to sheer chance. Apart from the five peaks of the deluge tale a cormorant appears with five fellows (p. 1188); the fish-otter has five brothers-in-law (p. 1193); an old couple is credited with five married

[2] M. Gusinde, *Das Brüderpaar in der südamerikanischen Mythologie* (Proceedings, 23d International Congress of Americanists, pp. 687–98, New York, 1930).

sons (p. 1243); five brothers are made to live with their brothers-in-law (1250; 1252) when any other number would seem to serve as well.

One of the most attractive features of the book are the numerous observations on the "uncrystallized" aspects of aboriginal life, those inconspicuous details that in their totality yield a convincing picture of a human group. There is, e.g., the comment on the lightness of Yaghan sleep (p. 383), the treatment of infants (pp. 714–24), the description of children's games (pp. 759–73), and especially the discussion of etiquette (pp. 1006–18). Altogether Gusinde has achieved a remarkable work, which merits the closest study by all Americanists.

ROBERT H. LOWIE

UNIVERSITY OF CALIFORNIA

Vida y costumbres de los indígenas araucanos en la segunda mitad del siglo XIX. PADRE ERNESTO WILHELM DE MOESBACH. Prologue, revision, and notes by Dr Rodolfo Lenz. (Santiago de Chile: Imprenta Universitaría, 1936.)

Printed in parallel columns in the original Mapuche and the Spanish translation, this work is of extraordinary linguistic value; it is also enormously valuable for a knowledge of Chilean ethnology and of general ethnic psychology. Coña, the Mapuche chief whose personal record it contains, not only describes the experiences of his long life—with his education, his trips to Santiago and to Buenos Aires, his participation in fiestas, ceremonies, Indian invasions—but he tells as well all the manners and customs of his people, their mode of living from birth to death. Completing the collection of customs, tales, narrations, and songs begun by Dr Lenz in his *Estudios araucanos*, continued by Fray Félix José in the *Lecturas araucanas* and by D. Tomás Guevara in *Folklore araucano* and *Las últimas familias y costumbres araucanas*, this account has been qualified by Dr Lenz as "the most complete existing document by a single native Indian author." Anyone interested in the ethnography and folklore of the Indian, in the psychology of the Indian, in the problems presented by his transformation into the useful citizen of modern Chile, will find the life story of Pascual Coña of value.

While the principal interest of this story naturally lies in the very detailed description of all the Indian customs, its linguistic and psychological value is also great. This Indian enumerates all the details. He does not dominate his subject matter; to the contrary, it dominates him. He narrates every thing or he says nothing at all. His thought, like his life, is restricted to what is real. In order to give an exact image of the Indian mental state and an idiomatic exposition of his language, all the expressions of his thought must be conserved intact. Herein lies another of the attractions of this book; it enables a reader to obtain a clear idea of the Indian manner of thought.

Packed with interesting and vivid detail, fascinating in its combination of naivete and sophistication, this book cannot be well reviewed. It must be read.

MADALINE W. NICHOLS

HARTFORD, CONNECTICUT

AFRICA

Mining and Metallurgy in Negro Africa. WALTER CLINE. (General Series in Anthropology, No. 5. 155 pp., 16 figs., maps. $2.00. Menasha, Wis.: George Banta Publishing Company, 1937.)

In the United States much interest has long been devoted to Africa, more particularly, perhaps, in circles connected with missionary activities. Towards African ethnology, however, American scientists have comparatively lately turned their attention, which no doubt can chiefly be explained by their having had such an abundance of interesting and profitable problems to deal with in their own country. Some thirty years ago it would have appeared that, properly speaking, F. Starr was the only American ethnologist who occupied himself to any considerable extent with African cultures, and even he was essentially an Americanist. In the last twenty years, however, circumstances have changed. In 1917 Oric Bates started that important series, *Harvard African Studies* (*Varia Africana*), and subsequently America has added to our science such capable Africanists as Hambly and Herskovits. It gives great satisfaction to note that Leslie Spier has accorded space to African ethnology in his excellent *General Series in Anthropology*, in which so far two volumes have been published by Dr Cline.

Since R. Andree wrote his small—and by now rather obsolete—work *Die Metalle bei den Naturvölkern* (1883) no comprehensive survey of mining and metallurgy in Negro Africa has—so far as I can call to mind—been written prior to this by Dr Cline. Its author does not content himself with putting together copious material, but also critically scrutinizes his sources. The number of the latter—archaeological, historical (including Arabian ones) and ethnographic—is in fact highly imposing, and the list of them may be regarded as very representative and complete. One or two works might perhaps have been included, such as Foy's *Zur Geschichte des Eisentechniks, besonders des Gebläses* (Ethnologica, 1908), and Frobenius' *Erythräa* (1931).

Of the purely metallurgical parts of Cline's book I am no competent judge, but he has, however, collaborated with experts. Written, as they are, in a way that makes them intelligible even to ethnographers, they are of great use to the latter. As regards the sections more especially devoted to ethnographical subjects I can only say that they are here discussed with a degree of comprehension and thoroughness that cannot well be surpassed. I only wish to add a few marginal notes. Goldworking (p. 13) also occurs in Sierra Leone. That there exists no native word for gold (p. 15) appears to characterize all Bantu languages. Among "the problems still unsolved" concerning the ancient mines of South Africa, Cline stresses the circumstance that thousands of tons of metals must have been extracted, but that it is impossible to understand where they have gone to. As a possibility, "which I scarcely dare to mention," he suggests Indians and Malays as customers. To an ethnographer this does not appear so very inconceivable. Especially Frobenius, and subsequently Baumann, have in regard to South Africa and neighboring regions pointed out the existence of a sufficient number of cultural correspondences for

unreservedly accepting a connection in the realm of the history of civilization. I cannot here go into details.

Cline has devoted a special chapter to wire-drawing (p. 109). To this may be added that the technique also occurs in northeastern Africa, in Abyssinia, and in Kaffa (draw-plate also of wood), and that according to Vernier everything points to its having been practised in ancient Egypt (draw-plate of stone). In 1926 I published an essay on *Wire-drawing in Africa*, but as it was printed in Swedish (in a journal named *Rig*) it cannot very well be expected that Dr Cline would be acquainted with it. In that paper I arrived at the same opinion as he; namely, that the technique in question was originally introduced into Negro Africa from outside. On the other hand I take the liberty of raising a slight protest when he asserts that our only adequate account of the technique of chain-making—for which purpose the metal wire is largely used—is from the Akikuyu. In *The Akamba of British East Africa* (1920) I have given a fairly detailed description of the method, and also illustrated an apparatus for rolling wire, of which I have neither before nor since come across a counterpart. In this book I also state as my opinion that the Akamba brought the technique of chain-making to greater perfection than the Akikuyu and other neighboring tribes. Nor I am inclined to agree with Dr Cline's supposition that the chains of the Akikuyu are the best made by African natives. In my work just referred to I have pointed out that the Kamba chains are superior to those of the Akikuyu, that their fame is widespread through East Africa, and that they find a sale among a great number of tribes, while the Akikuyu article is of the ordinary, plain East African type. For the sake of comparison I depicted a Kamba and a Kikuyu chain side by side.

In Cline's work there is also a chapter devoted to the social and religious aspect of metal-working in Negro Africa. Lack of space prevents me from entering upon this interesting survey, but I may, however, mention the existence of the paper entitled *Schmied und Gesellschaft*, together with a distribution map, found in Frobenius' *Atlas Africanus* (Part 2:8).

In this review I have somewhat disproportionately enlarged upon one or two details, and for this I feel I must apologize. In conclusion I only wish to express the hope that Dr Cline may continue his researches in the domain of African ethnology where he has already given us so much that is of value, and that Dr Spier will also in the future keep his *Series* open to the publication of African material.

GERHARD LINDBLOM

STATENS ETNOGRAFISKA MUSEUM, STOCKHOLM

Jabo Proverbs from Liberia. Maxims in the Life of a Native Tribe. GEORGE HERZOG with the assistance of Charles Blooah. (xiii, 272 pp. $2.50. London: International Institute of African Languages and Cultures, Oxford University Press, 1936.)

The material presented in this volume was collected by the author during an expedition to Liberia on behalf of the Department of Anthropology, University of Chicago. Many contributions are made by Charles Blooah, a native of Liberia, who accompanied Dr Herzog on his journey.

Some four hundred Jabo proverbs, addresses, honorary titles, etc., are presented in native text, accompanied by unilinear translation, and extensive remarks and explanations. This material has been classified in a convenient scheme, so that it is readily usable for purposes of comparison with other areas of Africa. The student of language will note that the phonetic recording of the text is representative of the high standards of the Sapir school. The author furnishes us with some insight into the tonal characteristics of the Jabo language, by the inclusion of titles or "honorary addresses" which are intended for rendition on such musical instruments as the drum, horn, xylophone, and musical bow.

In Liberia proverbs assume an important socio-psychological function and as the author points out, "far from being the dead clichés which proverbs are for us, they form a vital and potent element of the culture they interpret" (p. 15). These pithy sayings are used extensively in native legal and social life, as a means of interpreting new situations in terms of past occurrences. Since they are "drawn from the entire range of experience, past and present, from everyday happenings or from supernatural and mythological lore" (p. 2), these proverbs reveal much concerning the life and thought of the natives.

Thus Jabo conceptual images are used with implications wholly foreign to the European reader, i.e. " 'to eat' may imply 'to posses a quality,' 'to have control of,' 'to exercise power over,' etc." (p. 7). Such aspects are important for African linguists and ethnologists, particularly since the influence of Western European civilization is obscuring much of the native life of the past.

HEINZ WIESCHHOFF

UNIVERSITY OF PENNSYLVANIA

A Tribal Survey of Mongalla Province. L. F. NALDER (ed.). (232 pp., map. 15s. London: International Institute of African Languages and Cultures, Oxford University Press, 1937.)

The introduction reviews the work of Dr C. G. Seligman and his wife whose minor studies were incorporated in a large volume entitled *Pagan Tribes of the Nilotic Sudan,* which forms a companion volume to *A Tribal Survey of Mongalla Province.* The latter work provides a general description of the people and their principal institutions, and in addition gives some details of particular tribes.

The survey of Mongalla Province is a piece of team work by missionaries and district officers serving in that province, and the merit of the research is greatly enhanced by the fact that these investigators have a fluent knowledge of the Sudanic languages. To supplement the studies presented, students should consult not only Dr Seligman's contributions but those of Dr Evans-Pritchard, Mr. J. H. Driberg, Fathers Molinaro and Crazzolara, also articles in *Sudan Notes and Records.*

The geographical introduction makes a brief, perhaps too brief a presentation, of the main physical features that have affected local cultures. An extension of the brief notes concerning elevation, rainfall, and tsetse-fly belts would have been a valuable aid to a fuller understanding of differences in tribal habit and the influence of topographical conditions on culture patterns. An excellent map shows the dis-

tribution of the tribes between 3° and 7° N. latitude, and 28° to 36° E. longitude.

Part I, which is general and comparative, is introduced by a brief account of somatic traits, languages, cultures, and history. Then under the heading "Tribal Structure" the reader is given a synopsis of the culture pattern in general, which is based on clans, village units, sections, tribes, age-grades, chieftainship, and rain-making. Following this, the spiritual basis of tribal life is shown to depend on deism, regard for ancestral spirits, miscellaneous cults, blood purification, and magic. The chapter on "Economic Life" deals succinctly with care of live stock, agriculture, bee-keeping, and handicrafts.

This all-too-brief survey (63 pages) leads to a detailed study of six main groups, and these might be reduced to three primary divisions on grounds of language, physique, and culture.

Among the merits of the book, and these are many, is the conspicuous fact that the authors have no particular ethnological axe to grind. The book is a condensed summary of well indexed factual material. The "life cycle" approach is included, and a brief estimate is made of the cultural and psychological results of contacts of Nilotic Africans and Europeans.

Every year the anthropological courses for students are widened in scope, more and more is demanded. To the hard-pressed student this *multum in parvo* will be extremely welcome. Experienced teachers likewise will find much that is new to them, for the area under survey is still imperfectly known. Men having long acquaintance with this or that tribe may no doubt have minor criticisms and objections. Some critics may say that the work is not dynamic; the people studied do not really live; they are merely observed through the ethnological quizzing glass.

But for the general practitioner who has to take courses on Africa as a whole, and perhaps the rest of the world as well, this summary has a high value.

WILFRID DYSON HAMBLY

FIELD MUSEUM OF NATURAL HISTORY

A Study of the Kanuri Language: Grammar and Vocabulary. JOHANNES LUKAS. (xvii, 253 pp. $5.00. London: International Institute of African Languages and Cultures, Oxford University Press, 1937.)

A Grammar of Chichewa: a Bantu Language of British Central Africa. MARK HANNA WATKINS. (Language Dissertations, No. 24, Linguistic Society of America. 158 pp. $2.25. Philadelphia, 1937.)

The first book treats of Kanuri, the principal language of Bornu Province in northern Nigeria. It is intended to be used primarily as a practical handbook and should therefore be judged accordingly. It is conventionally ordered and the chapters are based chiefly on the traditional eight parts of speech. Supplementary exercises and illustrative texts with translations are included. The translations are commendably smooth but the value of the texts would be greatly increased, for pedagogical as well as scientific purposes, if they were supplemented by grammatical analysis. A useful and fairly extensive vocabulary (pp. 183–253) concludes the book.

The sound system of Kanuri presents few difficulties. However, the importance of Lukas' discovery that Kanuri is a tone-language cannot be overestimated. The simplicity of his tone-marking system is especially commendable and stands in marked contrast to the complexities of the system used by Ward in her work on African languages. Lukas' system (which consists of á, à, ă, â, and a̰ for high, low, rising, falling, and middle tones respectively) is entirely adequate for Kanuri. Moreover, it gives the impression of being "tonemic" (a rare accomplishment in works on African languages), although it is possible that the middle tone could be eliminated by means of a few carefully selected rules. A certain amount of Arabic influence is noted by the author (e.g., *x*, a voiceless velar fricative, is found only in certain Arabic loanwords), but there is some additional internal evidence (aside from the rather high percentage of Arabic loanwords of all types) which argues for the fact that this influence may have been greater than he indicates.

The outstanding morphological features of the language may be summarized as follows: Kanuri is primarily synthetic in structure and agglutinative in technique. The principal morphological processes are prefixation (which is somewhat rare), suffixation (which is widely used), compounding, and reduplication. All of these are used to form derivatives but inflection is accomplished chiefly by means of suffixation. In the verb, the most complex of all the lexeme-classes, there are several pronominal sets of inflectional endings differentiated as to aspect, mode, and tense. Phonological processes, as mechanical operations affecting the whole of the language, are nowhere brought together, but several types of consonantic assimilation and a number of interesting types of tonal changes are evident.

Chichewa, a variant of Nyanja, is spoken in Nyasaland and belongs to the widespread family of Bantu languages. In contrast to Lukas's study of Kanuri, Watkins's presentation of Chichewa is from the scientific rather than the practical point of view. In reading the two books together, the reviewer was much impressed by the greater effectiveness of the scientific treatment. *A Grammar of Chichewa* is well written and taken as a whole provides one of the best descriptive grammars of an African language that the reviewer has seen. There are two main chapters, on phonology and morphology respectively, and at the end of the book there are two texts which are supplemented by translations (both interlinear and free) and grammatical analysis. The texts would be somewhat improved were they provided with punctuation. In the chapter on phonology, the vowels, consonants, and tones are carefully described and interpreted phonemically. As in the case of Kanuri, the system of tone-marking (though somewhat different in detail from Lukas' system) is remarkable for its simplicity. The use of the term "pitch accent" to describe the tonal phenomena of Chichewa is, however, somewhat unfortunate, since that term is generally used in connection with languages, such as Lithuanian, in which tonal distinctions are significant only in stressed syllables. Chichewa seems to be a true "tone language;" in other words, it is a language in which tonal distinctions are significant for every syllable. It is, however, also characterized by a mechanical stress (occurring regularly on the penultimate syllable). In addition, stress may be employed as a rhetorical device in emphatic expressions.

The chapter on morphology is well-organized and contains, among other things, a discussion of the following lexeme-classes: nouns, verbs, copula, qualificatives, numerals, pronouns, demonstratives, interrogatives, locatives, words with temporal significance, conjunctives, and interjections. Of these the noun and the verb are the most complex. The basic morphological features of the language are summarized in the following quotations:

> It [Chichewa] illustrates the typically synthetic language of agglutinative technique. . . . The system of noun classes and concordances serving as relational elements may be said to stamp the Bantu family as a "simple mixed relational" type; i.e., the relational elements may be classified as "concrete relational" elements.
>
> Prefixation and suffixation are the primary grammatical processes employed by this language, the former being considerably the more important. . . . Word order may be ranked next to affixation in importance. Reduplication is regularly employed to express intensification. . . .

As would be expected in the case of a Bantu language, a large part of the grammatical discussion is devoted to the system of concordances. There are ten distinct classes of nouns, each having a singular and a plural subdivision. Qualificatives (modifiers) and the pronominal elements in the verb, whether of subjective or objective reference, must at all times rigidly agree in classification and number with the noun to which they refer.

Both books are definite contributions to African linguistics and it is hoped that they will receive the attention they deserve.

MARY R. HAAS

EUFAULA, OKLAHOMA

OCEANIA

Religion and Social Organization in Central Polynesia. ROBERT W. WILLIAMSON, edited by Ralph Piddington, with a preface by Raymond Firth. (xxix, 340 pp., $9.00. Cambridge and New York: Cambridge University Press, Macmillan, 1937.)

This treatise is in two parts which are in the main the work of different authors. Part I is a continuation of Williamson's *Religious and Cosmic Beliefs in Central Polynesia* (Cambridge, 1933). It was prepared by Dr Piddington from manuscript and notes left unfinished at the author's death. It is purely descriptive, lacking the somewhat labored interpretation ("Mr Williamson was formerly a solicitor") of its predecessors. Like them, it is a painstaking compilation from earlier sources. The editor has included some later ones, but has not attempted as exhaustive a search as Williamson's. The discussion of temples and burial places, for instance, could have been clarified by use of Bishop Museum archaeological studies. Still, a compilation in a field where research is still active can never be up to date. Some confusion in details, too, is perhaps inevitable in a work of this kind. Thus on p. 177 there are two references to Gambier Island and one to Mangareva, with nothing to show that these are two names for the same place. In spite of such blemishes, Williamson's work is an invaluable guide to the earlier literature on Polynesia.

Part II is a functional study of Polynesian religion in the spirit of Malinowski. Essentially the work of Piddington, it has benefited by Dr Raymond Firth's intimate knowledge of Polynesia. It is based mainly on ethnographic studies published since Williamson's time. The role of religion in economics, government, warfare, and individual life is brought out as far as possible from Teuira Henry's *Ancient Tahiti* (B. P. Bishop Museum, Bulletin 48, 1928). The relevant data from this inchoate record are admirably organized and illuminated. A study of the sanctity of chieftainship is based on E. W. Gifford's *Tongan Society* (B. P. Bishop Museum, Bulletin 61, 1929). A further analysis of religion in economic life goes into data from various parts of Polynesia. One of religion in law is based on Ian Hogbin's study centered in Ontong Java (*Law and Order in Polynesia*, London, 1934). While the treatment inevitably lacks the vividness of a first-hand account, it succeeds in bringing out the manifold workings of religion in Polynesian culture more fully than any of its sources.

Functionalists, as a rule, are not at home in the study of regional difference. Central Polynesia for Williamson and Piddington includes all of Polynesia except New Zealand and Hawaii. In Piddington's attempt at an integrated picture, by taking data wherever he found them, some local differences are ignored. That may be implicit in the plan of the book, but it risks giving a false impression. For example, much of the kinship complex of Tonga which is vital to chieftainship there—special importance of a man's sister and sister's son, and related usages—is quite foreign to the Society Islands, while in Ontong Java the typical Polynesian elaboration of chieftainship is absent.

The author squarely faces one problem of regional difference, the separation of sacred and secular rule in some islands, their combination elsewhere in one class of officials. His explanation is avowedly sociological as distinguished from historical. Briefly, he attributes the differences to social advantages and disadvantages of the two arrangements. He concedes that other possibilities will occur to the historically-minded and that, if they could be verified, they would supplement his own. But, in true functionalist fashion, he sees no hope of verifying any of them. "The value of historical as opposed to functional interpretations will form part of a later study. For the present we may simply say that a partial explanation which does not go beyond the facts is preferable to a more complete one which is founded upon speculation rather than upon empirical data." It remains for the later study to show wherein functional interpretations are inherently less speculative—not merely less specific—than historical ones.

The more general discussion, especially the preliminary formulation of the theoretical approach and the final conclusions, is a thoughtful restatement of the functionalist point of view as applied to religion. In a review of gaps in the data, the importance of a study of cultural conditioning in childhood is emphasized. The work as a whole deserves the attention, not only of specialists in Polynesia, but of those interested in the role of religion in society anywhere.

E. G. BURROWS

HONOLULU, HAWAII

Ethnology of Futuna. EDWIN G. BURROWS. (Bulletin, Bernice P. Bishop Museum, No. 138, Honolulu, 1936.)

Ethnology of Uvea (Wallis Island). EDWIN G. BURROWS. (Same series, No. 145, 1937.)

Two more volumes of the Bishop Museum's survey of Polynesia are now available, giving complete and up-to-date ethnographic materials on the comparatively little known islands of Futuna or Horne (and Alofi), and Uvea or Wallis. These islands are about 100 miles apart; Futuna lying approximately 150 miles northeast of Fiji, and Uvea 186 miles west of Samoa. They are thus located on the western fringe of Polynesia, and should be of considerable interest to Polynesian students concerned with cultural contacts and possible migrations in pre-European times.

The volumes consist primarily of detailed ethnographic materials on all phases of the cultures of these peoples. Mr Burrows, with his wife and child, spent approximately four months on each island in 1932. His accounts are based not only on earlier sources, which he has apparently covered thoroughly, but also on information obtained from old informants; and more important, on first hand observation, since European culture has not entirely replaced the old forms, except possibly in the sphere of religion.

Following the detailed ethnographic report are several concluding pages on cultural relationships. After his comparative analysis, Burrows believes that "Uvean culture, then, is western Polynesian. It is mainly Tongan, but shows traces of a pre-Tongan population and of minor influences from other Polynesian islands" (*Uvea*, p. 172). Futunan culture, however, is more distinctive, less western.

> For example, the following features of Samoan and Tongan social organization are absent in Futuna: Samoan—talking chiefs, village maids, chiefs' language, division of privileges between the kinsfolk in the male line and those in the female line; Tongan—*matapule* subchiefs, chiefs' language, fixed order of rank for every individual within a kindred [*Futuna*, p. 233].

Following Buck's lead, Burrows suggests that certain phases of Futunan culture may represent an old stratum of Polynesian culture, such as "parallel rafters on the rounded ends of houses; inheritance of the position of master-craftsman; pandanus leaf for house thatching; right-through lashing of canoe planks" (*Futuna*, p. 233). Also present in Futuna, and characteristic of eastern Polynesia and usually absent in western Polynesia, are felting of bark cloth, nose flute and backrest stones on malaes. In this respect the manufacture of bark cloth is interesting. The felting process is known throughout eastern Polynesia (except New Zealand); the pasting technique in Samoa and Tonga.

> But in Futuna and in the neighboring island of Wallis both techniques are in use. This distribution, taken with the statement of Futunans that pasting is the more recent method there, suggests that felting is the old Polynesian method of making bark cloth; that pasting was invented in Samoa or Tonga, where it displaced the more laborious felting; that pasting spread also to Futuna and Wallis, but in these outlying islands did not entirely displace the older felting.

A similar conclusion is indicated by the distribution of different methods of decorating bark cloth. Free-hand drawing, found both in eastern and in western Polynesia, is perhaps the original method. Rubbing over a tablet has the same distribution as the pasting technique and seems to be a western Polynesian invention. A third method is that of printing. If my information is correct, it is reported only from Hawaii, and with some difference in technique, from the Society and Cook Islands. This looks like another local invention, originating this time in the Society Islands, the source of much of the culture of Hawaii, as well as that of smaller surrounding islands like those of the Cook Archipelago [*Futuna*, pp. 233–34].

These and other remarks on cultural relationships will be of most interest to those who have followed the hypotheses of Buck, Linton, Emory, and Handy in their several publications issued by the Bishop Museum.

On some points of ethnography, specialists might wish for more specific information. For example, in the kinship system of Futuna, is the term tamana, meaning "father, father's brother, and any male relative of the first ascending generation," also used for mother's brother? Is then, the term tu'a tsinana (maternal uncle) only a secondary term? With sister's child designated as ilamotu, and the custom of vasu (specialized somewhat in Futuna), it would seem logical for the maternal uncle to be given a specific designation as in Wallis, or Tonga, or Tikopia. Or is this, too, a survival of an older Polynesian form (cf. kinship of Hawaii)? However, criticism of such minor details tends to indicate how full and complete are these excellent and well-rounded accounts of Futuna and Wallis.

Also to the credit of these publications is the fact that there are short, but fairly complete indices. The editing is also to be commended, only a few errors having been made, such as the obvious oversight of 1910 for 1810 (*Futuna*, p. 153).

With each additional publication the Bishop Museum is nearing its goal of obtaining, while it is still at all possible, complete ethnographic accounts of the various Polynesian islands, upon which may eventually be based the hypothesis of migrations and cultural diffusion, as well as other problems of Polynesia.

J. GILBERT MCALLISTER

UNIVERSITY OF TEXAS

ASIA

Studies in Early Chinese Culture: First Series. HERRLEE GLESSNER CREEL. (Studies in Chinese and Related Civilizations, American Council of Learned Societies, No. 3. xxii, 266 pp. $3.00. Baltimore: Waverly Press, 1937.)

Every serious student of Chinese history will have to be familiar with Dr Creel's most recent study of pre-Confucian China. The present review attempts only to suggest the significance of the book for anthropologists not specializing in the Far East.

In the first place, the book is the detailed and scholarly foundation for Creel's more popular work *The Birth of China* (1936). Since this widely read book is certainly the best general account in a western language of Chinese archaeology and

early history, it is valuable to have in the *Studies* a clear statement of specific sources. The bibliography conveniently summarizes and emphasizes the vast amount of historical material, inscriptions on bronzes and oracle bones, and Chinese as well as western archaeological reports now available.

The first section, "Source Materials for the History of the Shang Period," describes in detail the history of the deciphering of the famous oracle bone inscriptions, and presents a superb critical bibliography; it outlines the excavations of the Shang capital at Anyang (dating approximately 1400 to 1100 B.C.); and finally subjects to keen analysis the extant literary records supposed to date from Shang times—one section of the Book of Odes, and five books in the chin wên text of the Book of History. Creel adduces strong evidence to prove that all this supposed Shang literature is of post-Shang date. Indeed no part of these two works appears to be earlier than the eleventh century B.C. Anthropologists should note this. No longer is there any excuse for going to translations of the Book of History and the Book of Odes and finding there fantastically early dates for Chinese institutions or inventions. Unfortunately this happens frequently.

Section 2, "Was there a Hsia Dynasty?" will be of less interest to anthropologists. Creel states (p. 130): "The evidence warrants us in concluding that while there was not a Hsia dynasty, in the traditional sense, there was a state by this name." The inference is that it preceded, though it may have been partly contemporary with, the Shang state.

Archaeologists will find the last section, "Who were the Shangs?" most valuable, for it gives a summary of archaeology in China, using both Chinese and western sources. Creel is primarily interested in what archaeology can tell about the origins of Shang culture—the earliest fully developed Chinese type of civilization yet known. He builds a strong case for the indigenous (i.e. northeastern Chinese) origin of several fundamental elements of this culture, and aggressively combats the popular idea that Shang civilization was an importation from the West, imposed by a conquering Bronze Age people upon the neolithic Chinese. It is too early to be very conclusive about this debate, which is primarily a question of emphasis. Creel admits the probable western origin of the basic technique of bronze casting; and certainly there are many other important non-Chinese elements. Nevertheless, prehistorians, especially those who start with a knowledge of West Asiatic, European, and Siberian cultures of the second millennium B.C., cannot ascribe Shang culture entirely or even largely to western influences without considering his strong counter arguments based on archaeological reports in Chinese as well as western languages.

This will not be an easy book for non-specialists. Most will find *The Birth of China* more usable, and it covers much of the same ground. But no one should become very far involved in problems of China's early civilization without digesting *Studies in Early Chinese Culture.*

C. MARTIN WILBUR

FIELD MUSEUM OF NATURAL HISTORY

Social and Physical Anthropology of the Nayadis of Malabar. A. AIYAPPAN. (Bulletin, Madras Government Museum, n. s., Vol. 2, No.4. iii, 141 pp., 12 pls. Rs 3-2-0. Madras: Government Press, 1937.)

This volume, the latest of an expanding series of government publications on anthropology being issued in India, contains an interesting account of one of the lowest castes in Malabar, the Nayadis, who now live principally by begging but who until recent years were much more dependent upon hunting. The recent spread of agricultural castes, which has reduced the extent of jungle country, the liberal anti-caste attitudes of the Christian and Moslem elements in the neighboring population, and the energetic measures taken by the government to alleviate the miserable existence of the untouchables, have combined to accelerate a movement to the villages where many Nayadis now receive employment. The present cultural situation is discussed by the author, and comparisons and contrasts with the past are made on the basis of material secured from old people or from traditional and historical sources. The perplexing problem of caste is given attention, as are the usual fields of inquiry—social structure, economic life, technology, religion, etc.

Part II is devoted to physical anthropology. Of a total population of 565, 62 male and 42 female adults were measured. The detailed statistics are presented in tabular arrangement and comparable data from neighboring castes and tribes are included.

D. S. DAVIDSON

UNIVERSITY OF PENNSYLVANIA

PREHISTORY

The Stone Age of Mount Carmel; Excavations at the Wady El-Mughara: Vol. I. D. A. E. GARROD AND D. M. A. BATE. (xi, 240 pp., 55 pls., 9 figs. $16.00. Oxford and New York: Clarendon Press, 1937.)

This rather formidable looking report covers the archaeological and paleontological results of six seasons (1929–34), or about twenty-two months' field work devoted to three closely adjacent caves on the west flank of Mount Carmel in Palestine. The volume opens with a foreword by George Grant MacCurdy in the form of a brief "Historical Introduction," and this authorship, together with the fact that the excavations were carried out jointly by members of the American School of Prehistoric Research and of the British School of Archaeology in Jerusalem, lends more than ordinary interest to the results for American archaeologists.

Miss Garrod, as field director representing the British School, writes the "Preface" and "General Introduction," describes the investigation of the two larger caves, outlines the probable history of their occupation, and is presumably responsible for the classification and description of all the artifacts. Mr Theodore D. McCown, of the Americal School, who as one of fifteen field assistants was given charge of the work done in the third or smallest cave, similarly describes his excavations. Both of these accounts include brief illustrated summaries of the numerous and important skeletal remains uncovered. This archaeological portion of the report, covering 133 pages, constitutes Part I. Part II, embracing 90 pages, is devoted by

Miss Bate chiefly to a systematic description of the recovered fossil faunas, vertebrate and molluscan. Included also are six brief appendices giving the chemical analysis or otherwise determined nature of certain of the raw materials found, the identification of several botanical specimens, and lastly a brief account by McCown of the methods used in removing the skeletal finds. Full treatment of the human osteological material itself is reserved for another memoir, presumably by Sir Arthur Keith.

The three excavated caves, together with a fourth tested out and found sterile, are located near the southern end and at the base of the Mount Carmel range, at an elevation ranging from 45 to 63 meters above sea level and 12 to 31 meters above the coastal plain. They occur in a limestone escarpment facing northwestward across the mouth of a ravine known as Wady el-Mughara (Valley of the Caves), out over some low foothills and the coastal plain beyond, towards the Mediterranean Sea, only three kilometers away. Of only moderate size, the largest, Mugharet el-Wad (Cave of the Valley) is 90 meters long and averages about 10 meters in width; the next, El-Tabun (Cave of the Oven) measures about 35 by 18 meters; and the smallest, Mugharet es-Skhul (Cave of the Kids), 8 by 14 meters. In ground plan all are moderately regular, with arched roofs, in one case partly opened by a chimney to the sky. Two of them turned out to have deep debris-filled floor pits directly inside the entrances. Fronting the entrances are more or less extensive sloping rock terraces, which were also covered with considerable thicknesses of relatively recent and badly disturbed relic-bearing deposits requiring much excavation.

The excavations, obviously difficult and complicated tasks, are described in detail as to extent, thickness, and special characteristics of the separable layers and their archaeologic contents. No specific statement is made concerning the amount of debris actually handled, but the total area covered is indicated on the ground plans and the composite culture section of the three caves, not counting duplications of layers, is given as in excess of 21 meters. As such, it outranks the thickness of deposits in both the Castillo and Princes' caves and is regarded by the author as representing a period of time approaching 100,000 years. The combined sections revealed a stratigraphic succession of seven district culture stages (with minor subdivisions) named from the bottom up as follows: Tayacian, Acheulian, Levalloiso-Mousterian, Aurignacian, Atlitian, Natufian, and Bronze-to-Modern. The overlap and duplication of culture levels in the three caves may be indicated by stating that, counting from the top, stages VII to III were present in the Wady el-Mughara cave; stages VII, III, II, and I were present in the El-Tabun cave; and part of stage III was present also in the Es-Skhul cave. By way of explanation of the newly introduced terms, "Tayacian" denotes a flint industry characterized by small utilized flakes resembling a primitive Mousterian phase; "Atlitian," though exhibiting Aurignacian affinities, is regarded as equivalent to Magdalenian; and "Natufian" corresponds at least in part to the Azilian and Tardenoisian but appears to contain a few Neolithic traits, such as mortars, pestles, and sickles. The minor subdivisions are based partly on technological features and partly on differences in the faunal accompaniments.

Space limits forbid detailed characterization of the successive industries, but they all resemble more or less the indicated equivalents of western Europe. The top layer, called Bronze-to-Modern, being in a churned-up condition both inside and outside the caves, its contents have been described only in general terms. For the remaining levels the nearly complete inventories of flint and stone artifacts are classified in tabulated form for each recognized division and subdivision. Summed up, these tables record 91,785 specimens, exclusive of numerous cores and flakes not retained. These specimens are classified into about fifty mostly implemental *types*, some of which, as, for example, scrapers, burins, and coups-de-poing, are subdivided on the basis of special characteristics, so that the number of distinguishable *forms* reaches a total of about 80. In addition, the finds include several types of ground stone implements, such as mortars, pestles, polishing stones, phallic symbols, and one sculptured human head. Some 150 bone objects, besides fragments, are listed under such type headings as awls, harpoons, skin-scrapers, sickle handles, gorgets, beads, pendants, and one carved animal head. Shell artifacts, occurring only in the Natufian layer, are limited to a few beads, but dentalium shells were used for decorative purposes in their natural form.

Miss Garrod closes her report with a brief chapter in which she first of all lines up with the Mount Carmel stratigraphic column the chronological positions of other known but incomplete culture deposits of the eastern Mediterranean region. Next she makes several comparisons between the Palestinian cultures and the corresponding stages of Egypt and western Europe, leading to the conclusion that Palestinian developments were in the main independent. Her last word is a plea for cooperative work on the part of the geologists to bring the now firmly established Palestinian succession of industries into the general framework of Pleistocene geochronology.

The paleontological section of the report, though doubtless important, is hardly for the archaeologist to tackle. It must suffice to say that Miss Bate lists in her comprehensive table 54 vertebrate animals, only 11 of which are present at the beginning and only 26 of which survive to the present day. The table also supplies interpretations as to the climatic fluctuations indicated by these faunal changes. One remark worth noting here is that no cold period is indicated.

Returning to the archaeological report, a few comments seem pertinent. Judging from the numerous illustrations afforded, the Paleolithic stages of the eastern Mediterranean are much less sharply defined than in western Europe. Most of the classic flint implements are present, but in rather more generalized forms, except for the coup-de-poing, the end-scraper, and certain of the geometric microliths. There are present no clear-cut Mousterian, Magdalenian, or Campignian series; the Solutrean stage is absent; and the normal Neolithic inventory, unfortunately, is only barely indicated, though its existence is vouched for in proper stratigraphic position elsewhere in Palestine. Equally noteworthy is the comparative scarcity of bone implements and of art objects. Most of all, the reviewer is struck by the almost complete absence of the hammerstone. Only one specimen is mentioned.

Criticism is hardly in order for anyone on this side of the Atlantic, even if called

for. One could have wished, however, that certain of the ground plans and sections had been done on a somewhat larger scale. Also it would have saved the reader much time if the illustrations had been supplied with conveniently placed legends. This would have afforded the American connoisseurs—in dire need of a complete systematic album—swift means of identification for most of the Old World implement forms. Entirely apart from all this, questions have been raised about the price of the publication. Sixteen dollars is perhaps not exorbitant, all things considered; but it places the volume out of reach of the average archaeologist. This is unfortunate because as a model report on a carefully executed task it should be in the hands of many who cannot afford it. And the same argument holds for the paleontologists. In other words, ignoring practical considerations of printing cost, it would have been better if the archaeological and paleontological sections had been published separately, with only brief summaries of the respectively omitted portions. That, however, has nothing to do with the merits of the report itself and the reviewer concludes with sincere congratulations to Miss Garrod and her collaborators on a truly epoch-making piece of work.

N. C. NELSON

AMERICAN MUSEUM OF NATURAL HISTORY

GENERAL

The Hero: a Study in Tradition, Myth and Drama. LORD RAGLAN. (311 pp. $3.50. New York: Oxford University Press, 1937.)

The shape-shifting of the heroes of mythology in the hands of mythologists is almost as marvelous as the original magical feats. Lord Raglan shares with many other European mythologists the wish to trace all heroes to a single phenomenon. His theory is that all myths, folktales, fairytales, dramas, sagas, epics, ballads, and nursery rhymes are ultimately of ritual origin. A myth is a narrative accompanying a ritual drama, and a folktale is a degenerate myth. He defines a hero pattern on the basis of the careers of several mythical heroes like Oedipus, Moses, the Shilluk Nyiakang, Arthur, Robin Hood, and others. The major events in the career of each hero are his unusual birth, accession to the throne, and death. These correspond to the *rites de passage* of birth, initiation, and death.

Furthermore, as the principal characters in the myths are often kings and queens and as the events, according to Raglan, are founded on the royal ritual of the death and resurrection of the king, the original pattern of myth and ritual *must have* developed in the Nile-Indus area, perhaps in a centralized kingdom with no more than a trinity of gods, gods who represented the old king, the new king, and the queen. "It is a description of what should be done by a king (priest, chief, or magician) in order to secure and maintain the prosperity of his people, told in the form of what a hero, that is, an ideal king, etc., once did" (p. 151). Then the heroes are put through their paces to show that their careers represent this royal ritual of death and resurrection.

The advertising on the jacket of the book states that it is "light reading for

highbrows." Perhaps this is assurance that one is not intended to take this baffling mixture of theorizing and quotations of opinions seriously, nor trouble to examine the evidence supporting the main thesis—when there is any evidence other than the kind which begins, "It must have been—." The most valuable part of Lord Raglan's work is his comparison of twenty heroes of Europe, Asia, and Africa with the Oedipus story on which he bases his hero pattern. That similarities exist in the careers of mythological heroes has been observed since ancient times, and the explanations of the origins of these similarities have furnished mythology with the bulk of its theories. These similarities have been explained as the natural result of the interest of mankind in the history of real heroes, the rising and setting of the sun, the waxing and waning of the moon, or the hatred of the father. Lord Raglan drives more spikes into the coffins of the astronomical and euhemeristic theories, but he does not mention the psychoanalytical theory, which like his own has a hero pattern based on Oedipus.

One turns with relief to examine the pedestrian plodding of American anthropologists in the field of mythology, their pre-occupation with myth elements, and their cautious and modest generalizations. Under the leadership of Boas, the study of myths has had an integral place in anthropology. In fact, the position and research methods of American anthropologists have frequently been defined by studies in mythology. They do not depend too much upon divine revelations from which the unintuitive and skeptical are excluded. Like the Finnish geographical-historical school of folklore, they present the evidence for their conclusions in great and wearying detail. Any theory according to which a single phenomenon represents the ultimate source of all mythology is alien to the pluralistic spirit of the American school. Ernest Jones, who has written extensively on the psychoanalytical interpretation of mythology, expresses the reaction of the monists, whatever the theory of each may be. He believes that there is no real antinomy between the psychoanalytical and anthropological points of view (*Folklore Jubilee Congress*, 1928, pp. 220–37). A survey of the tenets of the American school will show where the seekers of a universal mythology believe that a bridge exists between these two parallel and opposing lines of thought.

The American studies in mythology have been primarily of two kinds—the analysis of the mythology of a single tribe or of a group of tribes with geographical or historical relations, and the analysis of single tales or themes. The purpose has been to trace the history of the tale or mythology in question, and to determine the processes of myth formation and the function of mythology in a tribe. The studies have demonstrated that, as regards American Indian mythology at least, a plot is a relatively temporary and local cohesion of myth-elements which have spread independently of each other. Related tribes have more elements in common than the unrelated. No primary version of a myth can be established. Each tribe gives to the elements a form and meaning, a "secondary interpretation," which is conditioned by the social forces and literary style peculiar to the tribal culture. A tribe with an organized priesthood and complex ritual will integrate the myth-elements with ritual, while another tribe will give the same elements a different meaning and place

in the culture. Some tribes create long cycles or plots; others tell very short stories. It is recognized that European plot-complexes are more stable and uniform in form and content than the American. As regards a hero pattern, a characteristic response of an American anthropologist, judging from the work on totemic and guardian spirit complexes, would be, "Is it really an organic unity or is there a superficial identity which hides different psychological and historical origins?"

When evidence shows that mythological elements with a certain similarity do not have any apparent historical connection and must have been invented independently, the question arises as to why certain themes and elements are so common throughout the world and so congenial to human feelings. Here the American anthropologist stops; other schools of diffusionism continue to ferret out historical connections which, according to American methodology, are not justified. Either the problem of why these similarities exist is left to other sciences, or general remarks about human nature and the psychic unity of mankind are advanced together with the confession that methodologically such a problem is harder to solve than one involving historical connections.

Here is where the monists point out how unconsciously honest our phrase "secondary interpretation" is to describe the local meanings attached to myth elements and themes. According to Jones, the "meaning" is only a "rationalistic façade" which the people give to a belief or custom of whose real deeper motive and origin they are unaware. Mythologists of every school admit the existence of the rationalistic façade, but differ as to what the real deeper motive is. Characteristically, the American school has felt that if those on the opposite shore would only use the words, "motive," "impulse," and "principle" in the plural, the bridge would look more reliable. They insist that phenomena apparently alike may develop in different ways and from different psychological and historical origins. Judging from the rarity of American folklore studies in recent years, the monists may never be enlightened as to what some of these origins specifically are.

KATHARINE LUOMALA

UNIVERSITY OF CHICAGO

Studies in the Science of Society Presented to Albert Galloway Keller. GEORGE PETER MURDOCK (ed.). (555 pp., pl. $6.00. New Haven: Yale University Press, 1937.)

The volume consists of a group of twenty-six essays contributed by students of Sumner and Keller to Professor Keller on the completion of the thirtieth year of his professorship at Yale University. The aims and methods of the Sumner-Keller school are well exemplified in the papers, as well as their range of interests. In addition to studies of modern sociologic problems, there are a number devoted to topics of more specific interest to anthropologists: "The Humor of Primitive Peoples" (Bowman), "A Sample Comparative Analysis of Material Culture" (Ford), "Shamanism in China" (Harvey), "A Survey of Indonesian Civilization" (Kennedy), "Marriage and the Family among the Galician Ukrainians" (Koenig), "Alternating Generations in Australia" (Lawrence), "The Making of a Black Na-

tion" (Leyburn), "Indo-Aryan Society" (Lumley), "Primitive Economics in the Light of Consistency in the Mores" (Miller), "Correlations of Matrilineal and Patrilineal Institutions" (Murdock), "The Fur Trade Frontier of Siberia" (Weiler), "The Pre-Iroquoian Cultures of New York State" (Woods).

This broad scope is consonant with Dr Murdock's statement, in his "Editorial Preface," that "sociology is a comparative science concerned with social behavior wherever and whenever recorded, not merely with its manifestations within our own particular historical tradition" (p. xiii). The aims of this discipline of comparative human society are stated to be the formulation and testing of cross-cultural generalizations by application of factual data (p. xv). With this bold aim, and scientific (rather than philosophic) approach the followers of Sumner and Keller set out, determined to avoid the pitfall of sterile metaphysics into which some sociologists have tumbled, as well as the maze of inconsequential details in which Dr Murdock accuses anthropologists of having lost themselves. Their success is varying. A number of the papers mentioned above are straight descriptive accounts such as any anthropologist might turn out, that is, an anthropologist of the more capable sort. Others, however are more successful in following the course set by this school. Dr Murdock's paper on the correlations of matrilineal and patrilineal institutions with other aspects of culture may be singled out as representative of these more typical contributions.

After a survey of the significances of the problem for past and present anthropologic schools of thought, Murdock reviews briefly the pioneer attempts at correlations of institutions, that of Tylor, and the later one of Wheeler, Hobhouse and Ginsberg, bringing out the criticisms leveled against them. He then outlines his own method, which is intended to avoid the methodological errors of the earlier workers. The 230 ethnic groups from which the data derive are selected as nearly as possible in equal numbers from all the culture areas throughout the world, to obtain a systematic sampling. These tribes are classified as matrilineal or patrilineal in respect to a series of components of the matrilineal and patrilineal "complexes," for these so-called complexes are units of too vague bounds to serve for exact comparisons. The numerical coöccurrences of these traits—line of descent, assignment of children on divorce, exogamy, initial and final residence, inheritance, household authority, avunculate, and succession—with a second series of traits, economic, technologic, etc., indicative of higher cultural attainments, forms the body of Murdock's study. From the correlations of these two sets of traits the author derives his conclusions. These are (1) in general the simpler cultures tend to be matrilineal, the more advanced, patrilineal; but, (2) the evolutionist assumption of the priority of matriliny cannot be substantiated; (3) simple matrilineal systems may be succeeded by more elaborate matrilineal societies on a high cultural level; (4) patriliny and matriliny tend to be correlated with the relative importance of male and female economic activities.

This synopsis does not do justice to Murdock's exposition, but, it is hoped, may make clear the breadth of his undertaking, the careful and refined methodological approach, and the type of results aimed at. Such a treatment cannot but be thought-

provoking, and in the long run more fruitful than a common type of anthropological paper, which describes some minute detail of some tribelet. A specific point that must be raised, however, in regard to Murdock's argument, is that he does not seem, to the reviewer, to meet the criticisms of the historical school, as voiced by Boas (as cited by Murdock, pp. 460–61). The "sociological assumption of a stress toward integration" and the attendant cultural adaptation notwithstanding, the genetic relationship of given traits cannot fairly be dismissed as inconsequential. In other words, the occurrence of a trait invented, in part at least, as a response to needs existing in the culture—i.e., brought into being by the stress toward integration—ought to be weighted differently from the occurrence of the same trait among a borrowing group. Murdock, on the basis of his sociologic assumption, weights all occurrences equally, regardless of historic factors. His conclusions can therefore be valid only to the extent that historic factors had no bearing on the material used.

PHILIP DRUCKER

UNIVERSITY OF CALIFORNIA

Twenty-fifth Anniversary Studies. D. S. DAVIDSON (ed.). (Publications, Philadelphia Anthropological Society. Vol. 1. vi, 235 pp., illus. $2.50. Philadelphia: University of Pennsylvania Press, 1937.)

This volume consists of eighteen papers on specific problems in archaeology, ethnology, and folklore. The bulk of the material has a New World setting but Australia, Melanesia, and Africa are represented also. The collection presents a neat cross-section of the interests and activities of those associated with the Philadelphia Anthropological Society. The richness and general high quality of these studies render them at once an important contribution and a fitting commemorative record.

The number of contributions makes it impossible to comment upon each. Perhaps a random selection may serve to introduce the whole.

D. S. Davidson, the editor, considers "The Relation of Tasmanian and Australian Cultures," and clarifies many of the knotty problems of racial, historical, and cultural affinity. Davidson's conclusion is that the Tasmanians formerly inhabited Australia and migrated to Tasmania at a time when certain elements of recent Australian culture were as yet unknown. "But has not this conclusion been generally accepted for some time past?" it may be queried. It has, of course, though not on the basis of any exhaustive analysis, but rather upon bits of disjointed evidence. It was accepted, that is, until very recently when Wood Jones, H. D. Skinner, and Pulleine reopened the question by arguing for an oceanic origin. This was the immediate stimulus for Davidson's study. He shows that these recent efforts, as well as earlier ones, fail to survive critical examination when the whole picture is viewed, rather than an isolated portion.

Frederica de Laguna furnishes a provocative "Preliminary Sketch of the Eyak Indians, Copper River Delta, Alaska," based upon her work in association with Kaj Birket-Smith. This compact summary bristles with fascinating problems of

cultural relationship. "The material and spiritual culture of the Eyak represents a rich blending of Interior Athabaskan, southwestern Alaskan Eskimo, and Tlingit elements." According to Sapir, who examined a vocabulary collected by the author and Norman Reynolds, the Eyak "phonetic system is suggestive of Tlingit, and the language itself may be a new dialect of the Na-Dene group, coordinate with Athabaskan on the one hand and Tlingit on the other." Customs which appear to have been recently borrowed from the Tlingit include exogamous matrilineal moieties, potlatch houses, and practices surrounding death. Ranking appears to be absent. Avoidance is practiced between mother-in-law and son-in-law, between grown brothers and sisters, and possibly between father- and daughter-in-law. A joking relationship is recognized between brother- and sister-in-law. Wife lending and exchange are known. Religious beliefs parallel those of the Eskimo, especially in the extensive application of the anthropomorphic soul idea. Other aspects of the culture are similarly blended, the sketch indicates. The appearance of the full Eyak ethnography is eagerly to be anticipated.

Loren C. Eiseley, under the title "Index Mollusca and their Bearing on Certain Problems of Prehistory: A Critique," examines the available data with particular reference to the American Southwest. He warns that we must not permit overenthusiasm for a new approach to blind us to its shortcomings. Conchologists themselves stand divided on the fundamental question of whether minute differences between forms, especially metrical differences, are correlated with variation in climate, habitat, and general environment, or are merely the result of normal variation and overlapping. Until this matter is settled with reasonable finality any application of conchological data to archaeological problems must remain tentative. Further, the paucity of material from critical areas is especially serious where the reliability of a placement is proportional to the number of specimens on which the norm is based. But, as Eiseley points out, these difficulties should not lead to the abandonment of an approach which still retains promise, especially since the more certain method of pollen analysis is not applicable to a great part of the High Plains.

Frank G. Speck resumes his Catawba studies with a description of "Catawba Medicines and Curative Practices." Therapy here consists largely in the use of herbal prescriptions. Ritual curing is apparently quite absent, in contrast to Cherokee practice. Speck lists the diagnostic categories which are recognized and translates a considerable number of prescriptions.

Dorothy M. Spencer contributes psychologically significant data on "Fijian Dreams and Visions," but confounds the reader with an over-use of native terms. For example: "The dream meant that Saiyasi would die without making a *mandrali* for his *luve-ni-wai* spirit." The word *yaŋgona* is substituted for the familiar term kava; the translation is contained in a footnote (p. 201).

"Cross-cousin Marriage in the Lake Winnipeg Area" is discussed by A. Irving Hallowell. This type of marriage is found to be a traditional and still persisting form among many of the Cree and Salteaux. Marriage and kinship practices on the western side of the lake show variations which are interpreted as the result of mod-

ern local conditions. Turning to the larger problem, Hallowell concludes that "northern Algonkian kinship systems are likewise intelligible as variants of a basic pattern that has undergone modification as a result of acculturative processes and differences in local conditions" (p. 108). This solution runs parallel to that offered by Eggan for the kinship confusions encountered in the Gulf states.[1]

Other contributors are: W. N. Brown, Mary Butler, J. L. Cotter, Frank M. Cresson, Jr, Edgar B. Howard, Nathaniel Knowles, Jr, J. Alden Mason, Samuel W. Pennypacker, 2nd, Vincenzo Petrullo, Linton Satterthwaite, Jr, H. Newell Wardle, and Heinz A. Wieschhoff.

VERNE F. RAY

UNIVERSITY OF WASHINGTON

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[1] Fred Eggan, *Historical Changes in the Choctaw Kinship System* (American Anthropologist, Vol. 39, pp. 34–52, 1937).

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BRIEF COMMUNICATIONS

A REPLY TO THE REVIEW OF "COOPERATION AND COMPETITION AMONG PRIMITIVE PEOPLES"

To the Editor:

Your reviewer of *Competition and Cooperation Among Primitive Peoples*[1] has warned your readers that he was "unable to extract a crumb of meaning" from the theoretical section of the book, but he failed to give a corresponding warning about his understanding of the setting in which the research represented by the book was conceived and carried out. He has supplied your pages with an account so irresponsible and inaccurate that in the interest of the relationship between anthropology and the organizations of social scientists in the United States, it is necessary to correct it.

Your reviewer states that the book had a two-fold purpose[2] and that "a second (? secondary) purpose was to answer an inquiry posed by a sub-committee of the Social Science Research Council regarding competition and cooperation in primitive society." He then quotes, apparently as representing the inquiry, the working definitions of *competition*, *cooperation*, and *habit* furnished to all the research workers to ensure a common frame of reference. This "question" he says is "repeated jestingly by the editor who will not condescend to answer." As evidence of my refusal to answer the question he quotes my statement on p. 462 that for purposes of analysis I had found it desirable to narrow the *definitions* furnished by the committee. (These definitions were for use by all the contributing researches: the Life History Approach, Quantitative Experimental Social Psychology, etc. It was not surprising that any separate part of the research should find it useful to narrow them.)

The facts which were fully stated in the Preface and so were available to your reviewer were these. The Sub-committee asked us to prepare a "survey of the possible contribution of ethnological material to the planning of research in competitive and cooperative habits." They asked for a survey of available material from about twelve cultures and expected the work of preparing the digest of these facts to take one person's time for about three months. In considering the needs of the Committee, it was found that no one person could do twelve cultures in the time allowed with anything like the accuracy and fullness which a serious treatment of the subject demanded, and furthermore, that in most cases the published literature did not yield the kind of material which the Committee hoped to obtain. The kind of information they desired was ascertained by my preparing a trial digest of relevant information on the Manus and submitting it to them to find out the further questions which it evoked.

[1] American Anthropologist, Vol. 39, pp. 710–11, 1937.

[2] The two-fold purpose to which the reviewer refers may perhaps reflect the fact that I said in the Preface that parts of the book might be consulted separately by students with special interest.

A plan was then evolved by which it would be possible to furnish the Committee with samples of different available ways of tapping anthropological materials: from published sources, from published sources amplified by help from the field workers concerned, and from reports written by field workers with the inquiry of the Committee in mind. Because we were seriously interested in this attempt to focus materials from different social sciences on the development of research projects in which several disciplines could cooperate, we were able to exceed somewhat the original plans of the Committee. With the funds allotted for one worker, seven of us prepared accounts of thirteen cultures. These accounts the Social Science Research Council had mimeographed and I then summarized the implications of these accounts in such a way as to make them useful to a committee of psychologists. Subsequent to the completion of the mimeographed report which was much longer than the present publication, it was suggested that the materials be condensed and published in book form. Some of the longer extracts from the more accessible published materials were omitted, and I amplified my interpretative statement in an attempt to make it intelligible to young students not yet acquainted with many of the points of view upon which it drew. Considering the pains that were taken throughout to meet the special demands of the Committee the mischievous suggestion that I treated the inquiry of the Committee with levity is patently ridiculous.

As a member of the American Anthropological Association, I suggest that the AMERICAN ANTHROPOLOGIST should exercise greater editorial caution before publishing irresponsible statements jeopardizing cordial relationships among the different social sciences.

MARGARET MEAD

BAJOENG GEDE, BALI
NETHERLANDS EAST INDIES

PLAINS CREE KINSHIP TERMS

The Plains Cree kinship terms[1] collected by the late Alanson Skinner at the Keewistaihu reserve and some adjacent reservations under the Round Lake Agency, Saskatchewan, Canada, differ so greatly from other published Plains Cree schedules and are so innately improbable that they should not be accepted until they have been verified by actual field-work. Skinner himself does not give any intimation that other Plains Cree schedules are available, nor does he note the discrepancies.

Proof of the innate improbability is the following: n't'êkwatim, my father's brother's son, etc. (ordinarily, my cross-nephew); nicimis, my father's brother's daughter (ordinarily, my cross-niece; it is barely possible that the old term for cross-niece has survived in this Cree dialect, but it is much more likely that the term is an Ojibwa loan-word); nicis, my father's brother (ordinarily, my mother's brother); n'gosis, my mother's sister's daughter (ordinarily, my son); n'danis, as given by Skinner for my mother's sister's daughter (ordinarily, my daughter);

[1] American Anthropologist, Vol. 16, 1914, pp. 73–74.

nigawis my father's sister (patently built up on the term for my mother; n'tosis is my mother's sister); nictim, my daughter (ordinarily, my cross-niece, also, my daughter-in-law; for the true term for my daughter see above). The term for my grandfather, ninos'um, is a misprint for nimos'um; so too ninahacim, my son-in-law, is a misprint for ninakacim or ninahakacim.[2]

TRUMAN MICHELSON

BUREAU OF AMERICAN ETHNOLOGY
WASHINGTON, D. C.

[2] Printed by courtesy of the Smithsonian Institution.

NOTES AND NEWS

INTERNATIONAL DIRECTORY OF ANTHROPOLOGISTS

An *International Directory of Anthropologists* has been prepared and published by the National Research Council. Its 303 pages contain names, addresses, and brief biographical sketches of anthropologists in all parts of the world. Copies are available at $1.00 from the Secretary of the Division of Anthropology and Psychology, National Research Council, 2101 Constitution Avenue, Washington, D. C.

SOCIEDAD MEXICANA DE ANTROPOLOGÍA

During 1937 a group of Mexican and foreign anthropologists residing in Mexico founded the Sociedad Mexicana de Antropología in Mexico City. Meetings are being held twice a month by some fifty participants. It is a provision of the society that those who do not report on their researches in open meeting will be dropped from the membership rolls.

ARIZONA ANTHROPOLOGICAL ASSOCIATION

The Arizona Anthropological Association has been formed in Phoenix, Arizona, "for the purpose of sponsoring anthropological research and for the dissemination of any knowledge which might accrue from such research." The officers of the newly incorporated association are Odd S. Halseth, President; Dr R. E. Solosth, Chairman of the Executive Board; and Thora Rollins, Secretary. Headquarters of the association is the Pueblo Grande Laboratory, Phoenix. The association already has considerable assets and plans are under way for the sponsoring of a major field project. This, the Andean Anthropological Expedition, is under the direction of Dr Solosth, from whom details may be obtained.

SOCIAL SCIENCE ABSTRACTS

Complete sets of *Social Science Abstracts* for the four years from 1929 to 1932, inclusive, during which it was published, may be obtained from the Social Science Research Council upon payment of express and handling charges. The charges, to be paid at the time the request is made, amount to $1.00 anywhere in the United States except California, Oregon and Washington, where the amount will be $1.50. For Canada, the charge will be $3.00, and for other foreign countries, $4.00.

Communications should be addressed to the Social Science Research Council, 230 Park Avenue, New York, N. Y.

RECENT DEATHS

Dr Thomas W. F. Gann, widely known for his investigations of Maya sites in British Honduras and Yucatan, died in London, February 24th, at the age of 69.

Mr George A. West, for thirty years a member of the Milwaukee Public Museum's Board of Trustees and for nineteen years President, died on January 20th, aged 79. His interest in the archaeology of Wisconsin and adjoining areas led to the assemblage of an extensive collection which formed the basis for his *Tobacco, Pipes and Smoking Customs of the American Indians*, published by the Museum.

ETHNOLOGISKA STUDIER: A CORRECTION

Dr Walter Kaudern, its editor and publisher, calls attention to the fact that "Ethnologiska Studier," now in its fifth volume, is a periodical without institutional connection. By inadvertence it was referred to in a review (this journal, Vol. 39, p. 684, 1937) as published by the Göteborgs Etnografiska Museum and in a sense a continuance of Nordenskiöld's *Ethnographical Studies*, but is neither. It is published twice a year; annual subscription kr. 15; orders may be addressed to Dr Walter Kaudern, Göteborgs Etnografiska Museum, Göteborg, Sweden.

SOCIAL ORGANIZATION OF THE FOX INDIANS: A CORRECTION

In the article *Sol Tax on the Social Organization of the Fox Indians* by Truman Michelson (this journal, Vol. 40, pp. 177–79), the first sentence of the second paragraph should read: "On p. 252 we are told that nemise (Table 1) means older sibling of the opposite sex (o br [w.s.]; o sis [m.s.])."

TWENTY-EIGHTH INTERNATIONAL CONGRESS OF AMERICANISTS

To Whom It May Concern:

Please be so kind as to take notice that at the request of the Peruvian Government and with the consent of the President of the United States of Mexico, the 28th International Congress of Americanists which was going to be held from the 3rd to the 13th of September, 1938, will be transferred to the early months of 1939. Therefore, this Department [of Monuments] will have the pleasure of letting you know in time matters relating to this Congress in the knowledge that it continues working with the greatest interest for the best success of the same. I repeat my attentive and appreciative consideration.

The Chief of the Department
Licenciado ALFONSO TORO

American Anthropologist
NEW SERIES
VOL. 40 OCTOBER–DECEMBER, 1938 No. 4 (Part 1)

A CORRELATION OF ARCHAEOLOGICAL AND HISTORICAL SEQUENCES IN THE VALLEY OF MEXICO

By GEORGE C. VAILLANT

THERE is no area in the New World in which so much documentary historical information has been preserved as in the Valley of Mexico, and there are few regions which have been subjected to so detailed a scrutiny through the techniques of archaeology. The Valley therefore becomes an ideal proving ground not only for testing the value of Indian tradition in attacking historical problems in New World anthropology, but also for appraising the utility of archaeology as a means for solving problems of cultural diffusion and evolution. The following hypothesis for the correlation of archaeological and historical sequences in the Valley of Mexico will illustrate, if it does not necessarily prove, the possibilities of research in this direction.

Such a process must involve the establishment of chronological sequences for both the archaeological and the historical data, so that the two series of consecutive events may be fitted one to the other. This combination of historical and archaeological information should supplement the evaluation of the periods formulated in either category of research. The result, while far from flawless, is nonetheless highly suggestive as regards the interpretation of human activity in the past.

Let us examine first the archaeological sequence and the data on which its time values and the identification of its makers are based. Then let us examine the chief historical sources in order to correlate them in terms of absolute time. Finally, let us see how each succession of events supplements the other.

The archaeological history of the Valley may be broken down into five successive culture planes: the Copilco-Zacatenco, the Cuicuilco-Ticoman, the Teotihuacan, the Chichimec, and the Aztec. Analysis of ceramic, plastic, architectural, and other details of material culture makes it possible to divide the duration of each culture into periods and the periods into intervals. Since publication lags prevent citations of a printed description for each culture and period, it would seem advisable to characterize

the cultures and periods below, supplying the basis for the definition whenever a published account is lacking.

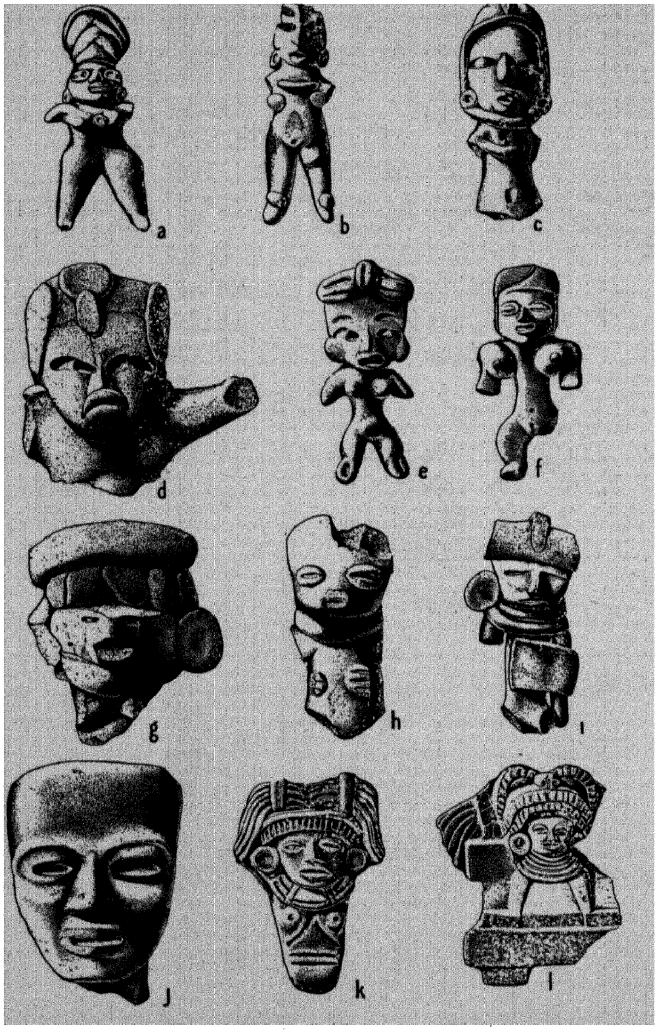


FIG. 1. Figurine types from early archaeological periods in the Valley of Mexico. a, Early El Arbolillo I phase of Early Copilco-Zacatenco (Type C3); b, Intermediate El Arbolillo I phase of Early Copilco-Zacatenco (Type C1a); c, Transitional period between Early and Late periods of Copilco-Zacatenco (Type B–C); d, Late Copilco-Zacatenco (Type A); e, Early Cuicuilco-Ticoman (Type E1); f, Late Cuicuilco-Ticoman (Type H2); g, Variant of Early Cuicuilco-Ticoman and Teotihuacan I (Type E4); h, Teotihuacan I type; i, Teotihuacan II type; j, Teotihuacan III type; k, Teotihuacan IV type; l, Teotihuacan V type.



FIG. 2. Figurine types from late archaeological periods in the Valley of Mexico. m, Mazapan type from western Mexico; n–p, Mazapan types; q–r, Coyotlatelco types; s–t, Aztec II types; u–x, Aztec III–IV types.

I. COPILCO-ZACATENCO

This culture has been described by Gamio, Diaz Lozano, and Vaillant.[1] There are two major periods characterized by the differentiation of figurine, pottery, and projectile types but with the exception of one figurine

[1] Gamio, 1920; Diaz Lozano, 1925; Vaillant, 1930, 1935a, b.

style, apparently imported, the later period evolves directly from the earlier. At Copilco, the second or later period is represented; at Zacatenco, both periods with a transitional interval are found; and at El Arbolillo, the deep deposits enable the stratigrapher to subdivide the early period into three chronological intervals on the basis of technical changes in figurine styles and the decoration of a distinctive type of black pottery. The seven and eight meter depths of occupation at Zacatenco and El Arbolillo suggest long occupation, but this earliest culture yet found in the Valley is in no sense primitive, even though it lacks the specialization of ceremonial found in later epochs. The distribution of the Copilco-Zacatenco culture, according to our present data, is limited to the Valley of Mexico, but little has been done in tracing its ultimate extensions (figures 1, a–d; 3, a–b).

II. CUICUILCO-TICOMAN

Descriptions of this culture are given by Cummings, Vaillant, and Vaillant and Vaillant.[2] There are no direct traces of evolution from the Copilco-Zacatenco culture, and three stages may be discerned in its development at Cuicuilco and Ticoman. These two sites yield material that indicates local variations of a broad general culture. At Gualupita, in the adjacent state of Morelos, was found a third aspect in which two periods could be established, the later was contemporaneous with the Valley stages of Cuicuilco-Ticoman but the earlier appeared to be coeval with the later period of Copilco-Zacatenco. Linné's excavations at Chalchicomula, Puebla, Noguera's at Cholula, and collections purchased in the same state, which is east of the Valley, indicate that the Cuicuilco-Ticoman culture flourished there, and a few examples from near Medellin, Vera Cruz, give an even wider eastern distribution.[3] Thus there are good grounds for postulating that the Cuicuilco-Ticoman culture was developed in the Puebla region at the same time that Copilco-Zacatenco existed in the Valley of Mexico. At a later date, tribes with specialized aspects of the same culture, like the existent Cuicuilco-Ticoman, penetrated into the Valley and supplanted the makers of the Copilco-Zacatenco culture (figures 1, e–g; 3, c).

Time factors offer a suggestive picture. Ticoman-Cuicuilco artifacts are

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[2] Cummings, 1933; Vaillant, 1931a, 1935b; Vaillant and Vaillant, 1935.

[3] Caso, 1933; Linné, 1937b, Vaillant, 1935b; Noguera, 1935a. Noguera believes his C types from Cholula connect with early Copilco-Zacatenco; the writer agrees, with the reservation that the examples belong to an early stage of Cuicuilco-Ticoman contemporaneous with early Copilco-Zacatenco.

generally made with more sophistication and skill than those of Copilco-Zacatenco. The refuse beds at Cuicuilco and Ticoman have about half the depth of those at Zacatenco and El Arbolillo. Cuicuilco and some other sites in Puebla and Morelos show the platforms and mounds so common to the later Teotihuacan culture. Representations of the Fire God, another Teotihuacan trait, have been found on this horizon. Elements of the Cuicuilco-Ticoman ceramic occur in the first Teotihuacan horizon and suggestions of partial contemporaneity between the two cultures appear at Gualupita.[4] In western Mexico, too, a highly specialized figurine style is a direct descendant of a Cuicuilco-Ticoman type. Over against such evidence of little antiquity is the lava flow of the Pedregal at the south of the Valley of Mexico. This volcanic deposition seals in the refuse beds of Cuicuilco and Copilco, but the geological estimate of "recent" carries with it a qualifying clause of 2000–10,000 years, an impossible range for historical determination.[5]

III. THE TEOTIHUACAN CULTURE

This culture takes its name from the great ceremonial center at San Juan Teotihuacan, northeast of Mexico City. We are indebted to Doctor Manuel Gamio and his colleagues in the Department of Monuments of the Mexican Government for presenting the archaeology of that site, and to Doctor Eduard Seler, Doctor A. M. Tozzer, and Doctor Sigvald Linné for excellent descriptions of the content of the material culture.[6] By the method of ceramic stratigraphy,[7] Doctor Manuel Gamio and Professor Franz Boas established the relative chronological position of the Teotihuacan culture as anterior to Aztec and posterior to early culture remains, like Copilco-Zacatenco and Cuicuilco-Ticoman.

The internal stratigraphy of the Teotihuacan culture has never been published in detail. We have, however, a highly significant study[8] on the earliest period at Teotihuacan published by Mr Eduardo Noguera, of the Department of Monuments, and some unpublished data collected by the writer and his wife at Teotihuacan and El Corral, a deposit at San Miguel Amantla in Azcapotzalco, a district where there is an enormous representation of Teotihuacan artifacts. On the basis of this information it has been possible tentatively to arrange five stages, some of which have the fullness of definition of a period, while others represent intervals in the development of technical processes.

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[4] Noguera, 1935a; Vaillant and Vaillant, 1935.
[5] Nuttall, 1926.
[6] Gamio, 1922; Seler, 1915; Tozzer, 1921; Linné, 1934.
[7] Gamio, 1913, 1924; Boas and Tozzer, 1915.
[8] Noguera, 1935a.

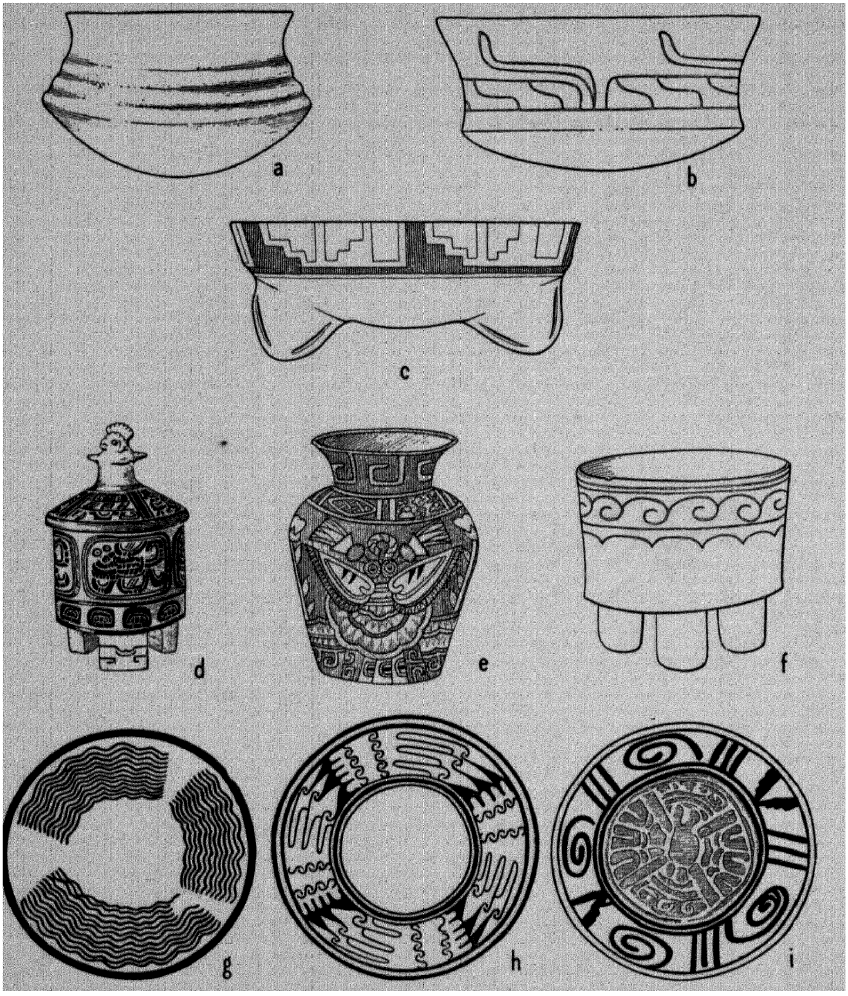


FIG. 3. Pottery styles from early archaeological periods in the Valley of Mexico. a, Intermediate El Arbolillo I, black ware bowl, Early Copilco-Zacatenco period; b, Etched black ware, Late Copilco-Zacatenco period; c, Trichrome bowl, Cuicuilco-Ticoman period; d, Carved vase, Teotihuacan II–III period; e, Fresco decorated vase, Teotihuacan II–III period; f, Etched red ware vase, Teotihuacan V period; g, Red-on-yellow wavy line bowl, Mazapan culture; h, Red-on-cream bowl, Coyotlatelco culture; i, Black-on-orange with relief decoration on floor, Aztec I period.

Teotihuacan I. This stage has been carefully published by Noguera.[9] It involves the material found embedded in the adobes from which the Pyramid of the Sun is

[9] Noguera, 1935a.

constructed. The Vaillants found the same types in the fill of the Pyramid of the Moon and in the hearting of the walls of Group 5', a precinct west of that monument. No buildings nor undisturbed refuse beds of this time phase have been found *in situ*, since the remains of this stage have been incorporated in later buildings.

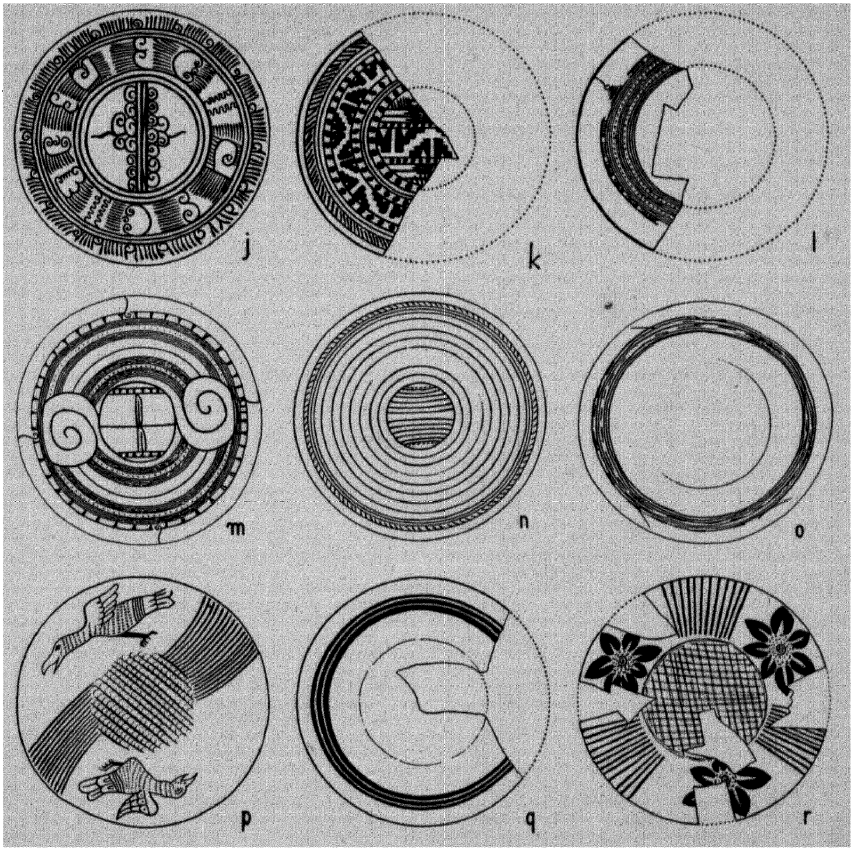


FIG. 4. Pottery styles from late archaeological periods in the Valley of Mexico. j, Black-on-orange IIa bowl, Early Aztec II period; k, Black-on-orange IIb, Late Aztec II period; l, Black-on-orange IIc, Late Aztec II period; m, Black-on-orange IIIa, Early Aztec III period; n, Black-on-orange IIId, Early Aztec III period; o, Black-on-orange IIIb, Late Aztec III period; p, Black-on-orange IV, naturalistic, Aztec IV period; q, Black-on-orange IV, conventionalized, Nonoalco style, Aztec IV period; r, Black-on-orange IV, naturalistic, Aztec IV period.

Mr Noguera's work disclosed a culture on the same developmental plane as Cuicuilco-Ticoman, which on technical and stylistic evidence was composed of elements common to the "Tarascan" cultures of western Mexico, to the Cuicuilco-Ticoman culture, to indigenous elements found in the developed Teotihuacan culture, and to intrusive traits from undefined sources. The western Mexican influence

is reinforced by the presence of many shells from the Pacific, as well as by the use of negative painting and figurine types suggesting that source. While to the writer, there is still the possibility that the western Mexico culture may have been influenced by an earlier Cuicuilco-Ticoman effusion, nonetheless, Mr Noguera's belief that a west Mexican complex is present in Early Teotihuacan, is amply supported by the evidence (figure 1, g–h).

Teotihuacan II. The work of the Mexican archaeologists has shown two major architectural periods at Teotihuacan.[10] The earlier period includes such notable buildings as the original structures of the Moon, the Sun, the Temple of Agriculture, the earlier phases of the superimposed buildings, and the Temple of Quetzalcoatl. There is an able use of dressed stone in the so-called Temple of Quetzalcoatl and well-executed frescoes in the Temple of Agriculture attest to skill in that art. Associated with this early architectural period are found figurines of the hand-made slit-eye type, the fully developed corpus of Teotihuacan wares including the vases carved with ceremonial designs in champlevé.[11]

The El Corral data of the Vaillants show this period to be the earlier of two found at that site. There are such minor differences between the two sites as a much stronger representation of carved and thin orange wares at Teotihuacan, while hemispherical vases set on low annular bases, which are virtually absent at Teotihuacan, are common at El Corral. The data from other areas like Morelos and Puebla suggest that the widest distribution of Teotihuacan culture occurred in this period[12] (figures 1, i; 3, d, e).

Teotihuacan III. This period seems to be directly associable with the second major building period at Teotihuacan, represented by additions to the big pyramids, the second layer of superimposed buildings, and the big precinct called the Ciudadela.[13] The masonry of all the buildings seems less massive than in the first architectural period. The Vaillants' stratigraphical data gave the impression of a falling off in the quality of ceramic technique, a situation that might be due to features of erosion and exposure. The figurine types collected from these later levels produce mold-made styles among which predominated the simple form called the "portrait" type and less commonly a style with elaborate dressing of the hair (figure 1, j, k).

The "portrait" type of figurine is rare, almost to the point of absence, in El Corral and in purchase collections from the Azcapotzalco district. Moreover, in this western region, architectural data are lacking for direct comparison with Teotihuacan, since the mounds are almost entirely ploughed under.

Teotihuacan IV. This stage in the evolution of Teotihuacan culture is based on the most imprecise archaeological data and may be only an interval in the develop-

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[10] Gamio, 1922. [11] Linné, 1934; Vaillant and Vaillant, 1935.

[12] Noguera, 1937b; Linné, 1934.

[13] Gamio, 1922; Linné, 1934. Linné's Uurial sequence at Xolalpan suggests that his site was occupied in Teotihuacan II and III, if not later. The mortuary vessels were not numerous enough to compare with Vaillants' stratigraphical statistics.

ment of Teotihuacan figurine technique. At Calpulalpan, in the state of Tlaxcala, seventy-five percent of the figurines picked up in the fields were of this type, which is also more common to the settlements adjacent to the archaeological zone of Teotihuacan than to the ceremonial site itself. There are no data on the associated pottery types (figure 1, k).[14]

Teotihuacan V. This time level is discernible and definable as the later layer in El Corral. Figurine types involve several highly ornate mold-made styles; the pottery tends to shift in color from black to brown; and incision after firing tends to supplant carving. Complex urns tend to be more common at this time, but some of the older styles persist. There is the possibility at El Corral that the Teotihuacan V period succeeded the Teotihuacan II without intermediate stages, the technical transitions, presumably having taken place elsewhere[15] (figures 1, l; 3, f).

This Teotihuacan V figurine stage is not represented near the big buildings of the archaeological zone of Teotihuacan. It is also relatively rare in the buildings off the zone, being less common than the types of Teotihuacan IV. Examination of early books with pictures of specimens found at Teotihuacan, as far back as the 1820's, confirms this rarity of Type V, so that the possibility of the pre-selection of ornate types by early surface hunters is ruled out. It would seem as if the zone of Teotihuacan were abandoned at the end of Teotihuacan III or early IV, with the population residing in the neighborhood. By early V times this population had left the vicinity of Teotihuacan, but there developed an elaboration of the Teotihuacan culture at Azcapotzalco expressed in the prevalence of Teotihuacan V types.

Xolalpan, the site excavated and published by Linné,[16] produced little internal stratigraphical data and Tozzer was prevented, by circumstances beyond his control, from analyzing Coyotlatelco collections.[17] Cross-dating with other cultures leads us to Oaxaca through trade sherds of Oaxacan grayware which occurs in all periods, and also through frescoes at a presumably late Teotihuacan building, the Casa de Barrios, showing symbolism of the Oaxacan Zapotec culture.[18] Linné found a few trade sherds of Peten Maya type corresponding to the Uaxactun II-Holmul II–IV tradition, and Holmul II–IV also produced vases reflecting shapes in vogue at Teotihuacan. A carved animal tooth found at Teotihuacan has its counterparts in Holmul II–IV,[19] while the Teotihuacan V incensarios may have had their origin in the mortuary urns of Monte Alban. More precise cross-dating is not to be obtained, since most of the connections cannot be fitted to exact periods within the Teotihuacan sequence. In short, despite the great amount of work on the Teotihuacan culture, it still remains the

[14] Linné, 1936. [15] Seler, 1915, Tozzer, 1921.

[16] Linné, 1934. His grave and building sequences are not readily comparable to stratigraphical periods, cf., footnote 13 above.

[17] Tozzer, 1921. [18] Caso, 1936. [19] Merwin and Vaillant, 1932; Linné, 1934, 1936.

weakest period, chronologically, in the archaeology of the Valley. The excavated sites of the Teotihuacan culture conspicuously lack the deep refuse heaps suitable for this type of analysis.

IV. THE CHICHIMEC PERIOD

This phase of Mexican culture history is expressed by the presence of various ceramic families, which can be shown by stratigraphic method to lie above Teotihuacan remains or below those of Aztec date, or which can be tied in through trade wares to material so defined by stratigraphical method. Some of these families we shall list and describe briefly below. In most cases architectural remains have not been found.

A. *Mazapan.* Linné gives the fullest description of the pottery, which was first defined by the Vaillants.[20] This ceramic family is composed of several main wares: red-on-yellow wavy line, red-on-yellow thick line, red-on-yellow tripod, orange, white and orange-on-white matt lacquer wares. Figurines are mold-made and seem to represent gods in the Aztec tradition. The Mazapan wares suggest diverse regional origins and might represent a tribal affiliation between groups which have separate ceramic traditions. There is no trace of Teotihuacan origin. Linné and the Vaillants found it to overlay Teotihuacan wares in Teotihuacan. The Vaillants found it beneath Aztec wares at Chiconauhtla. It tends to occur in the northern half of the Valley of Mexico, but sherds have been found near Chapultepec, and in the Tlaltelolco district of Mexico City. Accompanying this pottery are such trade wares as plumbate and the Vera Cruz ware, fine orange, both of which also occur as trade wares during the Mexican occupation of Chichen Itza[21] (figures 2, m–p; 3, g).

At Tula, Hidalgo, the Vaillants found a huge refuse heap with matt lacquer types of Mazapan predominating. Since the sculptures and serpent columns at Tula suggest neither Teotihuacan nor Aztec, they may perhaps be referable to the Mazapan period.[22]

B. *Coyotlatelco.* This important red-on-cream type was described by Tozzer and Boas and named for the site in Azcapotzalco where it was discovered.[23] Figurines are mold-made, but not conspicuously defined in a symbolic sense. Coyotlatelco was originally thought to be a Teotihuacan ware. Noguera found it mixed with Aztec II pottery in refuse beds near Tenayuca.[24] The Vaillants observed no trace of Coyotlatelco pottery in either of their Teotihuacan II or V levels at El Corral, so that they concluded that this ware was subsequent to Teotihuacan. A refuse bed which they were not permitted to examine produced apparently pure Coyotlatelco pottery, strongly indicating that this ware was made before the manufacture of Aztec II pottery. Surface collections at El Arbolillo, Cerro de la Estrella, El Bosque del Contadero, and at Papalotla near Texcoco, suggest by the presence of sherds of

[20] Linné, 1934; Vaillant, 1932c. [21] Vaillant, 1936. [22] Charnay, 1888.
[23] Boas, 1911-1912, Plate 57; Tozzer, 1921. [24] Noguera, 1935b.

both families a partial contemporaneity with the Mazapan culture (figures 2, q–r; 3, h).

There is a suggestion as to the development of this ware. In the lowest Tenayuca levels are simple red-on-yellow pottery wares which Noguera attributes to the Cuicuilco-Ticoman horizon.[25] The writer believes that this view is incorrect in view of an unpublished collection from Gruta de Binola near Tula, which produced vessels midway between the sophistication of full Coyotlatelco and the simple forms of early Tenayuca. Coyotlatelco, like Mazapan, shows little trace of a Teotihuacan origin save through a carving technique found in this Gruta de Binola collection.

A very important factor in the interpretation of Coyotlatelco ceramics is the superimposed buildings at Tenayuca, where a temple excavated by the Mexican Government archaeologists disclosed that a platform and temple had been added to no less than five times through tearing down the temple, building a larger platform, and constructing a new temple on top. A sixth addition, in the form of a buttress, may be part of the fifth renovation. It is important that the first two structures have nearly straight sides, the fourth, fifth, and sixth the sloping walls and ornaments of Aztec times, while the third exhibits transitional features.[26]

C. *Aztec I.* This important ceramic type was excavated by Miss Castañeda from the lowest levels of a lacustrine refuse heap at Culhuacan. It was published by Professor Boas and described by Doctor Gamio and Miss Brenner.[27] The chief ware is orange in color and decorated in black with realistic designs. An accompanying style is composed of flat-bottomed plates supported by cylindrical legs and decorated in maroon. Trade sherds attest the contemporaneity of this ware with Mazapan and Coyotlatelco; in decoration and shape this family shows affiliation with wares occurring in the third period at Cholula, which in turn ties in with orange wares imported to Chichen Itza during the Mexican period.[28] Aztec I is principally found here at Culhuacan and its distribution elsewhere is scarce according to our present data. A tiny collection from the Tlaltelolco district of Mexico City and one from Azcapotzalco cover the additional sites on which the writer has information (figure 3, i).

D. *Cholula, Altar de los Craneos Period* (*Period III*). As for so much of our stratigraphical knowledge of Mexican archaeology, we are again indebted to Noguera for his study of the ceramics of Cholula. The orange and bichrome wares of this period show affiliations both with Aztec I and with the thick line wares of Mazapan.[29] Additional eastward connections of this culture lead to the Cerro Montoso material of Strebel and the Isla de Sacrificios collection in the British Museum.[30]

E. *Tenenepango.* This site, excavated by Charnay, produces vessels in plaster cloisonné as well as of the orange-on-white matt lacquer type of Mazapan.[31] Plumbate ware and Mazapan tripod thick line red-on-yellow bind these wares into the Chichimec period. Since pottery cloisonné decoration is not found at Teotihuacan, the time of manufacture of this technique seems established.

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[25] Noguera, 1935b. [26] Marquina, 1935; Noguera, 1935b.
[27] Boas, 1911–1912, Pls. 1–10; Gamio, 1921; Brenner, 1931. [28] Noguera, 1937a, b.
[29] Noguera, 1937a. [30] Nuttall, 1910; Strebel, 1885–1889.
[31] Charnay, 1888; Lumholtz, 1902.

F. *Cholula Wares.* This variety of intense polychromy in decoration is abundantly distributed throughout the Puebla area, Tlaxcala, and the Chalco district of the Valley of Mexico. Mr Noguera's studies disclose two periods, the earlier of which overlaps the Altar de los Craneos period at Cholula. From the Vaillants' data, the ware does reach the Valley tribes until the Aztec II period and then appears as trade ware with a gradual increase in later periods. Mr Noguera distinguishes several local types.[32]

G. *Gualupita III.* The styles found in this, the latest period at Gualupita, are likewise associated with the pyramid of Teopanzalco, architecturally close to the early stages of the pyramid at Tenayuca. There is an intense use of polychrome in decoration. One of the styles made during this period occurs in collections from the Matlatzinca territory of the Valley of Toluca. There are few traces of Aztec ceramic influence *per se*, although there may be partial contemporaneity.[33]

H. *Matlatzinca.* This rich and varied ceramic family seems to have an independent origin. Through the Gualupita III polychrome style it seems to have contemporaneity with the Morelos group. Matlatzinca archaeology shows traces of Aztec influence at a late date, so that it may well have been at some time contemporaneous with the other cultures of this Chichimec group.[34]

Summary. The presence of so many contemporaneous ceramic groups within a small area, following an era of relative cultural unity, like the Teotihuacan Period, must be indicative of considerable immigration of tribal units and the infiltration of various cultural elements. The contrasts between the ceramic families seem too violent to suggest local variations of a single broad cultural unit.

V. AZTEC PERIOD

The Aztec culture has been described by a multitude of contemporaneous observers, both Indian and European, and a great number of later writers have interpreted and studied it as well. Until recent years, however, the sociological and religious sides of Aztec civilization have been more strongly stressed then the archaeological. Doctor Gamio's and Miss Castañeda's stratigraphical studies established a firm foundation for later work in the field of archaeology of this epoch.[35] Paramount among the works on Aztec archaeology is the report of the Mexican Government archaeologists on Tenayuca, where history, theology, architecture, and ceramics have been correlated to make a verified picture of Aztec and pre-Aztec culture.[36] The work of the Vaillants at Chiconauhtla and Nonoalco[37] and Mr Robert Weitlaner at Tlaltelolco has also contributed to a very closely worked out

[32] Noguera, 1932, 1937b; Spinden, 1928. [33] Vaillant and Vaillant, 1935.
[34] Payon, 1936. [35] Gamio, 1913; Boas, 1912; Brenner, 1931.
[36] Tenayuca, 1935. [37] Vaillant, 1937.

ceramic stylistic sequence which has its value in making the chronology of the Aztec period more precise.

Aztec I. This period, described in the previous section as contemporaneous with the Chichimec era, was defined by Miss Castañeda at Culhuacan and described by Doctor Gamio (figure 3, i).

Aztec II. This phase was first established by Miss Castañeda at Culhuacan and described by Doctor Gamio.[38] Mr Noguera, at Tenayuca, further defined this horizon in which, according to the refuse beds at this site, Coyotlatelco pottery was mixed.[39] In distinction to the decoration of the preceding epoch, there was used a conventionalized running pattern resembling the line work used in the cursive writing of various old world cultures.

At Chiconauhtla the Vaillants found Aztec II in a pure state, without a Coyotlatelco mixture. There were two main decorative wares: a black-on-orange and a trichrome involving black and white designs on a red field and a black-on-red ware. The Aztec II black-on-orange was discovered to be divisible into three sub-types, *a*, *b*, and *c*, of which type *a* was found alone in the lowest layers of several stratigraphical cuts, but associated with *b* and *c* in strata overlying these earlier lenses. Material from this later phase appeared in a deposit under a floor, where in many cases it was possible to reconstruct whole, or nearly whole, vessels from some of the fragments. There seemed a strong possibility that this deposit represents a simultaneous destruction of a number of vessels (figure 4, j–l).

The Chiconauhtla data gave good ground for dividing Aztec II into two intervals, early II and late II.[40] The black-on-orange IIa style represented a complete aesthetic change from Azetc I. The styles of the succeeding interval represent transitions to the next period, Aztec III. Therefore, in view of special conditions at the Chiconauhtla site, we were able to discern intervals not apparent elsewhere. It has seemed wise, therefore, to describe the two Chiconauhtla phases as early II and late II, thus preserving the original type designation, since the style is very widely distributed. The figurines for the period cannot be differentiated thus subtly (figure 2, s–t).

Aztec III. This period was defined as the top layer of the Culhuacan sequence established by Miss Castañeda and described by Gamio and Miss Brenner.[41] It is characterized by conventionalization of the standard black-on-orange vessels and by elaboration of the decorative techniques of the black and white ornamentation of red wares. The Chiconauhtla data produced evidence that this period could, in turn, be subdivided. Two lines of evidence converged to show this point. In stratigraphical cuts and in the fill of reconstructed rooms the black-on-orange III showed an early stage whereby the outer decorative border of the vessels was conventionalized and simplified (figure 4, m–n). The later stage produced vessels, the decorative border

[38] Boas, 1911–1912, Pls. 11–24, 1912; Gamio, 1921; Brenner, 1913. [39] Noguera, 1935.
[40] Cf. Boas, 1911–1912, Pls. 11, 14, for IIa with Figure 4, k and l for IIb and c respectively.
[41] Boas, 1911–1912, Pls. 25–31, 1912; Gamio, 1921; Brenner, 1931; Noguera, 1935.

of which had been abandoned (figure 4, o). In the early III strata an especially ornate type of trichrome ware was in vogue, only to be abandoned in the later period. The figurine types change into highly formalized types representative of gods in the Aztec pantheon (figure 2, u–x). At several points in the Chiconauhtla palace deposits were found where numbers of vessels had been simultaneously destroyed. Some of these dumps produced early III pottery and others late III, but the location of the dumps confirmed the succession of the types according to stratigraphical analysis.[42]

The Vaillants' excavation at Los Melones likewise indicated the practice of destroying quantities of vessels. Here a shallow ditch was filled with early III sherds, many of which could be fitted together and most of which seemed to emanate from relatively unused vessels. Mr Noguera, digging on the site of the Volador market in Mexico City, also found a cache with hundreds of bowls in the early III style.

That the practice of destroying great masses of pottery was not confined especially to early III styles is to be seen in the late III period at Chiconauhtla and in the Vaillants' digging along the high tension line in the Nonoalco district of Mexico City. Here an ancient ditch was traced out wherein quantities of late III vessels had been thrown. Overlying this ditch stretched strata of later types to be described in the next section.[43]

Aztec IV. This period was first recognized by Mr Robert Weitlaner and described by Noguera.[44] The term was used rather to describe a style than to distinguish a period, although the chronological position of the decorative technique was implicit. Bowls in Aztec black-on-orange had been found which had naturalistic decorations representing plants and animals (figure 4, p, r). Mr Weitlaner had recovered some fragments from Tlaltelolco which showed such indubitable evidence of Spanish influence as the representation of the Austrian double eagle and coats of arms.

The upper layer of the Vaillants' digging at Nonoalco produced many more fragments of this naturalistic style than did the canal.[45] Accompanying these naturalistic black-on-orange forms were bowls with three or four solid black bands (figure 4, q). These styles must have been those in use at the time of the Spanish Conquest. A third method of decoration involving two contrasting fields of black and orange decoration[46] seems to overlap the later period of III and be associated with this type IV.[47]

[42] Cf. Boas 1911–1912, Pl. 25, for black-on-orange IIIa of early Period III, and Figure 4, o, for black-on-orange IIIb of late Period III. [43] Vaillant, 1936, 1937.

[44] Noguera, 1932, 1935, Pl. 58; Boas, 1911–1912, Pl. 65. [45] Vaillant, 1936, 1937.

[46] Cf. Boas, 1911–1912, Pls. 30 and 68 give examples.

[47] Conditions at different sites warrant different methods of classification. Noguera, 1935, did not have the advantage of cyclical dumps as did the writer; consequently, his description is based more on pure design and less on the ultra refinements of chronological stratigraphy. N's (Noguera's) cajetes sub-types I and III equal V's (Vaillants') bowls Type B; N's cajetes sub-types II and IV equal V's bowls Type C; N's dishes sub-types I, II, III, IIIa equal V's

VI. CONCLUSIONS ON THE CERAMIC EVIDENCE

The foregoing pages have listed the various sources for the establishment of a detailed time sequence in the Valley of Mexico. There are several types of evidence, suggestive of culture sequence, of the presence of tribal entities, and of the shifting patterns of decorative style indicative of the lapse of time. The succession rests on those ceramic and figurine styles which have shown themselves most susceptible to change and variation. For the purposes of this paper, architecture and other aspects of the material culture have not been stressed.

Before making a direct comparison between the stratigraphical evidence and the written histories, there are two preliminary steps to be taken: first, the identification of the pottery with tribal groups; second, the determination of elements of elapsed time in the ceramic levels insofar as that is practical. In identifying the makers of the ceramic types we are vastly aided by having the stratigraphical sequence anchored to the period of Colonial history by means of those Aztec IV vessels with naturalistic decoration which bear traces of European influence in draughtsmanship. In other wares there are direct transitions from Aztec to Colonial times.[48] Furthermore, the predominant ware at sites known to have been occupied at the time of the Conquest falls within the Aztec group.

The native histories describe, prior to the formation of the great centers of Tenochtitlan and Texcoco, a period of immigration and fighting between various independent tribal units. In some records, notably those of the Aztec of Tenochtitlan, a body of people split up into groups which have the same names as the tribal units of later times. In other records, notably those emanating from Texcocan sources, a sequence of migrant tribes, as well as the rivalry between various centers, is described. The following tables disclose a suggested correlation between ceramic types and the tribal groups mentioned in Tenochca sources and the sequence of tribes in other annals. It does not seem to be stretching the data too far to see a harmony between the great variety of contemporaneous ceramic families before the Aztec period and the numerous independent tribal entities previous to the formation of the great dynasties of Tenochtitlan and Texcoco.[49] (See Table 1.)

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b-on-o IIa; N's dishes sub-types Ia, IV equal V's b-on-o IIb; N's dishes sub-type V equal V's b-on-o IIIa; N's black-on-red (Pl. 15) and black, white-on-red, fall in V's Aztec II colored wares; N's black, white-on-red (Pl. 31) equal V's Aztec III colored wares; N's Group VI falls into V's period IV.

[48] Noguera, 1934.

[49] Vaillant and Vaillant, 1934, pp. 121–24. The tables given here are abridged from those in the citation.

TABLE 1. TENTATIVE CORRELATION BETWEEN MIGRANT TRIBES AND CERAMIC GROUPS ACCORDING TO VARIOUS SOURCES
(After Vaillant and Vaillant, 1935)

	Histoire Mexicaine	Codex of 1590	Codex of 1576	Historia de los Mexicanos	Codex Ramirez	Codex Boturini	Duran	Sahagun	Codex Telleriano	Codex Vaticanus	Clavigero	Motolinia	Muñoz Comargo	Mendieta	Suggested Ceramic Correlations
Aztec	×	×	×	×	×	×	×	×	—	—	×	×		×	Aztec II–IV
Xochimilca	×	×	×	×	×	×	×	—	—	—	×	—			?
Tepaneca	×	×	×	×	×	×	×	×	—	—	×	—	×		Coyotlatelco
Acolhua*	—	×	—	×	—	—	—	×	—	—	—	×	×		Mazapan
Culhua	—	—	—	×	×	—	×	—	—	—	×	—	×		Aztec I–IV
Cuitlahuaca	×	×	×	—	—	×	—	—	—	—	—	—	—		?
Chalca	×	—	×	×	×	×	×	×	—	—	×	—	×		Cholula Wares†
Tlahuica	—	—	—	—	×	—	×	—	—	—	×	—	—		Gualupita III
Tlaxcalteca	—	—	—	×	×	—	×	×	—	—	×	×	—		Cholula Wares
Cholulteca	—	×	—	—	—	—	—	—	—	—	—	—	—		Cholula Wares
Huexotzinca	×	×	×	×	—	×	—	×	—	—	—	—	—		Cholula Wares
Matlatzinca	×	—	×	—	—	×	—	—	—	—	—	—	—		Matlatzinca
Malinalca	×	—	×	—	—	×	—	—	—	—	—	—	—		Matlatzinca
Quauhquechollan-Xelhua	—	—	—	—	—	—	—	—	—	—	×	—	×		?
Chichimeca*	×	—	×	—	—	×	—	—	×	×	—	×	—		Mazapan
Nonoalca	—	—	—	—	—	—	—	—	×	×	—	—	—		?
Michoaca	—	—	—	—	—	—	—	—	×	×	—	×	—		Tarascan (?) Wares
Couixca	—	—	—	—	—	—	—	—	×	×	—	—	—		?
Totonaca	—	—	—	—	—	—	—	—	×	×	—	—	—		Cerro Montoso (?)
Cuexteca	—	—	—	—	—	—	—	—	×	×	—	—	—		Huaxtec (?)
Olmeca-Xicalanca	—	—	—	—	—	—	—	—	×	×	—	×	×	×	Papaloapan (?)
Mixteca	—	—	—	—	—	—	—	—	—	—	—	×	—	×	Monte Alban V
Otomi	—	—	—	—	—	—	—	—	—	—	—	×	—	×	?

* Acolhua and Chichimeca seem to be used synonymously, but the two terms never both appear on the same list.

† Chalcan wares differ in surface from pure Cholula varieties.

The population of the Valley prior to the Chichimec period is described in the Texcocan and other sequential annals as Toltec and as composed of highly civilized people.[50] The conditions described in the chronicles as characterizing the Toltecs seem amply borne out qualitatively by the advanced state of the Teotihuacan culture, which stratigraphically precedes the cultures of the Chichimec period.

[50] Notably Ixtlilxochitl, 1891–1892.

Prior to the Toltecs there is mention of Olmecs, Quinames, described as giants, and Maceguales (common people) who were said to have been created by the gods. To try to identify the ceramic types made by these peoples would be a highly dubious procedure. A very tentative case might be made out for the Olmecs, on this early horizon, as having been the

TABLE 2. SEQUENCE OF PEOPLES IN THE VALLEY OF MEXICO ACCORDING TO VARIOUS SOURCES
(After Vaillant and Vaillant, 1935)

	Historia de los Mexicanos	Ixtlilxochitl, 1891	Ixtlilxochitl, 1892	Veytia	Duran	Muñoz Camargo	Clavigero	Sahagun	de Jonghe	Mapa Tlotzin	Mapa Quinatzin	Codex Xolotl	Motolinia	Origen de los Mexicanos
Maceguales (made by Gods)	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Quinames (Giants)	2	1	1	1	1	—	—	—	—	—	—	—	—	—
Tarasco	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Olmec-Xicalanga	—	2	2	3	—	2	—	—	—	—	—	—	—	—
Zacateca (Zapoteca)	—	—	—	—	—	2	—	—	—	—	—	—	—	—
Toltec	4	3	3	4	—	—	1	1	—	—	—	—	—	—
Nomad Chichimec	3	4	4	2	—	—	2	—	1	1	1	1	1	1
Chichimec	—	—	—	5	2	3	—	2	—	—	—	—	—	—
Teo-Chichimec	—	—	—	—	—	4	—	2	—	—	—	—	—	—
Otomi	—	—	5	6	—	—	—	2	2	—	—	—	—	—
Chalco-Toltec	—	—	—	—	—	—	—	—	—	2	—	—	—	—
Tlailtoque	—	5	—	—	—	—	—	—	—	—	2	2	—	—
Chimalpanec	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acolhua	—	—	—	6	—	3	3	—	(4)	3	—	—	—	—
Seven tribes	—	—	5	—	3	—	—	3	3	—	—	—	2	2
Tepanec	—	6	5	6	—	—	—	—	—	—	3	—	—	—
Culhua	5	6	—	—	—	—	—	—	—	—	3	—	—	—
Aztec	—	6	6	7	4	—	—	—	—	—	3	3	3	3
Huitznahua	—	6	—	—	—	—	—	—	—	—	3	—	—	—

makers of the Cuicuilco-Ticoman culture, since their early presence in the Valley, Puebla, Tlaxcala, and Vera Cruz would not fit badly with distribution of Cuicuilco-Ticoman figurine types. Sahagun, however, in describing conditions immediately before the Conquest, places the Olmecs in southern Vera Cruz and lauds their civilization. This contradition might be explicable by a claim that the Olmecs developed their culture through the centuries and that Sahagun comments on their status prior to the Conquest.

The safer course would be to take this statement as indicative of the unreliability of tradition and thereby abandon the attempt to correlate tribe and culture, in this instance. (See Tables 1 and 2.)

Another check on this identification of the makers of pottery types is to examine the possibilities of time indications within the ceramic groups. Here we have a very striking possibility in the presence of simultaneously destroyed groups of vessels, as opposed to the more usual gradual accumulations in refuse heaps. These simultaneous deposits are confined to the Aztec period. The early writers describe in great detail the ceremonies attendant to the completion of one 52-year cycle and the beginning of another.[51] One such rite involved the destruction of old household furniture and equipment in order to make new utensils when the next cycle began. A second ceremonial observance, after kindling the new fire, was to embellish their temples.

Now these dumps bear none of the elements of casual refuse, nor of destruction in warfare, since charred beams and the like are conspicuously absent. Consequently, it is tempting to try to tie them in with cyclical observances. The last ceremony before the Conquest fell in 1507, and our latest dumps are those of late Aztec III. If the pottery of Aztec IV, found in the upper layer at Nonoalco may be interpreted as that made at the time of the Spanish Conquest in 1519–20, then the deposits of late Period III vessels in the Nonoalco canal and the latest rooms at Chiconauhtla should represent the ceremonial destruction of 1507. Following this hypothesis farther, the early Period III dumps at Chiconauhtla, the Volador in Mexico City, and the one near the Los Melones group at Texcoco should have been laid down in 1455. A final interpretation would be to place the late Period II deposit at Chiconauhtla as of the cyclical ceremony of 1403. Our archaeological evidence for cyclical dumping does not extend back of this date, although literary records for New Fire ceremonies go back to 1143.[52] On the other hand, the shift in styles during Aztec II might indicate a century's duration for that decorative vogue, so that Aztec II might have begun in 1299 A.D.

At Tenayuca, Mr Marquina invoked the idea of cyclical renovation to explain the successive building stages in the structure excavated by the Mexican Government.[53] The site was occupied at the time of the Conquest

[51] Thompson, 1933, p. 198 seq.

Bancroft (1883, Vol. 3, pp. 293–96) cites several early authorities and gives a description.

[52] Anales de Cuauhtitlan mention a binding of years at that date, and the Relacion and the Origen report the Tenochca cyclical ceremonies as beginning at that time.

[53] Marquina, 1935, p. 101, pp. 77–102.

and the original building was reconstructed five times, with the possibility that some added buttresses represent a sixth addition. Applying the cyclical hypothesis, the latest reconstruction would be 1507, preceded by those of 1455, 1403, 1351, and 1299, with the original building constructed anterior to that date. If the buttresses be counted, the first reconstruction would fall in 1247, with the original building some years anterior. It will be recalled that the original temple and its first reconstruction were in one style of architecture; the second reconstruction represented a transition to the full Aztec style of building periods 4 to 6. Allowing this reconstruction, the later Tenayuca architectural period occupies the span of the ceramic periods of early and late III and IV. The transitional period at Tenayuca would correspond to the postulated introduction of the late II ceramic styles which bridge the gap between the distinctive painting of early II and the conventionalism of period III. Thus, hypothetically, the Tenayuca temple and the widely distributed Aztec II, III, IV coincide closely with the construction of the first temple preceding the introduction of the Aztec II ceramic style which we postulate at 1300.[54]

The Aztec I pottery types, according to our present data, do not seem to be widely distributed in the Valley. Aztec I, however, by virtue of Mazapan trade sherds, may be associated with the Chichimec period in which so many independent ceramic families existed. The best lead for placing this era in time is through the presence of plumbate and fine orange pottery as articles of trade which are not found in the later Aztec horizons, so far as the writer knows. Both of these wares are common in refuse of the Mexican period at Chichen Itza. This occupation, according to the traditional histories of Yucatan, seems to have taken place between 1190 and 1450. Therefore, the span of this ware extends in time far enough back to take in the period of independence in the Valley. The base date for the introduction of this ware is not far removed from the traditional dates for the coming of the Chichimecs and the downfall of the Toltecs, which seem to center around the tenth and eleventh centuries, according to most authorities.[55]

The internal evidence for the duration of the Teotihuacan culture does not have the precision of the subsequent stages. Linné's discovery of Peten Maya sherds of the Uaxactun II–Holmul II–IV does not give a precise cross-check. The ceramic chronology of the Maya is as subject to wide

[54] According to the Codex Telleriano-Remensis, the major reconstruction of the great Temple in Tenochtitlan was begun by Tizoc in 1484 and finished by Ahuitzotl in 1487, dates some years distant from the cyclical ceremony of 1455. Such untoward facts show that hypotheses should be definitely regarded as relative rather than absolute in their implications.

[55] Joyce, 1920, Appendix III.

TABLE 3. ARCHAEOLOGICAL CERAMIC SEQUENCE IN THE VALLEY OF MEXICO AND ADJACENT AREAS

(According to the data of Noguera, Marquina, Gamio, and Vaillant)

VI Post Conquest Period				
V 1299?–1507, Aztec Period				
Aztec IV (1507–1519) Late Aztec III (1455–1507) Early Aztec III (1403–1455) Late Aztec II (1351?–1403) Early Aztec II (1299?–1351?)	Culhuacan III Culhuacan II	Tenayuca III Tenayuca II Coyotlatelco (?)	Ten. Temple VI Ten. Temple V Ten. Temple IV Ten. Temple III Ten. Temple II	Late Cholula IV Early Cholula IV Cholula, Tlaxcala Chalco, Huexotcingo
IV 1100–1300, Chichimec Period				
Aztec I Gualupita III—Matlatzinca Mazapan	Culhuacan I Tenenepango	Coyotlatelco Gruta de Binola Tenayuca I	Ten. Temple I	Cholula III (Altar de Craneos)
III 600?–1100?, Toltec Period				
	V El Corral II IV? Calpulalpan III Persistence of El Corral I II El Corral I	Teotihuacan IV (off the zone) Teotihuacan III Teotihuacan II		Cholula II
II 400?–600?, Ticoman Cuicuilco Period				
Gualupita II	Cuicuilco III Cuicuilco II Cuicuilco I	Teotihuacan I	Late Ticoman Intermediate Ticoman Early Ticoman-Late Zacatenco	
100 B.C.(?)–400 A.D.? Copilco-Zacatenco Period				
Gualupita I	El Arbolillo II El Arb. Transitional Late El Arbolillo I Intermediate El Arb. I Early El Arbolillo I	Copilco	Middle Zacatenco Transitional Zacatenco Early Zacatenco	Cholula I

fluctuation in chronological estimate as is the interpretation of the calendar. Nonetheless, Teotihuacan vase forms in the Maya area balanced against Peten sherds in Teotihuacan and the presence of identically carved animal teeth in both localities argue for contemporaneity at some point.[56]

The early cultures of Ticoman-Cuicuilco and Copilco-Zacatenco are equally difficult to place in absolute time. There is considerable evidence that Ticoman-Cuicuilco and Teotihuacan overlap in early stages of the latter, but the duration of Cuicuilco-Ticoman and Copilco Zacatenco is subject to sheer guess work. We do know that the deposits of Copilco-Zacatenco are about twice as deep as Cuicuilco-Ticoman, a condition conceivably indicative of greater age for the earlier culture. Purely from the point of view of a vague estimate, we compared their depths to those of Pecos, New Mexico, the deepest dated site known to the writer. The Pecos ratio worked out at 6.40 meters depth for six hundred years, giving a range of 200 years to the Ticoman layer at the Zacatenco site, and 400 years to the Copilco-Zacatenco occupation. Adding the greatest depths for each phase of each culture irrespective of site and calculating them according to the Pecos ratio, produce some 780 years for Copilco-Zacatenco and 300 years for Cuicuilco-Ticoman.[57] These estimates are offered as the merest of suggestions, and Table 3 sets off the archaeological sequence with such time estimates as are current in the literature.[58]

VII. HYPOTHESIS FOR VALIDATING HISTORICAL SOURCES

The core of the time question hinges on the dating of Teotihuacan. From lack of direct evidence through the material culture, any such calculations depend on the validity of the dates given for the Toltecs in the historical accounts. With the archaeology as guide, the writer re-examined many of the Mexican historical sources. There is relatively little discrepancy between the length of the reigns of the rulers of Tenochtitlan and those of Texcoco during the early sixteenth and the entire fifteenth century. The latter quarter of the fourteenth century can also be reasonably correlated.[59]

Prior to 1376, the Tenochca[60] did not keep a formalized account of the reigns of their rulers, but had a list of happenings to the tribe. There are considerable discrepancies in the annals for this era and it is difficult to harmonize the events. However, the record of the Texcocan chiefs is

[56] Merwin and Vaillant, 1932; Vaillant, 1935c; Thompson, 1935.

[57] Vaillant, 1935a, pp. 166–67, 257–58. [58] Vaillant, 1935a, p. 259.

[59] Orozco y Berra (1878) gives a most helpful analysis of the different schools of dating.

[60] To distinguish the Aztec culture from the political group often called by that name, the term Aztec is reserved for the culture, Tenochca for the tribal entity.

fairly clear, for the erudition of Veytia and Orozco y Berra has reconciled the accounts of Ixtlilxochitl with the Texcocan codices, the Mapa Tlotzin, the Mapa Quinatzin, and the Codex Xolotl.[61] As a countercheck to the Texcocan annals, we have the records contained in the Anales de Cuauhtitlan which give the events and reigns of the four dynasties in Culhuacan, Cuauhtitlan, Cuitlahuac, and Tenochtitlan.[62] The records in this account are confused owing to the Mexican calendar system which could only distinguish the years within a fifty-two year cycle. The scribe who transliterated the original sources into Nahuatl in Roman characters had a trick of repeating his year sequences. However, by listing the rulers of all four states, the account will balance.[63] Since the Culhuacan dynasty derived from a Toltec group in Tula, it is our best and only direct link to Toltecan times. As an additional check on the Anales de Culhuacan, there are two lists of Culhuacan rulers published by Garcia Icazbalceta, wherein the reigns are given, not in calendar years but according to length of each reign. While not absolutely identical to the Anales, the records agree very closely.[64] (See Table 4.)

A feature of all the accounts is the curious isolation of the various communities. The Anales de Culhuacan make scant mention of Texcoco until well into the fourteenth century, but occasional references to Culhuacan rulers in Texcocan annals give some lead as to the validity of the time estimates. The accounts of both communities mention something of the Tenochca, so that incompatible statements can be roughly checked, and one has

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[61] Orozco y Berra, 1880; Veytia, 1836.

[62] Anales de Cuauhtitlan: pages 7–34 seem to follow a consecutive story; pages 34–48 are in order running from 2 Reed 1195 to 7 House 1369; pages 49–55, 8 Rabbit 1360 to 12 Flint 1400; pages 55–68, 12 Flint 1348 to 1 Flint 1428; pages 68–84, 1 Flint 1428 to 1 Reed, 1519.

[63] *Relacion de Genealogia y Linage de los Señores que han señoreado este tierra de la Nueva España* and *Origen de los Mexicanos* (in Garcia Icazbalceta, *Nueva Coleccion de Documentos para la Historia de Mexico*, Vol. 3, "Relacion," pp. 263–81; "Origen," pp. 281–308.

[64] A typical example is the date for the founding of Tenochtitlan. Palacios (1925) gives a brilliant exposition, interpreting the dates to correlate at 2 Reed, 1325, utilizing data as to the ceremonial ideal of the calendar. However, examining the records from another point of view, it would seem that the major discrepancy arises from the recording of two sets of events: one the real founding of the town, in 1325, the year following One Flint, the date of the Tenochca War God, Huitzilopochtli, as is recorded in the Historia de los Mexicanos por sus Pinturas, the Codex Mendoza, the Anales of Chimalpahin, and the Codex of 1590; the other the building of stone houses around 1360 (i.e., becoming civilized) shortly antecedent to investiture of Acamapichtli, the founder of their chiefly line, as is recorded in the Anales de Cuauhtitlan, the Codex of 1576, the Mapa de Tepechpan, the Histoire Mexicaine, and possibly the Codex Vaticanus.

TABLE 4. RULERS IN CHICHIMEC AND AZTEC PERIODS

Culhuacan	*Cuauhtitlan*	*Cuitlahuac*	*Texcoco*	*Tenochtitlan*
Nauhyotl d. 1124 [60 years]*				
				1143 Mexican Cycle I
Cuauhtexpetlatzin 1124–1181 [11 years]	Teiztlacohuatzin 1160–1226		Xolotl 1115–1232	
Huetzin 1181–1202 [25 years]				
				1195 Mexican Cycle II
Nonoalcatl 1202–1223 [16 years]	Quinatzin 1226–1299			
Achitometl 1223–1237 [14 years]				
Cuauhtonal 1237–1251 [14 years]				
				1247 Mexican Cycle III
New Lineage Mazatzin 1251–1274 [23 years]			Nopaltzin 1232–1263	
Quetzaltzin 1274–1287 [14 years]		Coatomatzin 1282–1288	Tlotzin 1263–1298	Huitzilhuitl 1235–1298
				1299 Mexican Cycle IV
Chalchiuhtlatonac 1287–1304 [16 years]	Tezcaltecutli 1299–1338	Miahuatonaltzin 1290–1300		
Cuauhtlix 1304–1311 [9 years]		Axayaltzin 1300–1308		
				Tenoch?
Yohuallatonac 1311–1321 [10 years]		Atzatzamaltzin 1308–1324		
Tziuhtecatzin 1321–1334 [14 years]	Vactli 1339–1349	Totopeuhtecutli 1324–1343	Quinatzin 1298–1357	
Xihuitlemoc 1334–1352 [18 years]	Iztactototl 1348–1367	Epcoatzin 1343–1354		Queen Ilancueitl 1349–1383
				1351 Mexican Cycle V
Coxcox 1352–1376 [16 years]	Queen Ehualyenitzin 1368–1372	Quetzalmichin 1354–1365		
Acamapichtli 1376–1388 [12 years]	Tematzacocuitzin 1373–1378	Mamatzin 1369–1389	Techotlala 1357–1409	Acamapichtli 1375–1395
Achitometl 1388–1400 [12 years]	Tlacateotzin 1379–1389	Pichatzin 1389–1392		Huitzilhuitl II 1395–1414
				1403 Mexican Cycle VI

TABLE 4 (*Continued*)

Culhuacan	*Cuauhtitlan*	*Cuitlahuac*	*Texcoco*	*Tenochtitlan*
			Ixtlilxochitl 1409–1418	
			Tepanec Tyrants	
Nauhyotl 1400–1413	Xaltemoc 1390–1398 (1408)	Tepolozmayotl 1393–1415	Tezozomoc 1343–1427	Chimalpopoca 1414–1428
			Maxtla 1427–1429	Itzcoatl 1428–1440
			Texcocan Lineage resumed	Montezuma I 1440–1469
			Nezahualcoyotl 1428–1472	
				1455 Mexican Cycle VII
				Axayacatl 1469–1481
			Nezahualpilli 1472–1516	Tizoc 1481–1486
				Ahuitzotl 1486–1503
				Montezuma II 1503–1520
				1507 Mexican Cycle VIII
			Cacama 1516–1519	

* Bracketed reigns as given in the Relacion and Origen.

TABLE 5. TOLTEC RULERS

Eastern Lineage		*Western Lineage*	
Chalchiuhtlanetzin	510–562		
Ixtilcuechahauac	562–614		
Huetzin	614–666	Huetzin	869–
Totepeuh	666–718	Totepeuh	–887 [56 years]*
Nacoxoc	718–770		
Mitl-Tlocomihua	770–829		
Queen Xihuiquenitzin	829–883		
Iztaccaltzin	833–885	Ihuitimal	887– 923
Topiltzin	885–959	Quetzalcoatl-Topiltzin	923– 947 [16 years+12 in Tula]
		Matlacxochitl	947– 983
		Nauhyotzin I	983– 997 [interregnum 97 years]
		Matlaccoatzin	997–1025
		Tlilcoatzin	1025–1046
		Huemac	1074–1122 [62 years]

* Bracketed dates are those given in the Relacion and Origen.

a definite feeling that the Tenochca did not keep written records until well into the fourteenth century.[63] Table 4 shows the reigns of rulers in Culhuacan, Cuauhtitlan, Cuitlahuac, Texcoco, and Tenochtitlan.

The Culhuacan and Texcocan dynasties were each founded by chiefs who overthrew settlements of Toltecs at different times. Both the Anales de Culhuacan and Ixtlilxochitl give lists of the members of the Toltec dynasty which do not agree either in name or in time of reign. (See Table 5.) If we follow the assumption that the Toltecs were governed as an empire by a single succession of chiefs we have reached an impasse. On the other hand, if we interpret the data on the basis of the more illuminated sources for Mexican history, we may, with some justice, postulate the possibility of two chiefly lines: an early one, in the east near Teotihuacan, with which the Texcocan dynasty was in contact, and a later succession in the west whom the migrant group of the Culhua knew. The term, Tollan, used in all the chronicles may mean any important Toltec settlement. It would be not unlikely that the site now called Teotihuacan was called Tollan by early eastern immigrants, while the imposing site now known as Azcapotzalco might equally well be Tollan to western invaders. Again the present site of Tula might be Tollan to that Mazapan group which left such heavy evidence of its occupation. (See Table 5.)

There is no doubt that Ixtlilxochitl's chronology is formalized, since he listed each of his early Toltec monarchs as reigning fifty-two years, the duration of a cycle.[65] This convention may have arisen from a desire to create a fictitious antiquity, or the annals to which he had access may have been abridged to list the principal chief in each cycle. In that writer's references to the Culhuacan dynasty, he names only one of the several Culhuacan chiefs who held office in the reign of each of his Texcocan rulers.[66] The histories complementary to the Anales de Culhuacan greatly abridge the members of the Toltecan succession listed there, which may account for scattering resemblances in the Anales and Ixtlilxochitl lists.[67] However, if we leave the lineages set up as they were in the records, we find a later Toltecan persistence in the west of the Valley than in the Teotihuacan region. (See Table 5.) Furthermore, we find that Teotihuacan V, the latest archaeological period, is best developed in the Azcapotzalco district, and virtually absent from Teotihuacan.

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[65] Ixtlilxochitl, 1891.

[66] The complementary lists are given on Table 4: Xolotl had contact with Nauhyotl, Nopaltzin with Achitometl, Tlotzin with a Calquiyautzin (which may be a scribe's error for Chalchiuhtlatonac), Techotlala with Coxcox

[67] Relacion and Origen; see also footnote 62.

We have another curious correspondence wherein Topiltzin, the last eastern ruler in whose time the kingdom fell and whose dates, according to Ixtlilxochitl, are 885–959, is matched in the Anales de Culhuacan by a Quetzalcoatl Topiltzin, with a 923–947 reign, who is treated extensively as a culture founder. Is there the possibility that we are dealing here with the same man, who with his court fled into the west from the Chichimec, and was instrumental in transforming the simple styles of Teotihuacan II in the El Corral I phase of Azcapotzalco into the ceremonialized elements noted in the Teotihuacan V types of El Corral II? It will be recalled that the intermediate stages of Teotihuacan III and IV do not seem to be strong in the Azcapotzalco district.

The late Madame Zelia Nuttall wrote a paper, unfortunately never published, on the Temple of Quetzalcoatl at Teotihuacan. She suggested the possibility that Mitl Tlacomihua (770–829) might have been the instigator of its construction. Mitl was the first Toltecan ruler to be mentioned as associated with the building of a temple, that of the "Frog." While the analogy is far-fetched, the Frog is associated with Tlaloc and the water cult and Tlaloc is almost as strongly represented as the feathered serpent in the symbolism of that temple. Furthermore, the Temple of Quetzalcoatl seems to fall at the end of Teotihuacan II so that its construction in Mitl's time would seem more probable, than to haul it up to the time of Maya-Mexican contact, as would be the case if there was evidence of a ruler Quetzcoatl who had been to the Maya country.[68]

Even such tenuous evidence as this is lacking for Teotihuacan II, the first building period, but the phase must have been a long one, since the whole ceremonial center was laid out at that time. Teotihuacan III may well have been shorter, since much of the construction merely involved adding to earlier structures or else covering them in as foundations for later ones. The occurrence of the name Huetzin early in both the Culhuacan and Texcocan Toltec dynasties suggests a possible point at which to begin, since the name is associated with great power. Were this hypothesis correct the remainder of the listed chiefs could be assigned to the Teotihuacan I period.[69]

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[68] This intensely interesting hypothesis of Dr Spinden does not seem very probable to the writer in view of the archaeological and historical evidence of the infiltration of Mixteca Puebla culture in the Valley. See below.

[69] Sahagun's estimates for the age of Teotihuacan are difficult to understand. His historical calculations of reigns and dates are quite uniformly bad. Perhaps it was the fault of his informants who were so good in other ways.

Thus matching off the Teotihuacan culture periods against the dubious lists of reigns we should have the following situation:

Teotihuacan I, 510–614, Chalchiuhtlanetzin to Huetzin.

Manufacture of the material within the Pyramids of the Sun and Moon.

Teotihuacan II, 614–829, Huetzin through Mitl.

Construction of first period buildings at Teotihuacan culminating in the temple of Quetzalcoatl. Trade to Maya country? Establishment of a big center in the Azcapotzalco district, El Corral I. Wide distribution of culture to Cholula, Morelos, Toluca Valley, etc.

Teotihuacan III–IV, 829–959, Queen Chalchiuhtlanetzin through Topiltzin.

Construction of second period buildings at Teotihuacan; introduction of mold; growth in ritualistic presentation of figurines, abandonment of ceremonial center of Teotihuacan; trade to Maya country? Incursion of Chichimecs.

Teotihuacan V, 923–1122, Topiltzin through Huemac (Culhuacan Toltecs).

Great development of ritualistic definition of gods as seen in figurines; El Corral II shift of Teotihuacan culture to northwest of lake with resultant raising of a Teotihuacan II local culture; possibly induced by refugees from Teotihuacan under chief Topiltzin; influences from Oaxaca; destruction at end by Culhuas.[70]

VIII. HISTORICAL AND CULTURAL EVOLUTION OF THE CHICHIMEC PERIOD

The two chief historical accounts for the Chichimec period, the Anales de Cuauhtitlan and Ixtlilxochitl's Historia Chichimeca, do not require such elaborate hypothetical manoeuvering to bring out a relationship between archaeology and history as was the case in the Toltec annals. The Cuauhtitlan records describe the overthrow of the Toltecs by Nauhyotl and the killing of Huemac, their last chief, at Chapultepec in 1122. A glance at Table 4 will show some suspiciously long reigns at first, but by the end of the twelfth century, the succession settles down to conceivable lengths of time. Culhuacan seems to have been settled early in the twelfth century, and the lineage was considered as "Toltec," but the tribal affiliation was distinct from the inhabitants of Tula.[71] But according to the Relacion and

[70] It being the writer's purpose to present an hypothesis to be checked, adjusted, and, if necessary, rejected, he sees no value in discussing other correlations like that of Dr Lehmann who postulates an Old Toltec and a Young Toltec era. This, in general, agrees with this hypothesis except that Lehmann's (1933, 1938) dates are much earlier, being based on the Suns or Ages of the cosmogonic myths instead of the dead reckoning used here. Lehmann's Neo-Toltecs seem to be Chichimec claiming Toltec descent but possessing Mixteca-Puebla culture.

[71] Something of the same process seems to be described in the Historia Tolteca-Chichimeca (Preuss and Mengin, 1937). In this case the migrants move east, away from the Valley to Cholula, and Muñoz Camargo tells of similar events in Tlaxcala. The dates seem to fit into

the Origen, this "Toltec" dynasty came to an end and was replaced by a "Chichimec" line under Mazatzin.[72] This lineage continued until the end of Culhuacan's political importance in 1413. We shall discuss the possible significance of this break in terms of material culture a little later.

The Texcocan annals describe the Chichimec chief, Xolotl, putting an end to the Toltecs in 959 or 1011, according to one of Ixtlilxochitl's statements.[73] In another, he puts the reign of Xolotl from 1115 to 1232, but he also describes a fight with Nauhyotl of Culhuacan.[74] In contrast to the fantastic ages ascribed to Xolotl, the rest of the rulers in the Chichimec succession follow quite conceivable life spans. This situation might well arise were an immigrant group to occupy an area and yet not acquire the idea of historical records or the lineage system for chieftainships until a later date. Thus the folk memory of the time might preserve the recollection of a very famous chief, but not all the names. The name of Xolotl, once history and lineage were taken up by the Chichimec, would therefore be used to cover the events of all that period.[75]

An original settlement in the north of the Valley of Mexico and the founding of a "capital" at Tenayuca are ascribed to this time of Xolotl. Tula is reported as deserted. Then there came three tribes, Tepanecs, Acolhuas, and Otomies, who are given lands by Xolotl and whose chiefs marry his daughters. In 1298 Quinatzin shifts his "capital" from Tenayuca to Texcoco and four years later he is joined by two tribes, the Chimalpaneca and the Tlailtoques who bring the knowledge of writing, the worship of Tezcatlipoca, and many other arts. A note suggestive of the extreme independence of Mexican communities is shown by the revolt of the Tenayucans under Tenancacaltzin against Quinatzin and his Texcocans immediately after the latter's accession to office.

The Culhuas and the Texcocans maintained control over the northern part of the Valley of Mexico until the middle of the fourteenth century, when a new power arose, the Tepanecs of Azcapotzalco. Adopting aggres-

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this same arrangement. It would appear that four processes were at work: infiltration of many tribal groups, absorption of culture elements from the original Toltec group, infiltration of ideas from an outside culture source (Mixteca-Puebla), and intense internal conflicts between exponents of the two cultural expressions. This would result in many movements of disaffected elements with results like those outlined in the following pages.

[72] See footnote 62. [73] Ixtlilxochitl, 1895. [74] Ixtlilxochitl, 1892.

[75] The discussions of Ceballos Novelo and Palacios in the Tenayuca volume are very helpful. There is a great discrepancy between the time Ixlilxochitl ends his Toltec Empire and begins the reign of Xolotl. Is not this historian trying to compensate for the youth of the Texcocan lineage, by placing Xolotl in line with the beginning of the Culhua dynasty? He has fantastic reigns for some of the rulers who are in striking distance of the historic period.

sive tactics, under their great chief Tezozomoc, they gained town after town, disposing of Culhuacan in 1413 and Texcoco in 1418. They were wiped out in 1427 by the celebrated triple alliance of the Texcocans, Tenochca, and Tlacopans, and their records went with them, so that they are known only through the contact of their war chiefs, Tezozomoc and Maxtla, with the other tribes.[76]

The early history of the Tenochca or Aztecs may be studied with profit from the records of these sedentary peoples, since they themselves seem to have been wanderers. They settled at Chapultepec about 1250 and becoming too powerful, were attacked and broken by the Culhuas and other tribes around 1300. The tribe was a subservient fief of Culhuacan until 1325 when they went to live in Tenochtitlan. While 1325 is the official date, there are minor discrepancies indicating that the process was gradual. Several documents show the founding of the town in the neighborhood of 1360, to which there is an illuminating comment in the Anales de Cuauhtitlan, "In this year the Mexicans made houses of stone," a statement indicative of cultural advance over their previous state of hut dwelling.[77] It is certain that shortly after this time they asked for and received a chief of *lineage*, and in one document there is a picture of his investiture by the clan council.[78] In this connection it should be noted that in the time of the Culhuacan captivity, after they had distinguished themselves in the Xochimilco campaign, the Tenochca had asked for a chief's daughter to found a lineage and had had their request granted, but they committed the political error of sacrificing her, resulting in exile to the lake.[79] After the accession of Acamapichtli, the Tenochca seemed to have fought on the side of the Tepanec against Culhuacan and Tenayuca until they organized the triple alliance with Texcoco and Tlacopan. From then on they gradually dominated the Valley and by 1450 had extended their conquests over much of central Mexico.

The records for the Tenochca run back to 1163, the year One Flint, the date of Huitzilopochtli. In the events about Chapultepec in 1300 they mention the name of only one chief, Huitzilhuitl I, and obliquely describe Tenoch as chief at the time of the founding of Tenochtitlan. Some of their manuscripts show groups of individuals whose separate glyphs are repeated in various documents. It would seem a strong hint that here was represented

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[76] A complete account of the origins and development of the Tepanec would be significant. There is no good lineage, but a father of Tezozomoc, Acolhua,is sometimes given. Tezozomoc, Codex Ramirez, and Ixtlilxochitl have good accounts of the activities of the Tepanec tyrants.

[77] See footnote 63. [78] Histoire Mexicaine.

[79] See *Historia de los Mexicanos por sus Pinturas*.

the clan council,[80] later to be weakened by the hereditary chief. Not until their lineage was founded did they list their rulers in order, so that this situation would add strength to our interpretation of the reign of the Chichimec under Xolotl. Furthermore, it appears obvious from the historical evidence that the Tenochca were in no position to act as culture donors until the second quarter of the fifteenth century.

IX. HISTORICAL AND ARCHAEOLOGICAL CONFIRMATIONS

In the fifteenth and early sixteenth centuries—the Aztec III and IV archaeological periods—architecture, ceramic types, and sculpture were closely unified. Local pottery types existed more abundantly in one place than another, but usually there was enough trade or tribute so that examples of all contemporaneous Valley types may be found in any one site. In spite of political individuality and, in some cases, variation in religious or sociological practice, the social and material culture of the northern Valley tribes may be considered as coherent.

In the fourteenth century, the Aztec II archaeological period, we find two conflicting phenomena: a political situation of constant struggle between the tribes in the Valley, accompanied by the spread of a unified material culture. It is also significant that, to date, in the vicinity of Tenochtitlan, far less Aztec II pottery has appeared, then in the subsequent III and IV stages, a condition directly reflecting the political and cultural conditions in that locality. It is a curious coincidence that, if one grants the hypothesis of cyclical reconstructions, the developed Aztec architecture in the Tenayuca temple sequence comes into being in 1351, just when the Tepanec emerge into the political arena. At Chiconauhtla, a fief of Texcoco, the style of the domestic architecture seems to change at this same time.[81] Then there is the curious correlation between the introduction of writing in Texcoco in 1302, which coincides with the "calligraphic" style of the pottery decoration of early Aztec II black-on-orange.[82] Finally, there is a remarkable statement in Ixtlilxochitl that the Texcocan king, Techotlala (1357–1409), was able to make all his people speak the same language, Nahuatl or Mexican, a statement suggesting a more than usually intimate relationship between culture and language.[83]

There can be little doubt that the origin of the Aztec II ceramic style lay in the Culhuacan Aztec I. There are, likewise, close affiliations between

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[80] Mapa de Siguenza, Codex of 1590, Histoire Mexicaine, Codex Mendoza, Mapa de Tepechpan, Vaticanus A, Telleriano Remensis.

[81] Chiconauhtla seems to have been a frontier post belonging to Texcoco; Quinatzin fought there against the insurgent Otomies; and Techotlala and Ixtlilxochitl both battled the rising power of the Tepanec at this point. [82] Brenner, 1931. [83] Ixtlilxochitl, 1892, p. 73.

Cholula I and Aztec I.[84] In the Puebla area and northern Mixteca the ceremonial symbolism, as seen in manuscripts and on late pottery, is much more highly elaborated than in the Valley. Consequently, an ultimate origin for Aztec culture in the Mixteca-Puebla area would seem very logical.[85] Possibly the first contact between this branch of the material culture of the Puebla region and the Valley was at Culhuacan in Aztec I times. Moreover, at Culhuacan the dynastic change which brought in Mazatzin in 1251 was preceded by an immigration of new people, who might conceivably have been the introducers of the new wares.

What, then, was the original culture at Culhuacan, that of the "Toltec" lineage? There are, so far, only indirect data to answer this point. Coyotlatelco pottery is found in abundance in the neighborhood. It is also found in quantity in the Azcapotzalco region, the location of the type site, and in the rubbish heaps near Tenayuca it seems to be mixed with Aztec, although this may mean mixture of refuse rather than contemporaneity.[86] Yet, were this association a true one, there is far more likelihood that Coyotlatelco pottery is an index to the presence of the Tepanec, whose center was Azcapotzalco. To this question the attribution of Mazapan pottery is important.

Mazapan pottery is found in such different spots as Teotihuacan, Chiconauhtla, at Tula, Hidalgo, Teoloyucan, in the Azcapotzalco district, and in the fields west of Chapultepec. It would fit all the geographic requirements for the Chichimec, but for one factor: Noguera did not find it in his Tenayuca dumps. It is, however, found mixed with Coyotlatelco a mile or two from Tenayuca at El Arbolillo. There is a possibility that Noguera's simple Tenayuca I pottery represents that of the early Chichimec, and Mazapan a later brand. It is also conceivable that just as such various independent tribal entities with their own local potteries made Aztec pottery in later times, so groups, early engaged in the manufacture of Mazapan wares, might have shifted to Coyotlatelco with the coming of the Tepanecs.

To sum up, Mazapan pottery is found isolated, occasionally mixed with Coyotlatelco, but never associated with Aztec II, except through the mixture of deposits originally laid down at different times. Coyotlatelco pottery is found unmixed, associated with Mazapan, and mixed with Aztec II wares. Therefore, since Aztec II is later than Mazapan, the probabilities are that Coyotlatelco wares were made after Mazapan wares had ceased.

If one associates the Tenayuca I pottery with the original Chichimec, then Mazapan wares might be associated with Acolhua of Texcoco and Coyotlatelco with the Tepanec, who immigrated in the time of Xolotl. Yet if one accept the impression of two spheres of influence given by the

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[84] Noguera, 1937b. [85] Noguera, 1932, 1937b. [86] See Section IV, above.

manuscripts,[87] one Culhua at the west of the lake and one Chichimec-Acolhua at the east, then the two styles of pottery might well be assigned to the dominant tribes in each area: Coyotlatelco to early Culhua or rather the cultural influences affecting them, and Mazapan to the Chichimec group whose influences, extending originally quite far west, were later retracted to the east.

Let us sum up, then, the combination of elapsed time, historical data, culture sequence, and style shift, which we have been discussing.

950-1100, Early Chichimec Period

Eastern Phase: Contact with Toltecs at Tula (Teotihuacan) under Xolotl, Tenayuca I pottery, rude culture.

Western Phase: Teotihuacan V and western Toltec empire at Tula (Azcapotzalco).

1100-1250, Middle Chichimec Period

Eastern Phase: Tenayuca occupation by immigrant tribes, replacement of Toltecs at Tula (Tula), tribal government, foundation of Chichimec lineage in 1232, development of fiefs, introduction and spread of Mazapan culture.

Western Phase: Destruction of Toltecs at Tula (Azcapotzalco), movement to Culhuacan, establishment of Culhuacan "Toltec" Lineage in 1114, adoption of Coyotlatelco ceramics (?).

1250-1299, Aztec I Period

Eastern Phase: Establishment of Texcoco as seat of Chichimec power under Quinatzin in 1298; persistence of Mazapan culture in east; penetration of Coyotlatelco culture and temple cult to Tenayuca (?).

1250–1299, Early Aztec II Period

Western Phase: Foundation of new dynasty at Culhuacan in 1251, Tenochca at Chapultepec (with Mazapan culture?). Introduction of Aztec I pottery at Culhuacan, with origins in Puebla or possibly the Mixteca, construction of Tenayuca temple (Building I).

1299–1351

Eastern Phase: Introduction of writing and other arts at Texcoco by people from Mixteca; adoption of Aztec IIa pottery.

Western or Culhua Phase: Revolt of Tenochca at Chapultepec, foundation of Tenochtitlan, adoption of Aztec IIa pottery, but persistence of Coyotlatelco (?); cyclical reconstruction of Tenayuca Building II.

1351–1403, Late Aztec II Period

Eastern Phase: Unification of language by Techotlala, political and cultural dominance of Texcoco; Aztec IIb pottery and unification of culture; cyclical dump at Chiconauhtla.

[87] Anales de Cuauhtitlan for Culhua; Ixtlilxochitl, Mapa Tlotzin, Quinatzin, and Codex Xolotl for Chichimec Acolhua.

Western Phase: Decadence of Culhuacan; rise of Tepanec at Azcapotzalco; Tenochca build homes of stone and adopt lineage pattern with accession of Acamapichtli; cyclical reconstruction of Tenayuca (Building III, Aztec Transition).

1403–1455, Early Aztec III Period

Eastern Phase: Political elimination of Texcoco during first half of period with important recovery; prosperity and cultural advance under Nezualcoyotl; great development in material culture, expansion of palace at Chiconauhtla; cyclical dumps at Chiconauhtla and Los Melones; Aztec IIIa pottery.

Western Phase: Political extinction of Culhuacan; dominance followed by extinction of Tepanec power; rise of Tenochtitlan from fief of Azcapotzalco to dominant power with organization of triple alliance; growth of conquest and war captive pattern; cyclical reconstruction at Tenayuca (Building IV); cyclical dump in Zocalo; broad diffusion of Aztec IIIa pottery type.

1455–1507, Late Aztec III

Eastern Phase: Continuance of cultural elaboration in Texcoco; growth of Chiconauhtla palace; elaboration of ceramics; cyclical dump at Chiconauhtla; Aztec IIIb pottery.

Western Phase: Political power of Tenochtitlan; extension of conquest; elaboration of sacrifice of war captives; reconstruction of great temple; elaboration of ritual pattern; cyclical reconstruction at Tenayuca (Building V); cyclical dump at Nonoalco; diffusion of Aztec IIIb pottery.

1507–1519–21 (Conquest), Aztec IV

Eastern Phase: Growing friction between Texcoco and Tenochtitlan; ultimate expansion of Chiconauhtla palace; Aztec IV styles with good life forms.

Western Phase: Dominance of Tenochtitlan with attempts at coercion of Texcoco; maintenance of previous conquests rather than the undertaking of new; cyclical reconstruction at Tenayuca (Building VI); Aztec IV styles with many life forms.

X. CONCLUSIONS

The writer believes, however subject to later revision this hypothetical reconstruction may be, that the general outlines are substantially correct. The broader aspects of historical tradition seem to be reflected in the archaeological sequences. The four cross-checking elements—history, sociology, ceramics, and the ceremonial aspects of material culture—complement each other relatively well and compose an interesting picture of the processes of acculturation and the efflorescence of religious ceremonial.

The Copilco-Zacatenco series shows a gradual improvement in material techniques, while the subsequent Cuicuilco-Ticoman in its mounds and Fire God discloses latent ceremonial expression. The Teotihuacan culture produces a majestic ceremonialism expressed in the massive architecture of its type site. In the material culture, particularly in the figurines, we see

a gradual elaboration of ritualistic requirements. Between the Toltec tradition and the actual archaeological remains there is little discrepancy. After the gradual collapse of this civilization, new tribes with distinctive cultures began to infiltrate into the Valley and the many local ceramic types attest to the validity of the historical record. In the annals we find, gradually appearing, the idea of lineage affecting the election of the tribal ruler, the worship of more and more gods, the cyclical method of counting time, sacred wars, the controlling of tribute-paying fiefs which, among other traits, were considered the marks of advanced communities. The wide diffusion of Aztec black-on-orange wares from a local style at Culhuacan, reflects, in the material culture, the unification of the social civilization of the tribes of the northern Valley.

At Culhuacan the association of the first stage of Aztec pottery and one of the oldest Valley lineages makes that place seem highly suggestive as a point of cultural diffusion into the northern Valley. This spread of civilization seems to have continued during violent political struggles between the Valley groups. The documentary evidence indicates that the transmission of culture progressed in many ways: direct imposition by conquest, as in the defeat of the original Toltec groups; by absorption, as a fief of the culture donor, as did the Tenochca in the Culhuacan captivity; by the demands of less cultured groups from a higher one, as in the case of the Tenochca's craving for a chiefly lineage; by the absorption of immigrants, as did the Texcocans with the Chimalpanec; by the accretion of political refugees, as when the Culhuas spread to Texcoco and Cuauhtitlan; and finally, by distribution of tribute, as seems to be the case in some of the archaeological sites.

These few examples and the projected reconstruction of the history of the northern Valley open wide vistas as to the future of archaeological research in establishing time backgrounds for ethnological and sociological investigations. While this study corresponds very closely to the analysis of the archaeology of the Valley of Mexico, made recently by Dr Walter Krickeberg,[88] it must not be forgotten that the correlations suggested here are hypothetical and subject to the revisions implicit in the prosecution of research.

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[88] Krickeberg, 1937. This work is an invaluable adjunct to the critical analysis of problems and interpretations in Mexican archaeology.

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AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK CITY

POLYANDRY IN KOTA SOCIETY[1]

By DAVID G. MANDELBAUM

THE Kotas of the Nilgiri Hills in South India are not polyandrous in the strict sense of the term. A woman may have but one husband and can acquire another only by divorce from or after the death of her previous spouse. What Kota polyandry amounts to is that a man's brothers have free sexual access to his wife, and when a man is ill or incapacitated or in any way unable to fulfill his husbandly duties, then his brothers take his place. The brothers are, in effect, secondary husbands.

The Kotas are the neighbors of the famed Todas on the Nilgiri plateau. Unlike the Todas, whose whole culture pivots around the care of buffalo, the Kotas have more diversified interests. They are agriculturalists, but also keep herds of cattle and buffalo. A large part of their livelihood is earned by handiwork; they are the aboriginal artisans of the Nilgiri area and provide the other tribes with iron tools, wooden utensils, and pottery. In addition, they are professional musicians who furnish the music that is required for the ceremonies of the other tribes.

There are seven Kota villages, each divided into three exogamous father-sibs. The same three sib names occur in every village, but each village sib counts as a distinct social entity. A man belonging to the aker gens may not marry a woman of the same gens in his own village, but is permitted to take a wife from the aker gens in any of the other villages. Marriage is a simple affair; the bridegroom bows to the feet of the bride's father, pays a token fee of four annas and a bride price ranging from ten to one hundred rupees. Residence is patrilocal. The normal household consists of several brothers and their wives and children living together under the paternal roof. When the growing families can no longer be accommodated in a single house because of the limitations of space, each of the married brothers establishes his family in a separate house.

A man may have more than one wife and so the Kota marital system includes true polygyny as well as fraternal polyandry. A woman lives only in the house of her legal husband and he is recognized as the father of the children she bears. The husband has precedence to his wife's attention and favors. But in the absence of the husband, any of his brothers have the right and the obligation to act in his stead. It is a right in the sense that a husband may not attempt to interfere and may not exhibit any signs of jealousy when he finds his brother with his wife. It becomes an obligation

[1] Read before the Twenty-fifth Indian Science Congress, Calcutta, 1938. Fieldwork done under a Fellowship in the Biological Sciences, National Research Council, 1937, and under the auspices of the Institute of Human Relations, Yale University.

when the husband is away from the village overnight. No woman will sleep alone in a house lest the sorcerers from the nearby Kurumba tribe find her an easy prey. Therefore the husband delegates one of his brothers to sleep with his wife while he is away. Similarly, when a man is unable to accompany his wife on a ceremonial visit to another village, one of his brothers is duty bound to go along with her and to remain at her side constantly, as would the husband himself. Not infrequently also, a man may want to conduct a liaison on his own and may conveniently divert the care and the attention of his wife to his brother while he himself goes about his affairs.

Although any one of a man's brothers may be the biological father of his wife's child, only the husband is recognized as the sociological father. When a child patently resembles its progenitor rather than its sociological father, any levity on the subject is sternly discouraged. The mother's husband is thus the father of the child in every sense of the word, save the biological. In no way may a man question the right of his brothers to have intercourse with his wife.

This right applies not only to an individual's uterine brothers, but to his classificatory brothers as well. All the male parallel cousins of a man and all the male members of his gens who are of his own generation are classed as brothers. Since the sib groups are small, the number of classificatory brothers is restricted. Nonetheless there may be ten to twenty men standing in the fraternal relationship to an individual.

Underlying the practice of sharing wives among brothers is the operation of a principle whose presence may be discerned in other phases of the culture, the principle of the equivalence of brothers. Just as every member of a group of brothers has equal sexual rights to the wife of any one of them, once the husband's precedence has been allowed, so do brothers share equally in other things. In the economic sphere, a group of uterine brothers till the paternal fields together and mutually partake of the harvest. When brothers live together, they divide the various tasks. One brother acts as herdsman, some as blacksmiths, others work in the fields. The proceeds of their labor are pooled, and each one enjoys an equal part of the total income. When the paternal inheritance is to be divided, it is parcelled out equally among all the sons.

The kinship system further reflects the operation of the principle of fraternal equivalence. A man calls the children of his brother by the same terms as he uses for his own sons and daughters. This is true for the children of classificatory brothers as well as for the children of real brothers. The brothers of one's father are equated with the real father and are called

"younger father" or "elder father" according to their age in relation to one's own father. The presence of this particular type of kinship system is not to be taken as either the cause or the effect of the fraternal principle. There are societies which possess this kind of system and which do not have the idea of fraternal equivalence, and conversely, there may be cultures in which the fraternal principle exists and which have an entirely different type of terminology. The concurrence in Kota culture only means that the terminological aspect of the social structure is in symmetrical accord with a dominant social motif.

The presence of this principle is also apparent in Kota religion. There is a paramount triad of gods composed of "Elder Father God," his brother "Younger Father God," and "Mother God." The junior male god shares the wife of the other. It is not so much that "Younger Father God" is a co-husband, but that Kota deities, like Kota men, have fraternal rights to the wives of their brothers. In this culture as in many others, the attributes and behavior of the deities are direct projections and elaborations of patterns valid in the society.

Incidents in the folklore illustrate the cultural setting within which the formula of fraternal equivalence works. There is a tale of two brothers, the elder called Katpedkamaten, the younger Parkul. In the words of the story,

> The elder brother became the headman of the village and always walked about with a leaf umbrella [a symbol of wealth and dignity]. He had many servants. When the time for sowing came, the men spread manure over the fields. The elder brother told the younger to carry manure with the servants but the younger brother took his loads of manure and poured them into the bushes instead of over the fields. When the elder brother heard of this and berated Parkul, he replied, "I am your brother, not your servant. If you work, I will work; if you stand with a leaf umbrella, so should I." Katpedkamaten grew angry and beat his brother with a stick. . . . Then an old man rebuked him with the proverb, "Even if a man becomes a king, to his mother he is only a son and to his younger brother he is but elder brother." And the old man went on to tell Katpedkamaten, "Bring back your young brother, for when an elder brother sits, then also must the younger brother sit."

To this episode the informant added his own comment that "Until today, brothers who live in the same house are equal in position. When each has his own house and his own land, then only may one have more than the other." There is absolute economic equality among a group of brothers who live together. When they no longer live in one household, they still are bound to render economic assistance to a brother who is in need. If a man suffers any misfortune, it is his brothers who come to his aid, who cultivate his land, do his craft work, care for his family. The essential

economic solidarity of the fraternal group is maintained even though the brothers no longer pool the proceeds of their work.

The fraternal equation does not prevail with mathematical infallibility. In certain circumstances it may come into conflict with another cultural axiom and be cancelled out. One such situation arises in the case of the priests. There are one or two men in each village who perform the sacerdotal duties, occupy a priestly office, and are scrupulously segregated from contaminating contacts. Thus the Kota priest may not eat from vessels used by laymen; he must occupy a certain reserved portion of the house when he visits the home of a fellow villager; he may no more join in the ordinary social dances than a bishop may publicly demonstrate the tango. Since women are most potently charged with ceremonial pollution, and since the priest must be most carefully insulated against such pollution, the rules which regulate the contact of the priest with women are stringent. He may have only one wife and may not have intercourse with any other woman. The wife of the priest partakes of his sanctity and she, in turn, may not have intercourse with any man but her husband. It is in this respect that the principle of the equivalence of brothers gives way before the more demanding principle of the segregation of the priest and his wife from contaminating mundane influences. The brothers of a priest do not have access to his wife since that would impair her sacrosanct nature. The priest may not have anything to do with the wives of his brothers since they would trespass his consecrated presence. The priestly principle is dominant over the fraternal principle because its effective rating, to use Professor Linton's phrase, is higher. That is, the society is more concerned with preserving the purity of the priests than it is in consistently equilibrating the rights of brothers. The priesthood complex has greater potentialities, in this instance, for influencing societal behavior than has the fraternal complex.

Sometimes the application of the concept of fraternal equivalence overrides some other fundamental of the culture. A basic observance is that a woman may not be forced into an association repugnant to her. A girl may be married off to an elderly man for the sake of the bride price he pays, and many kinds of social pressure will be exerted on the girl to persuade her to abide by her parents' choice. But if she adamantly refuses to stay with one husband, she is usually able to get another. In the numerous legal cases concerning illicit sexual relationships, the crucial point at law is whether the woman willingly formed the alliance or whether she was forced into it. If it was voluntary, her partner's penalty is light; if involuntary, it is more severe. The volition of the woman is of primary importance. But when a

woman dislikes the brother of her husband and refuses him, she is ultimately forced to tolerate the relationship. In this case the woman's will is disregarded because of the paramount idea that brothers must enjoy equal privileges.

The conflict of the same two principles but with opposite results occurs in the remarriage of widows. If the equivalence of brothers were the most powerful social coefficient in this instance also, a widow would be compelled to marry one of her deceased husband's brothers. As it is, the levirate is the preferred remarriage; it is socially approved, but yet is not compulsory. Should a widow refuse to marry one of the brothers, she may not be coerced into the match. She must then surrender to the brothers all the property left by the deceased and must even give them the jewels given by her late husband. The fraternal principle demands that the material possessions be equally distributed among the brothers if there are no sons to inherit, but the brothers are defeated should they attempt in this case to overrule the maxim that a woman's stubborn will must prevail.

The question then arises as to why a woman may reject the brother of her husband after her spouse is dead, but may not do so while he is alive. The answer is that the refusal while the husband is alive immediately disbalances the fraternal prerogatives, denying to one brother what the other possesses. But when the widow remarries to some one not in the fraternal group, then none of the brothers have access to her and the equivalence is maintained.

The Kotas themselves do not calculate this outcome with deliberate nicety. Indeed, they are hardly aware of the existence of the fraternal principle. That, however, does not militate against its reality and influence. Even the members of the highly verbalized societies of Western civilization do not consciously formulate the basic configurations of their cultures.

Nor does the fraternal principle have the same meanings for all the tribesmen. One informant rationalized the practice of fraternal polyandry on the grounds that it encourages friendship between a man's wife and his brothers, and when it becomes necessary for the brothers to aid the wife and the children, they are not reluctant to do so. The polyandrous custom, in this informant's understanding, created a sort of aboriginal insurance policy for one's family. Less articulate informants merely returned the stock answer, as their rationale for polyandry, "We follow this custom because our forefathers did."

Individual variations likewise occur in the application of the principle. A man who recently died left behind him little property and no close relatives to pay for the expenses of his funeral. It was clearly the duty of

his parallel cousins, in their capacity as classificatory brothers, to provide for the cremation. They did not feel impelled to do so since the deceased had been a man of little consequence and, as they would not inherit from him, any expenditures for the funeral would be sheer loss. In the end the husband of the dead man's sister and his widow's brother provided for the necessary ceremonial display. For if the body had been ignominiously disposed of, the disgrace would have redounded to them, his nearest of kin. The parallel cousins were men of some rank and any adverse criticism of their action would not harm them greatly. But in other instances in which parallel cousins were obligated to provide for the funeral of a classificatory brother, they unhesitatingly did so. Some men feel constrained to fulfill their social obligation, others may ignore it.

The principle of the equivalence of brothers extends to a group of sisters. Thus a man has sexual access to all the sisters of his wife. The sororate is preferred, but is not compulsory. If a newly married couple find that they are not compatible, the husband may exchange his wife for one of her sisters. But the equivalence of sisters is not as thoroughgoing as is the fraternal principle because a set of female siblings may be married off into different villages and will not frequently meet; therefore a sororal group does not constitute as tight a social and economic entity as does a fraternal group.

A noteworthy topic of inquiry in a society which permits a number of men to share the same woman is whether any friction arises over the uniform allocation of privileges. Among the Kotas, as in other cultures where polyandry or joint uxorial rights are sanctioned, any manifestations of sexual jealousy within the fraternal group are drastically squelched. There is a tale of a man who asked his brother to keep away from his newly acquired second wife so that more of her time might be available to her husband. For this mild and seemingly reasonable request, the husband almost was outcaste, had to pay a heavy fine and send the woman to live with his brother for a time. The slightest sign of sexual jealousy between brothers arouses the relatives and the sib members of the jealous man to bring all the persuasion and social force at their command to eradicate the symptoms of jealousy.

This is not to say that jealousy outside the fraternal line is unknown. A husband will not usually tolerate any sexual relationship between his wife and a man who is not one of his brothers. If he suspects such a relationship, the husband will threaten the paramour, or remove his wife from temptation, or utilize any of the devices available to jealous husbands in other societies beside the Kota. Whatever the root causes of jealousy may be in

Kota culture, they are certainly as deep lying and are perhaps similar to those operating in Western societies. Since Kota men are conditioned to exclusive sexual possession of their wives in respect to most males, it seems likely that they may have the desire for personal possession in respect to the fraternal males also. The feeling for individual privilege which is socially encouraged in the one circumstance may carry over into the other. Since the dictates of the culture so effectively repress any manifestations of such sentiments, it is difficult to find many direct evidences of intrafraternal jealousy. But there are certain indirect clues.

There is a proverb which says, "Do not climb a rope down the face of a cliff [as is sometimes done in gathering honey], except in the company of your male cross-cousin." The implication is that one's brothers are not to be trusted too far.

Another clue is the prevalence and frequency of quarrels among brothers. While the assertion of individual aggression is rigidly tabooed in the sexual sphere, there is no restraint of hostility in other matters in which a group of brothers share rights. Violent disputes among brothers occur about property division, about distribution of inheritance, about the allocation of work when a joint enterprise is being conducted. It is my impression that intrafraternal disputes are more numerous and more vehement than other kinds of quarrels. It may be that the hostilities generated by sexual jealousy within a set of brothers find their outlet in the economic relations of the fraternal group.

Polyandrous societies are not as rare as it was once thought they were. The Eskimo, Tibetan, and Wahuma cases have long been known. Recent reports indicate that a number of North American tribes practiced the custom, among them the Shoshoni, Paviotso, Northern Paiute, Pawnee, Wichita, Kitsai, Arikara, and Comanche. The Comanche in particular institutionalized the exchange of wives in a manner similar to the Kota system. The Lhota Nagas of Assam also extend the rights of a husband to his brother.[2] In South India polyandry is of especially frequent occurrence. Six polyandrous tribes have been reported from Cochin; the Nayars of Travancore and the Irava of British Malabar have this form of mar-

[2] R. H. Lowie, *Primitive Society* (New York, 1920), pp. 43–46; J. H. Steward, *Shoshoni Polyandry* (American Anthropologist, Vol. 38, 1936, pp. 561–64); W. Z. Park, *Paviotso Polyandry* (*ibid.*, Vol. 39, 1937, pp. 366–68); O. C. Stewart, *Northern Paiute Polyandry* (*ibid.*, pp. 368–69); A. Lesser, *Levirate and Fraternal Polyandry among the Pawnees* (Man, Vol. 30, 1930, No. 78); R. Linton, *The Study of Man* (New York, 1936), p. 136; J. P. Mills, *The Lhota Nagas* (London, 1922), p. 154.

riage; while the Todas are the classic example of a polyandrous people in the textbooks of anthropology.[3]

The historical aspects of Kota polyandry frame a significant problem. Before the English came up to the Nilgiri plateau, its inhabitants were relatively isolated from the main currents of South Indian life. Contacts with the people of the lowlands were few, since the journey up the hills was hard and hazardous. Soon after the Europeans discovered that the climate of the plateau was a life-saving refuge from the fevers of the plains, roads and later a railroad were built. In the wake of the English came Tamilians and other lowland Hindus. Within the last fifty years the advent of these newcomers has effected significant changes in the tribal culture. New deities have been adopted, new legal procedures have appeared, new fashions in dress taken on, new methods of cultivation practiced. It is striking that there has been no change in the practice of polyandry. Other of the tribal institutions, economic, religious, political, have been affected, yet polyandry flourishes with full vitality.

Such has not been the case in other polyandrous communities. Dr A. Aiyappan says of Irava polyandry, "Wherever modern European culture has penetrated and modified indigenous culture, polyandry is giving way to monandry . . . ." Only among the rural and remote Irava does polyandry still exist. Aiyappan ascribes the absence of jealousy and discord among Irava co-husbands to several causes: the joint marriage ceremony, the desire to limit heirs, the supervising influence of parents, the force of public opinion.[4] Among the Kotas, however, there is no joint marriage system, nor any desire to limit the number of heirs, nor any particularly potent supervision by parents. The one common factor that remains is public opinion. But public opinion is an omnibus term which may encompass any number of differing social forces and phenomena.

To delineate the reasons why Kota polyandry has stood steadfast in the face of the influx of new customs let us return to the cultural motif which was found to underlie the functioning of polyandry. The encroachment of foreign concepts has not yet invalidated the principle of the equivalence of brothers. Inheritance, marriage, family organization are still influenced by this factor. Since the principle continues to function in other

[3] L. K. Anantha Krishna Iyer, *The Cochin Tribes and Castes, Vol. I* (Madras, 1909), pp. 9, 161, 173, 209, 301, 346; *Nayar Polyandry* (Man, Vol. 32, 1932, No. 320); A. Aiyappan, *Nāyar Polyandry* (*ibid.*, No. 99); *Polyandry and Sexual Jealousy* (Man, Vol. 37, 1937, No. 130); A. Aiyappan, *Fraternal Polyandry in Malabar* (Man in India, Vol. 15, 1935, p. 108 ff.)

[4] Aiyappan, *Polyandry and Sexual Jealousy.*

phases of the culture, it is understandable that it should continue to work in the matter of polyandry. It continues to work because the fraternal principle is still economically justified. The economic set-up is usually the part of a culture most vulnerable to change, and it is precisely here that the fraternal principle finds its primary validation. Although new crops are being cultivated, although the old intertribal commerce has broken down, although the material equipment of the household has been revised, the major economic pursuits of Kota men are still blacksmithing, music, agriculture. Each of these occupations demands the cooperative effort of a team of men. In blacksmithing, at least three must work together: one to operate the bellows, one to hold the iron, a third to wield the hammer. In music, the minimum number for a band is five players. In agriculture, it is becoming easier for a man to care for his fields alone, but cooperative effort is more efficient. The groups that work together in the smithy, in the fields, and in providing music, are generally groups of brothers. Since the Kota depends on the economic cooperation of his brothers for his livelihood, it is small wonder that the close knit ties of the fraternal group hold their grip and that the principle of the equality of brothers yet prevails. A proverb which aptly states the case says, "If the mother dies, there is no good food; if the father dies, there is no happiness; if a man has no brothers, he has no strength of arm."

The economic dependence on group effort is the condition that makes the supreme civil penalty, outcasting, so powerful a force toward social cohesion. One who persistently disregards the rules of the culture in regard to the fraternal principle or in any other important respect, is outcaste and denied communication with his fellow tribesmen. He consequently is unable to earn a living, since he cannot single-handedly make tools or provide music or reap a full harvest. The one man in the tribe who has for some time defied the consequences of being put into the Kota Coventry, is the one man, a school teacher, whose livelihood does not depend on the traditional occupations. He is now strenuously campaigning for reforms in the tribal habits of wearing long hair, of eating carrion, of protracted menstrual and childbirth seclusion. A number of young men have come to support him. But in the matter of polyandry, the reformer seeks no change. There is neither incentive nor opportunity for altering this tribal custom.

Kota polyandry then, has remained unimpaired because the underlying functional principle and its economic validation have remained intact. Not that the economic factor is the only important element motivating the fraternal principle. Childhood conditioning, family organization, emotional attachments, also play a significant part. But the economic

props will probably be affected before the others, and then polyandry will be threatened. When imported tools completely supplant the articles of Kota manufacture, when no income is to be derived from musical services, when improved agricultural techniques and availability of hired labor make the Kota more independent of his brothers, then it well may be that the equivalence of male siblings and the practice of polyandry will no longer be maintained.

The factors responsible for the continued preservation of polyandry in this tribe need not be the same as those operating in other polyandrous societies. The Todas have a form of polyandry similar to that of the Kotas, and Toda polyandry too, continues to flourish. But Toda economy and social organization are vastly different from that of the Kotas, and the resistance of the Toda institutions may be due to reasons different from those posited for the Kota case. It is to be noted, however, that Toda economic life has changed even less than Kota within the last half century. A study of what has happened to polyandry among the Todas and studies of other polyandrous peoples would make the Kota instance more meaningful. A deeper insight into the nature of the cultural processes may best be secured through the comparison and integration of controlled bodies of evidence regarding culture change in various societies.

Through Kota society there run certain dominant themes which link seemingly disparate elements of the culture, motivate the cultural dynamics, establish the basic configurations of the society. Within the scope of these basic configurations, there is room for individual variation in some matters, no allowance at all for personal deviations in other matters. A dominant personality will utilize all the leverage permitted within the configuration to introduce changes. The principle of fraternal equivalence is still current because it is economically worth while. If its economic value should fall, then we may look for a corresponding decline in the practice of polyandry.

OOTACAMUND
SOUTH INDIA

SIXTEENTH AND SEVENTEENTH CENTURY REPORTS ON THE CHOL MAYAS

By J. ERIC THOMPSON

ETHNOLOGICAL IMPORTANCE OF THE CHOLS

THE Chols, with their cousins the Chortis, who form one of the dozen or so main divisions of the Maya linguistic group, are of very considerable importance because their occupation in colonial times of the very heart of the Maya Old Empire region, the area which produced the finest examples of Maya art, suggests that they may well be the descendants of the builders of cities such as Copan, Quirigua, Pusilha, Palenque, and many others.

Cholti, their language, is transitional in the west between the Yucatec division, including the Lacandon language or dialect, to the north and the Tzeltal-Tzotzil division to the south. On the east side of the Yucatan peninsula there is a similar linguistic transition from Yucatec through the Mopan language or dialect of Yucatec to Chol as one travels from north to south. The Chorti stock, on the extreme east of the Chol belt, with its substitution of *r* for the Cholti *l*, supplies a similar linguistic and geographical transition to the highland Maya divisions. This evidence would indicate that the Chols were not recent arrivals in that area, but continued into colonial times to occupy the home in which their language had diverged from those of their neighbors.[1] Any light that can be thrown on their customs may, therefore, be of great importance in a reconstruction of life in the southern cities of the so-called Old Empire.

Aside from that consideration, the Chols are, perhaps, of greater ethnological importance than any other division of the Maya group because from their position they had been influenced very slightly or not at all by Mexican cultural contacts. Our chief sources of information on Maya ethnology, the Yucatecs and the highland Mayas, have, on the other hand, been exposed to a varying degree to the penetration of Mexican invaders and ideas, with the result that frequently it is extremely difficult to separate truly Maya traits from those of Mexican origin.

Such ethnological information as can be garnered concerning the Chols should, therefore, serve as a standard, against which ethnological data from other Maya divisions may be measured. Unfortunately, our knowledge of Chol ethnology is extremely limited. The present day Chortis[2] and

[1] W. E. Gates, *The Mayance Nations* (Maya Society Quarterly, Vol. 1, pp. 97–106, Baltimore, 1932). This contains an able summary of the linguistic position of the Chols. Sapper and Stoll have published linguistic maps showing the Cholti belt.

[2] Charles Wisdom, unpublished report on the present day Chortis. Mr Wisdom spent two seasons among the Chortis of the Camotan-Copan region.

the few scattered settlements of Chols, mainly in the vicinity of Palenque, Chiapas,[3] and El Chol (Belem), Quiche,[4] are culturally almost more mestizo than Maya. However, a few notes on Chol ethnology are contained in the various accounts of the efforts of lay authorities and Dominican missionaries to reduce them to Christianity and the crown in the sixteenth and seventeenth centuries. These scattered references substantiate the view that Chol culture was purely Maya, for the absence of idols and tortilla making, river and mountain worship, and blood letting are known to have been purely Maya features. Unfortunately the data are tantalizingly scanty. Tozzer has published a manuscript letter of 1595 containing practically all that is known of the Central Chols of the Dolores area.[5] Ethnological information from that letter, together with a few scattered references from the Central Chols, largely contained in Villagutierre, and somewhat fuller information concerning the Northeastern Chols of the Manche region comprise our source material.

CHOL SUBDIVISIONS

The territory occupied in the sixteenth century by the Chols may be divided into three sub-areas, or four, if the Chontals are included. To the extreme east and southeast lived and still live the Chortis. Although the area now occupied by them is not very large, in the seventeenth century it embraced Chiquimula, Esquipulas, Casaguastlan, Camotan, Jocotan, and Copan.[6] Around Zacapa, the Motagua River, and the Dulce Gulf were more Chols, a small group of whom were known as Toqueguas.[7] Perhaps these Chols were closer linguistically to those of Manche than to the Chortis.

North and east of Cajabon were the Manche Chols, whose territory is discussed in greater detail below. In the sixteenth century the area south

[3] F. Starr, *Notes on the Ethnography of Southern Mexico* (Proceedings, Davenport Academy of Natural Sciences, Vol. 9, pp. 63–172, Davenport, Iowa, 1901). This contains a short section on the Chols of the Palenque region and an abbreviated Chol vocabulary. A second vocabulary from this region is published in L. Fernandez, *Lenguas indígenas de centro-america en el siglo XVIII, según copia del archivo de Indias . . .* (San Jose de Costa Rica, 1892).

[4] F. Ximenez, *Historia de la provincia de San Vicente de Chiapa y Guatemala de la orden de Predicadores* (2nd ed., 3 vols. [Biblioteca Goathemala], Guatemala, 1929–1931), Book 5, Chapter 51.

[5] A. M. Tozzer, *A Spanish Manuscript Letter on the Lacandones in the Archives of the Indies at Seville* (Proceedings, 18th International Congress of Americanists, pp. 497–509, London, 1912).

[6] Ximenez, *op. cit.*, Book 4, Chapter 3.

[7] A. de Remesal, *Historia general de las Indias occidentales y particular de la gobernación de Chiapa y Guatemala* (2nd ed., 2 vols. [Biblioteca Goathemala], Guatemala, 1932), Book 11, Chapter 20.

of Manche was probably Chol, for according to Rockstroh, Stoll,[8] and Sapper[9] there is reason to believe that Lanquin and three quarters of Cajabon were once Chol speaking, but that language has subsequently given way to the more aggressive Kekchi. In addition to the ethnological and linguistic evidence adduced by those writers, it is worthy of note that the Manche Chols were in the habit of trading with the Cajaboneros and visiting Cajabon for the feasts, while Cajaboneros invariably served as interpreters, guides, or lay teachers to the converts during the various sixteenth and seventeenth century efforts to reduce the Manche Chols.

West of the Manches, but east of the Chixoy River were the Acalas, not to be confused with the people of Acalan, in the vicinity of the Terminos Bay. Of the speech of the Acalas there is no direct information, but from the location of that group it must have been a dialect of Yucatec or Chol. Fathers Domingo Vico and Tomas de la Torre, who made an *entrada* in 1550, were the first Spaniards to penetrate Acala territory, yet Father Vico knew the language of the Acalas before he undertook the trip, and in the course of his short stay preached the gospel to them at great length. It is true that the good father had the perhaps undeserved reputation of being able to learn a language in three days and of speaking no less than seven, yet it is hard to understand how he could have learnt Yucatec. He arrived in Guatemala from Spain in 1545 and spent the following five years in the Vera Paz and in Guatemala City and its environs. Therefore, unless he studied Yucatec during his short stay in Campeche, en route from Spain to Guatemala, he had no opportunity to learn that language. His movements in the Vera Paz are not certain, but at least we know he was in Chol territory two years after his *entrada* to the Acala, for at that time he was doing missionary work in the Dulce Gulf region. It is not an unfair assumption that the father had spent his years in the Vera Paz before his *entrada* to Acala preaching in Chol. In any case the other main language of the Alta Vera Paz, Kekchi, was at that time confined to the highlands. The conclusion is inescapable that the Acalas were Chol speaking.

West of the Chixoy River were the so-called Lacandons of Dolores, who in actual fact were Chols. This is proved by Chol words in the manuscript letter published by Tozzer and by the evidence of the copy of the Father Moran *Arte y diccionario* of Cholti which was made in Dolores at about

[8] O. Stoll, *Guatemala: Reisen und Schilderungen aus den Jahren 1878–1883* (Leipzig, 1886), pp. 359–60.

[9] K. Sapper, *Choles und Chorties* (Proceedings, 15th International Congress of Americanists, Pt. 2, Quebec, 1906, pp. 423–65), pp. 433–35.

the same time as the manuscript letter was written.[10] The presence of this Chol settlement west of Acala, taken in conjunction with the well attested location of Manche Chol settlements east of Acala, is further confirmation of the assignment of the Acalas to the Chol linguistic division. Furthermore, Acalas and the people of Dolores were allies, as both groups took part in the massacre of Fathers Vico and Lopez and their comrades.

Roughly west of Dolores and north of the foothills of the Cuchumatan Mountains was Pochutla, the second large settlement attributed to the Lacandons. The evangelization of this town and the final transfer of most of its inhabitants to Ocosingo, Chiapas, was very largely the work of Father Pedro Lorenzo, who was also responsible for the founding and spiritual care of the settlements of Palenque (near the ruins of the same name), Tumbala, and Tila, which were peopled by Chols he had brought from the forests,[11] and whose descendants speak Chol to the present day. Father Lorenzo, who had come to the Bishopric of Chiapas in 1560, soon became very proficient in Tzeltal and Tsotzil, and obviously must have spoken Chol equally well to have founded so many Chol settlements, and to have won deep affection from his flock.[12] It would, therefore, appear most probable that he spoke to the people of Pochutla in Chol, since so far as is known, he had no means of learning Yucatec, the only other language which might conceivably have been spoken by the Pochutlecs. The belief that Pochutla was Chol speaking finds some confirmation in the name of the cacique, Cham Ahhoal, which has a distinctly Chol flavor.

Of the third large settlement attributed to the Lacandon that of the Lake of Topiltepec,[13] there is extremely little information, and none which throws light on its linguistic affiliation. Yet as it lay between Chol speaking

[10] *Arte y diccionario en lengua cholti* (Publications, Maya Society, No. 9, Baltimore, 1935: in facsimile). A manuscript copied from the *libro grande* of Fray Pedro (*sic*) Moran of about 1625. The name should be Francisco Moran. There is evidence in the arrangement of the words that the dictionary was converted from Chol-Spanish to Spanish-Chol.

[11] Ximenez, *op. cit.*, Book 4, Chapter 41. [12] *Ibid*, Book 4, Chapters 47 and 48.

[13] There seems little doubt that the Lacandon of the lake is not the same as the Lacandon subsequently named Dolores. Lacandon of the lake was on an island, which the Spaniards in their invasion of 1559 had to approach in boats, whereas Villagutierre tells us that Dolores was situated in open country with some savanna around and implies that water was scarce (J. de Villagutierre Soto-mayor, *Historia de la conquista de la provincia de el Itza*, 2nd ed. [Biblioteca Goathemala], Guatemala, 1933, Book 5, Chapter 6). Furthermore, Dolores could not have been far west of Acala territory, if not actually a part of it, whereas Lacandon of the lake was reached by the army advancing from Chiapas before Pochutla, and must, therefore, have lain roughly west or southwest of the latter town, which we are told was in the foothills of the Cuchumatanes, and therefore well west of Acala territory.

Pochutla and the Chol settlements of the Palenque-Tumbala region, it would seem logical to assign it to the Chols. An Indian boy of Coban, taken prisoner during a Lacandon raid but rescued next day, had understood the Lacandon conversations. As he could only have spoken Spanish, Kekchi, and Chol, the Lacandons could not have been Yucatec speaking.

Only the Indians of Tenosique and Nohha in the abortive Prospero province, fifteen leagues (to the east ?) certainly spoke Yucatec. In this connection it is significant that for their conversion priests were brought from Yucatan on the specific grounds that the priests of Chiapas were unable to undertake this mission because of their ignorance of the tongue.[14] Tenosique and the Prospero country were on the edge of the Yucatec territory, and it is, therefore, not surprising that they should speak that language.

It would seem, then, that the Indians south and west of the Usumacintla were Chols; those north and east Yucatecs. Yet, despite the fact that Cogolludo, the authority on the Prospero *entrada*, carefully distinguishes the Prospero Indians from the Lacandons,[15] and despite the evidence pointing to the Lacandons having been a Chol people, we find the term reserved at the present time for a people speaking a dialect or language close to Yucatec, somewhat resembling Mopan, yet definitely not Chol. Some early writers have got round this difficulty by assuming an eastern Yucatec group of Lacandons and a western Chol group.[16] Is it not more logical to suppose that the present so-called Lacandons south and west of the Usumacintla have drifted thither from north and east of the river during the past two or three centuries since that area was depopulated through the transference by the priests of its original population to more accessible settlements? Should that be so, it is clear that the modern inhabitants have no connection, save geographical, with the historical Lacandons, but may well be descendants of the historical Prospero Yucatecs. Sapper, in his paper *Choles und Chorties* made a very similar suggestion, of which the writer was unaware until after the completion of this paper. Except for Dolores, however, Sapper deduces no evidence that the Lacandons were Chol speaking.

An actual example of re-occupation of Chol territory by Mayas of another linguistic division is supplied by the northward movement in

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[14] Diego Lopez de Cogolludo, *Historia de Yucatan* (3rd ed., Merida, Yucatan, 1867–1868), Book 12, Chapter 3.

[15] *Ibid.*, Book 12, Chapter 7.

[16] G. H. Berendt, *Report of Explorations in Central America* (Report, Smithsonian Institution for 1867, pp. 420–26, Washington, 1867).

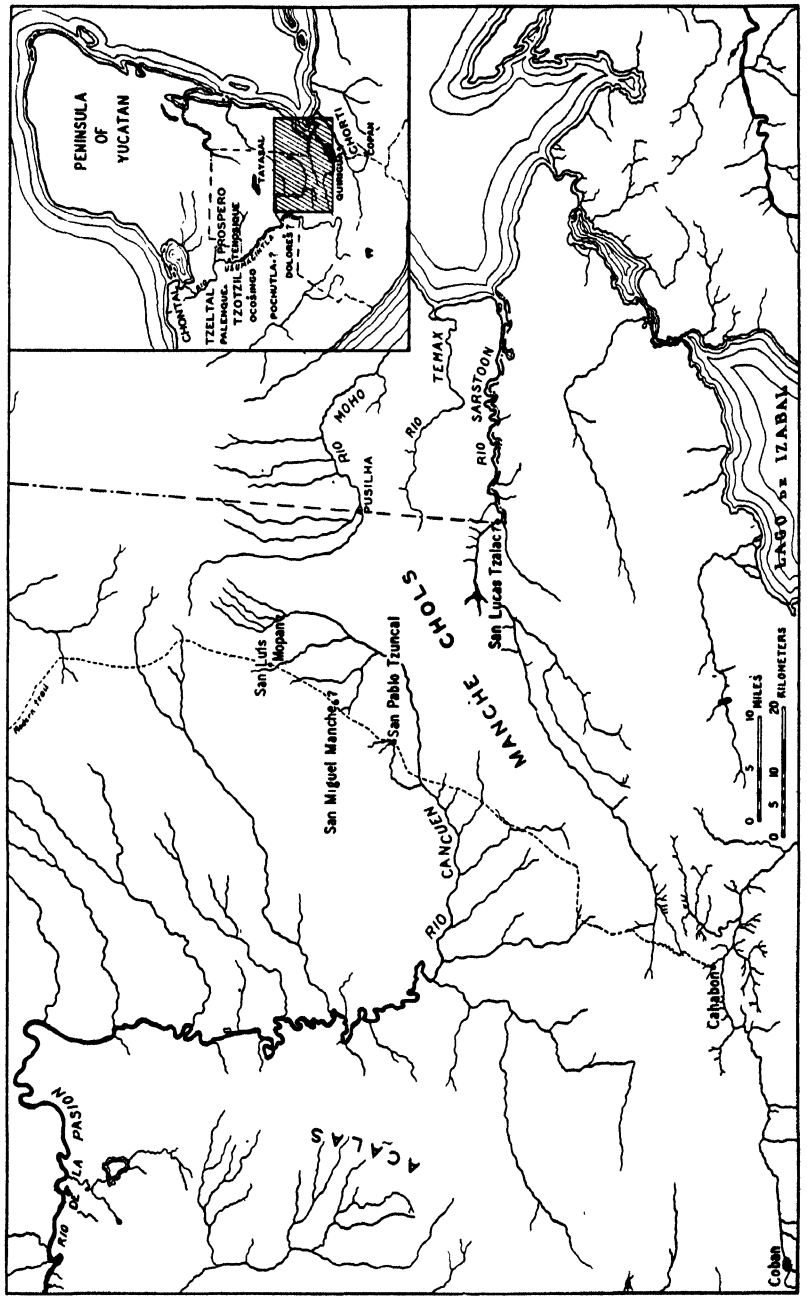


FIG. 1. Map of Manche territory and surrounding areas; with insert of Maya area showing Usumacintla drainage and Chorti territory. (Drawn by Edwin M. Shook.)

recent years of Kekchis into southern British Honduras[17] and to the banks of the Pasion.[18]

Northwest of the Chol towns of Palenque, Hidalgo, Tumbala, etc., the Chontals still occupy the territory between Macuspana and the coast beyond Comalcalco. The differences between Chontal and Chol appear to be sufficiently small to allow of the former being classed as very close to the latter. Should that be the case Chol and its allied languages or dialectic variants, Chorti and Chontal, occupied at the time of the Spanish conquest a belt of territory from Copan to the Gulf of Mexico, passing through the heart of the area where the stela-corbelled vault-classical art complex was most highly developed (fig. 1).

HABITAT OF THE NORTHEASTERN CHOLS

The Northeastern or Manche Chols lived north and northeast of Cajabon as far as Manche, their northern neighbors being the Mopan Mayas. West of them were the Acalas vaguely located as east of the Chixoy River. The eastern boundary of the Manche Chols was the Caribbean, while according to Father Delgado their scattered settlements flanked the coast as far north as a point close to Bacalar.[19] Should that have been the case, their northern extension was much greater on the coast than inland. This is a region of lowland rain forest, where conditions now are scarcely propitious for cultural development, although prior to the Spanish conquest, when malaria, and hookworm may well have been unknown, a better environment may have obtained.

In the sixteenth century there were no real towns in this region, the Chols living in scattered settlements of a few houses, the *rancherias* of the chroniclers.[20] The Dominican fathers, however, gathered the Indians, following their pacification, into several of the largest of these settlements, so that they would be under closer supervision. As a result several fair sized towns were founded, of which San Lucas Tzalac and San Miguel Manche were the most important. Neither of these is still in existence, and their exact locations are unknown.

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[17] J. E. Thompson, *Ethnology of the Mayas of Southern and Central British Honduras* (Anthropological Series, Field Museum of Natural History, Vol. 17, No. 2, Chicago, 1930), p. 36.

[18] T. Maler, *Explorations of the Upper Usumatsintla and Adjacent Region* (Memoirs, Peabody Museum of American Archaeology and Ethnology, Vol. 4, No. 1, Cambridge, Mass., 1908). A Kekchi settlement at Cancuen is mentioned on p. 39.

[19] Ximenez, *op. cit.*, Book 4, Chapter 31. This coastal area is also assigned to the Mopans.

[20] In this connection it is interesting to note that there is no native word for town in several of the Maya languages or dialects. Instead the Aztec word *tinamit* is generally used.

In a recent study of *entradas* San Lucas Tzalac has been placed a little north of Lake Yzabal,[21] but the evidence clearly points to its location elsewhere. Father Cano, who helped to refound the town, states that it was situated on low ground draining into the Zactun River, and that they made two bridges on the river; one immediate to the town, the other four leagues upstream on the trail to Cajabon. This river, called the Zactun at the mouth, he relates, was known farther upstream as the Maytol, and was formed of the Tiyu River and many other streams, one of the sources of the Tiyu being that stream on which Timuchuch, distant nine leagues from Cajabon, was situated He also tells us that the Zactun with its tributaries was greater than the Guadalquivir.[22] Father Delgado, on his return from Bacalar followed the coast of British Honduras and then sailed up the Zactun to reach San Lucas Tzalac.[23] There can be no doubt that the Sarstoon and Zactun are the same, for, apart from the close resemblance in names, the Sarstoon is the only river flowing into the Gulf of Honduras at all comparable to the Guadalquivir and the only one with tributaries close to Cajabon. Since Fathers Delgado and Gallegos followed the Maytol in travelling from San Lucas to the Cancuen settlements, one can deduce that that town was situated at or a little below the junction of the Chocon and Sarstoon, and that the Maytol was the Chiruchipec.

San Miguel Manche can be located with fair accuracy. In the account of the *entrada* of Fathers Esguerra and Cipriano in 1603 distances and directions are given.[24] Manche was three leagues east of Chocahan, which in turn was two leagues north of San Pablo Ixil, also called San Pablo Tzuncal, a small town on the banks of the Cancuen River,[25] which still

[21] D. Zemurray Stone, *Some Spanish Entradas* (Middle American Research Series, Tulane University of Louisiana, No. 4, pp. 213–96, New Orleans, 1932). Mrs Stone justifies her position for San Lucas Tzalac by Ximenez' statement: "They [the priests] got news that toward the side of the Chol [i.e. El Chol region] bordering on the Gulf Dulce and the castle of Santo Tomas there were many Chol Indians. With this news they returned to the town of San Lucas Zalac, which is *nearer to the gulf*" (italics of Mrs Stone). However, she has overlooked the preceding statement (F. Ximenez, *op. cit.*, Book 5, Chapter 29) that the news reached the padres when they were in the vicinity of Manche and Chocohan. San Lucas would be nearer the gulf whether located near Lake Yzabal or on the Sarstoon, but actually would have been off their route if located near Lake Yzabal. The fact that the padres, speaking of San Lucas, say that "here" the river was called Maytol, and that they travelled northeast to reach the Zactun part near the mouth fits in with the location suggested in this paper. Obviously, too, one would not cross the river twice, once very close to the town, in going to Cajabon had San Lucas been situated near Lake Yzabal.

[22] Ximenez, *op. cit.*, Book 5, Chapter 45.

[23] *Ibid.*, Book 5, Chapter 31.

[24] Remesal, *op. cit.*, Book 11, Chapter 19.

[25] Mrs Zemurray Stone places Manche northeast of Tzuncal in contradiction to the sources just given. She relies largely on Gavarrete, whose map, made almost at the close of the nine-

exists. Allowing for the tortuous travel in rain forest, Manche would be approximately as shown on the map. This checks well with the information of Father Cano that there were seventeen and a half leagues from the point where he reached the Cancuen, a short way above its confluence with the Yaxha, to Chocahan, and the estimate of twenty leagues by Fathers Esguerra and Cipriano for the same distance. The Yaxha River has not changed its name. Finally, we are told that Mopan was about six leagues from Chocahan, seemingly in a northeast direction.[26] It is more than probable that San Luis is the same place as the colonial Mopan, in which case Manche must have been very close to where it is located on the map.

HISTORY OF THE PACIFICATION

The pacification of the Manche Chols began in 1603, when Fathers Esguerra and Cipriano persuaded them to embrace Christianity. In the following year Fathers Cipriano and Alejo de Montes toured the whole area, as far as Manche to the north and Yaxha to the west. In 1628 the reduction of the territory had advanced to a stage at which it was erected into a Vicariate with Father Francisco Moran, the author of the Cholti *Arte y diccionario*, as Vicario with his seat at San Lucas Tzalac and over 6,000 reduced Chols in his care.

In 1633 the Chols revolted, burnt all the churches, and abandoned the towns. Father Moran barely escaped with his life, and the vicariate library, possibly containing much ethnological information, went up in flames. For thirty-eight years the Chols retained their independence, although Father Moran made two trips into their territory, and Father Gabriel de Zalazar a third. In his second trip, apparently made in 1642, Father Moran penetrated north of Chol territory as far as Bacalar, southern outpost of Yucatan.

In 1671 Father Geronimo Naranjo entered Chol country. His good reception led to a series of missions between 1672 and 1677, principally conducted by Fathers Jose Delgado and Francisco Gallegos, which resulted in the re-pacification of the Chols. In 1677 Father Delgado and companion travelled down the Yaxal (Mojo) River from Pusilha, and struck northwards along the coast of British Honduras. Afterwards, turning inland, they reached the Tipu (Belize ?) River, but not allowed to pass (by the English logwood cutters ?), they returned to the Texach (Manatee ?) River. Following that river downstream for eight leagues, they were captured at its mouth by English, who took them to the English leader, Barte Charpa

teenth century, is, so far as deserted sites are concerned, clearly guess work aided by an incomplete study of source material.

[26] Ximenez, *op. cit.*, Book 5, Chapter 58.

(Bertie Sharpe ?), on Cocina Cay almost opposite Belize. Subsequently the priest and his companion were released, and reached Bacalar after many sufferings.

In 1678 the Chols, irked by town life and the restrictions of Christianity, once more fled into the forests, and the resident padres, with no flocks to tend, returned to Cajabon. Four years later Father Delgado and two other priests reached San Lucas Tzalac, but found the church burnt and no signs of Indians. In 1685 five Cajabon Indians, sent as messengers to the Chols, were killed, but later in the same year Father Cano and two other priests succeeded once more in pacifying the natives. The pacification lasted four years, at the end of which time the Chols once more revolted. The re-built church of San Lucas Tzalac was burnt, the two resident padres barely escaping with their lives. Later in that same year of 1689, a punitive expedition rounded up such Chols as could be found, and settled them near Rabinal in the Urran Valley, whence a return to the forests was impossible. More Chols were rounded up and despatched to the Urran Valley in 1690 and subsequent years. In 1695 Fathers Cano and Delgado with five other priests accompanied Captain Diaz de Velasco and a small force in an expedition through Manche territory to the Mopan area. Subsequently they penetrated nearly to Tayasal (Ti Ahitza: at the place of the Itzas), but were forced to retire owing to the non-arrival of the main body advancing through Chiapas. However, with the pacification of the Mopans and the conquest of the Itzas two years later, Spanish dominion over the whole area was unchallenged. Practically all the remaining Chols were moved to the Guatemalan highlands, the Manche area becoming what it still is to all intents and purposes, uninhabited forest.

POPULATION AND LANGUAGE

The Dominican fathers claimed that in 1633 there were more than 6,000 souls concentrated in settlements under their care, but these may have included some renegade Indians from Coban, who had fled to the forests. On the other hand, by no means all the Chols had submitted to the fathers. Perhaps a total population for the Manche area of 10,000 is not over high. One source places it as high as 30,000. Occasional names, such as Alracaham, a Chol chief, or Xcarruchan Mountain, suggest that the division between Cholti and the *r* using Chorti dialect was not so fast as has been supposed.

ETHNOLOGICAL NOTES

Religion. The explicit statement that the Manche Chols did not have idols is of particular interest, as according to early sources, the Mayas of

Yucatan similarly lacked idols until they were introduced by Mexicans, who, according to tradition invaded Yucatan under the leadership of Quetzalcoatl-Kukulcan, the feathered serpent deity or leader. Instead, these Chols sacrificed to woods, very high and rough mountains, dangerous passes, cross roads, and great whirlpools in rivers, believing that from these came everything needed in life. Two mountains were particularly revered. One, called Vatanchu (straight god),[27] was two and a half leagues north of Cucul on the road to Manche. On the summit the padres found a square rock a yard high, on top of which were burnt pine torches and drops of blood. At this shrine the Indians were accustomed to pray and sacrifice to the mountain. The second, Xcarruchan, was close to the Rio Maytol, on the trail from Tzalac to the Cancuen settlements. This the padres described as the god of the mountains. On top they found a well swept little plaza with a fire in the center surrounded by a palisade. The Indian porters explained that the fire was kept perpetually alight by travellers, so as to have it at hand for burning their offerings of copal incense.

Remesal states that in the plaza of the settlement of Chocahan stood a crudely made altar of stone and mud. about an arm's breadth in diameter. Here the Indians burnt black wax candles and pine torches, and sometimes sacrificed (turkey) hens and other birds and drew blood from their tongues, ears, temples, the fleshy part of the arms, and other parts. In the course of their travels the padres came upon many crude altars, made of two or three rough stones on the ground with a bower of palm leaves behind, as a sort of *reredos*. At these the Indians burnt copal and made sacrifices similar to those offered at the altar in Chocahan.

Father Delgado describes a penis mutiliation ceremony of the Manche Chols, probably allied to the blood drawing ceremonies of Yucatan. As quoted by Jiminez he says:

In Vicente Pach's [Pech's] ranch I saw the sacrifices. They took a chisel and wooden mallet, placed the one who had to sacrifice himself on a smooth stone slab, took out his penis, and cut it in three parts two finger breadths [up], the largest in the center, saying at the same time incantations and words I did not understand. The one who was undergoing the operation did not seem to suffer, and did not lose a drop of blood.[28] In fact they seemed very pleased, for many came from various parts [to submit themselves] to the diabolical cutting, and went off [afterwards] very content. I saw this twice to my great astonishment. I took away the cutting instrument from

[27] *Chu* means god. Can there be any connection with Votan, the Tzeltal cave (and mountain ?) god? Straight god seems somewhat meaningless.

[28] The statement that no blood was lost would appear dubious. Apart from physical difficulties, the similar ceremony in Yucatan was definitely to draw blood.

them, I preached against it, and some of them invited me to do the same [whereupon] I hastened to dissuade them from that atrocity and evil.

Some ceremonies, at least, were held in huts used as temples. A brief description of one of these is given by Remesal, who says it was so black and dirty, partly owing to deposition of soot from copal smoke, that it was a disgusting sight. The interior was full of vessels for the (ceremonial) drinking. There were also two stones, on which the sacrifices of incense smoke were made.

Incense burners of pottery were used, and stones, which may have been of jade, were used in religious rites. On the occasion of a chief's sickness an all night ceremonial was held, including sacrifices and the burning of incense, apparently to ensure his recovery.

In the Moran dictionary the name of the devil (underworld god) is given as Kisin. The same name was current in Yucatan and among the Dolores Chols. The same source tells us that the underworld was called Xibalba, a name also in use in the highlands of Guatemala, and in Yucatan. The Moran dictionary also gives Mam for idol. This term, meaning maternal grandfather, is used by the present day Mayas of San Antonio in southern British Honduras as a term for the mountains-valley gods of vegetation, and among the Kekchis is applied to certain deified mountains. Were Vatanchu and Xcarrunchan Mams?

Turning now to the information in the Dolores letter published by Tozzer, we find that they had deities of the maize fields, turkeys, cacao groves, and rivers, but the principal ones were Zintun, Ahate, Quizin, Chacmuo, Zainoh, Ahua, Xcacuihalal, Tepecthic, Chua, and Taxanitz. Except Quizin, whose name is merely a variant spelling of Kisin, these names are unknown, but the termination *halal* of Xcacuilhalal means arrow. Some of them may represent local mountains. Particularly important was the lightning, known, according to this letter, as Macon. Judging by the beliefs of the Mayas of other linguistic divisions, the lightning was associated with a group of deities. The padres describe a special lightning ceremony performed by the cacique and four assistants. The people of the settlement leave their houses after placing a pitcher of water beside the burning fire on the hearth. The cacique, ceremonially intoxicated, and his four assistants, enter the village like (mimicking ?) the lightning. The assistants pass from house to house putting out the fires with the pitchers of water left beside them. Only the fire is kept burning before the idols. At the end of the four days the people return, and every one kills a turkey and sprinkles its blood on pine sticks, which are burnt before the idols. New fire is then

carried to the houses, with which the turkeys are cooked for the festival of food and drink, at which as usual they blackened themselves.

In Yucatan the four junior officials who held the arms and legs of sacrificial victims were called Nacons. As Yucatec priests of another order were called Chacs, the name of the thunder and rain deities, one wonders whether the word Nacon can be connected with Macon, the lightning deity of Dolores, particularly as this name may well have been borne by the cacique and his four assistants when they mimicked the lightning. There is often considerable confusion between *n* and *m* in Yucatec vocabularies, indicative of regional differences or a transitional sound.

Sacrifices generally took the form of copal incense and turkey blood sprinkled on pieces of pine. There was a house where the idols were kept, and which also apparently served as a men's house, as we are told that during a wife's pregnancy the husband slept there.

Although shooting with arrows is mentioned as a punishment, there is no account of human sacrifice at Dolores, perhaps because of the presence of the padres. However, human sacrifice was practiced at Pochutla, for during the Spanish advance on that town in 1556 the Indians sacrificed a negro prisoner, removing his heart. Remesal says his heart was offered to the sun, but, according to current Spanish belief all human sacrifices throughout Middle America were made to the sun. There are various reports of children captured by raiding Lacandons being sacrificed. Villagutierre reports the use of incense burners and many idols at Dolores.

There is no mention of a regular priesthood, either among Manche Chols or Dolores Chols. Indeed, for the latter area we are informed that the caciques performed those functions. On the other hand the Moran dictionary lists two words for sorcerer. The Dolores caciques celebrated a particular feast, that of the cigarettes. Twenty days were employed making cigarettes in the houses, at the end of which time the people sought deer, fish, honey, etc., which on the appointed day they presented to the caciques in the house of idols. Afterwards the snouts of the idols were rubbed with the fat of the animals, and on the mouths were placed small offerings of ground cacao. Presents of cigarettes were made to the caciques, and the festival was celebrated with eating and drinking, the participants being painted. Divination for lucky days for sowing and harvesting and other work was performed in Dolores with grains of maize and red beans. Divination was also used to decide whether a person would live or die.

Burial Customs. For the Manche region there is no information, but of the practices at Dolores Villagutierre writes:

These Indians had the custom of burying the dead in open country a short

distance from the town and of putting over the graves of men little stools, *puquietas* [? meaning] and other things used by men, and on those of women metates, cooking pots, gourds, bowls, and other utensils of that kind. In their funeral dances they used to go around [the graves ?] with their abuses, superstitions and idolatry.

At Lacandon Lake the Indians threw their dead in the water. Remesal, who records this fact, states the custom was due to the lack of land on the rocky island.

Agriculture. According to the Dominican fathers the following plants were cultivated among the Manches: maize, sweet potatoes, cacao, "turkey" beans,[29] chile, tobacco, annatto, plantains, and sugar cane (the last two of European introduction). The Moran dictionary, almost entirely composed in the same area, lists in addition: plums, squashes, avocados, tomatoes, guayabas, mandioc, and anonas. These two sources represent casual references, not attempts to list all cultivated produce. Of very considerable interest is the definite statement of the padres that the Manche Chols did not know how to make tortillas, but had to be taught. In this connection it may be significant that Bishop Landa, our best source for Yucatan ethnology, makes no mention of tortillas, although describing at some length other methods of serving maize preparations. Moreover, pottery comal griddles are notably rare in Peten archaeological sites. The padres report the use of tamales, balls of maize, posol, and mixtures of maize with other herbs. The Moran dictionary lists metates, comals, both plain and with holes punched in them. For Dolores Villagutierre mentions maize, beans, chili, plantains, sweet potatoes, jicamas, plums, cultivated zapotes (mameys) and, in addition to others, pineapples, not improbably a post-Spanish introduction.[30] For the same town Villagutierre reports the comal. The presence of the comal does not necessarily imply tortilla making, as this is used among other things for roasting cacao beans.

Industry. The Manche Chols made their own breech clouts, and a few words connected with weaving are given in the Moran dictionary.[31] Copper axes, undoubtedly obtained in trade, were used in clearing milpas. They could not have been very efficient, as we learn that three or four days were

[29] "Turkey" beans are listed by Thomas Gage, *A New Survey of the West Indies or the English American, his Travels by Sea and Land* (3rd ed., London, 1677). Gage accompanied his friend, Father Moran, on one of the *entradas* to the Chol country (Chapter 20).

[30] Thompson, *op. cit.*, p. 193.

[31] Gates, in his introduction to the Moran *Arte y diccionario*, has pointed out the fact that the Kekchi word for huipil, *pot*, is listed here, as well as *lec*, explained as a Chol huipil. From this one infers that Kekchi huipils were traded to the Chols. The writer, however, for various reasons outside the scope of this paper, believes that *po*, the Kekchi name of the moon, from which *pot* is derived, may be a generic Maya root for moon.

required to fell a very large tree. Bows and arrows were used, and the Moran dictionary lists blowguns. Lime was made from certain shells and an obscure passage suggests that cacao beans and annatto were used as currency. To indicate a desire to communicate with outsiders bundles of cacao were left in trees. Hammocks of net technique were used, while the Moran dictionary gives baskets, net bags, and beds. Pottery making is indicated by the pottery incense burners, and confirmed by various types mentioned in the Moran dictionary. The latter source also lists flutes, the cochineal worm, turkeys, merchants, fish hooks. For Dolores Villagutierre reports blowguns, bows and arrows, stone metates and mullers, pottery, calabashes, suspended cradles of cane, beautifully worked axes of dark green stone used in clearing milpas, dogs, European chickens, turkeys and many tame macaws.

Dress. Father Cano relates a meeting with six completely naked Manche Chols, but Father Remesal says of them that they always wore breech clouts and sometimes cotton mantles as well. Women wore cloths of striped colored cotton as skirts, but important women, in public, covered head and breasts with a white cloth. Men wore their hair short in front, but the long tresses behind were plaited with locally made cotton ribbons and were gathered up in a kind of aspergill in which were stuck flowers and feathers of various kinds. They objected very strongly to having it cut.[32] Women wore their long hair loose. Men, apparently when on the war path, smeared themselves with annatto, while another group of the warriors, seen by the padres, was decked with feathers.

A Manche chief was captured with his body covered with designs made with a branding iron. If the scarification was made with an instrument of that metal, it must, of course, have been a trade piece. On his chest was a wreath pattern like the alternate flints and steels of the *Toisón* order of knighthood, while on his stomach was depicted a most horrible looking devil. Lacandons, perhaps from Dolores, captured a boy near Coban and dressed him in a wide shouldered, full smock of bark cloth with some painting on it. This may have been ceremonial, as the boy seemingly was to have been sacrificed. Undoubtedly it resembled the painted bark cloth of the modern Lacandon, illustrated by Tozzer. For the Dolores settlement we have only the information that the bridegroom gave the bride new skirts, and that red and black paint was used ceremonially on many occasions, but Villagutierre says men and women there went naked except for a cotton

[32] Cutting of the hair was a punishment among the Yucatecs (Cogolludo, *op. cit.*, Book 4, Chapter 4).

waist band, from which a belt hung down in front. The women were clever at weaving their cloths; dyeing them red with brazil wood and black with a certain powder. Both men and women wore wooden sticks in their ears. Women had the cartilage of their noses pierced for the insertion of horizontal canes or for the suspension of circular ornaments, of the size of a silver *real*, made of what was considered to have been amber.

In the Moran dictionary the word *Yaxtun* is given for blue beads. This, meaning green stones,[33] is suggestive of the highly prized jade. For the Dolores settlement beads and copper bells are mentioned, the latter, needless to say, imported.

Houses. In the Moran dictionary beside the usual word for a house, *otot*, which undoubtedly was used for the usual Maya lowland hut of poles and palm thatch, another word is given with the translation "house made with mud," presumably meaning walls of wattle. In each Manche house lived the owner, his sons, daughters-in-law, grandchildren, brothers-in-law, and relations of other categories. According to the Moran dictionary houses seem to have been provided with lofts. Villagutierre says that the houses at Dolores had open fronts, but sides and backs were closed with pole work. Roofs were of straw. In each room was a wooden bed of barbecue type sufficiently large to hold four persons. There were small beds for children. At Lacandon of the lake, according to Remesal, the houses were large and white. This suggests calcimined walls. At Dolores the chief's house had a verandah, suggestive of the type of house used by Yucatec chiefs.

Calendar and astronomy. No Chol calendar is mentioned by writers, except that the new year celebration at Dolores was called *Chuntal Catuz*. The first word means in Chol, "seat," but is also connected, through its original meaning of root or base, with "beginning" in most lowland Maya languages. However, we know from Yucatecan sources that the Katun (twenty vague year period) had its seat, and the meaning here is probably analogous. The meaning of *Catuz* is uncertain. It may be significant that a great feast and ceremonial intoxication was planned in a Manche Chol settlement for June 27, 1604. According to the correlation of the Maya calendar in Yucatan made by Bishop Landa, and allowing for leap day corrections, and the shift from Julian to Gregorian, which took place in the interval, this day coincided with 8 Cumhu, the mythical start of the Maya calendar, and an extremely important event in the Maya year. A list of Maya months in an almanac from Lanquin, Alta Vera Paz, was published

[33] Most Maya divisions do not verbally distinguish between green and blue.

a few years ago.[34] The fact that Lanquin was probably once Chol territory,[35] together with linguistic evidence of the closeness of several month names to those of Yucatan and non-Kekchi features such as the Chol *Yax* in place of the Kekchi *Rax*, supports the writer's original contention that the month names are Chol, although the rest of the almanac is written in Kekchi, the present language of Lanquin. The Moran dictionary gives *Xulab* as a generic name for star. This word is still current among the Mopan Mayas of San Antonio, British Honduras,[36] as a name for the planet Venus. There is a possibility that it is of Kekchi origin, since in that language it means guardian of the animals, according to information of a resident in the Kekchi country. The word *Apizocab* is translated as "Venus star or, rather, star which lasts all night." The name should doubtlessly be written *Ahpizacab* with the meaning measurer of the night. The Yucatec Motul dictionary gives *Ah ppizakab*,[37] "morning star that appears early [in the night] and runs all through it as though it were measuring it." This could not, of course, apply to Venus, but might describe any star or the planets Mars or Jupiter when not far removed from opposition. Elsewhere in the Moran dictionary the morning star is listed as *nohec*, meaning great star.[38] The Pleiades are given as *Uc chahom* (seven together?). The moon is *u;* the sun is *quin*, sunset being *ochquin* (enter sun) and the sun's rays being poetically described as *u halal quin* (the sun's arrows or spears). Directions are: east, *tzatzib quin;* north, *nohek;* west, *u yochib quin* (the sun's entrance); south, *nool.*

Relationship terms. Material in the Moran dictionary is not sufficient to cast much light on the classificatory system used by the Chols, but the few indefinite terms given suggest that it was of the same pattern as that used by the Yucatecs[39] in the use of reciprocal terms of address, although the material is too scant to indicate whether cross-cousin marriage had been practiced.

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[34] W. E. Gates, *A Lanquin Kekchi Calendar* (Maya Society Quarterly, Vol. 1, pp. 29–32, Baltimore, 1931); J. E. Thompson, *A Maya Calendar from the Alta Vera Paz, Guatemala* (American Anthropologist, Vol. 34, pp. 449–54, 1932).

[35] See notes 8 and 9.

[36] Thompson, *Ethnology of the Mayas*, p. 63.

[37] The Martinez edition gives *Ahppizba hab*, but an examination of a photostat of the original copy in the Carter Brown Library shows the *b* rubbed out, and a light stroke, the presence of which converts Martinez' *h* into *k*.

[38] In the Motul dictionary of Yucatec *Noh Ek* is definitely stated to be Venus.

[39] F. Eggan, *The Maya Kinship System and Cross Cousin Marriage* (American Anthropologist, Vol. 36, pp. 188–202, 1934).

The following terms are listed: *mam*, grandfather and grandson; *itzin*, younger brother and grandson; *mim*, grandmother and grandson (granddaughter ?); *mi*, uncle older than father (with prefix *no*[*h*]) stepfather (with prefix *tzeh*), and presumably father (not listed); *na*, mother, stepmother (with prefix *tzeh*), aunt older than mother (with prefix *no*[*h*]); *mu*, sister-in-law; *han* and *achalcan*, brother-in-law; *nial*, son-in-law (the Starr vocabulary from Tila gives this word as meaning father-in-law); *ichac*, nephew; *ichan*, uncle; *zacun*, elder brother; *itan*, sister; *choc*, son or daughter; *hatzil*, woman's child's mother-in-law.

The term *no*, undoubtedly *noh*, has the meaning of great, the prefix *tzeh* has in Yucatec the meaning little, and is there similarly used as a prefix, but with the sense of younger. These terms are suggestive of cross-cousin marriage when taken in connection with the terms used by the linguistically closely related Yucatec.

The Chol vocabulary in Leon Fernandez also lists *nia*, mother; *tiat*, father; *peenel*, son: *hal*, daughter; *tzuscun* (older ?) brother; *chich* (older ?) sister. The last is of particular interest since in Yucatec *chich* has, among other meanings, that of wife's brother's wife. Since *ch* in Chol becomes generally *c* in Yucatec, the term *chich* corresponds to the Yucatec *cic*. This relationship term is used for various relations including older sister. It is thus clear that originally the term *chich* was used both for elder sister and for wife's brother's wife presumably before Yucatec was differentiated from the other lowland languages or dialects. It is scarcely necessary to point out that with cross-cousin marriage one's sister is also one's wife's brother's wife.

The Manche Chols were polygamous, since many are said to have died of a mixture of anger and melancholy on being restricted to one wife after transportation to the Rabinal area. The Dolores Chols, on the other hand, were monogamous according to the authors of the manuscript letter and Villagutierre.

A fairly detailed account of a Dolores marriage ceremony is given in that letter.

> Marriages are made in this fashion. The young man goes alone to ask for the young woman, and if she is promised to him, he remains at the house of his parents-in-law for a year. He eats and sleeps there with her as though they were married. and if they do not agree well in that year, the young man seeks another woman and she is lost. But if they agree, at the end of the year they bring together many turkeys, etc., and the women guests paint themselves and paint the bride and decorate her hair and neck with as many beads, *tistines*, and copper bells as can be procured. And the men paint the bridegroom like themselves, black like devils.

The form of the marriage is: the bride gives the bridegroom a small stool painted in colors, and also give him five grains of cacao, and says to him "These I give thee as a sign that I accept thee as my husband." And he also gives her some new skirts and another five grains of cacao, saying the same thing. The cacique, who is the priest on all these occasions, joins their hands, places for them a *petate* [mat] in the middle of the house, and there the newly wed couple take their seats. Then the whole house is filled with guests with their small stools, eating and drinking, and now and then the newly married ones dance.[40]

There is no information as to restrictions on choice of a spouse, but Villagutierre says *Calpuls* or *Chirimitals* (clan or sib groups, perhaps geographical) existed at Dolores.

Social customs. At Dolores it was customary for a man to sleep in the house of idols from his wife's fifth month of pregnancy until the birth, not taking up residence in his house until the fifth day after that event. Twenty days after birth, in the presence of all the relatives, an old woman passed a comb under the child's short hair, and singed the ends with six successive lighted sticks of pine wood. Subsequently these six sticks were anointed with turkey blood and, together with much copal, burnt on a large pile of pinewood in the house of the idols. Then the high priest (chief cacique ?) came out and gave the child a name, smearing its whole body with black and red, and placed over it a garland of small macaw feathers called *quen*. Thereupon all returned to their houses and a big feast was held.

The people of Dolores were in the habit of confessing to their caciques when sickness afflicted a member of the family, holding the belief that the sickness would end in death unless confession were made by son, father, or husband, etc. Should the whole community be suffering from plague or sickness, the confession of a serious sin would lead to the shooting of the sinner with bows and arrows. Attendants did not eat or drink before a chief. Apparently a chief served as priest for the members of his clan or sib, although among the prisoners taken to Guatemala city from Lacandon of the lake were two individuals said to have been the cacique and high priest.

In the Moran dictionary words for mask and dance are listed. Terms are also given for various tradesmen and professionals, such as carpenter, mason, tailor, trader, doctor, and teacher, suggesting fairly advanced specialization.

Cortes and the Chols. Cortes, both during his march to Nito and during

[40] A. M. Tozzer (*op. cit.*) calls attention to resemblances to marriage ceremonial depicted in Mendoza Codex. The above translation is that of Tozzer.

his subsequent forays in the Lake Yzabal region, was in contact with Chols. However, his account, dealing primarily with the search for food, has little of ethnological importance in it, and, furthermore, his explorations from Lake Yzabal took him also through Pokomchi territory, and it is impossible to attribute his remarks to any particular group. Yet one of his two references to turkeys, pigeons, partridges, and pheasants (curassows) kept in cages probably applied to the Chols.

SUMMARY AND CONCLUSIONS

From the woefully meager source material one gets an impression of a simple culture of Maya pattern lacking the highly developed religious and secular organization of Yucatan or the Guatemalan highlands. This is particularly noticeable in the absence of a regular whole-time priesthood in both Manche and Dolores, and in the lack of towns in the Manche area and their small size in the Acala-Dolores-Pochutla regions. This feature is emphasized in the Moran dictionary by the absence of a specific word for town, the word *luum*, a generic Maya term for land, serving as a substitute.

Linguistic evidence shows that the people called Lacandons in the sixteenth and seventeenth centuries were actually Chols. The present day Lacandons, speaking a language or dialect very close to Yucatec, probably moved into this region after the Chols had been removed by the padres.

In seeking to place this poorly known Chol culture a few points are worth noting. The Dolores hut set aside as a combined temple and men's hut corresponds to the modern Kekchi *ermita*[41] and the modern Lacandon hut for idols.[42] Men's houses also existed in Yucatan, but these seemingly did not also serve as temples. In the worship of mountain and river deities the Chols, of both Manche and Dolores, are closer to the Kekchis and other highland Mayas as well as to the Mopans, Chontals, and Tzeltals[43] than they are to the Yucatecs and modern Lacandons, among whom this cult is absent or poorly developed.

Lofts in huts are shared by Manche Chols and Kekchis, but are missing among Yucatecs and Tzeltals, and even among the Mopans. In the free use of pine wood for sacrificial purposes the Chols are again closer to highland Mayas than they are to Mopans, Yucatecs of British Honduras or

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[41] K. Sapper, *Das nordliche Mittel-Amerika nebst einem Ausflug nach dem Hochland von Anahuac* (Braunschweig, 1897), p. 275.

[42] A. M. Tozzer, *A Comparative Study of the Mayas and Lacandones* (Archaeological Institute of America, New York, 1907), p. 11.

[43] F. Blom and O. La Farge, *Tribes and Temples* (Middle American Research Series, Tulane University of Louisiana, No. 1, New Orleans, 1926), pp. 368, 500.

Yucatan, or the modern Lacandons. However, the absence of this feature in Yucatan may be due to the rarity of pine wood there.

It is difficult to say to what extent Kekchi resemblances are due to absorption of Chols by the expanding Kekchis. Sapper has already called attention to Chol words now incorporated into Kekchi.[44] A possible addition to his list of ethnological importance is *icbolai*, the Kekchi name for the rattlesnake, of which the hammock of the Mam is made, but given in the Moran dictionary as a species of snake. *Xulab*, to which reference has been made, may also be a borrowing.

A penis mutilation ceremony, seemingly similar to that of the Chols, can be inferred from a late seventeenth century account of the Mopans,[45] who, judging by their apparent descendants now living in San Antonio, British Honduras, must have been culturally as well as geographically close to the Chols.[46] A somewhat similar ceremony has been reported by Bishop Landa as existing among the Yucatecs.

Our study shows that the Chols were not only geographically and linguistically intermediate between Yucatecs and highland Mayas, but also culturally so. However, such scant information on Chol ethnology can hardly be used to link that people with the ethnologically almost as little known Maya Old Empire. Nor has the time arrived when we can delineate with any assurance the cultural subdivisions which undoubtedly existed in that region. Unfortunately Maya archaeological collections consist overwhelmingly of sculpture, ceremonial objects, painted pottery, jades, and other showy pieces. These may be considered to reflect the unifying influences of the hierarchical cult, comparable, perhaps, in its effects to Mohammedanism. On the other hand, features such as metates and mullers, and sherds of unslipped or monochrome slipped pottery which might well be representative of the underlying ethnological and, perhaps, linguistic subdivisions, are almost completely absent from all collections except those most recently made. Whether, therefore, this belt of Chol territory is reflected in the archaeology of the area must remain in doubt until more is known of the humbler arts and crafts.

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[44] Sapper, *Das nordliche Mittel-Amerika*, p. 397.
[45] Ximenez, *op. cit.*, Book 5, Chapter 58.
[46] Thompson, *Ethnology of the Mayas*.

AN EXAMPLE OF CULTURE CONTACT WITHOUT CONFLICT: REINDEER TUNGUS AND COSSACKS OF NORTHWESTERN MANCHURIA[1]

By ETHEL JOHN LINDGREN

METHOD OF EXPOSITION

THIS brief discussion of aspects of Russo-Tungus culture contact in northwestern Manchuria is presented in the hope that, by comparison with studies conducted elsewhere, significant correlations may eventually be established. In analyzing the material the results of other investigations should therefore be taken into account. Unfortunately I have not yet found any detailed treatment of the particular problem with which I am concerned. Indeed an examination of several articles[2] relating to the effects of European civilization on African society reveals little uniformity even in the descriptive sections, raising the question of whether attempts at drawing general conclusions from culture contact research are premature.[3]

It is true that a comprehensive outline for the arrangement of data has already been proposed in *A Memorandum for the Study of Acculturation*, communicated to "Man"[4] by M. J. Herskovits, R. Redfield, and R. Linton. G. Bateson has criticized its categories and also advanced an alternative scheme.[5] Both systems of analysis clearly assume that contact phenomena, despite the differences between the cultures involved in each case, nevertheless have characteristics which permit of valid generalizations. Bateson further assumes that a study of the contact of groups *within* a culture will throw light upon factors present in inter-cultural relations.[6] The truth of the first assumption is of course often taken for granted in popular statements; e.g., "Conquerors are always resented by the conquered." Meanwhile anthropologists, by continued efforts to explain the presence or absence of individual features in as many cases of culture contact as possible, may gradually prepare the ground for wider syntheses.

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[1] Part of this paper was read to Section H of the British Association for the Advancement of Science, Blackpool, September, 1936.

[2] *A Five-Year Plan of Research* (Africa, Vol. 5, No. 1, 1932) which explains the objective, and contributions by A. I. Richards, L. Mair, I. A. Schapera, and M. Fortes to the same journal (1932–1936). See also C. Daryll Forde, *Social Change in a West African Community* (Man, 1937, No. 5).

[3] Note, however, that Fortes believes that the method of field-work which he advocates "provides a basis for a comparative sociology of culture contact," and claims to have demonstrated the fact by explaining the differences between his own findings and those of Schapera from another African tribe: see *Culture Contact as a Dynamic Process* (Africa, Vol. 9, No. 1, 1936), pp. 50–54.

[4] Man, 1935, No. 162.

[5] See *Culture Contact and Schismogenesis* (Man, 1935, No. 199).

[6] *Ibid.*, §§7, 9.

The present article is intended as a small contribution towards that task, although the aspect of culture dealt with has the disadvantage of complexity. It was, in fact, chosen because of its immediate practical importance rather than from theoretical considerations.

A summary is bound to be dogmatic and undocumented, and the conclusions therefore merely provisional. I am in full agreement with the standards of completeness in the collection and analysis of culture contact data which Schapera advocates.[7] Of my relevant field notes,[8] however, only those on shamanism, clan organization, personal names, and the attitude towards land have been somewhat fully analyzed. Yet preliminary reports of work in other areas have often helped me to see new problems in my own, and through the inter-cultural comparisons which they facilitate, the contact phenomena most susceptible of generalizations should become sooner apparent.

THE PROBLEM

Many culture contact studies have been prompted by conditions in one of two cultures, due directly or indirectly to its contact with the other, which according to the investigators' ethical criteria[9] appear unfortunate or even "calamitous."[10] Typically the culture causing anxiety is non-European, non-Christian, relatively primitive in its economy, and preliterate; its bearers have a skin color other than "white" and are politically a subject people. Typically the other culture is European, Christian, relatively advanced in its economy, and literate, its bearers being "whites" who are politically dominant. Characteristic accompaniments of their contact are attitudes of fear and suspicion on the part of the subject people[11] and attitudes which range from contempt to paternalism on the part of the Europeans,[12] both sets usually involving a view of the members of the opposite group as in some sense different in kind from themselves.

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[7] See *Field Methods in the Study of Modern Culture Contacts* (Africa, Vol. 8, No. 3, 1935).

[8] My interest in this subject was first aroused by the theories of F. C. Bartlett; see *Psychology and Primitive Culture* (Cambridge, 1923), Chap. 5, "The Psychological Study of the Contact of Peoples."

[9] These are seldom specified and are obviously difficult to define. Fortes has already called attention to the valuational bias in such terms as "pathological," "disintegrated," "detribalized," etc., remarking that "every society . . . can be described as pathological or disintegrated from certain points of view" (*op. cit.*, p. 25).

[10] See *A Five-Year Plan of Research*, p. 1.

[11] See, e.g., A. I. Richards, *Anthropological Problems in North-Eastern Rhodesia* (Africa, Vol. 5, No. 2, pp. 127–28).

[12] See, e.g., F. Clarke, *The Double Mind in African Education* (Africa, Vol. 5, No. 2, 1932) pp. 161–63.

When the interests of the two communities come into conflict, such attitudes may change to hatred, issuing in revolutionary violence on the one hand and in repressive action on the other.

In the case of the Reindeer Tungus and certain Russian Cossacks[13] of northwestern Manchuria, all the typical elements of contrast listed above have existed, in some degree, during a relationship which has lasted more than sixty years, yet the accompaniments just described seem to be lacking. I epitomize this condition negatively as *culture contact without conflict* because its theoretical significance lies in the fact that it is uncommon,[14] and its practical significance in the fact that members of some contemporary cultures, including our own, regard the reverse as undesirable. The condition may be further defined by the following data:[15]

(1) I heard no Tungus or Cossack express fear, contempt, or hatred in relation to the other group as a whole or any individual composing it.[16] A few traits of the opposite group are habitually criticized, and a few praised, on the basis of a comparison with the corresponding traits of the speaker's culture. Neither the unfavorable nor the favorable verdicts are inconsistent, however, with the self-estimates of members of the group concerned.[17] Expressions of dislike and distrust with regard to individuals in the other group are of exactly the same type as those applied within the group itself, and admiration seems to predominate over criticism.[18]

(2) No instance was recorded of the use or threat of force in the relations between these communities, although the reminiscences of the elderly cover most of the period of contact. The absence of even sporadic murders

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[13] Living in Chuerhkanho and Dubova at the time of this study; before the Russian Revolution, in Pokrovka and Ust-Urov.

[14] Cf. R. H. Lowie, *Cultural Anthropology: a Science* (American Journal of Sociology, Vol. 42, No. 3, 1936), p. 306. [15] Collected in 1929, 1931, and 1932.

[16] Statements about the *absence* of traits are notoriously unreliable, especially after a rather brief investigation, but complementary evidence of a positive kind appears in the descriptive sections below.

[17] For instance, the Tungus criticize the Russians because thefts occur in their communities, a crime unknown among the Manchurian Reindeer Tungus, while the Russian Cossacks are themselves tireless in praising Tungus honesty, implying its superiority to their own. The Cossacks, in turn, criticize the Tungus for their random violence under the influence of drink, Cossack violence being usually premeditated, and the Tungus often spontaneously deplore this weakness on their part.

[18] In observing the attitudes of Cossacks and Tungus towards each other I had the advantage of being a cultural novelty, not associated with either, and there were no Cossacks or Reindeer Tungus in my party. It included B. O. M. Mamen, a Norwegian; a Mongol who only knew a Tungus dialect remote from that of the Reindeer group; and, part of the time, a Mohammedan Russian Tartar and his son, whose culture differed considerably from the Cossacks'.

is important because they do occur *within* the two groups. There have also been violent encounters between the Cossacks and the Ganchens, a neighboring Tungus tribe. Recently three Reindeer Tungus were taken captive by bandits from other Russian settlements, but traders from the Cossack community in question pled successfully for their lives.

The condition which I wish to explain thus characterizes *both* the groups involved in contact and is distinguishable by the presence or absence of certain (1) verbally expressed attitudes, and (2) overt behavior, towards members of the other group. The effects of contact on the social and economic organization, the material culture, etc., of each group will only be considered as features which may, or may not, be related to the condition discussed. In its form the problem is therefore the converse of those envisaged by *A Memorandum for the Study of Acculturation*. The *Memorandum* seeks to explain such results of contact as the acceptance, adaptation, or rejection of foreign traits by noting, *inter alia*, whether the "type of contact" is friendly or hostile and whether elements of culture have been forced upon a people or voluntarily received,[19] this being the very aspect of the situation which I have chosen as a starting-point. Conclusions drawn from the two lines of inquiry should prove mutually illuminating. Bateson's objective, on the other hand, more closely resembles mine in that he wishes to find "restraining factors" for the "schismogenesis," or progressive differentiation, to which he attributes the fact that "the nations of Europe . . . are ready to fly at each other's throats."[20]

ASPECTS OF THE CULTURES AND THEIR RELATIONS

The characteristics of the local Reinder Tungus and Cossack cultures, and their relations, which appear most relevant to the problem will now be summarized. Brief accounts of the general mode of life and environment of the Tungus, and to a lesser extent of the Cossacks, have been given elsewhere.[21]

Early History of Contact

The Siberian Tungus fought, and were defeated by, the Russian

[19] *Loc. cit.*, §§III (A2, B1) and V. See also Bartlett's statement that "the psychological determination of the results of contact depends in the first place upon the instinctive social relationship form which holds good within and between the groups involved" (*op. cit.*, p. 133). The relationship forms which he describes are "primitive comradeship, assertiveness, and submissiveness" (p. 37). [20] *Op. cit.*, §20.

[21] See *The Reindeer Tungus of Manchuria* (Journal, Royal Central Asian Society, Vol. 22, Pt. 2, 1935), and *North-Western Manchuria and the Reindeer Tungus* (Geographical Journal, Vol. 75, No. 6, 1930), which is accompanied by a map.

invaders in 1603 and 1615, being forced to pay taxes from 1623.[22] The Russians who conquered Siberia were chiefly Cossacks and very probably included the ancestors of those who settled on the Manchurian frontier. The forbears of the Manchurian Reindeer Tungus were also in Siberia at the same period. However the two groups in Manchuria to-day seem to have no traditions about their early conflicts, neither Tungus nor Cossacks speaking of a time when they were not living near the Argun and trading amicably with each other.

It is difficult to date the first contact between these specific communities. Apparently few Reindeer Tungus had arrived in Manchuria by 1856,[23] but according to a Russian informant they had traded with the Pokrovka Cossacks for years before they crossed the Amur. Regular meetings with the Ust-Urov Cossacks must have begun not later than 1870.

Some two hundred years after engaging in armed conflict, therefore, small groups of Tungus and Cossacks established peaceful relations which have lasted for nearly a century.

Territorial Organization and Relations

I found no trace of a possessive attitude towards land among the Tungus,[24] although families tend to keep to the same region, probably because of their permanent storehouses. Even hunting grounds are not apportioned, the first comer being left the field. They nomadize within a total area of over 7,000 sq. m., only the fringes of which have been shared, in recent times, by Russian and Kumarchen[25] hunters and by Chinese seeking gold. The density of the Tungus population is roughly .02 to the square mile.

Until the Russian revolution every Transbaikal Cossack owned about 100 acres of tax-free land, little of which was cultivated by the owner himself.[26] After the revolution many Pokrovka and Ust-Urov Cossacks left Siberia for Manchuria and founded agricultural settlements at Chuerhkanho, across the Argun from Ust-Urov, and at Dubova, farther south.

While still living in Siberia, the Cossacks had often hunted in the woods on the Manchurian side. Since their emigration these excursions have multiplied, and other Russian refugees have followed their example. In the search for squirrels in the autumn and for wapiti in the spring they are

[22] See M. A. Czaplicka, "The Tungus" (*Encyclopaedia of Religion and Ethics*, 1921).

[23] See E. G. Ravenstein, *The Russians on the Amur* (London, 1861), p. 344.

[24] That is the Reindeer Tungus of Manchuria, unless otherwise stated.

[25] A Tungus tribe living east of the Khingan Mountains.

[26] See M. A. Czaplicka, *The Evolution of the Cossack Communities* (Journal, Royal Central Asian Society, Vol. 5, Pt. 2, 1918), p. 53.

clearly rivals of the Tungus, blazing trails ever deeper into the taiga and beginning to deplete the game. The Cossacks, like the Tungus, do not divide the hunting grounds in any way among themselves, nor do they come to a collective agreement with the Tungus on the subject. Yet the first to arrive in a valley, Tungus or Russian, is left undisturbed, and I never heard of attempted group intimidation or resistance, or even personal quarrels.

The fact that both Tungus and Cossacks have had more than adequate space to ensure their food supply during the whole period of contact must have facilitated their mutual tolerance. On the other hand there are obvious opportunities for friction in the unsystematized common use of territory, especially for hunting squirrels, which are of considerable importance to Tungus economy. Dr A. I. Richards has suggested to me that there is more likelihood of serious conflict between organized groups than between sets of individuals, and inquired about the method of hunting squirrels in this respect. It is interesting that the Tungus, while they usually hunt singly or in pairs, divide all products of the chase *except squirrels* equally among the households at the hunters' encampment; squirrels are retained by the individual hunter and the skins sold to traders for the profit of his family alone. The Cossacks hunt in parties of from two to six men, among whom the booty is shared, but there is acute rivalry between the various parties for the highest squirrel "score."

Even assuming that these conditions are more favorable than they would be if an organized body of Cossack hunters confronted a similar body of Tungus, a dangerously jealous attitude might be expected to arise had not cordial relations already become habitual.[27]

Size of Groups

In 1908 Chinese officials were told that there were 850 Reindeer Tungus in Manchuria. The Cossacks of Ust-Urov and Pokrovka together can scarcely have outnumbered them at that time.

Now[28] less than 160 Tungus remain, smallpox accounting chiefly for the difference, and with them twenty Cossack families, composed of some 150 individuals, carry on the traditional trade. Although the total *émigré* population in the villages of Chuerhkanho and Dubova together is perhaps 350, this degree of Russian predominance is negligible in proportion to the large territory which the groups share.

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[27] The Ataman of the Cossack settlement at Argunski, farther up the Argun than Ust-Urov, is said to have frightened away some Tungus who came to trade in his area in 1904 because he did not want the hunting spoiled. [28] 1932.

The two communities, therefore, have always been small and of approximately the same size, without expectation of sudden increase, all factors of probable significance in explaining the absence of hostility.

Types and Frequency of Contact

Contact between the Tungus and Cossacks has taken, apparently since it began, the following main forms:

(1) *Markets.* Two or three times each winter, when the Tungus are busy hunting squirrels, the Cossack traders travel with horse-drawn sledges up the frozen rivers and meet the Tungus at a forest rendezvous, where a market is held. Two or three times each summer, when the Cossacks are busy farming and reluctant to risk their horses in the marshy taiga, the Tungus come with their reindeer to the Cossack settlements instead. The markets last from two to five days, and a few Tungus women and children usually attend them with the men. During village markets, some of the Tungus often live in the Cossack traders' houses.

(2) *Encounters in the Woods.* Cossack and Tungus hunters can readily identify each other's trails, due to the differences in their footprints and blazes. If the marks are fresh, either Cossack or Tungus will eagerly seek out the camp for the sake of company, and probably a little trade, sometimes staying overnight.

(3) *Longer Visits.* Instances of protracted residence by members of one community in the other occur irregularly, and have diverse causes:

(a) About twenty-five years ago, when an epidemic swept away all but a few deer, most of the Tungus left the woods and lived with the Ust-Urov Cossacks until they had earned enough money to buy new reindeer from Siberia. The men worked in the fields, the women in the houses, and according to the Cossacks they got on very well. The Tungus make no complaints of their life as paid laborers at that time, only remarking that Russian houses are so stuffy to sleep in that their health suffered;[29] but they seem to have hastened back to their life in the forests as soon as fresh deer could be obtained. Although great excitement attends the periodic visits to the village, the Tungus, when asked, say emphatically that they prefer the taiga.

(b) After the summer markets Tungus young men occasionally stay on with the Cossacks for a few days. One youth who remained longer was, however, a case of maladjustment from the Tungus point of view,[30] and unpopular with the Cossacks because he did not help with their work.

[29] The Cossacks close the doors and windows at night and keep the stove hot, whereas the Tungus sleep in partly open tents, are lightly covered, and let out the fire.

[30] On other grounds, i.e. general laziness and ill-temper.

(c) A novel contact agent[31] has been a Pokrovka Cossack who twice fled from Chinese justice into the forest and nomadized with the Tungus for several months, accompanied by his very intelligent wife. They kept reindeer and learned many Tungus techniques, some of which they continued to apply after settling down in a Cossack village again. The wife became an intimate friend of a Tungus shamaness who is an important figure in the tribe.

Of the types of contact listed above, only the markets bring the two groups together at regular intervals, and when these brief meetings are over the routine of their daily life proceeds quite independently. This is perhaps one reason for the lack of irritation at each other's ways, but it is noteworthy that even continuous and intensive contact[32] does not seem to cause any difficulty.

Race and Miscegenation

The Tungus are straight-haired xanthoderms like the Chinese, whom they must have encountered soon after reaching Manchuria, if not before. Yet in spite of the contrasting, burly Cossacks, the Tungus have either failed to notice the physical traits which they share with the Chinese,[33] or do not assign any importance to them. Their attitudes towards foreign groups seem to be based entirely on culture, and they regard that of the Chinese as the most alien they know.

The Cossacks think of themselves as Russians. Although conscious of their special status as Cossacks under the old régime, they are not aware, I believe, of the original Turkic admixture in their blood which connects them with the Asiatics.[34] I never heard them group the Tungus and Chinese together in a racial sense, nor comment on the physical type of either.

While intermarriage has not occurred, to my knowledge, between Tungus and Cossacks brought up within their own communities,[35] the few Tungus children adopted by Cossacks in the past habitually made, I gather, Russian matches. A motherless Tungus boy now being reared by a trader's family receives more attention, if anything, than his foster-brothers, and the Tungus say: "He will be a Russian." Both Tungus and Cossacks show amused curiosity about the Slavonic features of one Tungus recently emigrated from Siberia, but this is due to the mystery about his

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[31] A term used by Fortes; cf. *op. cit.*, p. 54. [32] See §3, a, above.

[33] These are numerous; see A. C. Haddon, *The Races of Man* (New York, 1925), p. 32.

[34] See Czaplicka, *The Evolution of the Cossack Communities.*

[35] The present shortage of Tungus girls of marriageable age may or may not be relevant to the type and degree of miscegenation.

parentage and the presumption of an illicit union. I heard no ridicule or criticism of Russo-Tungus miscegenation as such.

On the other hand, marriages between Russian girls and Chinese, which have rapidly increased in number since the revolution, are strongly disapproved of by many Russians, even though the participants are not socially ostracized. Comments refer to cultural, not physical, differences, however,[36] It seems probable that marriages between Russians and taiga-bred Tungus, if they occurred, would also arouse adverse comment on cultural grounds, since the Russians are well aware of the differences, e.g., in cleanliness and in the care of women before and after childbirth, between the Tungus and themselves. Awareness of these differences does not, of course, account for the absence of miscegenation, because many elements of Chinese culture also seem alien to the Russians, and there have furthermore been bitter conflicts, quite recently, between the local Russian and Chinese groups. Cossacks and Tungus have probably seldom married merely because the two groups seldom meet, and, when they do, the opposite sexes have little opportunity to be alone together.[37]

The fact that intermarriage between Cossacks and taiga-bred Tungus has not taken place has obviously eliminated a possible source of strain. A few cases of intermarriage with Tungus reared as Russians, in this or neighboring groups, in the past have presumably been accepted by the Russians without question, since their attitude towards miscegenation seems to have a purely cultural basis.

Language, Literacy,[38] and Bilingualism

The Reindeer Tungus of Manchuria speak a Northern Tungus dialect. They know nothing of the alphabet for native Siberian languages created in the U.S.S.R.,[39] but some of the men carve messages, e.g., about lost rein-

[36] Persons familiar with Russia often remark that Russians in general lack racial prejudice, and they undoubtedly show far less evidence of it than most other European peoples.

[37] A Russian trader told me, as an example of what he evidently considered to be the pathological jealousy of Tungus men, that any hunter who returned to camp earlier in the day than the rest was regarded with deep suspicion by the others and interrogated about the motives for his action. When staying at a Tungus camp this Russian had apparently experienced this himself. As he was known to force his attentions on Russian girls when intoxicated in his own village, the Tungus were no doubt particularly cautious. In any case the anecdote shows that the possibility of sexual relations between the two groups was in the minds of both Tungus and Russian.

[38] I am indebted to Mrs B. Z. Seligman for reading an earlier draft of this paper and raising the question of whether the literacy of the Cossacks affected their relations with the Tungus in any way.

[39] In 1925; see G. M. Vasilevich, *Uchebnik Evenkiyskogo (Tungusskogo) Yazyka [Manual of the Evenki (Tungus) Language]* (Moscow, 1934), p. 4.

deer, on trees, and occasional words elsewhere, by representing the Tungus sounds with Russian letters.

All Tungus men, the older boys, and most of the women understand Russian, often expressing themselves fluently in that language, which is used exclusively in trade. Several middle-aged men also read and write, having studied for a short time in the "taiga school" established at the peak of Tungus prosperity, about twenty years ago.[40] A few younger men have picked up enough to make entries on their Russian calendars, while every man writes his name or initials, and the date, on various tools. None of the Tungus have learned arithmetic, even the simplest addition being too difficult for most.

The Cossacks speak Great Russian, apart from the local elements in their vocabulary. Adult men and women can usually read and write as well as reckon, although they make scant use of their ability, the shrewdest trader boasting to me that he had never read a book.[41]

A number of non-Russian terms used by the Cossacks, and firmly believed by them to be Tungus, bear little or no resemblance to the real Tungus expressions,[42] a fact of which the Cossacks remain ignorant because not one of them speaks Tungus. The shrewd trader just mentioned could count to ten in Tungus and recognize the word for "sable," and the fugitive who lived for months among the Tungus knew some phrases, but they were considered prodigies by the rest.

The prestige and advantages in trade which the Cossacks gain through a higher degree of literacy, reinforced by a monopoly of arithmetic, are therefore partly counterbalanced by the superior linguistic talents of the Tungus. While the Tungus cannot check the traders' bookkeeping, they can consult together at markets in a language no trader understands. As in other spheres, the inequality between them is not so great that respect ceases to be mutual, a circumstance which may be vital to the maintenance of good relations.[43]

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[40] Just before the Manchurian sables were exterminated.

[41] They are keen to educate their children, however, paying for a village teacher and even sending some of the boys away to school in the towns.

[42] They have probably been borrowed from other Siberian tribes.

[43] In a recent psychological experiment on "constructive social thinking," F. C. Bartlett found that a considerable proportion of subjects, in one case 33%, believed that a marked difference in I.Q. between groups would make their cooperation impossible (see *The Co-operation of Social Groups: a Preliminary Report and Suggestions* (Occupational Psychology, Vol. 12, No. 1, 1938, p. 39). Unfortunately I made no systematic observations on which to base an estimate of the relative intelligence of the Tungus and Cossacks, but the Tungus impressed me as being much quicker in their reactions, intellectual and physical, than the Cossacks.

Social Organization and Political Relations

Tungus social organization is characterized by the marked independence of individual households, no doubt accentuated in the Manchurian group through its isolation. Clan elders are still elected but have little power, or rather little occasion to exercise it, for theft is unknown, and acts of violence due to drunkenness, the only kind which occur, do not usually require compensation. Clan meetings often coincide with markets, the traders giving their advice.

The Cossacks seem to have lived a free, roving life, intolerant of interference and without class distinctions among themselves, from early times.[44] Later their military duties entailed a more stereotyped organization, but the Ust-Urov group which emigrated to Manchuria after the revolution has proceeded more by personal initiative than by cooperative effort. The senior representative appointed for short-term periods acts chiefly as intermediary between the Chinese officials and the Cossack council of adult men.

Although Manchuria had belonged to China for nearly two centuries before the Reindeer Tungus entered it, each hunter paid three roubles a year to the atamans of Cossack settlements across the Amur until the Great War. The Russian tax was sometimes described as church dues, since the Tungus visited these villages for their baptisms and weddings. In any case they appear to have had no further obligations towards the Russian authorities, and recognized none towards the Chinese.

About 1908 the Chinese administration began to take an interest in the frontier and soon established posts along it. The Tungus proved too elusive to deal with directly, but when the Cossacks settled in Manchuria the Chinese succeeded in gathering tribute from both groups by heavily taxing the Cossacks' trade in furs. Other taxes and many compulsory services were added, especially under the military régime which followed the Russo-Chinese "conflict" of 1929. Although an enlightened civilian official reduced the taxes in the Dubova area late in 1931 and became very popular, the growing power of this third group, regarded as oppressive, was certainly strengthening the bonds between Tungus and Cossacks[45] at the time when my field-work took place.

The comments of the other members of my party never suggested that the Tungus were in any way mentally inferior to the Cossacks, who indeed made no claim to such superiority themselves, emphasizing rather the extraordinary facility for learning shown by the Tungus in their mastery of the Russian language.

[44] See Czaplicka, *The Evolution of the Cossack Communities.*

[45] Cf. Bateson: "It is certain that either type of schismogenesis between two groups can be checked by factors which unite the two groups either in loyalty or opposition to some outside element" (*op. cit.*, §20, d).

The independence of the units of Tungus and Cossack society, the minimal control formerly exercised by the Russian Government over the Tungus, and the economic burden recently imposed on Tungus and Cossacks alike by another community have no doubt all contributed towards the present friendly relations of the two groups.

ECONOMIC[46] ORGANIZATION AND TRADE

The products of the chase which the successful hunter shares with the other households at his encampment[47] are used chiefly for food, clothing, tent-covers, and saddle-bags. Squirrels, which remain the hunter's personal property, furnish the necessary barter for the flour, tea, salt, sugar, tobacco, alcohol, cotton materials, lead, gunpowder, etc., supplied by the traders.

The Cossacks usually hunt in parties, and in that case the proceeds realized by the sale of the furs or wapiti antlers obtained are divided equally among the members. On the other hand in agriculture and stock-raising, which are the basic elements in their economy, Cossack households work independently.

Tungus-Cossack trade is conducted between individuals, who call each other andak, "friend." A Cossack trader may have several andaki, while a Tungus is supposed to have only one and to sell all his skins to him. Money seldom figures in their transactions. Theoretically the Tungus accumulates credit in the winter to draw upon for buying provisions in the summer, when he can offer no furs. But lazy hunters pile up debts and nowadays sometimes disappear to another area, where they can begin afresh by trading with Chinese. Such a defaulter returned not long ago and was accepted by a new Cossack andak, the original creditor taking no steps to recoup his losses. A Cossack commercial guild exists for apportioning the Chinese tax among the traders, yet does not seem to attempt collective action vis-à-vis the Tungus.

Most Tungus are well content with the system, however, and faithful to its conditions in the main.[48] They are able to order the goods they will

[46] Bateson writes: "The Memorandum is based upon a fallacy: that we can classify the traits of a culture under such headings as economic, religious, etc.," objecting that these categories are mere abstractions or labels. However, their usefulness for purposes of *exposition* is no doubt due to a fact mentioned by Bateson, i.e., "that certain native peoples—perhaps all, but in any case those of western Europe,—actually think that their culture is so subdivided" (*op. cit.*, §§5, 6 and note 2).

[47] See page 610, above.

[48] Soviet Russian frontiersmen, who used to hunt on the Manchurian side until 1930, are said to have told the Tungus that it was foolish to sell only to andaki, but apparently they did not succeed in buying much, if anything, from the Tungus nevertheless.

need at the next market in advance, and their cotton shirts, coats, and jackets are made up, roughly to measure, by the traders' families. A Tungus often boasts about the wealth and superior products of his Cossack andak, who boasts in turn of the Tungus hunter's achievements. When the Tungus comes to the village he stays at his andak's house and is treated as a guest, the Cossack receiving a similar welcome when he visits his andak's encampment in the forest.[49]

The history of Tungus-Cossack trade shows a great deal of mutual adjustment, not merely in the choice of a convenient place for markets.[50] During the sable days, and again when squirrel prices rose, the Cossacks made large profits and gave the Tungus of the best. But there have been lean years, particularly of late, and the basic Tungus demands remain the same. While the traders have cut down luxuries such as butter and silk kerchiefs, up to the time of my departure the Tungus never suffered actual want. The Tungus housewives' preference for white flour has even been considered when Cossack housewives have had to bake brown.

Since the Tungus now believe, perhaps rightly, that they cannot survive without obtaining at least bread,[51] lead, and gunpowder from outside sources, they are more dependent on the Cossacks than the Cossacks are on them, for to the Cossacks their trade is comparatively inessential, and sometimes burdensome.

The fact that their economic transactions were nearly equally important to both parties in the past must have helped to create a true reciprocity in social and other relations. The present asymmetry in economic dependence may soon begin to show its effects elsewhere, although it has been

[49] Cf. Malinowski's description of Kula partnerships, which in several ways resemble the relations of andaki, in *Argonauts of the Western Pacific* (London, 1922). In view of the hospitality and even physical protection afforded to the Tungus by his Cossack andak (see above, pp. 607 and 608) it is particularly interesting to read: "The protective character of an overseas partner becomes now clearer, after we have realized the nervous tension with which each Kula party in olden days would have approached a land full of *mulukwausi* . . . and other forms of sorcery . . . " (p. 224); and again: "An overseas visitor would as a rule go to his partner's house and offer him a small present as *pari* . . . in sharp contrast to the essential hostility between two strange tribesmen, such a relationship of friendship would stand out as the most remarkable deviation from the general rule" (pp. 275–76).

[50] See page 611, above.

[51] The Tungus appear to have used little or no bread when they first began trading with these Cossacks, but it now often preponderates over meat and fish in their diet. With game as scarce as it has now become, it is doubtful whether the Tungus could live on meat alone, and they do not know how to dry and store fish. A sudden and radical change of food would also be difficult for them. Three families which spent some months among the Ganchens could not accustom themselves to millet instead of bread, and therefore returned to areas where they could get flour.

partly redressed by the increase in Chinese traders, from whom the Tungus can sometimes buy instead of from the Cossacks.

Interchange of Material Culture

Besides the articles already mentioned, the Tungus have fire-arms, axes, iron pots and frying-pans, copper kettles, crockery, tumblers, enamel dishes, spoons, forks, needles, thread, thimbles, scissors, and other objects of Russian, Chinese, or Japanese origin which they get chiefly through the Cossack traders, from whose ancestors they probably first learnt their use.

The Cossacks' material culture also shows signs of Tungus influence. Harvesters erect shelters with a conical framework like that of Tungus tents.[52] In winter, Cossack hunters wear leather garments either of Tungus manufacture or tanned by a similar method, and are happy to dress their children, if they can, in Tungus boots. When the whole village of Dubova fled to the woods to escape Russian bandits, in 1930, a woman who had lived among the Tungus[53] taught the others how to bake bread without an oven, Tungus-fashion. This is a curious example of circular borrowing, for of course the Tungus originally acquired from the Russians the secret of baking bread.

The exchange of techniques and material possessions forms a solid foundation for mutual respect and interest, the importance of which should not be underestimated.

Religious Duality

The Siberian Tungus were nominally converted to Orthodox Christianity about the beginning of the nineteenth century. Before the revolution the Reindeer Tungus of Manchuria paid an annual visit to a Russian church across the border for their baptisms and weddings, and during the years since they have been cut off from religious services and priests, they have continued to hang ikons in their tents and put crosses on their graves.

Side by side with these Christian observances, however, Tungus shamans carry on their ancient profession undisturbed. Three shamans practice in the tribe, each in a different nomadizing area, and one of them is a woman initiated by a Kumarchen shaman.[54] Dressed in elaborate costumes, they sing, drum, and dance in a darkened tent to establish communication with the spirits, thereby allegedly healing the sick and predicting future events. The shamans have great prestige and play an important part in the life of the community.

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[52] See *North-Western Manchuria and the Reindeer Tungus*, plate opp. p. 526.

[53] See page 612, above. [54] The Kumarchens are pure Shamanists.

Christianity has had, inevitably, a much more pervasive influence on Cossack culture, with which it came into contact centuries ago. The Cossacks celebrate the many Saint's days with especial zeal, but at the same time hold firmly to superstitions, some of which resemble Tungus beliefs.

Their attitude towards shamans is ambiguous. On the one hand the Cossacks know that, as Christians, they should not have faith in such things, and occasionally they feign scepticism. On the other hand they delight in praising the shaman's insight and in describing shaman prophecies which came true. If the ethnographer, asked for an opinion, suggested a rational explanation, they were patently annoyed. Cossack hunters sometimes witness performances when they stay at Tungus camps, and often take the opportunity of asking the shaman's advice.[55]

Instead of intolerance or repression in the religious sphere, there has thus been a partial interchange of Christian and shamanistic customs. Accompanied as it is by the interchange of techniques just described, it is bound to promote closer relations between the groups concerned.

TUNGUS AND COSSACK CHARACTERISTICS

Before drawing conclusions on the basis of cultural factors, we must consider whether the psychological traits reputed to characterize the Tungus and Cossack peoples in general seem to explain the absence of conflict between these particular communities.

Castrén refers to the Reindeer Tungus of Siberia as

> das reinste, idealste Jägervolk, das in den Einöden Sibiriens weilt [and further as] ein rasches, hurtiges and unerschrockenes Volk. . . . Uebrigens lieben sie, im Gegensatz zu andern sibirischen Völkern, Tanz, Spiel und überhaupt ein munteres Leben.

Such traits appear entirely compatible with smooth inter-group adjustments, yet Castrén says that different Tungus tribes "rauben und plündern wie Feinde auf beiderseitigem Gebiet."[56] Moreover the relations of both Ganchens and Kumarchens in Manchuria with the Chinese often involve bloodshed, and the Numinchens have stolen horses from their neighbors for generations.

Cossacks traditionally inspired terror among the minorities whom the Tsar sent them to repress, partly due, no doubt, to their loyalty and boundless courage. Miss Czaplicka, a Pole, speaks of her surprise in learning to

[55] Cf. M. A. Czaplicka, *My Siberian Year* (London, 1916), Chap. 9, for the Russian colonists' attitude towards shamans.

[56] Alexander Castrén, *Ethnologische Vorlesungen über die Altaische Völker* (St Petersburg, 1857), pp. 22–24.

know other sides of their character, including "the imaginative and exploratory." One writer describes the Orenberg Cossacks as "mild, amiable, and hospitable, the pioneers of Russian civilization, brave, industrious, and enduring,"[57] terms quite applicable to the Ust-Urov Cossacks; but while they have maintained an unbroken peace with the Reindeer Tungus, they have also upon occasion killed numbers of Ganchens, Chinese, and fellow-Russians.

A brief review of the evidence therefore suggests that even if a series of traits universally characteristic of the Tungus and Cossacks could be accurately determined, they would not alone go far towards explaining the relations between specific groups.

SUGGESTIONS FOR FURTHER RESEARCH

As I made clear at the beginning of this article, the presence or absence of conflict cannot be definitely linked with other phenomena without comparative research, which I have not undertaken. The material already published on the contact of European and "primitive" cultures must obviously first be analyzed from that point of view, but it is unlikely to yield a sufficient range of examples or the data concerning *both* groups which are indispensable for the solution of the problem. In the case of my own investigation in Manchuria, the Tungus were my primary object of study and my observations on Cossack culture were on the whole unsystematic and incomplete. Only at a later stage, however, will it be possible to judge what information is relevant to the problem and what type of field-work is necessary for collecting it.

The inquiry will probably resolve itself into determining the relative importance of some or all of the factors enumerated in the sections above, and perhaps of others as well. In any single case, the degree of their influence is obscured by their concomitance and also by the fact that they may reinforce each other to a certain extent. Any attempt to draw even preliminary conclusions is therefore highly speculative.

Nevertheless a list of the factors which have been believed to be the causes of conflict or harmony elsewhere would be helpful in analyzing a particular instance of contact. Thus the Arabs are known to contend that territorial arrangements and the proportion of populations are the crucial aspects of the situation in Palestine, which in many respects provides a contrast to northwestern Manchuria. Disturbances in many parts of the world are often attributed to interference by politicians, a theory which

[57] See Czaplicka, *The Evolution of the Cossack Communities*, and the discussion which followed her lecture.

calls attention to the fact that the Cossacks and Tungus have been quite untroubled by propagandists up to the present. It is clear that further comparisons would throw still more light on Manchurian conditions, although without a much wider study no decisive results could be obtained.

Of the various factors in Russo-Tungus relations which have been considered in this discussion, the individualistic type of social and economic organization, and of inter-group trade,[58] seems to go far towards explaining the absence of conflict even in moments of stress. Yet I am inclined to think that the *interchange* of cultural traits is a very important background for inter-group friendships, and it apparently corresponds to the blending of cultures which Bartlett associates with "primitive comradeship."[59]

HARSTON, CAMBRIDGESHIRE, ENGLAND

[58] Cf. A. I. Richards' comment, p. 610, above.

[59] *Op. cit.*, pp. 140–43.

TRIBAL DISTRIBUTION IN THE GREAT BASIN

By WILLARD Z. PARK AND OTHERS

IN the preceding issue of this journal we printed a series of contributions to our knowledge of tribal distributions in eastern Oregon and adjacent regions immediately to the east and south. The remainder of the series, on distributions and group composition in the Great Basin, are given here. These offer suggested corrections to Julian H. Steward's *Lingustic Distributions and Political Groups of the Great Basin Shoshoneans*[1] and to other papers. Data are included on the Washo and Kawaiisu for the sake of rounding out the survey.—Editor.

THE ORGANIZATION AND HABITAT OF PAVIOTSO BANDS

The Shoshonean speaking people known as the Paviotso or Northern Paiute of western Nevada are grouped in five main, loosely organized, named, and localized bands. These groups and their locations are:

Kuyui'tükəd^{a}. (kuyui', a variety of large fish in Pyramid Lake; tükəd^{a} eater). This band centers around Pyramid Lake, particularly near the mouth of the Truckee River.

Agai'tükəd^{a} (agai', trout). The members of this group usually winter on the banks of Walker River close to the point at which it empties into Walker Lake.

Toi'tükəd^{a} (toi', tule). Formerly this band lived along the Carson River; now living at Fallon and Stillwater (in Nevada).

Wada'tükəd^{a} (wada, small seeds harvested in abundance from a plant, not identified, growing in Long Valley, California). Members of this group claimed Long Valley and the shores of Honey Lake in California as their winter home.

Ha'puɒtükəd^{a} (ha'puɒ, meaning not known to informants, probably a food plant). Members of this band usually wintered along the banks of Humboldt River from the lake to the present site of Winnemucca.

In addition to these larger bands, smaller named groups that returned to certain localities each year were recognized. Thus the people formerly living in Winnemucca Valley, between the present site of Reno and Pyramid Lake, were known as kamu'tükəd^{a} (kamu', rabbit), while those who returned each year to a small lake east of Fallon were known as ko·si'-patükəd^{a} (ko·si'pa, the seed of a grass commonly found in that vicinity). It seems likely that these smaller bands were even less stable in membership than the larger groups listed above.

[1] American Anthropologist, Vol. 39, pp. 625–34, 1937.

Boundaries separating the territories of the several bands listed here were not recognized. Members of one band frequently ranged in search of food in the locality of another group. Thus people wintering in the neighborhood of the present site of Fallon appeared each spring on the Walker

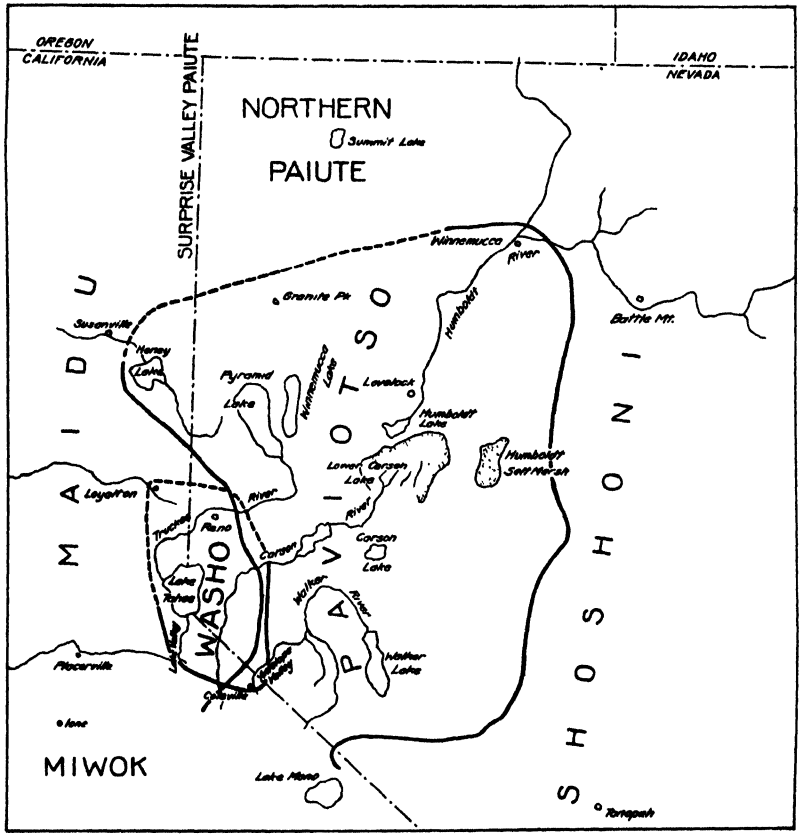


FIG. 1. Territory of the Paviotso and Washo. Paviotso boundaries by Park, Washo by Siskin. (Erratum: The northern boundary of Washo territory should be at Long Valley, south of Honey Lake, according to new information.)

River to join with members of that band in the taking of trout during the annual run of these fish. In a similar fashion people from several bands came together each fall in one locality for the pine-nut harvest. There was, moreover, considerable shifting of population from one group to another. A family attached to one band often wintered with another group for

several successive years. Family connections, friendships, the search for food, and perhaps the mere desire for a change seem to have motivated these inter-band moves. Certainly informants unanimously agreed that band territorial divisions did not exist, in fact were contrary to the Paviotso way of life.

In contrast to the above situation, fairly well defined boundaries marked off the territory of these five bands as a whole from the habitat of surrounding people. These lines, however, seem to have shifted from time to time. The penetration of Washo Valley is a case in point. Usually the ridge of the hills to the east of the valley was regarded as the boundary between the Paviotso and Washo countries. Peaceful relations with the Washo and the need for game, however, might lead to hunting on the floor of the valley. Continued success and failure of the Washo to repulse the invasion brought more and more Paviotso into this heretofore alien territory. Several fatal clashes with the Washo would result, however, in the Paviotso withdrawing. For the following few years the Paviotso would confine themselves to the country set off by the old boundaries.

Similar penetration of foreign territory, both of the Washo and of the Shoshoni to the east, occurred when the pine trees in the Paviotso habitat proved barren of nuts for a season or two. The invasion of the Paviotso country by Washo and Shoshoni from the same motivation suggests that a strip of territory on each side of the ridges, customarily constituting the formal boundaries, was exploited by whichever group arrived on the scene first.

It is noteworthy that no such territorial divisions existed between the Paviotso and their close linguistic and cultural relatives, the Surprise Valley and Owens Valley Paiute. Despite the recognized similarity in dialect and custom to these California neighbors, the Paviotso of Nevada regarded themselves as an entirely distinct group. This attitude may be regarded as an incipient feeling of nationality. Although the Paviotso differentiate themselves in this fashion from their Northern Paiute neighbors, they hold that even vague territorial boundaries never marked off their habitat from the territories of California Paiute. This situation is true only in respect to the several Northern Paiute groups. The boundaries separating the Northern Maidu and Pit River Indians from the Paviotso were well defined. Possibly they were more sharply drawn than those between their Shoshoni neighbors to the east, as the Pit River people were the traditional enemies of the Paviotso while enmity towards the Northern Maidu seems to have been about equally intense.

The limits of territory claimed by the Paviotso in California differs

somewhat from the tribal boundaries drawn up by Kroeber.[2] The western shores of Honey Lake are placed by him in Northeastern Maidu country and Long Valley between the lake and the California-Nevada state line is regarded as Washo. Informants, chiefly from Pyramid Lake, were in general agreement that these landmarks were well within Paviotso territory. Only two informants belonging to the nearly extinct Honey Lake band could be found Their testimony agreed substantially with that of the Pyramid Lake people.

The Paviotso boundary to the north was quite vaguely defined. A large part of the country between Pyramid and Summit Lakes is desert and nearly devoid of game and other usable resources. Consequently there was little interest in this area. This may in part explain the vagueness of Paviotso informants on the subject of the people who lived at Summit Lake and in the neighborhood of McDermitt. It is clear at any rate that relations with these Northern Paiute as well as those of Oregon were not as close as the ties that bound the Paviotso and the Surprise Valley people.

Territorial divisions to the east are fairly definite. Usually the ridges of hills are regarded as boundaries. These borders seem to have shifted back and forth in the same manner as those dividing the Paviotso and Washo lands. The border between Paviotso-Shoshoni territory supplied by Paviotso informants agrees substantially with that mapped by Steward.[3] Information from the Paviotso would suggest, however, that the boundary swings somewhat more to the west in the neighborhood of the present site of Winnemucca.

The available evidence offers no clue as to the length of time the Paviotso have occupied the territory claimed by them just before they were confined to the reservations. Traditions that Pit River Indians once lived in the neighborhood of Lovelock have been recorded by several investigators.[4] These tales cannot be taken as actual history without corroboratory evidence. There is a tendency in all Paviotso folklore to give a specific locality for each event. The account of Pit River Indians in the recent habitat of the Paviotso may then be no more than a reflection of this feature.

The relation of the archaeological material to the recent culture remains to be determined. It seems likely, however, that competent analysis may

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[2] A. L. Kroeber, *Handbook of the Indians of California* (Bulletin, Bureau of American Ethnology, No. 78, 1925), plate 37. [3] Steward, *Linguistic Distributions*, fig. 1.

[4] L. L. Loud, and M. R. Harrington, *Lovelock Cave* (University of California Publications in American Archaeology and Ethnology, Vol. 25, pp. 1–183, 1929), pp. 165–69; Steward, *op. cit.*, p. 626.

only show successive changes in material culture with little or no evidence of population movements.

Similar vagueness of tribal locations is characteristic of the scanty data in the accounts of early Indian-White contacts in western Nevada. Careful sifting of the literature leads to the conclusion that in the first quarter of the 19th century the Paviotso habitat did not differ substantially from that claimed by the tribe at the opening of the reservation period.

WILLARD Z. PARK

NORTHWESTERN UNIVERSITY

WASHO TERRITORY

The Washo inhabit a portion of west central Nevada and east central California. Three divisions of the tribe are differentiated by the natives: the "Northerners" (wɛ́lmɛlt'ɩ'), the "Valley Dwellers" (p'ávwalʊ), and the "Southerners" (háŋalɛlt'ɩ'). The writer came into contact with the two latter groups and obtained fairly accurate information concerning geographic boundaries.[5]

The only certain data regarding Northern Washo boundaries is that Long Valley, south of Honey Lake, marks the northernmost limit. Boundaries of the contiguous Valley Washo and Southern Washo are as follows: on the east, the Pine Nut Range running south to Antelope Valley (West Walker River drainage); on the south, Coleville, California and the territory bounded by a line running gradually northwest as far as the southern end of Lake Valley; and on the west, Lake Valley (Upper Truckee River drainage) and the crest of the Sierra Nevadas. The northern limit of the Valley Washo is the vicinity of Carson City, Nevada (northern end of Carson Valley). The present California-Nevada border at Woodfords Canyon (Woodfords, California) divides the Valley Dwellers from the Southerners.

Neighboring the Washo on the southwest are the tánɯ, probably the Miwok. Bá'lɛʊ ("Paiutes") is the name applied to all people living due south, southeast, and east. North of the tánɯ (west of the Valley Washo) live the dɛʊbɩ́mïš, presumably the Nisenan. ("All people living north of the line between Ione and Placerville are dɛʊbɩ́mïš; all people living south are tánɯ.")

During the fall and winter, the Valley and Southern Washo live in the territory east of Lake Tahoe and the Sierras, travelling westward to the mountains and the mountain lakes (especially Tahoe) in the spring and spending the summer there. On the whole, such seasonal movements are

[5] Field trip, June–August, 1937.

undertaken more largely by the Valley than by the Southern Washo. It was said that parallel movements westward are carried on by the northern section of the tribe. In general, the valleys east of Tahoe and the Sierras are considered the principal and permanent habitat, and it is here that the more or less permanent villages are situated.

Barrett's brief discussion of Washo habitat,[6] admittedly sketchy, is essentially in agreement with my data. It is to be questioned, however, whether the Washo penetrated as far to the southwest as he indicates on his map, that is "for some distance down on the western slope of the Sierras . . . a narrow strip of territory down to the vicinity of Big Trees."[7] In defining this southwest Washo border, Kroeber agrees with Barrett.[8] My informants were quite certain that the Washo never ranged much farther southwest than Lake Valley (immediately south of Tahoe), although asserting, at the same time, that the tribe ranged around the entire lake. At best, however, intertribal boundaries were vague, inexact, with marginal areas equally available to tribes living in geographic contiguity.

With respect to northern boundaries, Kroeber says that Long Valley Creek, draining northwestward into Honey Lake, was in the possession of the Washo. Dixon's data negative this.[9] My own substantiate the former.

EDGAR E. SISKIN

YALE UNIVERSITY

THE NORTHERN UTE

Three large divisions of the Northern Ute are recognized today under the names of Uintah, White River, and Uncompaghre. These divisions, before the coming of the whites, were not political units and their names applied only to the inhabitants of certain portions of Ute territory. There was no feeling of ownership of land by any group, and no feeling of trespass. It proved impossible in the course of field work[10] to obtain definite boundaries for the groups, but it is possible to delimit approximately their customary ranges.

[6] S. A. Barrett, *The Washo Indians* (Bulletin, Public Museum of the City of Milwaukee, Vol. 2, No. 1, 1917), p. 6.

[7] S. A. Barrett, *The Geography and Dialects of the Miwok Indians* (University of California Publications in American Archaeology and Ethnology, Vol. 6, 1908), p. 347.

[8] A. L. Kroeber, *Handbook of the Indians of California*, p. 570.

[9] R. B. Dixon, *The Northern Maidu* (Bulletin, American Museum of Natural History, Vol. 17, Pt. 3, 1905), plate opp. p. 124.

[10] The material in the present paper was gathered during two field trips of two months each during the summers of 1936 and 1937, financed by the Department of Anthropology Yale University.

The social unit was the small group of families, usually related by blood or marriage, who roamed together in search of food during the summer. Their size varied from a few families to twenty households. In the winter, several of these groups camped near each other, forming a camp of possibly one hundred families. Membership in a group was fluctuating, dependent on personal inclination, and the composition of these summer travelling groups varied from year to year.

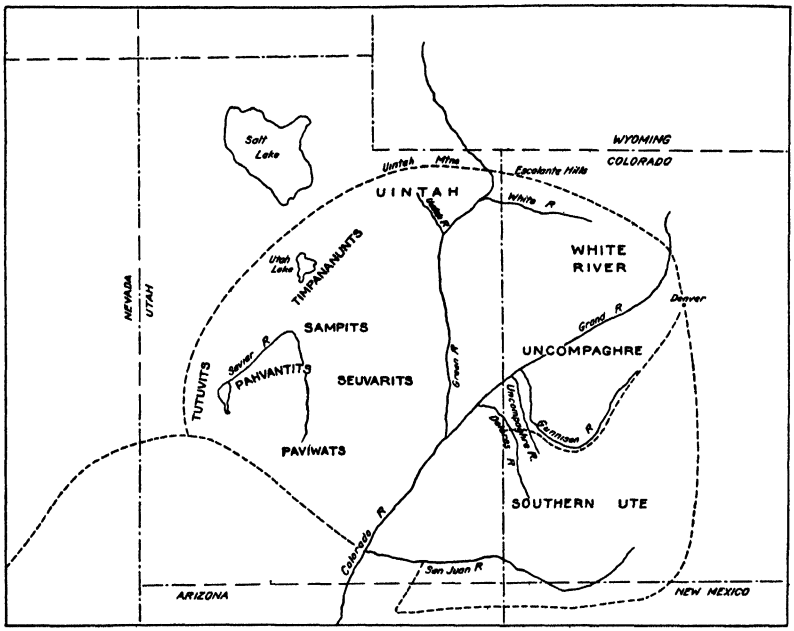


FIG. 2. Distribution of Northern Ute groups, by Cooke.

Each small group recognized one of its members as the headman, who decided when they would move on to new camping grounds. Each winter group had a headman, the extent of whose authority depended on his personality. As these headmen became more important after the coming of the whites, there developed a tendency to call the group by the name of the chief.

The Uintah roamed mainly in the Uintah Basin, and made their winter camps in the region between the present towns of Vernal and Strawberry. The Uintah Mountains formed their northern boundary. The Utah Lake group, called both Tïmpá·nanunc and Paγí·anunc, were stated by inform-

ants to be bands of Uintah, the lake forming the western boundary of Uintah territory. On the south, their range did not extend much beyond the present town of Ouray, the land farther south being of little value for either hunting or collecting. On the east, their hunting parties frequently followed the White River into Colorado.

Central Utah was occupied by small groups whose usual hunting and gathering grounds were not as extensive as those of their congeners in northeast Utah and Colorado, owing to the scarcity of horses in pre-white days. The Sevier Lake country formed the western boundary on the whole, yet the Tutú·vits, living west of Sevier Lake, were stated by informants to be "half Ute and half some other people," though they spoke only Ute. The Pahvá·ntits occupied the Sevier region, with the Sampí·viwants or Sampits to the northeast and the Seuvarits to the east. Two names were recorded for the group known as Black Hawk's band in historic times: Pavî·wats and Tú·paránovits. They occupied the upper Sevier and Fish Lake region. The southern boundary of the Ute bands in Utah corresponds with the dividing line between Ute and Southern Paiute as given by Kelly.[11]

East of the Uintah, in Colorado, were the White River, including the groups variously known as the Akanaquint, Grand River, Yampa, Yaparka, and Sabuaguanas. There seems to have been no clear line dividing their territory from that of the Uintah. On the north, the Escalante Hills formed a natural boundary, though frequent hunting expeditions were made beyond them. The White River roamed southeast as far as Denver. It proved impossible to determine a boundary line between them and the Uncompaghre, who roamed south of them. Their winter camps were in the sheltered valleys and mountain parks of the Rockies. Frequent expeditions were made into the plains for buffalo, though the Rocky Mountains were considered as the eastern limits of their territory.

Uncompaghre territory as given by informants was the country lying southwest of Denver. The Gunnison River formed part of the southern boundary, and west of the Gunnison their range included the lower Uncompaghre River and the country between the lower Uncompaghre and the Dolores River.

These locations correspond fairly well with such historical information as we have, with the exception of the southern boundary of the Uncompaghre. Escalante and Dominguez, the first white men to leave any record of their travel through Ute country, place the Uncompaghre, or Tabeguaches as they called them, farther south, giving as their southern bound-

[11] Isabel T. Kelly, *Southern Paiute Bands* (American Anthropologist, Vol. 36, pp. 548–60, 1934), fig. 1.

ary a small tributary of the Dolores, probably Disappointment Creek.[12] As the northern boundary, the friars give the junction of the Gunnison and Grand. It is possible that the Uncompaghre were farther south in 1776, and were later pushed north. Simpson[13] gives only a general description of Ute territory, whose limits correspond with those shown on the accompanying map.

My information agrees with that of Steward[14] save for the definite boundaries he assigns to bands. His pavogogwunsiŋ is apparently another name for Black Hawk's band.

ANNE M. COOKE

YALE UNIVERSITY

GROUPS OF CENTRAL AND SOUTHERN NEVADA

The present observations are not based on fieldwork but on a search of the records of eyewitnesses between 1776 (Escalante) and 1875. These records are far more impressive with respect to accuracy on matter of daily life than on names of groups and areas occupied. Though I have now a sizeable file of observations, it is necessary to record that I have not covered a tenth part of the available material. The following scraps of information are offered for what they may be worth.

In the unpublished diary of George Washington Bean,[15] an interpreter in the service of Brigham Young for many years and guide to Captain Simpson on his trip across Utah in 1859, I found statements dated January 24 and 26, 1856 in which he mentions a group of Indians which he met on these dates at Las Vegas, Nevada, which were called Quo-eech, who spoke the language "of the Snake Diggers like those west of Salt Lake City," and which lived five days journey northwest of Las Vegas. The Snake Diggers to whom he refers are probably the Gosiute, and, if so, it would appear that the Quo-eech spoke Shoshoni-Comanche, an entirely reasonable assumption considering the area they occupied. This reference is probably of no value, but it was interesting to me because it is the only mention of this group I have happened upon.

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[12] W. R. Harris, *The Catholic Church in Utah* (Salt Lake City, 1909), pp. 136, 142; Joseph J. Hill, *Spanish and Mexican Exploration and Trade* (Utah Historical Quarterly, Vol. 3, 1930), p. 9.

[13] J. H. Simpson, *Report of Exploration across the Great Basin of the Territory of Utah for a Direct Wagon-Route from Camp Floyd to Genoa, in Carson Valley, in 1859* (Engineer Department, United States Army, Washington, 1876), p. 35.

[14] Steward, *Linguistic Distributions*, fig. 1.

[15] In the possession of Mrs Flora Bean Horne of Salt Lake City.

The same writer mentions a group living near Las Vegas, Nevada, which he calls the Iats and which he seems to consider to be distinct from the Paiute although he mentions nothing of their language (July 7 and 11, 1855 and January 16, 1856).

Remy and Brenchly (1855)[16] mention a group in this locality which they called the Kusi-Utahs which they considered to bear a very great resemblance to the Utahs. They give a few words of their language, which I think may be safely considered to be Shoshonean.

Since Dr Steward completed his researches among the Gosiute, determining their language to be Shoshoni-Comanche rather than Ute-Chemehuevi as had been previously supposed, it seems to be the fashion to leave out entirely the possibility of Ute elements in the group. In this connection I might call attention to another statement of G. W. Bean's in the report of Captain Simpson's expedition across Utah and Nevada in 1859. He says,

> They [the Gosiute] are an offshoot of the Ute Indians, and are the offspring of a disaffected portion of this tribe that left their nation about two generations ago, under their leader or chief, Go-ship, and hence their name, Go-ship-Utes, is now contracted into Gosiute. I am disposed too, to believe that they are thus derived from the fact that I noticed among them several Utes who, while claiming that they belonged to the Utes proper, yet had intermarried with and were living among them.[17]

This statement might lead one to believe that although the group might well originally have been a Shoshoni-Comanche speaking group from the west, it probably contained a number of individuals who were Ute.

I have another statement, which may have a bearing upon the problem, regarding a coalition among several Southern Paiute bands. It dates from 1858 and occurs in the journal of Captain John J. Ginn, who was in Utah at that time. The statement is as follows,

> . . . We stopped over another day, to enable Jake Hamblin, our guide and interpreter, to proceed on the Santa Clara and engage old Tutsegovet, big chief over all the tribes south of the rim of the Great Basin, to come up to meet, and travel with us through all the bands of tribes southwest to the Muddy river, 180 miles.

This statement interested me very much in view of the lack of development of the concept of chieftainship in the Basin Shoshonean groups.[18]

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[16] Jules Remy and Julius Brenchly, *A Journey to Great-Salt-Lake City* (2 vols., London, 1861), Vol. 2, p. 411.

[17] Simpson, *Report of Explorations across the Great Basin*, p. 35.

[18] This journal is, at the present time, unpublished, but a copy is in the possession of Mr Charles Kelly of Salt Lake City.

I regret that I have nothing more to offer than these random statements of questionable value, but, as I said before, there seems to be little information available on band designations in the sources I have considered up to the present time.

WILLIAM T. MULLOY

UNIVERSITY OF UTAH

THE SOUTHERN UTE

A mere account of tribal range and band movements among the Ute depends largely upon whether one is discussing an earlier picture before the introduction of the horse, or the period in which the horse and the band camp are both present. For one thing, the introduction of the horse led to an extension of Ute range and frequent unfriendly contacts with Plains Indians. An account of band range would, therefore, not cover the entire picture.

The three bands of the Southern Ute, the Mowatsi, the Kapota, and the Weminutc, formerly ranged south of the Gunnison River and the present sites of Buena Vista and Denver in Colorado. Their southern boundary coincided roughly with the northern range of the Jicarilla Apache, although, because of the prevailingly friendly intercourse between these tribes, they may be said to have shared northern New Mexico and the adjoining section of Colorado in common.

The eastern and western limits of Ute location are more difficult to define, however, since the recent introduction of the horse led to a widened range in these directions. It may be stated definitely, nevertheless, that the western band, the Weminutc, ranged along the Uncompaghre River as a northern limit and east of the Dolores River and Ute Mountain in the southwestern part of Colorado. Wars with the Navajo, in which they sometimes joined with the Jicarilla, took them into the nearby corners of Utah and Arizona, while the Rio Grande and the San Juan marked their eastern and southern limits.

The central band, the Kapota, ranged south of the Conejos River and east of the Rio Grande. In general the continental divide marked off their territory from that of the Weminutc, so that the San Juan and San Miguel Mountains were common hunting territory. The Garita Mountains also provided hunting territory.

The Mowatsi ranged south of Denver and Salida on the west over to Pueblo and Trinidad on the east. Following the introduction of the horse, the Mowatsi pressed southeast for hunting and raiding as far as the Panhandle of Texas, commonly in conjunction with the Jicarilla.

This whole region, ridged by the high mountains of the continental

divide, at one time provided a safe retreat for the hunting and gathering activities of its inhabitants. In summer, when food was more abundant, these people might be seen moving in small family groups to favorite summer camps, located near the springs and rivers of the mountain valleys. In fall, however, the general movements of population were reversed and the Ute followed large herds of antelope south to level plateaus in order to lay in a winter supply of meat. Antelope drives and foot expeditions for buffalo frequently brought them into the corners of states adjoining southern Colorado. The geographical position and mobility of the Southern Ute immediately suggest contact with other tribes of the Great Basin and the Plains.

The scant literature on the Ute stresses particularly the latter type of contact. In the absence of a fuller account of this Great Basin culture, it became habitual to emphasize the Plains aspect of Ute artifacts and the relatively recent Ute war complex. It is important, therefore, to investigate the entire point of Plains orientation in this society, and to test this emphasis in the light of recent fieldwork. Until this is done, there is the constant danger of jumbling together the later stages in Ute organization which followed the introduction of the horse, and an older picture with decidedly less of the Plains aspect.

MARVIN K. OPLER

COLUMBIA UNIVERSITY

BAND ORGANIZATION OF THE SOUTHERN PAIUTE

Concerning tribal distribution in the Great Basin, I have little to add to the sketch map of Southern Paiute territory published some time ago.[19] I have at hand, however, my notes on the Kaibab Paiute, and they may be examined in the light of Steward's categories of village and band organization.

Among the Kaibab—and this holds for the Southern Paiute generally —the band, as I have used the term, was the communal land-holding unit and its territory was well defined. Within its bounds, however, springs and water holes were individually owned and inherited within the family. Ordinarily a man owned several adjacent springs at which he, his household, and friends camped in rotation. People of nearby springs shared the same economic cycle, constituting thereby informal local units, whose members journeyed together to the Kaibab Plateau for deer, to the Grand Canyon for mescal, and so on. Steward's criteria of village organization—habitual cooperation and association—are here applicable, although to inhabitants of a cluster of springs rather than to a single village.

[19] Kelly, *Southern Paiute Bands*.

The Kaibab were divided into ten such local units, of which the seven more populous ones had each its own headman who directed seasonal movements and activities, while the others made shift without such supervision. These local territories were not strictly defined. They were by no means economically independent, and mescal, deer, and so on were drawn from communal grounds within Kaibab habitat. Although springs on the Kaibab Plateau are said to have been privately owned, in the fall virtually all the Kaibab foregathered there to hunt. Within Kaibab territory there seems to have been no idea of trespass, even at privately owned springs:

A man owned a little land around a spring and lived there with his relatives and friends. If someone else came around he could camp there too; a man liked to have company. He liked to move around and change springs too; he knew where he wanted to camp. But if he moved away, he would come back later to his own spring.

Economically, each of these local groups within the Kaibab acted in unison and independently of other local groups. There was, however, considerable interplay and intervisiting. When, for example, a new headman was to be chosen in Houserock Valley, the Kaibab from Moccasin and Navajo Well traveled to Houserock Valley to assist in the selection. There was, of course, no formal exogamy, and blood relationship was the only bar to marriage.

As I see it, the Kaibab constituted a group distinguished from other Southern Paiute on the dual basis of dialect and territory. Whether such groups are designated as bands, tribes, or nations is immaterial. Within Kaibab territory there were local clusters, functionally economic in character, whose people moved freely within the Kaibab area but returned eventually to the series of springs which was regarded as the property of one of its members. If there was any sense of solidarity, it held for the larger unit (band, as I have used the term), not for the smaller component clusters. Such solidarity was not crystallized by the necessity of repelling foreign invasion, for there seems to have been little incursion in pre-horse days. With the surrounding Paiute the Kaibab appear to have lived on good terms, with occasional visiting and occasional intermarriage.

ISABEL T. KELLY

GILA PUEBLO

KAWAIISU TERRITORY[20]

Aboriginally the Kawaiisu occupied the southern end of the Sierra Nevada range, and thus lived for the most part in rugged, mountainous

[20] My field work among the Kawaiisu consisted of two seasons of about two months each during the summers of 1936 and 1937. During this time I worked with nine informants and

country. Their habitat, however, extended westward toward the San Joaquin Valley and eastward into the Mohave Desert.

Though the tribal frontiers are vague,[21] the general geographic relationship of the Kawaiisu to their immediate neighbors is clear. To the north were the ʔənəʔapə, the Tübatulabal, frequently referred to today as the "South Fork" people. Most informants placed the boundary line between the two tribes a few miles south of the South Fork of the Kern River and the augmented Kern, and running parallel to them. The sites of present Isabella, Bodfish, and Scovern Hot Springs were specifically mentioned as locations of aboriginal Tübatulabal villages.

To the northeast were the kohoži (kohoyži),[22] presumably the Koso. The line of delimitation is difficult to determine. The Kawaiisu and the kohoži are said to have lived together along Canebrake Creek. Walkers Pass, however, is reported as Kawaiisu territory. Both Inyokern and Randsburg were occupied by the kohoži, though the Kawaiisu went "to the other side of Randsburg" (apparently either to the Lava Mountains or Red Mountain) to obtain obsidian.

Somewhere to the east—apparently at a distance—lived the šividə, who appear to be the Chemehuevi.[23] No points of contact are mentioned. The šividə were said to have lived formerly around Needles. They gradually moved westward as the pitadə (see below) "died out." Just how far Kawaiisu territory stretched eastward into the desert it is impossible to say. Men went periodically to the dry lake at Saltdale for mineral salt. Other products are mentioned as having been obtained in the desert. Nonetheless, the Kawaiisu subsistence economy is distinctly montane; desert flora and fauna assume a minor role. In any case, the desert was conceived of as an area for occasional excursions, never of permanent residence.

All neighbors to the south—supposedly the Vanyume, the Kitanemuk,

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secured incidental data from about a dozen others. The bulk of my material, however, comes from Emma Williams, about 84 years of age, who lives at Piute Rancheria, and who proved, after a rather exhaustive survey, to be far and away the best informant available.

[21] I attempted repeatedly to obtain ethnogeographic data, but the response was never entirely satisfying. My informants were keenly aware of topography—place-names thus far recorded number one hundred twenty-five—but they seemed not to think in terms of exclusively owned territory. The invasion of other tribes for food-gathering purposes was an accepted phenomenon; and, similarly, excursions of the Kawaiisu into occupied areas were common.

[22] Native terms in parentheses are dialectic variants; all others represent the speech of my interpreter, Elsie Garcia.

[23] In view of Kelly's report of the close association of the Chemehuevi with the Las Vegas band (*Southern Paiute Bands*, pp. 555–56), the term šividə may well refer to either or to both.

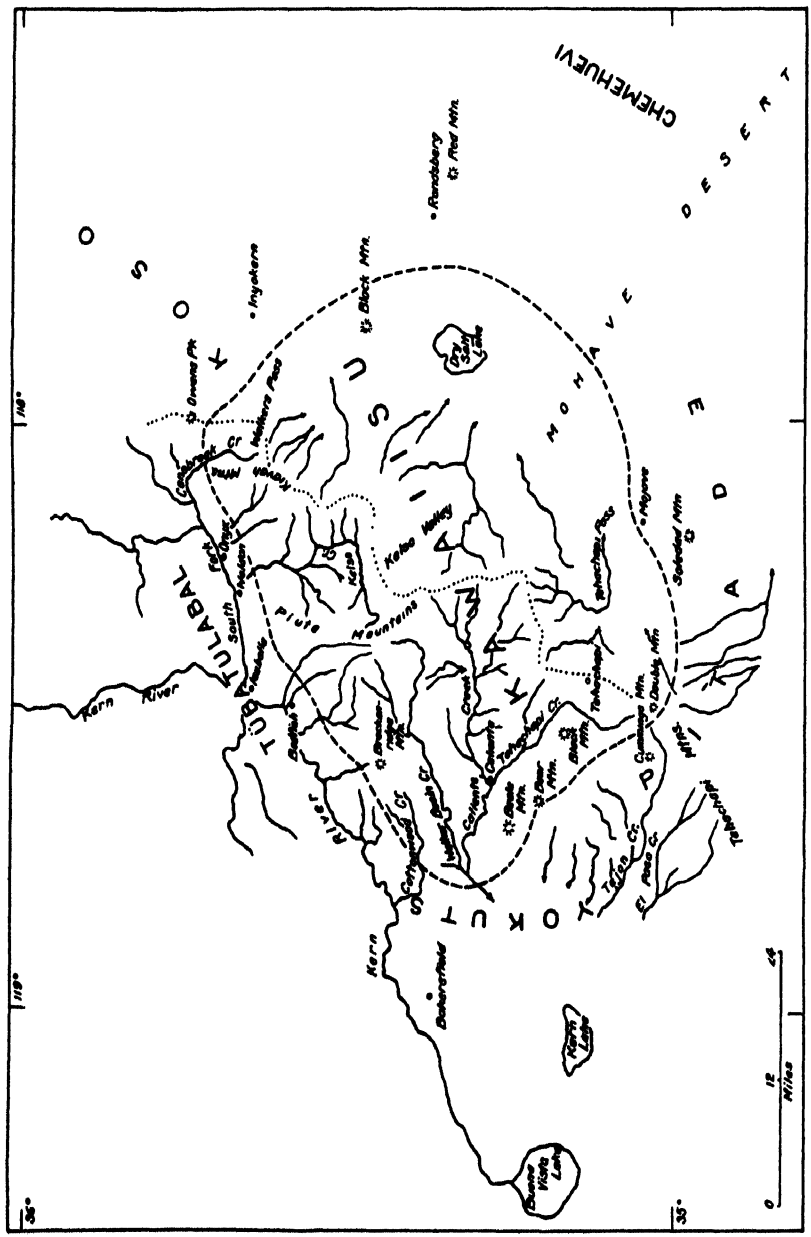


FIG. 3. Kawaiisu territory, Southern California, by Zigmond.

and the Alliklik—are grouped together under the single term pitadə (pitandə), i.e., "the southerners." Today these people are commonly called "the Tejon"—a natural reduction since all that remain of them are a few Kitanemuk living at the Tejon "reservation." Pitadə territory extended all the way from Victorville and Barstow, through the town of Mojave, to Tejon Canyon. At certain sites southwest of modern Tehachapi—Brite Valley, for example—the pitadə and the Kawaiisu were said to have dwelt together.

The Yokuts immediately to the west of the Kawaiisu are known as ka·pišəkəmə. Contact between the two groups was infrequent and relations on the whole unfriendly. The Kawaiisu occupied territory along Caliente and Walker's Basin Creeks and apparently inhabited a site as far west as Bena. "The ka·pišəkəmə never came up as far as this." Cottonwood Creek, which flows into the Kern, is mentioned as being in ka·pišəkəmə territory, but probably the lower section of the stream alone is meant.

Few previous attempts have been made to establish Kawaiisu boundaries. The northern frontier as fixed by Kroeber[24] and E. Voegelin[25] agrees essentially with this description. Kroeber's delimitation of western Kawaiisu territory,[26] though evidently drawn from Yokuts data, is in remarkable agreement with my own.

Two recent papers make brief reference to the eastern boundary of the Kawaiisu. Driver[27] states that "their territory extended east to the Panamint Mountains." Steward[28] believes that "Panamint Valley and probably the southern portion of Death Valley were occupied by Kawaiisu." Neither of these statements appears to me to be tenable. None of my informants gave any evidence to substantiate them. On the contrary, to the kohoži[29]

[24] Kroeber, *Handbook of the Indians of California*, pp. 606–607.

[25] E. W. Voegelin, *Tübatulabal Ethnography* (Anthropological Records, Vol. 2, No. 1, 1938), pp. 7–9. Among the hamlet sites listed (pp. 31–43), Voegelin mentions a "Koso-Kawaiisu site" on Chimney Creek, north of Canebrake Creek. Specific inquiry during the summer of 1938 elicited the information that a Kawaiisu settlement formerly existed east of Pilot Knob, on the west side of the South Fork, apparently at Voegelin's site No. 4. These two locations are about three miles apart and may be confused in the minds of informants. Evidently the Tübatulabal, Koso, and Kawaiisu were inextricably mingled in this area.

[26] *Handbook*, Plate 47.

[27] H. E. Driver, *Culture Element Distributions: VI Southern Sierra Nevada* (Anthropological Records, Vol. 1, No. 2, 1937), p. 58. [28] Steward, *Linguistic Distributions*, p. 626.

[29] Fred Collins' statement to Driver (*op. cit.*) that "kohaiziwa" is a Kawaiisu self-name contradicts his assertion to me that the term (-wa is plural suffix) applies to northeastern neighbors. On this point all my informants were agreed. Incidentally, the self-name of the Kawaiisu was universally given as nəwə, plural nəwəwa (cf. Kelly, *op. cit.*, p. 548, where I=ə).

was attributed all territory north and east of Canebrake Creek, including Owens Lake and Koso Hot Springs. North of Owens Lake were the paγa-zozi (Eastern Mono ?) whose territory included Mono Lake. My most reliable informants identified still another tribe, the tavinaγapidə, "around the Panamint Mountains."

Steward's footnote in the article cited above[30] obviously needs typographical revision. The position of the Kawaiisu in reference to the South Fork of the Kern (not Kings River) has already been discussed. Kelso (not Kelsey) Valley was undoubtedly an important Kawaiisu district, as was the Tehachapi region.

A preliminary linguistic analysis tends to show that Kawaiisu, while belonging to the Ute-Chemehuevi subdivision of Uto-Aztecan, is further removed from the other constituents than the latter are from one another.[31] Thus it may be assumed that at some time in the past the Kawaiisu broke away from their linguistic affiliates and, drifting westward, moved up into the mountains. There they found themselves wedged in between peoples already well-established: Southern Californian Shoshonean-speaking groups to the south, Kern River Shoshoneans to the north, and the Yokuts to the west. An uninhabited desert span separated them from their former neighbors. Whatever may have been the date of this migration, it must be set at a time recent enough to account for strong linguistic ties to the east, yet remote enough to permit of a thorough-going adjustment to a mountainous habitat and to erase from the tribal traditions all evidence of the migration itself.

MAURICE L. ZIGMOND

YALE UNIVERSITY

[30] Page 626, note 9.

[31] B. L. Whorf suggests the term Utan for Ute-Chemehuevi-Kawaiisu.

NAVAHO CHANTWAYS AND CEREMONIALS

By BERARD HAILE

THE present paper proposes to discuss briefly some religious terms which Navaho practitioners, and the natives at large, employ in designating their various chantways and ceremonials. The discussion will, it is believed, assist in clarifying some confusion which exists in recognizing a chantway, in identifying ceremonials, rituals, and the like.

Our discussion must necessarily exclude the names of specific religious functions known as ceremonies—naxaγá, or relativized naxaγâi, "a ceremony;" plural: ndaxaγâi, "ceremonies." Thus, cutting up spruce dresses, unslipping hoops and knots, emesis with fuel burning, the bath, sweat-bath, sand-paintings, prayer-stick, jewel offerings, and similar religious functions, often have specific names. Individually, however, they are all naxaγá, "a ceremony." When these various ceremonies are presented in a unit, and distributed over several nights and the intervening days, we designate this complex as a ceremonial. References to this distribution are very common: 'ašλa' ǰé·' xatá·l, "a five-night ceremonial;" ná·xáśťái ǰé·' xatá·l, "a nine-night ceremonial," which means that this number of nights, and intervening days, are required for the ceremonial.

The late Dr Washington Matthews correctly pointed out that by far the greater portions of Navaho ceremonials are chanted, and felt justified in grouping them all as chants. Thus, the well known ǰé·ží xatá·l he renders "Night chant," which we render "Nightway." Yet it is obvious that neither the single song (possessive: biγi·n, "its song") nor a number of songs which are "chanted" constitute xatá·l, "chant," in the native sense. Only such ceremonials in which the songs are accompanied with a rattle instrument ('aγá·ł) are properly speaking "chants." We find, therefore, that the term xatá·lží, "chantway," suggests, at the least, a dichotomy in the Navaho ceremonial system. One division of ceremonials would be "chantway;" for the other we employ the term "rite," as implying that it is not chantway. The language offers no equivalent for "rite," perhaps because the two most prominent rites are usually mentioned by one of their names: xóžǫ·ží, "Blessingway," and 'ana·'ží, "Enemyway." (Minor rites of war, raid, and the chase are becoming rare, but have probably drawn upon these two rites for their songs.) At any rate, the singer of Blessingway holds the ǫil łe·ž, "mountain soil (bundle)" in his hand as he sings, while the 'ása·' or "pot-drum" accompanies Enemyway songs. The two rites, therefore, are not assigned to xatá·lží, "chantways."

On the other hand, too, it is not necessary to add qualifying xatá·l,

"chant," when a chantway is mentioned by name. The name itself sufficiently implies this connotation. Thus, ǰé·ží, "Nightway," is sufficient, in native usage, to connote the more explicit ǰé·ží xatá·l, "Nightway chant or ceremonial." In the following, therefore, we shall quote the chantway by name only, without adding qualifying xatá·l, "chant." The chantway appears to define the kind of repertory which happens to present a given ceremonial. This repertory may have its own characteristic performances, not found in other chantways, or it may share specific ceremonies with other chantways, yet conduct these along its own standards and with its own songs and prayers, which would sufficiently distinguish one from the other chantway. The very fact, however, that the same ceremonies and, as we shall see later on, even entire rituals may be shared in common by several chantways, indicates a very liquid type of chantway in the Navaho ceremonial system. A process of survival of the fittest goes on. The stronger chantway increases its repertory of ceremonials so that, in time, it may readily take care of the repertory of a weaker chantway, gradually absorb the latter, a process which, to a great extent, accounts for extinct chantways mentioned occasionally. Conversely, too, this same liquid type will permit new chantways to be added to the system. We know that this has happened in the Fort Sumner period of 1864–68, when the Navaho were in contact with the Chiricahua Apache. As a result the old chantway, which was known as ńłčiǯí, "Windway," had to be qualified by diné bińłčiǯí, "Navaho Windway," because a new chantway, the číší bińłčiǯí, "Chiricahua Windway," had developed during that period.

The divination method known as n'dilni·h, "hand-trembling," also owes its introduction to this contact with the Chiricahua. Apparently, too, this method of divination is sufficiently popular in some localities, like Ramah and the southern Tohachi Valley, to have been transformed into a chantway, known as n'dilni·hǯí (xatá·l), "Hand-Trembling-way (chant)." The process, therefore, both of adoption and absorption may be expected in the Navaho chantway system.

A study of the names of existing chantways reveals that some add enclitic -ǯí, others add enclitic -e· to their names. Regarding postpositional -ǯí, Dr Edward Sapir, in a recent communication, calls attention to seven special "direction enclitics," of which -ǯí is one. This need not necessarily be a petrified noun meaning "side," but more properly expresses "in the direction of" (whether locally, modally, or referentially). Those chantway names, therefore, which employ enclitic -ǯí, we have compounded with "way," or hyphenated them, in order to approximate the Navaho terminology as closely as possible. Thus, diné bińłčiǯí, "Navaho Windway;" číší

biłčižį "Chiricahua Windway;" ǩé·žį, "Nightway;" ma'i·žį, "Coyote-way;" wółáčí·'žį, "Red Antway;" sǫ' cohžį, "Big Starway;" ǯiłkižį, "Mountain-Top-way;" n'dilni·hžį, "Hand-Trembling-way" (in some localities).

Regarding the second group of chantway names with enclitic -e·, Dr Sapir again makes a very valuable suggestion. He points out that we probably have a postposition -e·, "with, or by means of," attached directly to the noun or nominalized verb. To illustrate: tóe·, for instance, suggests "by means of water." So also for the other names of this type. In deference, however, to native feeling, which seems to treat enclitic -e· here analogously to enclitic -žį of the first group, we retain "way" in the second group also. The popular query, therefore, xa'áťé·žį xatá·l "Which way (kind of) ceremonial is it?" will find this response in the enclitic -e· group: béše·, "Flint-way;" ačose·, "Downway;" 'ažiłe·, "Prostitutionway;" xaščécohe· (which is a more popular pronunciation than xa·šč́é'ecohe· for) "Big-God-way;" na'ať oe·, "Shootingway;" tóe·, "Waterway;" yo·e·, "Beadway;" xo·žóne·, "Beauty-way;" xane·łnéhe· (xa'ne·łnéhe·), "Moving-up-way;" ńlóe·, "Hailway;" caha· (or cahá probably extinct), "Awlway." While analogous in the use of the enclitic, dini'e·, "Gameway," does not appear to be a chantway. Also, there are na·γé'e· sin, "Monsterway songs," but the origin legends of this name do not mention na·γé'e· as a chantway.

Both enclitics for the same chantway are found in 'ačose· and 'čosížį, "Downway," which has been called the Feather chant, or Plume chant, and Downy Feather chant. The variant na'ať oye·, which many natives employ for na'ať oe·, "Shootingway," strongly recalls postpositional -e·, which Dr Sapir suggests above. The Franciscans, for whom the writer recorded in 1910 and 1912, use that popular pronunciation.[1] Some chants have two names and even nicknames. The Chiricahua Windway, especially, comes in for its share. Thus, číšižį, "Chiricahua-way;" golaγaižį (or góláγáižį), "the golagai-way," because of the terminal refrain of its songs; γʷócį'ížį (or γʷócį·žį, and even γʷócę'éžį), "Toothgum-way." So, too, ca'i·žį, "Female-way," is very probably another dub for ǯiłkižį ba'á·žį, "female (branch) way of Mountain-Top-way." Some natives also hold that 'ayážížį, "cub side" is, at most, but a sub-branch of the same ǯiłkižį ba'ážį, for the reason that the she-bear cannot be separated from its cubs.[2] In my texts of the female branch of Mountain-Top-way no mention is made of 'ayážížį,

[1] Cf. Franciscan Fathers, *An Ethnologic Dictionary of the Navaho Language* (Saint Michaels, Arizona, 1910), *sub verbo* Lightning chant, and *idem*, *A Vocabulary of the Navaho Language* (Saint Michaels, Arizona, 1912), Vol. 2, *sub verbo* Shooting chant.

[2] The above quoted *Dictionary* (p. 365) erroneously translated: mountain chant to the small birds. But 'ayá·š "small bird," and 'ayážį, "young one," are two different concepts.

"Cub-way," although the cubs are constantly mentioned with the she-bear. One hesitates to accept it as a distinct chantway until better evidence can establish it as such.

Flintway (béše·) has been called Knife chant.[3] Our texts of this show that nothing is farther removed from the ideology of the chant than knives. But béše·, "Flintway," and 'i·ná·ží, "Lifeway," are synonymous, and the *Dictionary*[4] correctly lists Knife and Life chant as one. It is also referred to by some as 'akéšgą·ží, "Hoofway," reminding of the use of 'akéšgą· 'aγá·ł, "hoof rattle," in this chantway. Again, because of the division of Flintway songs into sin bakazí, "main shaft songs," and bina· ńža·'i·, "those which surround (the main shaft songs)," it is possible that the dub kase·, "Shaftway," may have originated. My informant of Flintway knew nothing of the name. As far as I can now recall, this completes the list of duplicate names, which, therefore, are comparatively few in number.

Several chantways lay claim to male and female branches. They indicate this claim by prefixing possessive bi- to/ką' and /'á·d, "male" and "female," to which they again add enclitic -ží to "show" the way. Thus we get biką'ží, (assimilated baką'ží), "its male way," and ba'á·ží, "its female way." And, since the English terms "male and female branches" fairly accurately express the native ideology, there seems to be no objection to the use of these terms. It may not always be clearly defined what is meant by the terms. The connotation is certainly not that baką'ží, "its male branch," must only be applied to male patients, and similarly ba'á·ží, "its female branch" to women patients only, because both branches are applicable to patients of either sex. More than likely the distinction will be ascribed to the authors as men or women, or a similar rationalisation may be advanced. Yet, even this uncertainty leaves no doubt in the native mind, that two distinct chantways are postulated whenever a chantway claims a male and female branch. We note, too, that in native usage the male branch is ordinarily meant when a chantway with male and female branches is mentioned by name. The female branch, therefore, is ordinarily specified. Thus, žiłkiží ba'á·ží, "Mountain-Top-way female branch," while simple žiłkiží denotes the male branch of the same chantway. The division implies that the legend, repertory of songs, prayers, sand-paintings, prayer-sticks, even the religious paraphernalia, known as žiš, "pouch," will differ in each branch.

We have said that ordinarily the female branch of a chantway must be specified as such. An exception is made in Flintway where, due perhaps to

[3] Cf. *Dictionary, sub verbo* Knife chant.

[4] Page 364.

the greater popularity of its female branch, this branch is meant whenever béše·, "Flintway," is mentioned. In matter of fact, very little appears to be known of the male branch in Flintway. If then, the use of the possessive pronoun here establishes the claim of a branch chantway, we may reasonably expect the same method applied in establishing new chantways. In other words, where the possessive pronoun is not employed, a new branch chantway need not be postulated.

To apply this principle will, undoubtedly, involve some difficulties. Mention has already been made of 'ayážíží, "Cubway," and ca'i·ží, "Female-way," which some feel should be recognized as branch chantways. Others think not, and recognize duplicate names, in these terms, of ǯiłkiží ba'á·ží, "female branch of Mountain-Top-way." Very likely, however, there is only a reference to the cubs, or the she-bear, respectively, as etiological factors. In ǩé·ží, "Nightway," too, we meet such distinctive terms as céní·'ží, "midrock-way;" táłǩáhží, "water-bottom-way;" cinca·ží, "big-tree-way," and others, with reference to the γé'i·, "gods," of these localities, and therefore appear in Nightway only. Natives seem to feel that there is just one Nightway, so that, in all probability, there is reference in these terms to the gods of these localities as etiological factors, rather than to distinct chantways of these names. This seems to be brought out again in the study of sand-paintings and prayer-sticks, as well as such portions of the legend pertaining to them. We recall, too, that there is such a combination as ǯiłkiží na'aťoe·, "Mountain-Top-way-Shootingway," or reversed: na'aťoe· ǯiłkiží, "Shootingway-Mountain-Top-way;" terms in which neither chant claims possession of the other. Not much can be found in either our Shootingway legends or in the text of the female branch of Mountain-Top-way to substantiate the claim of a distinct chantway for this combination. While there are those natives who disagree with the view, the writer favors the opinion which holds that the combination is only applied when Shootingway presents the 'ił náššin, "bough dark circle," or corral dance with exhibitions such as Mountain-Top-ways usually present. The term therefore connotes that Shootingway borrows Mountain-Top-way features for the occasion, not vice versa. If, on the other hand a distinct chantway is postulated, evidence must be produced how this new chantway differs from male and female branches of both Mountain-Top-way and of Shootingway.

Other difficulties are perhaps presented by the apparent free use which natives make of enclitic -ží, "way," and the nominalized xatá·l, "ceremonial (or chant)." Religious terminology, however, rarely makes reference by name to a disease which a ceremonial of a chantway is called upon to cure.

In matter of fact, the religious system does not require a physical examination to determine the nature of a disease, as the concept of locating the cause of a disease in the human body itself is foreign to the Navaho. The cause for disease, for injury to the body or to one's property, for continued misfortune of any kind, must be traced back to supernatural causes. Hence human affliction does not belong in the realm of medicine but in that of ceremonialism. The ceremonial, in other words, is the only effective method of administering medicine, because it removes the cause of disease by appeasing the supernaturals. This ideology finds expression in a number of terms with evident reference to the etiological factors concerned. These factors are numerous, from which we select some for illustration.

A case in the neighborhood comes to mind, in which a woman complained of pains in her shoulder caused by carrying a sack of piñon nuts, which she had gathered inside of a brush corral. She figured that these pains were sufficient evidence of šaš 'áɬ'ɻ·ží, "bear does-it-way," in other words that a bear was causing her shoulder trouble. She called upon a singer of ʒilkiží ba'á·ží, the "female branch of Mountain-Top-way," to hold a ceremonial of this chantway for her benefit. The choice of this chantway, in this instance, was probably prompted by the well known unconcern of the she-bear with cubs about seeking the most convenient feeding grounds. The woman, however, had no business doing likewise. The pains in her shoulder reminded her of this! It becomes clear at once that šaš 'áɬ'ɻ·ží xatá·l, "bear does-it-way ceremonial," can have no other connotation than a reference to the purpose of the ceremonial, which is the removal of the influence mentioned in the bear's action.

The offense against the etiological factor may be purely accidental, as in the case just cited. Deliberate offense may be committed by the bear hunter, who kills the bear. This is indicated in šaš ʒo·γą́·łží (xatá·l), "bear one-killing-along-way (chant)," to express that a person goes along killing the bear, and consequently suffers therefrom. The ceremonial removes that suffering. Like references to the etiological factor at work may be found in the following: 'i·ńi' át'ɻ·ží, "thunder does-it-way;" ńłči 'áɬ'ɻ·ží (xatá·l), "wind does-it-way (ceremonial);" ǰi·scoh 'áɬ'ɻ·ží, "big snake does-it-way;" na'ašǫ́'i· dičíži· 'áɬ'ɻ·ží, "horned toad does-it-way;" čikę́·h šaš náλe·hé 'áɬ'ɻ·ží xatá·l, "changing bear maiden does-it-way ceremonial." A specific assignment to a chantway is not intended by these terms, as any chantway which makes provision for it can take care of these etiological factors. If it were true that one chantway alone can handle a case, in which the wind is an etiological factor, others only the bear, snakes, thunder, when these are etiological factors, such a claim, as we have seen, would very likely be made in the use of the possessive pronoun.

This is not even done when the chantway is indicated. The term 'ó'osńi'ʒí, "thunderstroke-way," allows any of several chantways to care for the thunder factor, here a lightning stroke. The term retains its form, even when assigned to, say, ńłčiʒí, "Windway," thus: ńłčiʒí 'ó'osńi'ʒí, "(Navaho) Windway thunderstroke-way." Of a piece with this are similar combinations: ńłčiʒí no·dǫ́·zʒí, "(Navaho) Windway striped-way," because reference is to striped wind as etiologically active, with which the chantway now happens to be occupied; na'aťoe· yóťá·hdę́·' (wóťá·hdę́·'), "Shootingway from upper (sky shelves)," in reference to winds, snakes, and thunders; and na'aťoe· ba'á·ʒí čil ya·dę́·', "Shootingway female branch, from below weeds," in specific reference to snakes as etiological factors. We again refer to the divisions in Nightway mentioned above, and to the Cubway and Female-way of the female branch of Mountain-Top-way as belonging here. In all probability ʒiłkiʒí ba'á·ʒí 'ayáʒíʒí (and ca'i·ʒí), "female branch of Mountain-Top-way cubway (and female-way)" connote references to these two etiological factors.

Following a suggestion made by Dr Sapir, I am rendering xoł dá·deskɻ·ʒí with "one's return-glide-way," which refers to partial loss of mind or consciousness. (Other passive forms are 'ił, "somebody's;" bił dá·deskɻ·ʒí, "his return-glide-way.") In the active form mention is made of the factor táłx̌áhʒí zahadolža·í yił dá·deskɻ (·ʒí), "water-bottom-way Fringed mouth caused him to return-glide(-way)," because Fringed mouth of the water bottom in Nightway has caused this temporary loss of mind. Several chantways like ʒiłkiʒí, "Mountain-Top-way;" x̌é·ʒí, "Nightway;" xo·žóné·, "Beauty-way," and perhaps others, provide for a prayer to return the mind to its normal condition. The few examples which we have mentioned in the preceding paragraphs should be ample evidence that the terminology makes frequent references to etiological factors. Distinct chantways, however, are not postulated by such references.

Earlier in this discussion we mentioned five- and nine-night ceremonials. Five-night ceremonials may be characterized by prayer-stick offerings, by sand-paintings, or by jewel offerings. Hence such distinctions are made in ceremonials as ǩe·ťá·n be· xatá·l, "a ceremonial with prayer-sticks;" 'i·ká·h be· xatá·l, " a ceremonial with sand paintings;" nx̌iz be· xatá·l, "a ceremonial with jewels." This terminology has no reference to any particular chantway, but expresses that the ceremonial in progress happens to be chiefly concerned with either prayer-sticks, sand-paintings, or jewel offerings. We note too that a chantway is not subject to distribution, but there is no objection to distributing the same ceremonial among several chantways. Therefore, if a number of chantways provide for ceremonials with prayer-sticks, with sand-paintings, or with jewel offerings, we are safe in

not postulating a special chantway for such ceremonials. On the basis of distribution, too, no especial chantway need be postulated for kin be· xatá·l, "ceremonial with the house," or, specifically, ǯóxona·'ái baγan be· xatá·l, "ceremonial with sun's home," because this may be characteristic of both branches of na'aťoe·, "Shootingway (male and female branches)."

The distinction between chantway and ceremonial is again emphasized in the fact that ceremonials may be united in one. Commonly nine-night ceremonials may devote the first four days to prayer-stick cutting, the last four to sand-paintings. Five-night ceremonials may distribute prayer-stick cutting and sand-paintings over four days. And diné bińłčiǯí, "Navaho Windway," provides for łá'ídi xatá·l, a "once" ceremonial, in which ceremonials with prayer-sticks, sand-paintings, and jewel offerings are combined. So too, when the chantway just mentioned speaks of its 'i·ká·h łáńǯí, "many sand-painting-way," it refers to a ceremonial in which the figures of the sand-painting are multiplied, instead of presenting the customary number of these figures. It does not, however, lay exclusive claim to this characteristic feature of the ceremonial, as this may be also found in the ceremonials of other chantways. General terms, therefore, seem to be preferred in assigning ceremonials.

In the category of general terms we also assign terms relating to the close of ceremonials. Some chantways may employ special terms, but, in addition to these, every chantway (and rite) ceremonial must have biǯį, "its day," which designates the day (of a one-, three-, five-, or nine-night ceremonial) on which all ceremonies have been completed, and the following dawn is awaited to conclude the ceremonial. Once a ceremonial has been begun it must perform its various ceremonies without omissions Its "day" indicates that this has been done, and therefore every ceremonial may and must claim biǯį, "its day," even when no public exhibition follows.

The term 'ił náǯin signifies "a bough dark circle, or brush corral," but in religious terminology it also has the connotation of dance exhibitions around a huge fire. Hence the English names "fire dance, corral dance." Various groups, representing so many chantways, follow one another, exhibiting the 'álí·l or "power specialty" of their chantway by turns. Hence the Navaho 'ažni·dá·h, "group-dancing is going to be done," always implying after biǯį, "its day," or conclusion of ceremonies, has been announced. Today this ordinarily refers to the two branches of ǯiłkiǯí, "Mountain-Top-way," and to na'aťoe·, "Shootingway," which then becomes ǯiłkiǯí na'aťoe·, "Mountain-Top-way Shootingway," as already mentioned. Several other chantways mention the 'ił náǯin, "brush corral,"

in their legends, but have discontinued the public exhibition in practice.

In ǰé·ǯí, "Nightway," the term na'akai, "group goes about" (or "dances in one place"), is known as the yeibichai dance, with reference to the γé'i· bičai, "granduncle of the ye-i," who leads the masked impersonators in the dances. When this public dance is not to be held, the ceremonial is called ťó· na·ǯéhégo xatá·l, "just visiting-here-and-there ceremonial," or also wúne'é xatá·l, "inside ceremonial," with reference to the close of the ceremonial within the hogan. The other chantways of the γé'i· daxólô·ni· which have masked impersonators group, namely, ma'i·ǯí, "Coyote-way;" 'aċose·, "Downway;" and xaščécohe·, "Big-god-way," also employ the term wúne'é or wúni·'ǯí xatá·l, "interior, or interior-way ceremonial," for the private conclusion within the hogan. Apparently, then, a public exhibition was originally intended for them, but has been discontinued, or rarely occurs.

The term xatá·l, therefore, has the connotation of ceremonial rather than of chantway. If we next consider the manner in which ceremonials are conducted, we find that the terminology mentions certain patterns, rituals we call them, which govern the performance. We have not in mind a general ritual, which governs the behavior of the patient in entering and leaving the hogan clockwise, or governs the size of prayer-sticks, or color materials for painting these sticks and sand-paintings, and the like. But the special rituals here considered concern certain alterations in the choice of song and prayer words, in the sequence of colors on prayer-sticks and sand-paintings, which distinguish one pattern or ritual from another. These alterations are probably determined by the attitude of the holy ones, who happen to be etiologically concerned in a given case. Just what is understood by holy ones?

In the ye-i chantway group, mentioned above, we may accept the view of an aged informant, according to which "whatever ye-i are to be found, are meant by diγin dine'é, 'holy people,' because they travel in a very holy way, by means of rainbow, reflected sunrays, and the like." The ye-i are identical with the xa·šč́éh dine'é, "failed-to-speak people." who are now visualized in the masked impersonators. The term diγin, which we render with holy, does not connote moral sanctity, as neither these holy people nor any of the native ceremonials are concerned with the moral order and its restoration. If anything, it may connote mysterious and, since as a class they are the counterpart of naxoká·' dine'é, "earth surface people," the term holy, in holy people and other religious terms, seems aptly applied. In some chantway legends holy people are mentioned, who do not belong to the failed-to-speak or speechless ones; they mention

natural phenomena as hail, rain, thunder, winds, and animals in human form, as snakes, horned toad, and ants. All these may be included in the holy people concept. They are not susceptible of harm, but have power to prevent it, and can confer this power upon "earth surface people." A diγinǩehgo xatá·l, when ceremonial is accorded to holy (ones) or directed by them, evidently has reference to the holy people. Commonly the "way" is again expressed: diγinǩehǯí xatá·l, "a holy way ceremonial," by which we mean a ceremonial which follows holy way ritual.

Now, most Navaho chantways make provision to conduct their ceremonials according to the holy way ritual. And because the patient himself decides upon the chantway to be selected, because he has traced the etiological factor operative in his case, he automatically directs the chosen singer as to which ritual to follow. If the patient has been bitten by a snake, attacked by a bear, hurled aside by the wind or thunder, the evidence is clear that injury has been inflicted by these factors. Evidence even, as in the case of a direct attack by a bear or a thunderstroke, that the de·zlá·', "weapon," or biǩa', "its arrow," may be lodged in the patient's interior. There is evidence, in any event, of the anger of the holy ones. The first objective, therefore, of a ceremonial conducted in the holy way ritual must be to remove this weapon or dart as a sign of anger, a sort of exorcism, after which the process of rendering the patient holy or impassible to similar attacks may be begun and completed by the ceremonial. The general trend and purpose of the ritual is hereby indicated in native terminology. Those chantways which speak of de·zláǩeh xatá·l (variants: de·zlá·ǩeh, de·zlá·ǩehǯí), "weapon or injury-way ceremonial," evidently have the weapon in mind, which the holy one, or supernatural, has used to inflict injury. Chantways which prefer to call such ceremonials 'i'dê·l-čįhǯí (there are variants also), "angry-way," emphasize the anger more than the weapon used, but are agreed upon the etiological factors at work. The obvious purpose of the ceremonial, as specified by the patient, is none other than to remove this weapon and the injury done.

Shootingway, Red Antway, Big Starway, and perhaps other chantways do not hesitate to use injury (weapon) way and angry way promiscuously in designating this ritual. Thus, de·zlá·' xatá·l (de·zlá·ǯí or other variants already mentioned), "weapon (injury) ceremonial," and 'i'dê'lčįhǯí, "angry-way," are one phase of diγinǩehǯí, "holyway ritual." The other phase of this dichotomy is called xóžǫ́·ǯí xatá·l, "peaceful-way ceremonial or ritual," to indicate that the patient is no longer at war with the holy ones and peaceful conditions have been restored. Peaceful is suggested by the

dichotomy in the division of war and peace leaders: haške·žį na·ťá·h, "angry-way (war) leader;" xóžǫ·žį na·ťá·h, "peace-way leader." By qualifying the subdivision of holyway ritual as xóžǫ·žį xatá·l, "peaceful-way (chant) ceremonial," this terminology at once distinguishes it from xóžǫ·žį "Blessingway rite," which does not belong to xatá·lžį, "chantways." These chantways, therefore, divide this ritual as follows:

diγinkehžį, "holyway ritual"
de·zlá·kehžį, "injury-way ritual," or
'į'dê·lčįhžį, "angry-way ritual," and xóžǫ·žį, "peaceful-way ritual"

Other chantways do not mention de·zlá·kehžį, "injury-way," and seem to sense a certain impropriety in introducing xóžǫ·žį, "Blessingway," as a ritual subdivision of chantway ceremonials. Possibly to avoid confusion here, a number of chantway ceremonials know only these two phases of holyway ritual: 'į'dê·lčį·hžį, "angry-way," and diγinkehžį, "holyway ritual."

The ideology in this group is identical. First in order is the removal of the wrath of the holy ones in angry-way. That done, every effort to prevent a recurrence of the condition suffered should be made, by rendering the patient holy in holyway ritual. We shall follow this last pattern for discussion here. When the patient desires 'į'dê·lčį·hžį xatá·l, "a ceremonial in angry-way ritual," the singer directs that the red bars of rainbows, reflected sunred, or those of ankles, knees, and wrists on sand-painting figures be turned toward the figure of the painting. The same holds for the coloring on prayer-sticks: red lines toward the body of the stick, to symbolize that the patient has been at war with the etiological factor. In diγinkehžį xatá·l, "ceremonials in holyway ritual," all reds must be turned out, away from the figure. In addition, some chantways prescribe slight alterations in song words for the two rituals. Flintway makes no such distinction in its ritual, because of the absence of prayer-sticks and sand-paintings. Its entire ritual, therefore, is diγinkehžį, "holyway."

Evidently, too, the nλiz be· xatá·l, "ceremonials with jewel offerings," are purely diγinkehžį, "holyway," because changes in coloring cannot be made. But ke·ťá·n and 'i·ká·h be· xatá·l, "ceremonials with prayer-sticks and with sand-paintings," readily lend themselves to the execution of these rituals And too, the entire ceremonial may be governed by one or the other ritual, or devoted partly to one and partly to another. Thus, part of a five-night ceremonial may be angry-way and conclude, in the other part, in holyway ritual, as economy dictates.

It has already been mentioned that 'i·nąą·žį́, "Lifeway," and béše·, "Flintway," are synonyms. Yet, because the na'aťoe·, "Shootingway branches," are biči·ní·h, "partner (associates)" of Flintway, they have adopted certain Flintway characteristics, which are then called 'i·ná·žį́, "Lifeway," thus, na'aťoe· bąką'žį́ 'i·ná·žį́, "Shootingway male-branch lifeway." As several chantways have adopted Lifeway, it appears permissible to treat this as a special ritual for these chantways. Their legends will, in all probability, only designate certain sections as 'i·ná·žį́, "Lifeway," without requiring a distinct legend.

Finally, several chantways have adopted the xóčǫ́·žį́, "ghostway" ritual. Careful pronunciation reveals these variants: xóčǫ́'ǫžį́, xóčǫ́'ížį́, and, as we should expect, xóčǫ́·'žį́. But in popular pronunciation the glottal stop is not heard, perhaps to emphasize the antithesis in xóžǫ́·žį́ and xóčǫ́·žį́, the first to express a happy (xóžǫ́), the second a xóčǫ́'ǫ́, "bad or ugly" condition of things. The xane·łnéhe· (or xa'ne·łnéhe·), "Moving-up-way,"records the story of the under worlds and the emergence from them into the present world. The passage through which this emergence was made is identified with the čį·di·tah, "ghostland," to which the phantoms of the dead return, as ordained by the first human to die on the present world. This chantway, therefore, and xóčǫ́·žį́, "ghostway," are identified as one, as its original purpose was directed towards the etiological factors of ghostland, as shown in the death of twins, dreams about the dead, contact with the grave or home of a dead tribesman, and so on. In time other chantways borrowed this characteristic of Moving-up-way, and incorporated it as a ritual of their repertories. Shootingway, Red Antway, and Big Starway may be mentioned as borrowers, and their claims are couched in the same general terms, noted for similar cases. Thus, sǫ'cohzį́ xóčǫ́·žį́, "Big Starway ghostway," which evidently leaves room for other chantways to claim this ritual.

This conservatism in the choice of terms, if we may so call it, appears to be quite in order. We surmise that the majority of chantways do not desire to include a special ghostway ritual in their repertories. They seem to prefer the general pattern, which provides both boxóčǫ́·žį́, "its evil or misfortune-way," and boxóžǫ́·žį́, "its blessing-way," for chantways. The possessive form of these terms indicates at once that every chantway can claim them, as they actually do, and therefore excludes the idea of a ritual as we conceive it. The two concepts then, xóčǫ́·žį́, "ghostway (ritual)," and boxóčǫ́·žį́, "its misfortune (way or part)," must not be confused. Undoubtedly there is reference to death in both terms, as no

condition can be conceived as being uglier (xóčǫ́'ǫ) than death. It is not unusual then, that the boxóčǫ́·žį́, "misfortune" part of a ceremonial is based upon a legendary incident, which records the death or near death, either of the hero himself, or those in attendance at the first or original ceremonial. As a free reference to death, however, is tabu, the language prefers the very general reference contained in these two terms. Our ghostway, evil or misfortune-way (or part), appears to render the native ideology fairly well.

The two parts of the ceremonial graphically visualize the entire process of restoration. In the boxóčǫ́·žį́, "its misfortune part," the ceremonial recalls what the patient may expect, if the hold which etiological factors had on him is not released. In boxóžǫ́·žį́, "its blessing part," he is assured that this hold is removed, and the etiological factor has no more claims upon the patient. In diγinkehžį́, "holyway ritual," which most chantways observe, as we have seen, it appears sufficient to designate a set of songs as boxóčǫ́·žį́, "its misfortune part or way." The same may be done in chantways observing xóčǫ́·žį́, "ghostway ritual," so that xóčǫ́·žį́ boxóčǫ́·žį́, "ghostway misfortune part," really refers to this particular set of songs in that ritual. In either ritual boxóžǫ́·žį́, "its blessing part" must follow, because this set of songs is usually borrowed from Blessingway. If the songs are borrowed from this rite they are also made to correct omissions and errors made in the course of a ceremonial, and thus render it effective. If xóžǫ́·žį́ sin, "Blessingway songs," have not been employed in the boxóžǫ́·žį́, "blessing part" of the ceremonial, xóžǫ́·žį́, "Blessingway," songs must be added, either immediately after the close of a ceremonial or sometime later. This insures correction of any errors or omissions made. This rite therefore, is in supreme control of every chantway and ceremonial. It does not call upon a chantway ceremonial for correction, but corrects itself in xóžǫ́·žį́ boxóžǫ́·žį́, "Blessingway's blessing part," a special set of songs set apart for that purpose.

In conclusion it may be said, then, that the names of Navaho chantways are fairly well standardized. Branch chantways indicate their affiliation by the use of the possessive pronoun. When this is not done, and combinations of chantway names occur, it is very probable that a solution must be sought elsewhere.

References to etiological factors are frequent, and these, as well as the use of the word xatá·l, are usually very safe guides in postulating a ceremonial rather than a new chantway. And, because ceremonials are common property, chantways are careful in their claims upon them.

There are two, possibly three, rituals which govern the manner of conducting chantway ceremonials. The majority of chantway ceremonials follow the holyway ritual, several add the ghostway (and lifeway) rituals to their repertories.

Chantway ceremonials provide for a misfortune part and for a blessing part of their ceremonials, but the rite known as Blessingway is above chantway and ritual, and governs the entire chantway system.

SAINT MICHAELS, ARIZONA

ARCHAEOLOGY IN THE U.S.S.R.

By HENRY FIELD AND EUGENE PROSTOV

INTRODUCTION

THIS report supplements four previous articles on this subject, two by the writers[1] and one each by E. Golomshtok[2] and A. Zolotarev,[3] which have appeared in the AMERICAN ANTHROPOLOGIST. In addition to our articles in this journal, we have published other brief summaries[4] of archaeological research within the territory of the Soviet Union.

The material treated here is arranged under the following geographic headings: Georgia, Abkhazia, Daghestan, North Caucasus, Ukraine, European Russia, Turkestan, and Siberia. Maps of archaeological sites in Transcaucasia, Ukraine, and Turkestan were published in our 1936 report in the AMERICAN ANTHROPOLOGIST, and a map of Central Asia showing the sites in the Uzbek, Tadzhik, Kirghiz, and Turkoman S.S.R's appeared in the cited article published in *Ars Islamica*. These maps were drawn at Field Museum by Richard A. Martin.

Soviet literature in the libraries of Field Museum of Natural History and the Oriental Institute of the University of Chicago was examined by Eugene Prostov, who selected passages for inclusion and supervised the transliterations and the spelling of place names.

Important contributions by A. M. Tallgren,[5] Eugene Golomshtok,[6] and G. Bonch-Osmolovsky and V. Gromov[7] have also appeared in English.

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[1] Henry Field and Eugene Prostov, *Recent Archaeological Investigations in the Soviet Union* (Vol. 38, pp. 260–90, 1936); *Archaeology in the Soviet Union* (Vol. 39, pp. 457–90, 1937).

[2] E. Golomshtok, *Anthropological Activities in Soviet Russia* (Vol. 35, pp. 301–27, 1933).

[3] A. Zolotarev. *The Ancient Culture of North Asia* (Vol. 40, pp. 13–23, 1938).

[4] (a) American Journal of Archaeology, Vol. 41, pp. 618–20, 1937; Vol. 42, pp. 146–47, 1938; Vol. 42, pp. 295–98, 1938. (b) American Journal of Semitic Languages, Vol. 52, pp. 138–41, 1936; Vol. 53, pp. 275–76, 1937; Vol. 55, pp. 109–12, 1938; Vol. 55, pp. 333–36, 1938. (c) Antiquity, September, 1938. (d) Ars Islamica, 1938.

[5] A. M. Tallgren, *Archaeological Studies in Soviet Russia* (ESA [Eurasia Septentrionalis Antiqua], Vol. 10, pp. 129–70, 1936); *Problems Concerning the Central-Russian Gorodishche Civilization* (ESA, Vol. 10, pp. 171–85, 1936); *The South Siberian Cemetery of Oglakty from the Han Period* (ESA, Vol. 11, pp. 69–90, 1937).

[6] Eugene Golomshtok, *The Old Stone Age in European Russia* (Transactions, American Philosophical Society, new series, Vol. 29, Pt. 11, pp. 189–468, March, 1938, Philadelphia). This article contains 37 plates, 93 text figures, 7 maps, a bibliography, and an index.

[7] G. Bonch-Osmolovsky and V. Gromov, *The Paleolithic in the Union of Soviet Socialist Republics* (Report, Sixteenth International Geological Congress, Washington, 1933. Preprint, issued January, 1936).

The following abbreviations have been used in the present report:

AbNIIK	*Abkhazskiĭ Nauchnyĭ Institut 'Istorii i Kul'tury* (Institute of Abkhazian Culture of the Georgian Branch of the U.S.S.R. Academy of Sciences)
ANU	*Akademiia Nauk Ukraini* (Ukrainian Academy of Sciences, Kiev, formerly VUAN, now UAN)
GAIMK	*Gosudarstvennaia Akademiia Istorii Material'noĭ Kul'tury* (State Academy for the History of Material Culture, Leningrad, now IIMK)
IAE	*Institut Anthropologii i Etnografii* (Institute of Anthropology and Ethnography of the State Academy of Sciences, Leningrad)
IIMK	*Institut Istorii Material'noĭ Kul'tury, Akademiia Nauk* (Historical Institute of Material Culture of the U.S.S.R., Academy of Sciences, Leningrad. Since summer of 1937, formerly GAIMK)
UAN	*Ukrainska Akademiia Nauk* (Ukrainian Academy of Sciences, Kiev, formerly VUAN, later ANU)
UZKOMSTARIS	*Uzbekistanskiĭ Komitet po Okhrane Pamiatnikov Stariny i Iskusstva* (Uzbekistan Committee for the Preservation of Monuments of Antiquity and Art), currently known as *Uzbekistanskiĭ Komitet po Okhrane i Izucheniiu Pamiatnikov Material'noĭ Kul'tury* (Uzbekistan Committee for the Preservation and Study of Monuments of Material Culture, Tashkent)
VOKS	*Vsesoiuznoe Obshchestvo Kul'turnykh Snosheniĭ* (All-Union Society for Cultural Relations with Foreign Countries, Moscow)

In the course of the second half of 1937 the largest archaeological institution of the U.S.S.R., the State Academy for the History of Material Culture (GAIMK), was reorganized and made a part of the All-Union Academy of Sciences, under the name of N. Marr Institute for the History of Material Culture (IIMK). During 1937 GAIMK, later IIMK, conducted thirty archaeological expeditions, some in conjunction with other Soviet institutions. The Desna, Tripolje, and Olvia (Olbia) Expeditions were conducted jointly with the Institute for the History of Material Culture of UAN. The North Caucasian Expedition cooperated with the Daghestan and Ingush Scientific Research Institutes and the Daghestan Committee for the Preservation of Ancient Monuments; the Angara Expedition with the Irkutsk Museum; the Upper Volga Expedition with the State University of Leningrad, as a part of the field training offered at the latter. A number of expeditions led by IIMK staff members were financed and sponsored by other institutions.

GEORGIA

At Gurdzhaani in the Kakhetia region a hoard of twenty-three pounds of copper coins[8] of Queen Thamar, dated 1189–1208, was found.

ABKHAZIA[9]

From 1934–1936 the Abkhazian Expedition[10] of IAE, cooperating with AbNIIK (S. N. Zamiatnin, leader), located forty Paleolithic sites within twenty-five kilometers of the coast, thirty-three of the sites being between Tuapse and Ingur. Twenty-three stations contained typologically Mousterian implements. The ten Acheulean, Clactonian, and Levalloisian sites are the oldest yet discovered in the U.S.S.R. Correlations of these alluvial deposits were made with the sea terraces so that relative chronological sequences could be established on the basis of geological data, typology, patina, degree of wear, mineralogical analyses, etc.

Two caves near Adler yielded a cultural sequence from Mousterian to Mesolithic.

Three groups of sites were identified: pre-Mousterian (10), Mousterian (23), and Upper Paleolithic (9). The oldest group was not found below the 80–100 meter terrace (IV). The Mousterian implements were usually associated with the 35–40 meter terrace (III). The primitive settlements represented by these sites were located near rivers. The Upper Paleolithic sites are associated with the crests and platforms of the eroded terrace. The general topography differed little from that of the present day.

Pre-Mousterian sites. At Kolkhida, near Novye Gagry, surface finds occurred 180 meters above sea level but in the lower horizon. At Kiurdere, near Psyrtskhi (formerly Novyĭ Afon) on the left bank of the Shitskuara River, homogeneous implements were collected on the surface of the same terrace as at Kolkhida and also in the diluvium. The lower IAshtukh village, three kilometers north of Sukhum, was located on the 80–100 meter terrace (IV). This site was the first Paleolithic station discovered in Abkhazia. Isolated flints of archaic type were found on the summit of IAsh-

[8] A numismatic description has been published by T. Lomouri, *Thamaris phulebsi gandzi* [A Hoard of Coins of Queen Thamar] (Tphilisis Saq. Universitetis shromebi [Contributions from Tiflis University], Vol. 1, pp. 281–89, 1936 [in Georgian]).

[9] S. N. Zamiatnin, *Paleolit Abkhazii* [Paleolithic Sites in Abkhazia] (Trudy Instituta Abkhazskoĭ Kul'tury im. Akad. Marra [Contributions, Institute of Abkhazian Culture, Georgian Branch, Academy of Sciences], Fasc. 10, 1937, 55 pp., 14 pl., edited by I. I. Meshchaninov).

[10] During 1936 E. V. Shantser, of the Geological Institute of the Academy of Sciences, and V. I. Gromov, of the International Association for the Study of the Quaternary, were members of this expedition.

tukh-orkhu Mountain and on the top of Cherniavskiĭ Mountain near Sukhum. In Sukhum some rolled implements carried down by the Sukhumka River were collected. Similar isolated finds were made in the modern alluvium of the Sukhumka River and in the Ostroumovskoe gorge near IAshtukh. Byrts Mountain, southeast of IAshtukh, yielded rolled flints on a platform near the peak. On the summit of Gvard Mountain a homogeneous group of flints of the oldest IAshtukh type was found. On Apiancha Mountain, east of Sukhum near Tsebelda, there were isolated rolled flints in the saddle-shaped hollow between the twin peaks. At Otap, 500 meters from the famous Achkytyzga cave, Lower and Upper Paleolithic flints were collected near a mosque, the former type being very rolled and deeply patinated. At Gali an Acheulean hand-axe from Terrace III was reutilized as a Mousterian nucleus. At Chuburiskhindzhi, on the road to Satandzhio Mountain, in a ditch associated with the preserved portion of Terrace V, a *coup-de-poing* was found among shiny, deeply patinated, rolled flints.

The majority of the implements from these ten sites were crude, broad, massive flakes, of roughly triangular or quandrangular outline, from discoidal nuclei. Secondary retouching of flakes and nuclei occurred. Hand-axes were found at Kiurdere, IAshtukh, Gvard, Otap, Gali, and Chuburiskhindzhi. Comparison with the Mousterian sites of Il'skaia on the Kuban River, of Ochemchiri in Georgia, and of the Crimea revealed that the earliest series of implements from IAshtukh is considerably older.[11] Closest analogies to these *coups-de-poing* may be seen in the Acheulean types from Clacton and Barnfield Pit in England.

Mousterian sites. At Kelasuri implements similar to those from Il'skaia and from Crimean caves were discovered on a platform of Terrace III and in the diluvium of Terrace IV. A perforator, a scraper, and a retouched triangular flake were among implements found at Bogoveshty on Terrace III of the Pshap River and on the slope of Terrace IV. Near Anastasievka on the right bank of the Kodor River a relatively large series was collected on the surface of Terrace III. Some archaic flints of IAshtukh type and patina were also found. Along the edge of Terrace III, one kilometer from Ochemchiri, points, scrapers, thin triangular laminæ with retouched striking platforms, and discoidal nuclei were discovered in stream beds or *in situ*. The flint was dark red with a yellow-brown patina. These implements and those from Kelasuri established the typological similarity

[11] Pre-Mousterian implements, although also flaked from discoidal nuclei, differ from those of the Mousterian culture in that the former have larger flakes, a very broad striking platform, and dark-red or brown, instead of light, patina. Secondary retouches are rare and are accomplished by means of crude pressure-flaking.

between this station, that of Il'skaia, and those of the Crimea. On the State Tea Farm near Achigvari on the left bank of the Okum River,

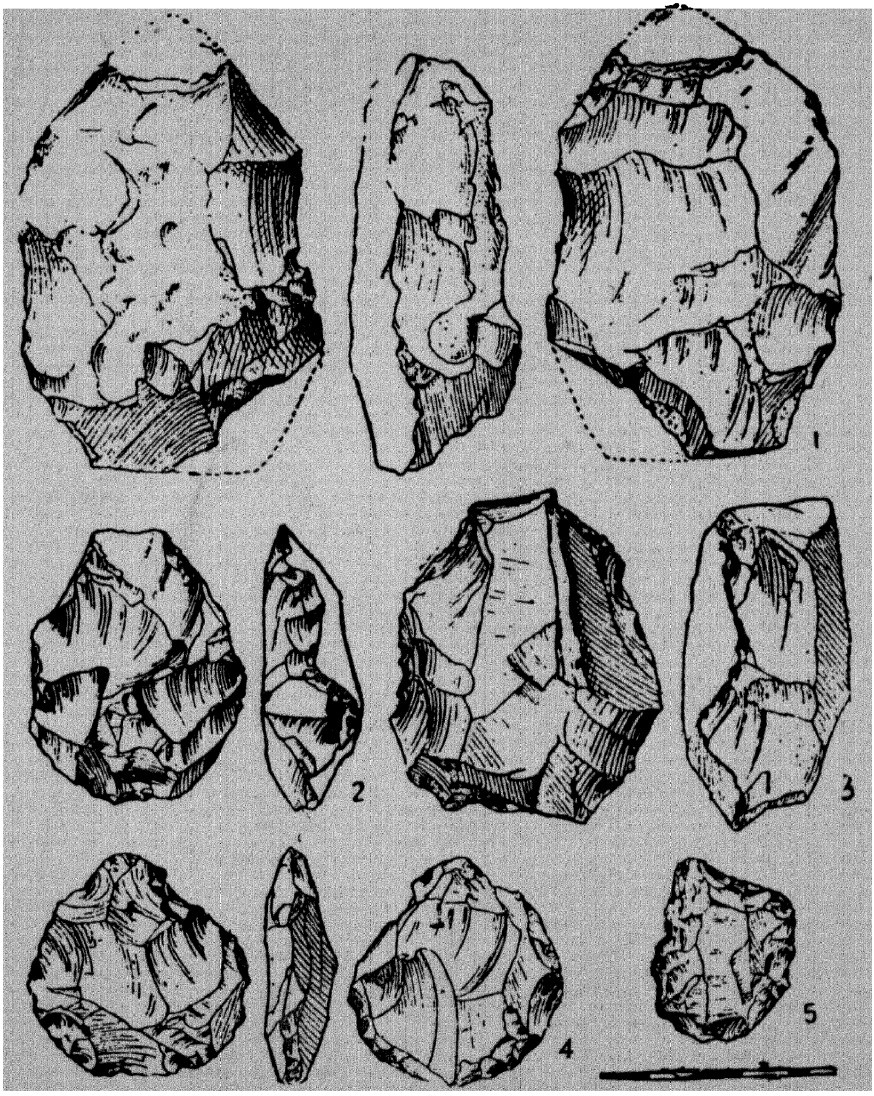


FIG. 1. Implements from IAshtukh, Abkhazia. 1–4, Hand-axes and small bifaced tools; 5, Mousterian burin of pink flint.

Mousterian and some Upper Paleolithic surface implements were collected on the forty meter terrace (=Ochemchiri Terrace III). Here was found a

fine Mousterian[12] hand-axe.[13] Other Mousterian stations were at Gali and Lechkop near Sukhum, in a rock shelter on the right bank of the Bzybi

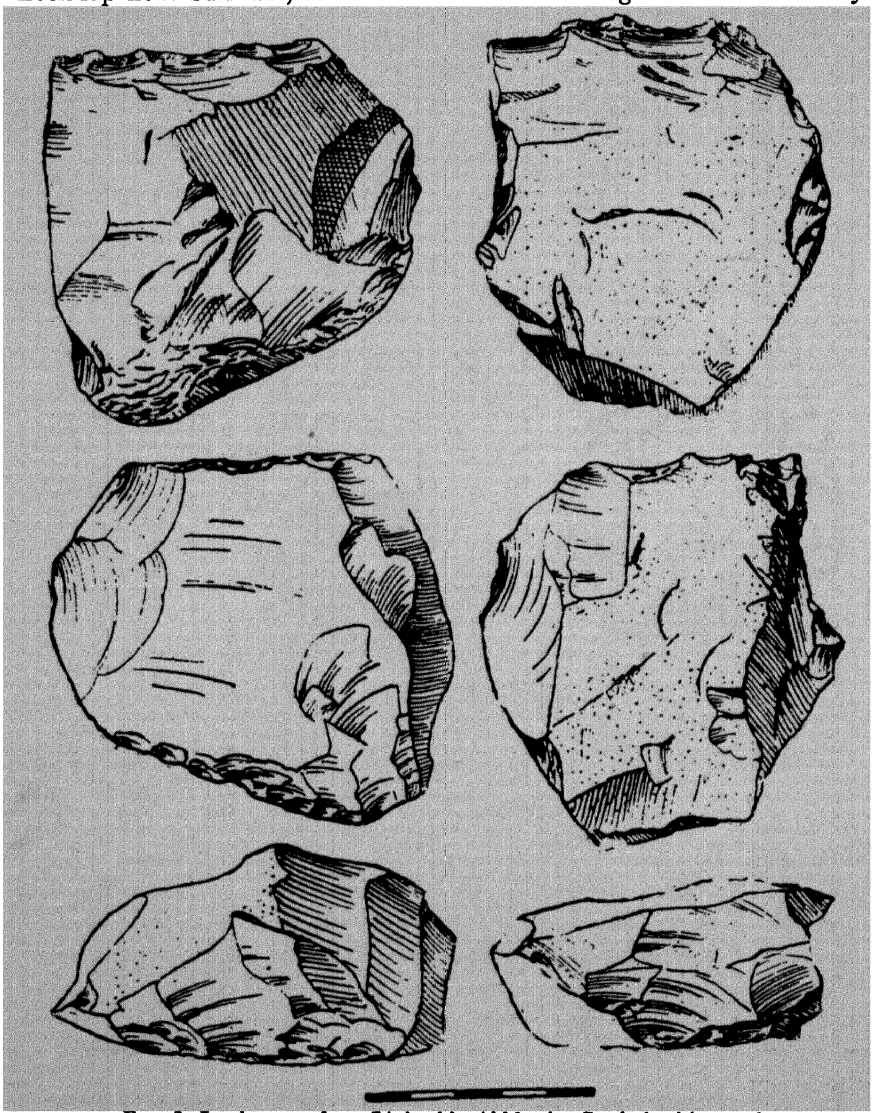


FIG. 2. Implements from IAshtukh, Abkhazia. Crude hacking tools.

[12] S. N. Zamiatnin compares the finer flint-flaking technique of the Mousterian craftsmen with the technique of the pre-Mousterian period.

[13] Cf. hand-axes from Chokurcha and Shaĭtan-Koba, near Bodrak, in the Crimea.

River, and on a hillside below Magara cave near the Lower Lemsa in the Tsebelda region. On Akhabiuk Mountain six kilometers north of Sukhum late Mousterian implements with delicate retouches, resembling to some degree those from Shaĭtan-Koba (near Bodrak village) in the Crimea, were collected.

The Acheulean and Mousterian flint implements were generally associated with the ancient alluvium, but those of Upper Paleolithic type occurred in the upper deposits of the diluvium.

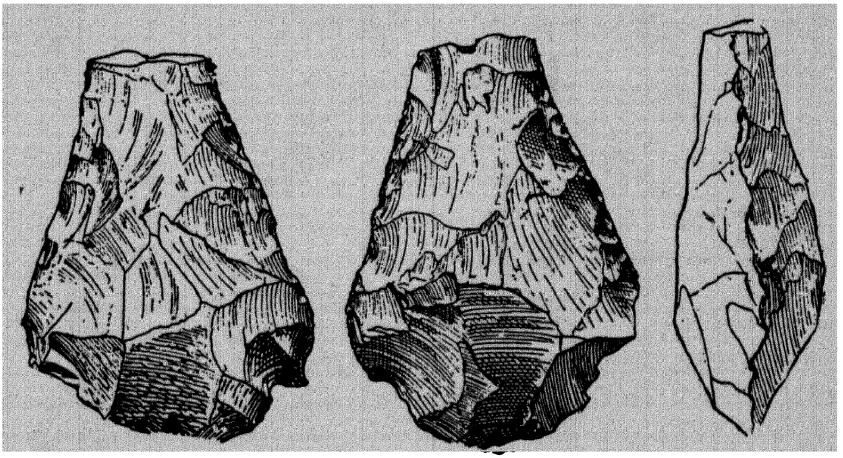


FIG. 3. Hand-axe from Gali, Abkhazia. (About ½ natural size.)

Upper Paleolithic sites. At Lechkop, IAshtukh, Otap, and Gali were concentrated accumulations of minute flint flakes and fragments, results of secondary retouches. Flint inventory included elongated knife-like laminæ; end scrapers; discoidal, carinate, and massive nuclear scrapers; angular and massive polyhedral burins; and occasional serrated flakes. An abundance of nuclei also occurred in Imeretia and in the Crimea. The hand-axes, forming a relatively small percentage of the specimens, were of both advanced and primitive types (fig. 3). At IAshtukh, in addition to hand-axes (fig. 1), there were crude hacking implements with one cutting edge, made from a flint block by rough flaking and retouched with secondary flaking (fig. 2). Breuil has called attention to this type of tool from Anglian sites.

The widespread distribution[14] of Paleolithic sites on the coast of

[14] S. N. Zamiatnin published a map locating these thirty-three Acheulean, Mousterian, and Upper Paleolithic sites. See footnote 9.

Abkhazia indicates that the area was favorable to human habitation and development.

During 1936 L. N. Solov'ev,[15] of AbNIIK, discovered several "Eolithic" sites, the most important being near Andreevskoe and Neĭdorf (Neudorff). At Andreevskoe ashes, charcoal, and numerous wooden implements were found in a stratum of peat. Awls, pins, and other pointed toools predominated. The largest implements included hoes, some of which had braided thongs of vegetable fibers near the pointed end. The same cultural layer yielded animal bones and unretouched flint and limestone implements of "Eolithic" type. From geological evidence this site was attributed to the Mindel glaciation.

Many wooden implements, typologically akin to those from Andreevskoe, were discovered in the neighborhood of Neĭdorf near Sukhum. No stone implements were found. The tools were well preserved in a stratum of interglacial peat, overlain with thick moraine deposits.

Near Tsebelda, human remains, associated with typologically Upper Paleolithic implements, were excavated. Lower Paleolithic tools occurred in a site near Sukhum.

DAGHESTAN[16]

Near the Sulak River a GAIMK Expedition (A. A. Jessen,[17] leader) examined many tumuli in the mountains. A site near Tad Shob Mountain was covered with sherds of crude handmade pottery attributed to a period prior to the fifth century A.D.

With the exception of one dubious report of worked flints found near Gunib the earliest implements from this area belong to the period immediately preceding that of the Koban culture. Koban type bronze

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[15] In a private communication dated October 14, 1937, A. Khashba, Director of AbNIIK, reports the following publications in press: L. N. Solov'ev, *Eneoliticheskoe selishche bliz Ochemchirskogo porta v Abkhazii* [Eneolithic settlement near Ochemchiri harbor in Abkhazia]; *Terrasy g. Sukhumi i datirovka Abkhazskogo paleolita* [The Terraces of Sukhum and the Dating of Abkhazian Paleolithic Deposits]; *Dereviannye orudiia prepaleolita iz stoianok Abkhazii* [Wooden Pre-Paleolithic Implements from Abkhazian Sites]; M. M. Ivashchenko, *Nekotorye dannyia o keramike feodalnogo vremeni, obnaruzhennoĭ na territorii stroiashchegosia Ochemchirskogo porta* [Data on the Pottery of the Feudal Period, Discovered During the Building of Ochemchiri Port]; *Antichnoe selischche vblizi g. Ochemchiri* [Antique (i.e. Classical) Settlement Near Ochemchiri].

[16] In the section on the North Caucasus, which follows this, are included some notes on work done in Daghestan by the North Caucasian Expedition.

[17] A. A. Jessen, *Raboty na Sulake* [Work in the Sulak Basin (Daghestan)] (GAIMK Izvestiia, No. 110, pp. 29–39, 1935). Excellent bibliographic summary of archaeological finds since first explorations in 1872, including accounts of fifty-six sites and an archaeological map.

weapons, now in the Hermitage Museum, were discovered near Tulcha.

The two thousand years of Daghestan history following this period are represented in several "sacred localities" in which numerous bronze figurines and many fortifications of the early Feudal Period have been found.

NORTH CAUCASUS[18]

1. The Manych Expedition (M. I. Artamonov, leader) excavated three tumuli on the left bank of the Manych River near Khutor Veselogo, in the Rostov-on-Don District.

Five Bronze Age and Scytho-Sarmatian burials were uncovered in one tumulus. The principal burial lay in a pit, the upper part of which was filled with reeds, forming a roof over the grave. The skeleton was oriented with its head toward the west and had its legs bent backward. Near the pelvis was a ram's skull and near the sides of the head two metallic half rings.

The second tumulus, of lesser size, held eight burials, one containing a dorsally extended skeleton oriented with its head toward the west. Grave furniture included an iron dagger and knife; a filigree bronze buckle with the effigy of a camel; round iron buckles; a pottery brazier containing coals; and two more pottery vessels, one of which was of black lacquered ware attributed to the third century B.C. A Bronze Age burial of the catacomb type included eight skeletons with legs flexed and bearing traces of red ocher. One of the children's skeletons had a pectoral necklace of bone beads and cylinders. At the head and at the feet of the two juvenile skeletons the bones of a calf were found.

The third tumulus, the smallest of the group, contained ten burials.

One of the Bronze Age burials contained a skeleton with an artificially

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[18] Among important publications must be included *Tretiĭ mezhdunarodnyĭ kongress po iranskomu iskusstvu i arkheologii: Katalog mezhdunarodnoĭ vystavki pamiatnikov iranskogo iskusstva i arkheologii* (Vol. 1, Leningrad, Gosudarstvennyĭ Ermitazh, 1935, 616 pp.). This catalogue was published as a result of the Third International Congress of Iranian Art and Archaeology held in Leningrad during 1935. The following Caucasian objects are described: grave inventories from Koban and Kumbulta; treasures from Dzhvari, Mekhchis-Tsikhe, and Kazbek; grave inventories from Vornak, Redkin Lager', Archadzor, Toprakh Kale, Armavir, Khaĭkaberd, and Khodzhali; tumuli of Ul', Kelermes, Maĭkop, Bol'shaia Tsarskaia, Elizavetinskaia, and Anapa; burial grounds of Kzyl Vank, Tazakend, IAloĭlu-Tepe, Nakhichevan, and Elizavetinskaia; treasure from Migulinskaia and Bori; architectural fragments from Garki; gold ornaments from Ashnak; grave inventories from Kamunta, Mtskhet, and Rutkha; antiquities from Baku, Svanetia, and Daghestan; carved stones from Kubachi; frescoes and pottery from Ani; and many objects of indefinite provenance.

deformed skull.[19] This is the third example of artificial cranial deformation seen in the Bronze Age sites in Manych.

2. The North Caucasian Expedition of IIMK (M. I. Artamonov, leader) conducted a large campaign of archaeological excavations in the eastern part of the North Caucasus, in the Chechen territory, and in Daghestan. The iterinerary of the expedition was as follows: Groznyĭ, Vedeno, Kharachoĭ, Andi, Botlikh, Khunzakh, Khodzhan-Makhi. The vicinity of Buinaksk (formerly Temir Khan Shura) was also investigated.

The majority of the monuments belonged to the pre-Moslem Middle Ages. Most typical were burials in stone boxes with walls of smaller stones and covered by slate slabs. The inventory was fairly poor, consisting of pottery, a few ornaments, beads, necklaces, rings, and bracelets. Similar burial grounds were found near Orta-Kolo, Shadroda, and Nakitl'. Christian antiquities were also discovered in this area. An ancient church surrounded by the ruins of a settlement was found near Datun and another near Khunzakh.

Earlier monuments were relatively scarce. A Bronze Age burial ground was discovered on a mountain crossing near Gagatl'. The flexed burials in stone boxes were enclosed in cromlechs. The inventory included oblong temple rings of bronze wire.

Among the most interesting monuments were the ancient sepulchers near Kharachoĭ, in the Checheno-Ingush A.S.S.R., and the sanctuary near Karata, in Daghestan. The sepulchers may be dated at the end of the Bronze Age, the beginning of the first millennium B.C.

Twenty-two burials were opened at Kharachoĭ. All the skeletons were in slate or sandstone boxes and were flexed. Pottery, copper bracelets, large temple rings, and beads and pendants of copper, antimony, and paste were excavated.

The second burial ground, near Isti-Su, belongs to the middle of the first millennium B.C. and has many traits in common with burials of the Scythian steppes and the mountainous areas of the Caucasus. The skeletons, either flexed or dorsally extended, were accompanied by pottery, iron spear points and knives, and ornaments. Of particular interest were a large copper buckle with engraved images of dogs and several copper fibulæ of Koban type.

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[19] On September 24, 1934, in the Ossetian Museum at Ordzhonikidze, formerly Vladikavkaz, I measured nineteen deformed skulls from a site near Nal'chik. According to A. Kharuzin artificial cranial deformation was practised among certain families in restricted areas of Transcaucasia during the tenth century B.C., after invasions from Central Asia. According to one authority these skulls from Nal'chik were found in eleventh or twelfth century tombs (H.F.).

The sanctuary in the Kulatl' area near Karata probably belongs to the same period. Here, at the summit of the mountain, a cartographic expedition found a bronze human figurine and a bronze effigy of a goat. Artamonov excavated at the spot where these bronzes were found and unearthed an iron trident and another bronze human figurine. These figurines, both male, were totally different in treatment from similar objects discovered in the Caucasus. A bronze female effigy was found on a mountain peak sanctuary near Sogratl' in Daghestan. Small-scale excavations were conducted at the group of tumuli near Alkhan Kala on the Sundzha River.

A large *gorodischche* yielding inventory of the first centuries A.D. had been discovered here in 1936. The group of tumuli nearby was also attributed to the same period. In order to discover the chronological relationship of the two sites the 1937 expedition studied five low tumuli containing narrow burial pits, each with an opening leading into a mortuary chamber. The chambers were fairly large and very carefully finished; in some cases they had vaulted ceilings reminiscent of Gothic architecture. Each burial had been robbed in ancient times, but there were small flat pieces of gold pierced for sewing on textiles, gold beads, gold pendants set with colored stones, cut carnelian beads of excellent workmanship, a paste Egyptian scarab, bronze fibulæ, and pottery. These objects may be attributed to the second or third century A.D., completely corresponding with the dating of the *gorodishche.* A burial ground near Karanaĭ village in Daghestan was found to belong to the fifth or sixth century A.D. Three subterranean stone vaults, one of which contained a human skeleton accompanied by two complete skeletons of horses, were unearthed.

Near Duba IUrt on the Argun River eight catacomb burials were excavated. Each catacomb contained from two to six burials. The inventory consisted of beads, pendants, bracelets, mirrors, rings, elaborate belt sets, and iron axes, knives, and pottery. This burial ground has many traits in common with the other catacombs of the North Caucasus and belongs to the latest period of their existence (ninth and tenth centuries A.D.).

The expedition also explored the vicinity of Derbent, particularly Dagh Bary ("Mountain Wall"), which extends west from the citadel of Derbent toward the Kara Surt range.

The ancient fortifications of Derbent were studied, and the presence of six distinct building techniques belonging to different historical periods was noted. It was discovered that "Mountain Wall" consisted for the most part of separate square forts, with towers on their four corners at points offering the least natural resistance to the advance of the invaders. These forts, as well as the long walls cutting across the valleys, were built

with the same type of masonry as the most ancient part of the fortifications of Derbent.

3. A second North Caucasian expedition (E. I. Krupnov, of IIMK, leader) from the Historical Museum, distinct from the North Caucasian Expedition of IIMK, operated in Northern Ossetia and in the Ingush area. Excavations were begun in the Upper Rutkha burial ground near Kernbul'ta, which heretofore had been known mainly as a monument of the early Middle Ages (fifth and sixth centuries A.D.). Many bronze objects and pottery of the Koban culture (first millennium B.C.) came to light. Nine massive ornamented bronze bracelets and a belt buckle of Koban type were unearthed. At the same site a robbed burial, the inventory of which included a Koban pin and belt buckle and sixteen Scythian three-finned arrows of the fifth or fourth century B.C., was uncovered.

4. During 1937 the Il'skaia Expedition of IIMK (V. A. Gorodtsov, leader) worked in the Kuban area. Excavations were completed at the site of a communal eating platform, where animal carcasses had been dismembered and the flesh cooked on a stone hearth. Many shattered bones of some extremely young mammoths and the bones of a gigantic deer and of *Cervus elaphus*, *Bos bonasus*, *Equus* sp., *Hyaena* sp., etc. were found. The remains of small birds and fragments of wood were also excavated. The few flint implements and flakes included several typical Solutrean forms. Bone implements, including a large pickaxe fragment, were discovered. In 1936 a dolomite ring used on a digging stick was found. These finds indicate that the inhabitants gathered plants with edible roots.

A Magdalenian horizon, contemporaneous with the diluvial deposits of the last Würm glaciation, yielded a hearth, the shattered bones of animals, and stone implements including typical Magdalenian laminated flint and jasper and microlithic discoidal scrapers.

These late Paleolithic forms were associated with extremely primitive types of dolomite burins, similar to those from Mousterian deposits.

5. The GAIMK Metals Commission, organized by A. A. Jessen,[20] reported that two foci of ancient gold production in the North Caucasus[21] were discovered on the basis of archaeological and historical evidence in Northern Ossetia and in the upper course of the Belaia and Laba Rivers.

[20] A. A. Jessen and others, *Raboty Komissii Metallov* [Work of the Metals Commission] (Arkheologicheskie raboty na novostroikakh, Vol. 2, pp. 158–252). The Academy of Sciences was empowered by Glavtsvetmetzoloto [The Central Office for Gold and other Metals] to search for ancient sources of metals.

[21] A. A. Jessen and T. S. Passek, *Zoloto Kavkaza* [Caucasian Gold] (pp. 162–78). A valuable summary of all available literature, archaeological evidence, and philological studies, with chemical analyses, maps, and extensive bibliographic footnotes.

New data were secured regarding ancient gold mining in western Transcaucasia, heretofore known only in ancient mythology.

UKRAINE

1. During 1937 the Kostenki Borshevo Expedition (P. P. Efimenko, leader) continued excavations at two Paleolithic sites in the Gremiachinskiĭ region of the Voronezh *Oblast*. On the Telman Collective Farm a semi-dugout (5.5 meters in diameter and 0.5–0.7 meters deep) contained bones, flint and bone tools, ashes, and charcoal. Bones of *Elephas primigenius* filled one pit. Laurel-leaf spear points and implements manufactured from broad laminæ and flakes were reminiscent of Mousterian scrapers. Efimenko therefore considered Telman the oldest Upper Paleolithic site in the Kostenki-Borshevo region. The presence of typologically Solutrean implements changes the prevailing idea of the absence of Solutrean sites in eastern Europe. This is the first typically Solutrean deposit found in the U.S.S.R. Similar sites occur in southern France and in Spain.

The second site, known since 1927 as Kostenki IV (Aleksandrovskaia), is attributed to the Lower Magdalenian period. Under a thick stratum of black loess-like soil three separate dwellings, the largest measuring 14.5 by 6.0 meters, were excavated. In each house were found three or four hearth pits, located equidistantly in a straight line through the long axis. These dwellings differ from those at Telman in being built above the ground; they are typical for a later stage of the Paleolithic period.

2. The Desna Expedition (M. V. Voevodskiĭ, leader) worked near Novgorod-Seversk and in the Voronezh *Oblast* at the Upper Magdalenian site of Chulatovo II, which yielded three hearths, ateliers for the manufacturing of flint and stone tools, and accumulations of finished implements, blanks, and chips. In 1936 at Novgorod-Seversk large stone implements known as gigantoliths[22] were excavated. During 1937 Upper Paleolithic implements were found with bones of *Elephas primigenius*, *Alopex* sp., *Dicrostonyx* sp., etc.

Excavations were also continued in 1937 at Pushkari I, attributed to the end of the Aurignacian or the beginning of the Solutrean Period. Points, burins, scrapers, and mammoth bones were unearthed. Seven new sites were located near Pushkari.

3. The Tripolje[23] expedition (T. S. Passek, leader) continued work in

[22] Cf. gigantoliths found by Karel Absolon at Ondratitz, Moravia, and now in the Moravske Zemske Museum, Brünn (Brňo).

[23] See B. L. Bogaevskiĭ, *Orudiia Proizvodstva i Domashnie Zhivotnye Tripol'ia* [Les Instruments de Production et les Animaux domestiques de Tripolie], pp. 1–306, Pls. 18, 1 map. [Resumé in French].

Kolomishchina near Khalep'e village in the Kiev[24] district, where systematic excavations have been conducted since 1934. During 1937 thirteen Tripolje platforms, or dwellings, were excavated, bringing the total to twenty-four. Twenty-one of the dwellings formed a circle, facing toward its center. The remaining three were outside the circle. In the large platforms (up to 120 square meters in area) where the remains of pisé structures with rectangular floor plans. Owing to the good preservation of the platforms excavated during the 1937 campaign, it was possible to determine accurately the building methods used in constructing a Tripolje dwelling and its parts—clay floor, ovens, walls, dais on the inside, partition, entrance, etc.

Many bone and horn artifacts were unearthed in the course of the 1937 excavations, together with flint knives, scrapers, arrowheads, and pottery sherds. A few clay figurines were also found. In the center of the settlement between the dwellings several incinerated burials in urns, dated in the early Scythian period, were unearthed.

The monuments of the Tripolje culture belong to the Eneolithic period and characterize the settled agrarian population.

4. Excavations at Nikopol (B. N. Grakov, leader) were sponsored by the Lomonosov Museum. Three small tumuli containing catacomb burials with inventories typical of Scythian tombs of the fourth and third centuries B.C. were completely excavated. One large tumulus (3.75 meters high, 44 meters in diameter) was partially excavated.

The mortuary customs indicate a funeral feast, suggestive of the literary tradition regarding Scythian funerals. The small tumuli represented the ordinary burials of nomadic Scyths. The cross section of a large tumulus disclosed a triple structure—three cones concentrically placed, one inside the other. The innermost (the most ancient) and the intermediate cone contained flexed, dorsally extended skeletons with raised knees, surrounded by quantities of red ocher. Burials of a much later date, containing some slightly flexed and some straight skeletons, were found near the surface.

On the shore of the Dnieper opposite Nikopol the dune areas of Vodianskie Kuchugury and Kamenskie Kuchugury were explored. These areas were inhabited from the Neolithic period until the time of the Zaporozhe Cossacks (sixteenth to eighteenth century). Most numerous and important were the finds of the Bronze Age and of the Scythian period. The remains of a fourth or fifth century graveyard were also located on the upper part of the Vodianskie Kuchugury dune.

[24] For recent work at Kiev see Sovietland, p. 38, March, 1938.

EUROPEAN RUSSIA[25]

1. The Karelian Expedition (V. I. Ravdonikas, leader) continued excavation of the only Neolithic burial ground in the forest belt of the northeastern part of the U.S.S.R., on Oleniĭ Island, Lake Onega, where one hundred burials were opened during 1937. The skeletons, interred in shallow graves, were thickly covered with bright red ocher. Among objects found were implements of flint, slate (schist), sandstone, bone, and horn and pendants and sets of ornaments made from the teeth of wild animals (canines of *Ursus* sp., incisors of *Alces* sp. and *Castor* sp., etc.). Important examples of primitive art included human effigies and an elk's head, carved from bone and horn.

Studying the Neolithic cultures of this forest belt A. L. Briusov excavated beside the Modlena River and along the western shore of Lake Charonskoe (Vozha) in the Charozerskiĭ region of the Vologda district.

Numerous sites between the lower course of the Modlena and its confluent, the Eloma River, belonging to various periods from the second millennium B.C. down to the early Iron Age, were excavated. The cultural strata were located partly in the sand dunes on the shore of Lake Charonskoe and partly in the lower strata of peat beds near Pogostischche.

The earliest pottery ("pit-and-comb") belonged to the early Neolithic period. In the later sites smooth and "net-ornamented" vessels appeared.

2. From 1932–1934 excavations by A. Artsikhovskiĭ and B. Rybakov at Slavna,[26] near Novgorod, revealed cultural levels of three periods: seventeenth to twentieth century, fourteenth to seventeenth century, and tenth to fourteenth century. The upper level contained three stages of timber wood in excellent condition.

In the middle stratum appeared a complete twelfth century *izba*, the workshop of a shoemaker. Inside it were found numerous fragments of leather and shoes and evidence of tanning, skin dressing, and hemp oil extraction. The chronicles of Novgorod mention that a rampart was leveled at this spot in the year 1335.

In the lower stratum the objects unearthed were characteristic of ancient Russia. Among the more important were colored glass bracelets of the eleventh or twelfth century, cramp irons for use on ice, a thirteenth

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[25] See Eugene A. Golomshtok, *The Old Stone Age in European Russia* (Transactions American Philosophical Society, n.s., Vol. 29, Pt. 2, pp. 189–468, 1938, Philadelphia).

[26] Sovetskaia Arkheologiia [Soviet Archaeology: a bi-monthly journal published in Leningrad by the State Academy of Sciences in cooperation with the Russian (R.S.F.S.R.) Commissariat of Education in Moscow], Vol. 3, 1937, p. 193.

century icon, and some fifteenth century coins from Novgorod (6) and from Kalinin (formerly Tver) (2).

3. In the Barvikha *gorodishche*,[27] twenty-five kilometers west of Moscow, the following finds were made: several iron buckles, of a type well known from eastern Finnish burials and attributed by V. V. Holmsten to the period between the third and seventh centuries of our era; gilded glass beads, supposedly imported from the Greek colonies on the Black Sea; a small, pyramidal bronze bell, of "Gothic style" and of a type known from the Mezhigorod treasure near Kiev (fourth or fifth century); and four groups of pottery.

The pottery is classified as follows:

Group A. Handmade, imperfectly fired, cylindrical jars, made of a mixture of clay and gravel and decorated with string and other stamp ornaments.

Group B. Handmade, "net ornamented," dark gray, medium-fired jars, with impressions of coarse cloth, a pinched design, and openings on the neck. This pottery is typical for the lower level of *gorodishche*'s, of Diakovo culture.

Group C. Smooth, medium-fired, undecorated, bomb-shaped pots, with an admixture of coarse sand in the slip.

Group D. Wheel-made, well-fired, black, polished, undecorated ware, typical for the higher levels of the Diakovo culture.

Bones of domestic animals included those of *Equus*, *Bos*, *Sus*, *Ovis*, and *Canis;* of wild animals, *Alces* and *Ursus*.

4. The Western Volga Expedition (P. P. Efimenko,[28] leader) examined the culturally homogeneous cemeteries in the central part of the Oka River and at Kuzminskoe, Borkhovo, Shatrishchi, and Gaverdovskoe in Riazan territory. Efimenko classifies the findings in the following chronological sequence:

Stage A. The period from the end of the first to the beginning of the third century A.D. is represented in the earliest burials of Koshibaevo, Sergachi, and Shatrishchi. Inventory of Sarmatian type, known from Kuban tumuli, and occasional finds associated with the P'ianobor culture of the Kama River are present.

Stage B. The third and fourth centuries are represented at Koshibaevo,

[27] L. A. Evtiukhova, *Barvikhinskoe Gorodishche* (Sovetskaia Arkheologiia, No. 111, 1937, pp. 113–25).

[28] P. P. Efimenko, *Kistorii zapadnogo Povolzh'ia v pervom tysiacheletii n.e. po arkheologicheskim istochnikam* [History of the Western Volga Region in the First Millennium of Our Era Based on Archaeological Evidence] (Sovetskaia Arkheologiia, Vol. 2, 1936, p. 57).

Sergachi, and in all early burials of the Riazan area. Imported articles, such as belt-buckles and fibulæ, are typical.

Stage C. The fifth century is characterized by massive, sometimes silver, cruciform fibulæ and women's ornaments of a distinct type.

Stage D. For the sixth and the first half of the seventh century, bracelets, armlets, and pectoral ornaments are typical. For the first time objects of "Gothic" origin are found in sites of this period; these are mostly fibulæ with anthropomorphic and animal effigies and belt and bridle sets ornamented with geometric designs.

5. The Upper Volga Expedition (P. N. Tret'iakov, leader) continued the work begun in 1933. At the mouth of the Nerl' River near Skniatino a large Epipaleolithic site yielded many cultural objects. Also near Skniatino a *gorodishche* attributed to the first centuries of the Christian era was excavated. A second *gorodishche* contained a lower stratum, with inventories dated at the middle and the second half of the first millennium B.C. Another site near the mouth of the Medveditsa River, attributed to the first part of the Christian era, yielded a rich inventory and remains of ancient fauna. A *gorodishche* of the same period was investigated above the mouth of the river. Excavation begun in 1935 on a *gorodishche* near Gorodishche village in the neighborhood of Kaliazin was continued. This site had been inhabited between the middle of the first millennium B.C. and the third or fourth century A.D. Animal bones and bone artifacts were well preserved.

Another *gorodishche*, with a thin cultural stratum, was excavated near Dereven'ka, above Uglich.

Fifteen eleventh to twelfth century tumuli in a burial group near the mouth of the Grekhov Ruchel above Uglich were studied.

At the present time all archaeological monuments along the Volga between Kalinin and Yaroslavl have been recorded and examined.

6. During 1930, under the direction of E. Goriunova,[29] the cemeteries of Choĭbulak and Aksarkino, near Ioshkar-Ola in the Mari A.S.S.R., were excavated. These two cemeteries date from the seventeenth or possibly the beginning of the eighteenth century. A female grave contained the headdress of a young girl in the form of a topknot made of cylindrical, hollow bronze tubes laced around her hair; ornamented flat buckles; silver and bronze bracelets with geometric incised ornaments; and rings with small oval and rhombic escutcheons. This type of ring was found throughout the Volga region during the Bulgar epoch.[30] In the male burials the objects

[29] E. Goriunova, Sovetskaia Arkheologiia, Vol. 3, 1937, p. 177.

[30] L. Kavka, *Les bagues de la Bulgarie kamo-volgienne* (éd. Société d'Archéologie et d'Ethnologie près l'Université de Kazan, Vol. 34, Parts 1–2).

were poorer and were often characterized by a large woodchopper's axe with a very large head. In a belt were a knife, a tinder box, and a metal buckle.

7. Near Balanovo, in the Chuvash A.S.S.R., O. N. Bader continued excavations at a rich Bronze Age burial ground near Karabar. In period and culture this site is very similar to burials of the so-called Fat'ianovo culture and proves that the latter extended farther east than previous evidence indicated.

During 1937 Bader discovered fifty tombs, bringing the total to eighty-seven. The graves were constructed with subterranean chambers, which were not filled in the course of the burials. The position of the male and of the female skeletons was different. Single burials predominated, but some of the burials contained three, four, or five skeletons. Bronze objects, particularly ornaments, were numerous, owing to the proximity of mineral sources. There were many wedge-shaped flint axes. A hundred round-bottomed pots, many miniature vessels, and a toy (a rattle) were excavated. Wooden objects, such as combs, were also found.

8. The Kama[31] Expedition (N. A. Prokoshev, leader) operated in three sections.

(a) The Levshino section continued excavations begun in 1936 on a Neolithic site at the northern extremity of Lake Griaznoe near the mouth of the Chusovaia River. The remains of four dwellings of semi-dugout type were studied. One or two hearths built at the bottom of each dwelling were encircled with round stone hammers, pickaxes, flint arrowheads, scrapers, and knives. The site is attributed to the first half of the second millennium B.C.

Excavations at the Kontsegorskoe settlement were completed. The objects found were of the Anan'ino period (end of the first millennium B.C.)

A dwelling similar to the long houses of the American Indians was excavated. Interesting finds included anthropomorphic clay figurines. The inhabitants, who practised agriculture, animal husbandry, hunting, and fishing, were also acquainted with metallurgy and with fiber work.

[31] According to A. Zbrueva (Sovetskaia Arkheologiia, Vol. 3, 1937, p. 54), the first domesticated animal in the Kama region was the dog, the bones of which were excavated in Neolithic and Bronze Age deposits in the forest zone of western European Russia. In deposits representing the end of the Bronze Age the horse, large and small horned cattle, and the pig were found. The pig had been domesticated in this region, whereas all the other animals appear to have moved northward from the forest zone of western European Russia, where they had already been domesticated at the beginning of the Bronze Age. Zbrueva presents the theory of the possible taming of the reindeer at the end of the Neolithic period, suggested by the number of bones found and by the discovery in the peat bog of Gorbounovo of a bone sledge-

Several other sites were explored and a thousand flint implements collected from Levshino and other Neolithic sites.

(b) The Chusovaia section completed the excavation, begun in 1932, of a sacrificial shrine in Kamnia Dyrovatogo ("the Cave of the Pierced Stone"), near Pashki. There were 4000 arrowheads, of stone, bone, copper, and iron. Of particular interest were the bone arrowheads with flint inserts. Two pierced silver coins were also found. It was discovered that the accumulation of arrowheads resulted from the shooting of arrows from the shores of the river. The ancient hunters starting on their trips sacrificed arrows by shooting them into the cave. Occasionally coins were tied to the arrows.

Bichki cave yielded numerous bones of elk, roe, reindeer, and other animals. Two metal-working molds, silver and bronze pendants of the seventh or eighth century, needles, and awls were found.

(c) The Upper Kama section continued excavation of the Rodanovo *gorodishche*, in the Chermoz region of Sverdlovsk. A dwelling with brick stoves and storage pits was unearthed. The lower stratum was attributed to the ninth or tenth century A.D.; the upper, to the tenth or eleventh century. Among the finds were a carved bone spoon, decorated with heads of animals, and smelting molds, including a form for coining Kufic dirhems.

TURKESTAN[32]

The purpose of the GAIMK Expedition, consisting of B. A. Latynin,[33] A. P. Mantsevich, and T. G. Obaldueva, was to record and study the monuments of antiquity in the Naryn Valley threatened by flooding in connection with the building of a hydroelectric station. A large portion of the flooding will occur in the Kyzyl-IAr steppe on the left bank of the river, now sparsely populated by nomadic Kirghiz. An IAE expedition in 1933 disclosed that this almost uninhabited area was once populated by settled tribes possessed of an ancient culture, which had grown out of an agricultural economy based on artificial irrigation. The entire steppe was found to be covered by groups of medium (40–50 meters in circumference, 6 meters high) and small (10–20 meters in circumference, 0.5–2.0 meters high) tumuli, appearing in three's or four's, each group not farther apart than 300–500 meters. The ruins consisted of mud-brick structures con-

[32] A report by the authors on archaeological investigations in Central Asia from 1917–1937, based on data supplied by M. V. Voevodskiĭ and A. I. Terenozhkin of UZKOMSTARIS appeared in Ars Islamica.

[33] Latynin, B. A., *Raboty v raĭone proektiruemoĭ elektrostantsiĭ na r. Naryne v Fergane* [Work in the Region of the Projected Hydroelectric Station on the Naryn River, Ferghana] (Izvestiia GAIMK, Vol. 110, 1935, pp. 120–57).

taining rich pottery inventories but few other cultural remains. Oblong stone handmills with well-worn working surfaces were often found.

Of particular interest on the Kyzyl-IAr steppe were the remains of the irrigation structures. A mud-brick rampart containing several *tepe*'s, probably the remains of auxiliary fortifications, crossed the steppe from the foothills to the river. The rampart separated the steppe into two portions. The extent of the ancient irrigated area, later abandoned with the development of direct irrigation from the Naryn River, was mapped. A later stage of culture was represented by the remains on the right bank of the river.

Gorodishche No. 1, attributed to the seventh or eighth century A.D., consisted of an extensive rectangular enclosure surrounded by unbaked brick ramparts and was situated on a prominence above the flood area of the right bank, opposite Uch-Kurgan tumulus. The walls (5.5 meters high) were badly obliterated; the ruins of cone-shaped towers remained on the outer side of the rampart, at intervals of fifty meters. An artificial hill, which formed the citadel of the fortification, was 14 meters high. The walls rested upon a stratum (0.3 meters thick) of boulders of the type still used as the foundation for unbaked brick houses in the native villages. The obliterated *tepe's* within the enclosure indicated that this settlement was built on top of a more ancient site.

Gorodishche No. 2 stood one kilometer farther downstream. The pottery types suggest that it belonged to an earlier period than *Gorodishche* No. 1. Like the latter, it was located on a prominence above the flood area of the river. The ramparts did not include towers.

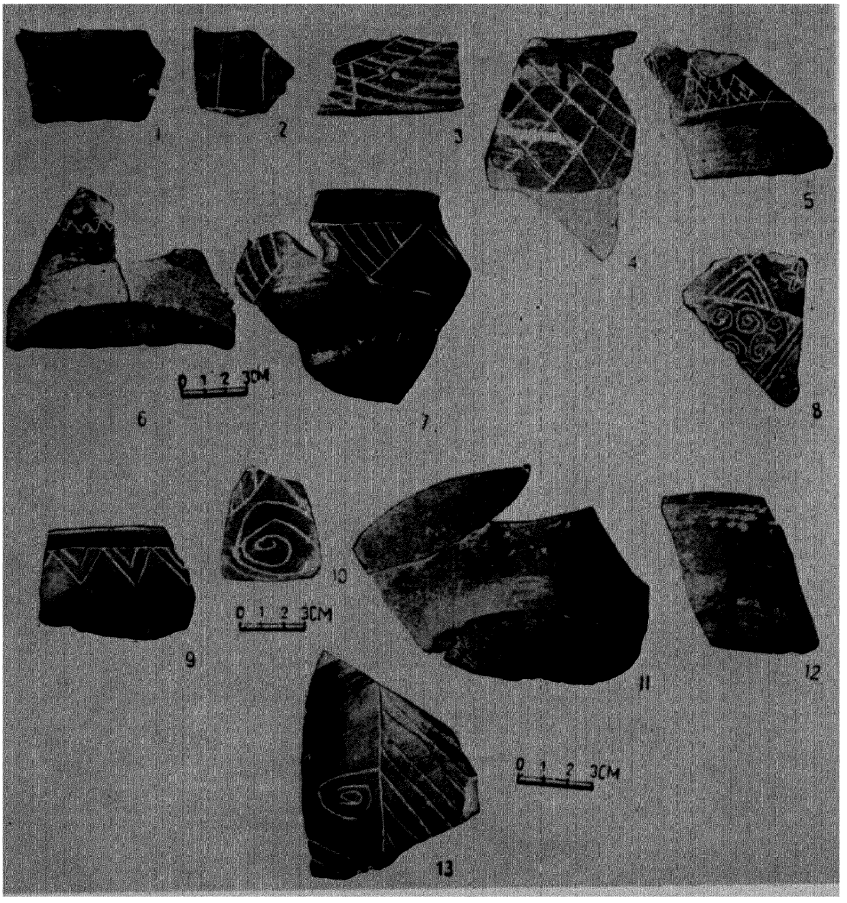
Work was continued on the left bank of the Naryn River at the place where the presence of ancient monuments was first discovered in 1930. This area, which until recent times was largely unirrigated and uncultivated, was covered by groups of small and medium sized *tepe*'s, a few of which, however, reached an altitude of 15–20 meters. The pottery types of this area are identical with those of Kyzyl-IAr *tepe*'s, suggesting similar cultural development and possible contemporaneity.

Two rectangular *gorodishche*'s near Katta-Mugal' village were associated with large *tepe*'s (18–20 meters high). The *gorodishche*'s consisted of mud-brick ramparts which enclosed the hill and, juxtaposing one of the walls, served as a citadel. The pottery of the two was identical and was the same in the enclosure and on the slope of the *tepe*. It was without a doubt contemporaneous with the typical pottery from the small and medium-sized *tepe*'s of the foothill steppes on both banks of the Naryn River.

Two small excavations were made in a medium-sized *tepe* in which a



Painted potsherds from Naryn Collective Farm, Turkoman S.S.R. 1 7, Red ware with ornaments; 8, Black sherd.



Painted potsherds from Naryn Collective Farm, Turkoman S.S.R. 1–10, Red ware with ornaments; 11–12, Unornamented red cups; 13, Black incised sherd.

large hoard of sherds was discovered in 1931–32. Charred beams buried in the remains of the baked-clay roof indicated that the building had been destroyed by fire. Three vessels were handmade and constructed of a spiral ribbon of clay and retained at their bottoms the usual layer of coarse-grained sand. In form, and probably in purpose, these large storage pots were similar to the modern vessels (*khuma*) used in Ferghana. The remainder of the pottery was wheel-made. The rim often had a complicated profile with marked projection. Loess containing very fine sand was used. The firing produced yellow, orange, and orange-red pottery, sharp at the fracture and sonorous. Most of the vessels were stamnos-like pitchers without handles, of medium (25–30 centimeters) and great (40–60 centimeters) height, with egg-shaped bodies, broad, flat bottoms, and low, everted rims on rather narrow necks. The rims were sometimes pierced with four suspension holes. The surface of these pots was smoothed and sometimes covered with thick orange-red paint. In general the paint was found only on the neck and shoulders of the pots or in two or three broad horizontal bands around the body.[84] Small cups (15–25 centimeters in diameter) of excellent finish and faced with red-orange paint inside and out were very frequent. Their bottoms were flat or rounded; the walls were slightly convex, with a sharp separation line between the body and the wide, flaring, straight or slightly concave rim. There were several variants of these drinking vessels, ranging from flat to conical.

Approximately a third of the vessels were ornamented, most commonly by a motif containing angles and spiral whorls made by means of rubbing off the paint before firing, so that the designs were formed by lighter lines of underlying clay. The ornamental areas and spaces between parallel belts were characteristically shaded (hatched); the spaces between the belts were filled with small wavy or zigzag lines surrounding the elements of the ornament. The wavy lines were also used in the grooves of vessels having ruffled walls.

Other types of pottery objects included spindle-whorls, some of which were obviously made from broken handles of flat lids belonging to large vessels. Several such lids were found.

No metallic objects were discovered at this site. An elongated, artificially flattened boulder was accompanied by two smaller stones, one of which bore traces of prolonged use as a striking implement. A portion of a flat handmill made from a granite boulder, typical for this cultural stage, was also uncovered.

[84] On some pots the paint facing was black, owing sometimes to firing conditions but generally to the composition of the facing.

The vegetable remains imbedded in the mud bricks of the buildings were found to be barley and wheat(?) straw.

The lower layer of the *tepe* yielded samples of a totally different type of pottery, which was also discovered in the Khakulabad *gorodishche* excavated later.

Irrigation canals appear to have been of the spring torrent type. Further study may disclose the heads of these early canals in the foothill areas of the Uch-Kurgan steppe. Ancient handmade pottery was found in the large rectangular *gorodishche* with towered ramparts near Eĭlatan, two kilometers east of Khakulabad. The pottery was porous and grayish, with traces of an admixture of vegetable matter, burned in the course of the firing. The surface was covered with a thin, polished, lilac-red wash, with a network of fine cracks. Some specimens retained bands of brownish-red paint. In general characteristics this pottery most closely approached Anau I ware.

In the Ferghana area four cultural strata were identified. The lowest, represented by the finds of archaic pottery in the lower level of the Naryn Collective Farm *tepe* and in the Eĭlatan *gorodishche*, parallels the corresponding levels at Anau and some of the archaic strata in Iran, which indicated the existence of early stages of agriculture and animal husbandry. The second stratum, represented by the majority of the *tepe*'s of the eastern part of the Ferghana Valley, was characterized by well-developed agriculture, the result of artificial irrigation depending for its water on the spring overflow of the mountain rivulets and streams. Animal husbandry was also developed, on a small scale; the osteological materials from this stratum contained the bones of *Bos taurus*, *Equus caballus*, *Capra hircus*, and *Ovis aries*. The bones of the smaller animals predominated. From the 1930 finds of the same period in the earlier strata of the Kul' *tepe* tumulus, near Khakulabad, a mandibular fragment of *Sus* (*?scrofa*) was unearthed. In the third stratum belong large rectangular *gorodishche*'s surrounded by mud-brick walls with towers. Here also belong, no doubt, the upper strata of the larger *tepe*'s of the preceding period, utilized in this period as sites for the fortified feudal castles of local princes (*dekhkan*'s). The fourth stratum represents the period of the Arab conquest and the spread of Islam, which must be connected with the first appearance of the glazed pottery in this region. This period is best represented by the lower layer of the ruins of Akhsa, the ancient capital of Ferghana, on the steep banks of the Amu near Shakhan settlement, twenty kilometers southwest of Namangan. Glazed pottery predominated here in the upper levels but was also found in the lower strata, in combination with the inventories of the pre-

ceding stage. The period is well known from the written sources describing the struggles of the local feudal lords with the centralizing tendencies of the Khalifate.

The uppermost stratum may be attributed to the seventh or eighth century A.D. While Chinese and classical sources are occasionally useful and analogies between inventories of corresponding periods may often be drawn, a sufficient basis for dating the earlier periods is still lacking. Tentatively the third stage may be dated in the first half of the first millennium of the present era; the second stage, in the beginning of the first, and possibly the end of the second, millennium B.C.; and the first stage, in the second, possibly the end of the third, millennium B.C.

SIBERIA[35]

1. In 1929 S. V. Kiselev[36] conducted excavations at Bystraia, near Minusinsk, and near Ust'-Syda and Syda. In 1931 excavations were made near Ust'-Erba, in the Khakassk A.S.S.R., and in 1932 at Tess, near Mt. Il'inskaia. At Ust'-Erba animal bones, common in other Karasuk burials, were not found. The pottery was spherical, round bottomed, and covered with a gray slip. The neck was decorated with horizontal incised lines and the body with triangles and rhombs formed by incised cross-hatching. As a result of these excavations the monuments of Karasuk may be subdivided into three chronological groups, the most ancient of which seems to be connected with tombs of Ust'-Erba, which contained the most highly developed geometric ornamentation of pottery. The grave furniture of these tombs presents affinities with that of burials of the Andronovo type. Another important result of the excavations was the discovery of both Karasuk and Tagar elements in burials at Bystraia and on the outskirts of the village of Tess.

2. The Mal'ta Expedition of IIMK (M. Gerasimov, leader) continued work on the Belaia River. The stratigraphical sequence began with the

[35] D. N. Lev, of IAE, in a letter dated April 4, 1938, writes: "In 1937 I studied the very rich archaeological materials in the Irkutsk Museum preparatory to publishing a book on the production of iron in the pre-Baikal region during the seventh and tenth centuries. In this work I shall refute the opinion generally expressed in the literature that they were unable, in ancient times, to melt iron but worked it only in the soft state. I have in my possession fragments of cast iron not of Chinese origin, as shown by chemical analysis. You also have specimens of cast iron in Field Museum of Natural History, but my own impression is that they are phosphoric. My own samples have but an insignificant phosphorus content." Thomas T. Read, of the School of Mines, Columbia University, is making chemical analyses of samples of cast iron from Field Museum specimens.

[36] S. V. Kiselev, Sovetskaia Arkheologiia, Vol. 3, 1937, p. 166.

Upper Paleolithic period and ended with the late Iron Age. The lowest cultural stratum at the site explored contained the ruins from a late so-called Badaian (Badalskaia) stage of the Siberian Paleolithic period. In the excavated area, covering seventy square meters, the remains of seven fire-platforms, surrounded by scattered bones and flint implements, were found. The finds included large typologically Mousterian scrapers, nuclei, small scrapers, flat bone harpoons, and bones showing traces of having been worked by stone implements. The remains of characteristic forest fauna, including bones of *Cervus elaphus*, roe, wolf, and beaver, were present.

The principal work of this expedition was conducted at the Paleolithic site of Mal'ta, near Irkutsk. A large dwelling of the semi-dugout type was uncovered. Among the finds were an effigy of a flying bird and an ornamented lamina of mammoth ivory. Trial trenches revealed the area of the site to be 500 square meters.

3. The Angara Expedition of IIMK (A. P. Okladnikov, leader) excavated the Neolithic site of Buret', where the discovery of a very interesting figurine, in costume similar to that of the modern Arctic population, attracted attention. In 1937 forty trial pits showed that this site is as large as that at Mal'ta.

4. M. I. Artamonov reports further that the remains of three ancient dwellings and bones of mammoth, reindeer, and wild horse were discovered at Buret'.

Near Nizhniaia Buret', on the Angara River, three Eneolithic burials were discovered. The rich inventories included bronze bracelets, ornaments, and bone and stone implements. In the scapula and in a costa of one skeleton were lodged flint arrowheads.

An archaeological survey of the entire valley of the Angara River was also completed. One hundred and thirty unrecorded monuments, including settlements, burials, and six sites of petroglyphs were discovered. Among important results of this survey were:

(a) The discovery of a new, characteristic type of monument, dated at the beginning of the present era and represented by settlements and burials, one of which contained bronze objects, including an unusual form of arrowhead, bone objects, especially the laminæ for bows, and pottery.

(b) The investigation of Neolithic burials with exceptionally rich inventory, including primitive sculpture (a figurine of a two-headed elk and stone fishes), the remains of a peculiar type of bow set with bone laminæ, nephrite axes, and bracelets.

(c) The discovery of new petroglyphs, including drawings of people on skis, of elks, and of shamans, and symbolic signs.

5. During the past twenty years archaeologists from Moscow, Leningrad, Oĭrot-Tura, and Biĭsk have worked in the valleys of the Altai region. Since 1924 the Institute of Anthropology and Ethnology (IAE), Leningrad, has examined, under the direction of M. Griaznov, numerous monuments in this area, including sepulchers of the first nomads, who may have been contemporaneous with the Scythians of the Black Sea region. During the Scythian epoch the pack horse, a new means of transportation, became an important factor in nomadic life. The large, well-constructed stone tombs preserved both skeletons and grave furniture to a remarkable degree. In 1927 at Chikhe, on the river Ursul, Griaznov found two artificially mummified skeletons, which recall Herodotus' account of Scythian mummification of their kings. Sculptured ornaments in bark and in wood covered with gilt, Chinese lacquers, colored and gilded horn sculptures, and 500 garments, many decorated with gold or gilt, were excavated.

6. In October 1937, on the frozen shore of Siberia opposite Alaska, the remains of a mammoth were found,[37] the second of its kind to be discovered in that region. The trunk measured 9 feet, and the hair was 3 inches in length. The body was intact with the exception of the head, one leg, and part of the trunk, which had been eaten by wild animals. Plans were made to excavate this specimen for shipment to Leningrad to include it in the superb collection of mammoth remains in the Zoological Museum.

At Pazyryk, on the river Yan-Ulagan, are five large stone kurgans, one of which was excavated by Griaznov[38] in 1929. Although robbed shortly after interment had taken place, the tomb contained well-preserved objects, including wooden beams with a resinous odor. The skin, hair, muscles, and intestines of ten stallions were preserved. The intestines still contained undigested food. Objects of leather, fur, wool, fabrics, and wood were found. An elaborate wooden cage formed the central chamber of the tomb, while outside lay the ten stallions, which formed the funeral cortège. The walls of the central chamber were covered with black felt, decorated with stylized images. A series of red and blue tiger heads had been appliquéd. Borders were festooned with blue, yellow, or bright red. The floor and ceiling had originally been covered with felt.

Among the most important objects in the tomb were the saddles, bridles, and trappings of the horses. The bridles were richly ornamented with cedar plaques or small carved leather figures. All buckles and bit appendages

[37] Science News Letter, January 15, 1938, quoted from Tass. See also article by A. A. Gavrilov, Sovietland, pp. 32, 38, March, 1938.

[38] M. Griaznov, *Pazyrykskiĭ Kurgan* [The Pazyryk Kurgan] (Akademiia Nauk and Hermitage Museum, 1937, Leningrad. Complete translation in French).

were of silver or were covered with gold leaf. The cheeks of the bit were sometimes decorated with running stags or mountain sheep. The saddles, covered with multicolored felt and ornamented saddle-cloths, were entirely different from those of modern type. They are the most primitive saddles yet discovered.

Although there appears to be a stylistic resemblance between artistic creations of the region from the Danube eastward to Beipine, Piandj, and Kama, the so-called Scytho-Siberian style is not homogeneous and originated in different places. Animal figures from Hungary differ from those of the Volga and of the Dnieper River region and from those of Ordos. The figures from the Altai are unlike those from the Yenissei, and those of western Siberia and those of the Kama region are dissimilar. The Pazyryk craftsmen developed their own artistic style, original but not isolated.

Griaznov quotes N. Marr in stating that the reindeer was the first saddle animal and that the horse was domesticated much later. The Pazyryk excavations seemed to confirm this hypothesis,[39] for even the dead were buried with a saddled reindeer, that is, a horse disguised as a reindeer. Griaznov attributes the burials at Pazyryk to the fourth or third century before our era. The horses were of Mongol type, that is similar to modern horses of the Asiatic steppes. Each horse bore a property mark, consisting of varying numbers of incisions in the right or left ear. Griaznov suggests that the ten horses belonged to different owners and were sacrificed as mortuary gifts.

The Hermitage Museum in Leningrad, which houses the Pazyryk finds, is preparing for publication a detailed report on this important site.

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[39] Evidence obtained by the Field Museum-Oxford University Joint Expedition to Kish, Iraq, in 1928 points to the domestication of *Equidæ* and *Cervidæ* in Mesopotamia about five thousand years ago. In "Y" cemetery two animals were found between the shafts of a four-wheeled chariot. Their teeth were identified as belonging to horses by Wolfgang Amschler, of the Institute of Animal Husbandry, Vienna. In the same cemetery copper rein rings surmounted by figurines of an equid, a stag, and birds were found. The stag had a long, heavy rope passing through its muzzle and attached to the right foreleg, indicating, according to Laufer's suggestion (Field Museum News, Vol. 1, No. 3, p. 1) that members of the *Cervidæ* may have been captured alive and tamed by the Sumerians. Edwin H. Colbert (American Anthropologist, Vol. 38, No. 4, 1936, pp. 605–608) calls attention to the "rather strong resemblances between the figurine [of the stag described] discovered at Kish and the Pleistocene giraffe, *Sivatherium*," suggesting not only that *Sivatheria* may have existed as late as early historical times but that they may also have been domesticated. The figurine of the *Equus* was also identified by Amschler as representing a horse. Teeth of *Equus onager*, *Bos*, *Capra*, *Ovis*, and *Canis* were found in the same cemetery (H.F.).

SUMMARY

This report gives in brief some recent results obtained by numerous expeditions throughout the Soviet Union. The authors wish to express their gratitude to the Directors of AbNIIK, GAIMK, IAE, IIMK, INQUA, UAN, UZKOMSTARIS, and VOKS and, particularly, to M. I. Artamonov, S. N. Zamiatnin, and B. E. Petri, who have contributed the greater part of the information herein contained. We are also grateful to Richard A. Martin, Curator of Near Eastern Archaeology at Field Museum, who edited the sections dealing with pottery.

The authors hope that these regional summaries of recent archaeological investigations in the U.S.S.R. and the bibliographic references to publications available in some United States libraries will be of aid to the student of primitive North Asiatic cultures.

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO, ILLINOIS

VARIABILITY IN RACE HYBRIDS

By WILSON D. WALLIS

IN his revised edition of *The Mind of Primitive Man*[1] Professor Boas warns against assuming "on the basis of a low variability that a type is pure, for we know that some mixed types are remarkably uniform. This has been shown for American Mulattoes, Dakota Indians, and made probable for the city population of Italy." In a footnote to that passage he refers to the studies of Herskovits, Sullivan, and Boas, respectively, presumably in support of this position. Inasmuch as the test of variability used in those studies is the standard deviation of dimensions, and, for reasons which I shall indicate, this is not an acceptable test of variability for this purpose, it seems proper to reexamine the data on variability of race hybrids.

Although several studies have been devoted to the results of race crossing, there are few definitive results. Some studies suggest hybrid vigor, that is, increase in dimensions over one or both parental strains. Other studies indicate that race hybrids are inferior to one or both parental strains. Some indicate that hybrids are less variable than parental strains; others, that they are more variable. The character of the results may, of course, depend upon the races crossed and upon proximity to original crossing; but on these matters there is little well attested information. Sullivan and Boas find half-breeds among Sioux and other groups taller than pure bloods among each sex. Wissler, in a series of Oglala Dakota, finds half bloods slightly shorter than full bloods. As Sullivan remarks: "No satisfactory solution of these contradictory results can be given so long as our series are incomplete in lacking the measurements on the whites with whom the Indians have mixed."[2] When all the data are considered, it is not clear that in race crossing any physical trait behaves as a Mendelian recessive or dominant—despite portrayals in fiction. In Hawaiian-European hybrids in Hawaii, however, Dunn finds evidence that the brachycephaly of Hawaiians is inherited as a dominant, and the European type of head (? dolchocephaly) reappears as a recessive in later hybrid generations. Hawaiians are said to contribute to the cross relatively more dominant factors than do Europeans. He finds evidence, also, of "segregation of 'racial' characters such as nose form, hair form, hair and skin color in diverse combinations in the F and backcross generation." There is, however, no evidence of Mendelian inheritance in the ratios with which these traits occur, and no evidence of Mendelian inheritance of a cluster of traits.

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[1] New York, 1938, p. 256.

[2] Louis R. Sullivan, *Anthropometry of the Siouan Tribes* (Anthropological Papers, American Museum of Natural History, Vol. 23, Part 3, 1920), p. 100.

The results of study of the Hawaiian-Chinese and Hawaiian-European crosses [Dunn writes] confirm the already considerable evidence that (1) all physical characters of the kind observed are quite variable even in pure racial groups; (2) this physical variability is somewhat increased in the hybrids, chiefly through the formation of different combinations of characters, although the hybrid groups cannot be distinguished from the "pure" types merely by increased variability in single traits; (3) there are few or no constant or infallibly distinguishing marks of

TABLE 1. VARIABILITY, AS MEASURED BY STANDARD DEVIATION, IN HOTTENTOT-DUTCH CROSSES AND IN BAVARIANS[8]

Trait	*27–39 Hottentot-Dutch Males*	*35–43 Hottentot-Dutch Females*	*100 Bavarian Males*	*100 Bavarian Females*
Length-Breadth Index of head	2.51	2.23	3.21	3.16
Facial Index	5.95	4.41	4.61	5.51
Nasal Index	7.34	10.55	7.36	11.18
Fronto-bizygomatic Index	3.99	4.29	2.57	3.02
Mandibular-bizygomatic Index	3.04	2.92	3.13	3.44
Interorbital-bizygomatic Index	1.98	1.87	1.74	1.95
Arm length-Stature Index	4.20	6.50	5.84	—
Leg length-Stature Index	7.11	7.44	8.60	—
Intermembral Index	4.15	3.78	2.24	—
Mean (9)	4.47 (6)	4.38	4.37	(6) 4.71

any of the race or hybrids groups studied. . . . So far as the measurements go, there appear to be no absolute criteria of race or of stage of mixture. The results of crosses between "races" show that "race" as it applies to a congeries of physical characters, must be used only in a relative or comparative sense, since "races" as such do not segregate from crosses, but break up into their component features. Thus from the crossing of races in Hawaii there emerges a heterogeneous population which does not contain distinctly Hawaiian, or Chinese, or White individuals, although many may reproduce the Hawaiian, or Chinese or White condition of one or a number of traits. Such a group departs from its parent types not so much in "racial" traits, but rather by exhibiting in its physical features the potentialities for the development of a future more uniform type which may be more or less Hawaiian, or Chinese,

[8] Eugen Fischer, *Die Rehobother Bastards* (Jena, 1913), p. 189.

TABLE 2. STANDARD DEVIATION OF INDEX IN PURE KISARS AND KISAR-DUTCH HYBRIDS (15–47 males, 8–25 females, Kisars: 68–80 males, 31–55 females, Kisar-Dutch)[4]

Index	*Kisars*			*Kisar-Dutch*			*Kisars–(Kisar-Dutch)*	
	Male	*Female*	*Male-Female*	*Male*	*Female*	*Male-Female*	*Male*	*Female*
Stem length / Stature	1.20	1.20	0	1.48	1.25	.23	− .28	− .05
Cristal breadth / Acromial breadth	4.50	3.58	.92	3.73	4.44	− .71	.77	− .86
Chest circum. / Stem length	12.66	—	—	8.62	—	—	4.04	—
Shoulder breadth / Stem length	3.94	3.12	.82	4.12	4.79	− .67	− .18	−1.67
Pelvic breadth / Stem length	3.20	1.73	1.47	3.18	3.35	− .17	.02	−1.62
Body build index	0.10	0.15	− .14	0.13	0.15	− .02	− .03	− .00
Span / Stature	2.19	1.80	.39	2.43	2.34	.09	− .24	− .54
Arm length / Stem length	9.28	8.27	1.01	9.84	8.25	1.59	− .56	.02
Arm length / Stature	1.26	1.20	.06	1.29	1.40	− .11	− .03	− .20
Lower arm / Upper arm	2.12	5.06	−2.94	4.22	4.35	− .13	−2.10	.71
Hand length / Lower arm length	5.62	5.89	− .27	5.48	6.06	− .58	.14	− .17
Hand Index	3.20	3.42	− .22	3.18	2.76	.42	.02	.66
Leg length / Stem length	10.67	9.27	1.40	11.15	10.04	1.11	− .48	− .77
Leg length / Stature	1.30	1.13	.17	1.22	1.51	− .29	.08	− .38
Lower leg / Upper leg	2.87	2.06	.81	5.60	5.56	.04	−2.73	−3.50
Foot Index	2.02	1.58	.44	1.96	1.90	.06	.06	− .32
Intermembral Index (with hand and foot)	2.57	1.41	1.16	2.16	2.82	− .66	.41	−1.41
Intermembral Index (without hand and foot)	2.44	1.16	1.28	2.24	3.02	− .78	.20	−1.86

[4] E. Rodenwaldt, *Die Mestizen auf Kisar* (2 vols., Batavia, no date), Vol. 1, pp. 132–216.

TABLE 2 (*Continued*)

Index	*Kisars*			*Kisar-Dutch*			*Kisars–(Kisar-Dutch)*	
	Male	*Female*	*Male-Female*	*Male*	*Female*	*Male-Female*	*Male*	*Female*
Cephalic Index	2.81	3.35	− .54	3.44	3.26	.18	− .63	.09
Total Face Index	4.99	3.61	1.38	5.08	4.80	.28	− .09	.19
Bizygomatic-frontal	2.64	1.53	1.11	3.45	2.81	.64	− .81	−1.28
Bizygomatic-mandibular	5.15	4.01	1.14	4.34	3.50	.84	.81	.51
Bizygomatic-interorbital	1.66	1.19	.47	1.94	2.33	− .39	− .28	−1.14
Frontal-interorbital	3.03	1.20	1.83	2.60	2.90	− .30	.43	−1.70
Ear Index	3.63	4.04	− .41	3.48	3.81	− .33	.15	.23
Nasal Index	7.37	2.94	4.43	7.33	7.05	.28	.04	−4.11
Nasal breadth-depth	6.10	3.00	3.10	5.75	6.89	−1.14	.35	−3.89
Mean (27) (26)	4.02	2.96	1.06	4.05	3.90	0.15	− .03	− .94

or White, depending on combinations of circumstances which cannot at present be foretold."[5]

VARIABILITY IN INDICES OR PROPORTIONS

Whether in general race hybrids show more or less variability than do parent stocks is still a moot point. Male Hottentot-Dutch hybrids show greater variability in stature than do male Bavarians. Male variability is greater in Hottentot-Dutch than in Bavarians in 4 indices, less in 5. Coefficient of variation of stature is less in Hottentot-Dutch female hybrids than in Bavarian females. Variability of females is greater in Hottentot-Dutch hybrids than in Bavarians in 1 index, less in 5, with a higher mean standard deviation of indices in hybrids.

Mean variability, as shown by Table 1, is slightly higher in Hottentot-Dutch males but lower in females than in Bavarians; but the comparison, to have much significance, should be with respective parental strains.

Standard deviation of indices, as well as coefficient of variation of dimensions, as evidenced by Table 2, shows higher mean values in Kisar-Dutch hybrids than in pure Kisars.

In the Jamaica Negro-white hybrids, as Table 3 shows, mean standard deviation of 20 indices is higher than in either Jamaica Negroes or Jamaica

[5] Leslie C. Dunn, *An Anthropometric Study of Hawaiians of Pure and Mixed Blood* (Papers, Peabody Museum of American Archaeology and Ethnology, Vol. 11, 1928), pp. 175–76.

TABLE 3. STANDARD DEVIATION OF INDEX IN JAMAICA BLACKS, BROWNS, AND WHITES[6]

Index	*Blacks*		*Browns*		*Whites*		*Browns–Blacks*		*Browns–Whites*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Relative sitting height	1.57	1.27	1.43	1.64	1.27	1.22	−.14	.37	.16	.42
Transverse chest diameter / Sitting suprasternale height	3.11	2.08	2.60	2.61	2.69	2.71	−.51	.53	.09	.10
Intercristal breadth / Biacromion breadth	3.86	4.29	3.76	5.31	4.07	3.78	−.10	1.02	− .31	1.53
Chest girth / Stature (body build)	2.89	2.83	2.72	2.64	2.98	2.50	−.17	−.19	− .26	.14
Relative span	2.79	2.34	2.85	3.11	3.28	2.17	.06	.77	− .43	.94
(Acromion-Stylon) / Stature	1.13	1.22	1.10	1.20	1.17	0.95	−.03	−.02	− .07	.25
Upper arm length / Gross arm length	1.18	1.40	1.62	1.34	1.72	1.28	.44	−.06	− .10	.06
Lower arm length / Gross arm length	1.49	1.51	1.72	1.45	1.66	1.39	.33	−.06	.06	.06
Lower arm length / Upper arm length	5.66	5.72	5.74	6.17	7.42	5.00	−.08	−.35	−1.68	1.17
Hand Index	2.46	2.86	2.89	2.72	2.60	2.59	.43	−.14	.29	.13

[6] C. B. Davenport and M. Steggerda, *Race Crossing in Jamaica* (Publications, Carnegie Institution of Washington, No. 395, 1929).

TABLE 3 (*Continued*)

Index	*Blacks*		*Browns*		*Whites*		*Browns–Blacks*		*Browns–Whites*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Relative kneeling height	0.88	0.66	0.84	0.87	0.53	0.89	−.04	.21	.31	−.02
Foot Index	2.01	2.47	2 02	2.05	2.07	2.22	.01	−.42	− .05	−.17
Head height / Head breadth	3.42	3.71	3.39	3.61	2.80	3.20	−.03	−.10	.59	.41
Head height / Head length	2.89	3.01	2.74	3.12	3.63	3.46	−.15	.11	− .49	−.34
Cephalic Index	2.76	3.05	2.80	3.46	3.42	3.87	.14	.41	−1.38	−.41
Minimum frontal / Head width	4.67	3.87	4.47	3.87	2.62	2.76	−.20	0.00	1.85	1.11
Interpupillary distance / Face breadth	1.81	2.32	2.53	2.38	1.87	1.53	.72	.06	.66	.85
Face length / Face breadth	5.53	5.42	5.20	4.96	6.33	5.34	−.33	−.46	−1.13	−.38
Nasal Index	9.20	10.25	9.81	8.16	5.97	7.15	.61	2.09	3.84	1.01
Pinna Index	3.69	5.85	6.17	5.92	5.25	5.10	2.48	.17	.67	.15
Mean (20)	3.15	3.36	3.32	3.29	3.31	3.00	.17	.20	.13	.35

Whites, in the case of each sex; the female showing the greatest differential in each comparison.

The greatest differential in variability, in favor of hybrids, is in nasal index, intercristal breadth/biacromion breadth, and minimum frontal/head width.

TABLE 4. STANDARD DEVIATION OF INDICES IN SIOUX PURE BLOODS AND HALF-BLOODS (INDIAN-WHITE HYBRIDS)
(Males, 534 pure blood, 77 half-blood; females, 157 pure blood, 19 half-blood)[7]

Proportion or Index	*Male*			*Female*			*Male–Female*	
	Pure	*Half-Blood*	*Pure–Half-Blood*	*Pure*	*Half-Blood*	*Pure–Half-Blood*	*Pure*	*Half-Blood*
Shoulder width/Stature	1.10	1.01	.09	1.20	1.35	−.15	−.10	−.34
Sitting height/Stature	1.68	1.94	−.26	1.90	2.75	−.85	−.22	−.81
Arm reach/Stature	2.41	2.19	.22	2.32	1.75	.57	.09	.44
Arm length/Stature	1.47	1.26	.21	1.68	1.29	.39	−.21	−.03
Cephalic Index	3.20	2.64	.56	2.68	2.85	−.17	.58	−.21
Cephalo-facial Index	3.22	3.23	−.01	3.22	1.88	.34	0.00	1.35
Facial Index (anatomical)	4.88	5.28	−.40	4.40	3.27	1.13	.48	2.01
Nasal Index	7.05	7.08	−.03	7.09	6.42	.67	−.04	.66
Mean (8)	3.13	3.08	.05	3.06	2.70	.36	.07	.38

Table 4 demonstrates that the Pure Sioux of Sullivan show slightly higher mean variability of index than do Half-bloods

COEFFICIENT OF VARIATION AS A TEST OF VARIABILITY OF DIMENSIONS

Variability in proportions, of course, is variability in somatic pattern as expressed by those proportions. Its existence demonstrates variability in relative change in the two compared dimensions, but does not give us any other specific information. Relatively high or relatively low variability in each of the dimensions is, under certain conditions, consistent with high or with low variability in either or both of the compared dimensions. As mentioned, the usual test of variability in comparing "pure" races with hybrids is the standard deviation (e.g., Boas, Herskovits).

Standard deviation is a linear function of mean of a given dimension; hence is not a proper test if the means of the compared groups have different values. In a normal distribution the group with the higher stature

[7] Sullivan, *Anthropometry of the Siouan Tribes*, pp. 108–60.

TABLE 5. COEFFICIENT OF VARIATION OF DIMENSIONS IN PURE KISARS AND KISAR-DUTCH HYBRIDS
(15–39 males, 8–25 females, Kisars: 71–79 males, 46–56 females, Kisar-Dutch)[8]

Dimension	*Kisars*			*Kisar-Dutch*			*Kisars–(Kisar-Dutch)*	
	Male	*Female*	*Male–Female*	*Male*	*Female*	*Male–Female*	*Male*	*Female*
Stature	3.96	3.29	.67	3.55	3.57	− .02	.41	− .28
Stem length	5.96	4.67	1.29	6.07	5.37	.70	− .11	− .70
Hand length	4.60	4.61	− .01	6.07	6.03	.04	−1.47	−1.42
Hand breadth	4.86	3.55	1.31	5.25	5.47	− .22	− .39	−1.92
Minimum circumference of lower arm	4.16	3.91	.25	6.15	7.85	−1.70	−1.99	−3.94
Leg length	3.94	4.01	− .07	4.47	4.46	.01	− .53	− .45
Foot length	3.97	4.07	− .10	4.88	4.30	.58	− .91	− .23
Foot breadth	4.09	4.77	− .68	6.23	6.18	.05	−2.14	−1.41
Minimum circumference of lower leg	2.77	4.30	−1.53	6.51	8.64	−2.13	−3.74	−4.34
Head length	3.17	3.01	.16	3.26	3.80	− .54	− .09	− .79
Head breadth	2.57	3.80	−1.23	2.83	3.06	− .23	− .26	.74
Head circumference	2.48	2.27	.21	2.68	3.36	− .68	− .20	−1.09
Bizygomatic diameter	3.88	4.12	− .24	3.69	3.42	.27	.19	.70
Physiognomic face height	7.55	4.71	2.84	6.18	6.11	.07	1.37	−1.40
Total face height	4.35	2.63	1.72	5.20	5.29	− .09	− .85	−2.66
Minimum frontal diameter	2.53	4.45	−1.92	4.96	4.37	.59	−2.43	.08
Interorbital diameter	7.80	5.35	2.45	9.44	9.14	.30	−1.64	−3.79
Interpupillary diameter	4.03	3.41	.62	5.31	5.18	.13	−1.28	−1.77
Mean (18)	4.26	3.94	.032	5.15	5.31	−0.16	− .89	−1.21

will have the higher standard deviation; indeed in a normal distribution the standard deviation increases by the same percentage as the mean. Thus, if M_1 has standard deviation x, then $2M_1$ has standard deviation 2x—unless the type of distribution changes.

Testing indicates that this idealized expression does not fit the facts as regards the relationship between mean and standard deviation in respect to at least some dimensions (and, of course, does not apply at all to indices). But testing shows that always there is a positive correlation between mean and standard deviation when a given dimension is used, such as head length, arm length, stature, body length, and so forth. Thus, most groups with the greater stature have the greater standard deviation of stature; most groups

[8] Rodenwaldt, *op. cit.*, Vol. 1, pp. 124–201.

TABLE 6. COEFFICIENT OF VARIATION OF DIMENSIONS AND CEPHALIC INDEX IN NEGROES AND NEGRO HYBRIDS
(Males, Howard University students. W. White, I, Indian.)[9]

Dimension	*N*	*N(I)*	*NNW*	*NNW(I)*	*NW*	*NW(I)*	*NWW*	*NWW(I)*	*W*	*Groups with maximum C.V*
Height, sitting	3.55	3.90	3.75	2.71	3.73	3.82	3.59	3.27	—	N(I), NW(I)
Stature	3.29	3.83	3.99	3.26	3.44	3.14	4.06	4.37	3.33	NWW(I), NWW
Shoulder (acromion) breadth	5.15	5.12	5.38	4.18	5.18	4.94	4.57	4.74	—	NNW, NW
Width of hips	6.36	5.71	6.28	5.77	6.00	6.66	7.68	7.92	—	NNW(I), NWW
Height of head	3.13	3.56	3.43	2.90	2.98	3.35	2.67	3.14	—	N(I), NNW
Length of head	3.28	3.23	3.61	3.84	3.26	2.99	3.57	3.58	3.45	NNW(I), NNW
Breadth of head	3.42	3.57	4.22	3.89	3.17	3.57	4.44	4.27	3.38	NWW, NWW(I)
Cephalic Index	4.16	3.93	4.92	5.59	3.76	4.29	4.59	5.08	3.85	NNW(I), NWW(I)
Distance between inner corners of eyes	6.41	8.19	8.98	7.74	11.04	9.73	5.88	7.81	—	NW, NW(I)
Distance between outer corners of eyes	4.22	5.81	5.50	4.64	4.21	4.73	4.07	4.58	—	N(I), NNW
Interpupillary distance	4.40	5.97	5.57	5.51	5.12	5.97	4.80	5.82	—	N(I), NW(I)
Nasal height	6.03	6.69	6.93	5.36	5.96	5.90	6.33	5.72	6.36	NNW, N(I)
Nasal breadth	6.45	10.44	8.21	10.05	7.50	9.57	10.40	11.48	6.92	NWW(I), N(I)
Nasal depth (Sn-tip)	9.68	8.76	9.05	9.91	8.78	10.23	13.08	7.98	—	NWW, NW(I)
Nasal depth (Cr-tip)	6.41	6.96	6.27	5.41	5.35	7.58	5.98	6.23	—	NW(I), N(I)
Height of ear	7.69	9.17	6.70	5.78	6.24	6.27	5.63	6.04	8.52	N(I), W
Width of ear	9.47	9.09	7.83	8.50	8.16	7.94	6.42	8.98	6.86	N, N(I)
Upper facial height	5.58	8.02	6.06	5.40	5.46	4.74	5.97	4.55	—	N(I), NNW
Total facial height	4.52	5.92	5.05	4.78	4.89	5.82	4.91	4.94	5.62	N(I), NW(I)
Bizygomatic breadth	3.84	5.09	4.99	3.79	4.32	4.04	5.24	4.23	3.46	NWW, N(I)
Lip thickness (center)	17.57	20.96	19.11	13.91	17.73	21.90	20.21	17.77	—	NW(I), N(I)
Lip thickness (right)	15.54	20.17	17.80	15.00	16.23	18.55	17.14	17.65	—	N(I), NW(I)
Width of mouth	6.91	8.26	7.94	7.56	6.11	7.62	6.72	7.10	7.08	N(I), NNW
Width of hand	4.29	5.70	5.23	4.66	4.71	4.96	5.32	4.35	—	N(I), NWW
Length of middle finger	5.49	6.22	5.51	5.87	5.27	5.48	6.90	5.77	—	NWW, N(I)
Minimum forehead breadth	6.03	5.57	4.88	6.65	5.26	5.07	4.16	4.99	3.97	NNW(I), N
Mean (26) (12, W)	6.26	7.30	6.82	6.26	6.30	6.88	6.70	6.63	5.23	N(I), NW(I)

[9] M. J. Herskovits, *Anthropometry of the American Negro* (Columbia University Contributions to Anthropology, Vol. 11, 1930), pp. 253–62.

TABLE 7. COEFFICIENT OF VARIATION OF DIMENSIONS IN ADULT JAMAICA BLACKS (54 M, 51 F), BROWNS (NEGRO–WHITE HYBRIDS) (93 M, 72 F), AND WHITES (50 M, 50 F)[10]

Dimension	*Blacks*		*Browns*		*Whites*		*Browns–Blacks*		*Browns–Whites*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Stature	3.96	3.95	3.97	3.90	3.97	3.90	.01	− .05	0.00	0.00
Weight	12.44	15.22	12.10	13.45	15.87	14.08	− .34	−1.77	−3.77	− .63
Sitting height	3.83	3.62	4.14	4.08	3.53	3.84	.31	.46	.61	.24
Biacromion breadth	5.22	4.58	5.12	4.14	5.37	5.26	− .10	− .44	− .25	−1.12
Chest girth	5.97	5.36	5.81	5.66	7.93	6.31	− .16	.30	−2.12	− .65
Intercristal breadth	6.46	7.16	5.76	6.74	6.63	4.75	− .70	− .42	− .87	1.99
Height of head and neck	3.60	3.62	4.39	4.33	4.57	4.58	.79	.71	− .18	− .25
Neck girth	5.61	4.88	5.54	4.78	6.46	4.41	− .07	− .10	.92	.37
Absolute span	5.12	3.65	4.70	5.10	5.48	4.43	− .42	1.45	− .78	.67
Acromion-Stylon	5.47	5.08	5.37	5.61	5.18	5.07	− .10	.53	.19	.54
Upper arm length	6.12	5.48	5.45	6.63	5.99	5.88	− .67	1.15	− .54	.77
Lower arm length	8.92	6.75	7.89	7.86	7.49	7.38	−1.03	1.11	.40	.48
Hand length	5.65	5.75	5.49	5.93	6.65	4.99	− .16	.18	−1.16	.94
Hand breadth	6.22	6.72	6.44	5.71	6.16	5.92	.22	−1.01	.28	− .21
Stature-Sitting length	6.23	4.61	5.28	5.73	6.05	5.32	− .95	1.12	− .77	.41
Leg length	5.24	4.01	5.17	4.19	4.57	4.10	− .07	.18	.60	.09
Stature-Kneeling height	5.69	4.47	5.23	6.15	6.32	5.62	.46	1.68	−1.09	.53
Tibiale height	5.96	5.12	5.78	6.02	5.03	4.46	− .18	.90	.75	1.56
Calf girth	7.22	7.66	6.86	6.30	6.85	3.75	− .36	−1.36	.01	2.55
Ankle girth	6.70	5.85	5.89	7.39	6.16	2.38	− .81	1.54	− .27	5.01
Foot length	5.49	5.40	4.89	5.71	6.43	5.12	− .60	.31	1.54	.59
Head height	4.29	3.43	4.10	4.23	5.58	4.00	− .19	.80	−1.48	.23
Head breadth	3.58	2.95	3.84	3.46	2.98	4.16	.26	.51	.86	− .70
Head length	3.54	3.57	3.36	3.94	3.70	3.67	− .18	.37	− .34	.27
Cranial capacity	6.57	7.47	6.72	8.99	8.35	7.41	.15	1.52	−1.63	1.58
Interpupillary distance	4.53	5.07	5.86	5.16	4.81	4.74	1.33	.09	1.05	.42
Nasal breadth	7.00	6.00	8.23	8.07	8.18	7.34	1.23	2.07	.05	.73
Nasal height	8.47	10.69	7.33	8.32	8.64	7.69	−1.14	−2.37	−1.31	.63
Pinna length	6.80	8.31	7.45	6.93	7.95	5.63	.65	−1.38	− .50	1.30
Pinna breadth	8.33	9.89	8.44	8.13	9.68	10.24	.11	−1.76	−1.24	−2.11
Mean (30)	6.00	5.88	5.89	4.42	6.42	5.55	− .09	.21	− .37	− .14

[10] Davenport and Steggerda, *Race Crossing in Jamaica*.

TABLE 8. COEFFICIENTS OF VARIATION OF DIMENSIONS IN SIOUX PURE BLOODS AND HALF-BLOODS (Indian-White, hybrids)
(Males, 534 pure blood, 77 half-blood; females, 157 pure blood, 19 half-blood)[11]

Dimension	Male			Female			Males–Females	
	Pure	Half-blood	Pure–Half-Blood	Pure	Half-Blood	Pure–Half-Blood	Pure	Half-Blood
Stature	3.27	3.92	−.65	3.30	3.59	− .29	− .03	.33
Height of shoulder	3.52	4.26	−.74	3.69	3.92	− .23	− .07	.34
Sitting height	3.95	4.89	−.94	4.25	5.91	−1.66	− .30	−1.02
Arm reach (span)	3.87	3.83	.04	3.83	4.05	− .22	.04	− .22
Arm length	4.64	4.24	.40	5.05	5.05	0.00	− .41	− .81
Head length	3.16	3.66	−.50	2.72	2.22	.50	− .44	1.44
Head width	3.47	3.26	.21	3.20	2.99	.21	.27	.27
Face width	3.65	3.83	−.18	3.53	2.65	.88	.12	1.18
Height of face, upper	7.11	6.10	1.01	3.70	6.62	−2.92	3.41	− .52
Height of face, hairline to chin	4.32	3.90	.42	4.52	3.25	1.27	− .20	.70
Height of face, nasion to chin	5.12	5.23	−.11	5.26	3.61	1.65	− .14	1.62
Nose height	6.75	6.48	.27	6.35	5.73	.62	.40	.75
Nose width	8.07	8.08	−.01	7.77	6.52	1.25	.30	1.56
Mean (13)	4.68	4.74	−.06	4.46	4.12	.34	.23	.43

with the greater head length have the greater standard deviation of head length, etc.

Hence, a more fitting test of variability, where means have differential value, is coefficient of variation; that is, standard deviation divided by the mean. This will remain constant for all values of the mean of a given dimension unless the distribution changes; that is, unless the relative variability changes.

We shall submit, therefore, the results of using coefficient of variation as a test of variability of dimensions in "pure" races and in hybrids.

A comparison of the coefficient of variation of dimensions (Table 5) shows that each sex of Kisar-Dutch hybrids has higher mean variability than have Kisars.

Mean variability is higher in all hybrid groups than in Negroes, as indicated by Table 6, with the exception of NNW(I), in which mean variability is the same as in Negroes. Nasal height shows no consistent differences; but variability in nasal breadth is higher in all hybrid groups than in

[11] Sullivan, *op. cit.*, pp. 99–152.

TABLE 9. COEFFICIENTS OF CORRELATION OF KISAR-DUTCH HYBRIDS AND PURE BLOOD MALE KISARS[12]

Characters correlated	Hybrids		Kisars	Hybrids (M)-Pure Kisars (M)*
	Male (77)	Female (53)	Male (37)	
Biacromial diameter-Interiliac diameter	.50	.28	.51	−.01
Arm length-Leg length	.77	.56	.43	.34
$\frac{\text{Arm length}}{\text{Stature}} - \frac{\text{Leg length}}{\text{Stature}}$	.89	.78	.86	.03
Stature-Cephalic index	−.17	—	—	—
Stature-Head breadth	.41	—	.12	.29
Stature-Thickness of lips	−.26	−.04	—	—
Stature-Nasal index	−.23	−.12	—	—
$\frac{\text{Arm length}}{\text{Stem length}}$-Nasal index	.17	—	—	—
Lower arm-Upper arm	.57	.60	.55	.02
Lower arm-Hand length	.21	.30	.21	0.00
$\frac{\text{Arm length}}{\text{Stem length}}$-Hand index	−.07	−.08	−.14	−.07
Nasal index-Thickness of lips (Group II)	.44	—	—	—
Nasal index-Thickness of lips	.17	0.00	0.00	.17
Head length-Head breadth	.10	.36	.27	−.17
Head length-Head breadth (Boer Group)	—	—	.34	—
Sum of length and breadth of head-C.I.	−.29	−.18	−.24	.05
Minimum frontal breadth-Head breadth	.38	.35	.25	.13
Nasal height-Nasal breadth	.28	.26	—	—
Nasal index-Fronto-malar index	−.34	−.17	−.36	−.02
Nasal index-Facial index	−.49	−.43	−.67	−.18
Mean (13) disregarding signs, except in Hybrids–Pure Kisars	.35	.30	.35	.04

* The difference Hybrids–Pure Kisars is given without regard to sign of coefficient.

[12] Rodenwaldt, *op. cit.*, Vol. 1, pp. 408–12.

Negroes or Whites. Lip thickness and width of hand show greater variability in all hybrid groups.

Width of ear has lower variability in all hybrids groups than in Negroes, though in all groups except one it is higher than in Whites. Thus the greatest differential variability in hybrids is in those traits which most emphatically set off the Negro from Whites and Indians, namely, nasal breadth and thickness of lips. The mean of these dimensions is likewise greater in Negroes than in any hybrid group. In Hottentot-Dutch hybrids

TABLE 10. CORRELATIONS OF INDICES AND DIMENSIONS IN THREE GROUPS OF DUTCH-HOTTENTOT HYBRIDS[13]

Variables correlated	*"Eu." Group*		*"Mid" Group*		*"Hott." Group*		*Mean*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Nasal index-Stature	−.02	−.16	−.12	−.05	−.28	−.39	−.14	−.20
Nasal index-Cephalic index	−.10	−.10	−.10	.06	−.21	−.14	−.14	−.06
Nasal index-Thickness of lips	−.34	−.36	−.001	−.05	.24	.10	−.03	−.10
Cephalic index-Stature	.18	−.07	−.11	−.28	−.04	.38	.01	.01
Cephalic index-Thickness of lips	−.11	−.07	.09	−.29	.18	.22	.05	.05
Cephalic index-Face index	.08	.09	.004	.03	−.17	.16	−.03	.09
Mean	.138	.141	.071	.127	.186	.231	.132	.166

(data of Fischer) coefficient of variation of stature, the only dimension for which this value is given, is higher in males than in Bavarian males, and lower in Hottentot-Dutch females than in Bavarian females. The values are: Hottentot-Dutch, M, 4.16, F. 3.80; Bavarians, M, 2.31, F, 3.89.

When racial crosses in Jamaica are considered (Table 7) Browns (hybrids) show lower mean variability than do either Blacks or Whites, for each sex, except in the case of female Browns compared with female Blacks. Here, too, in nasal breadth Browns, in the case of each sex, show higher variability than do Whites or Blacks.

Sioux half-bloods show higher mean variability in the case of males and lower variability in the case of females (Table 8). Greater variability in hybrids, in each sex, is found in the case of stature, height of shoulder, and sitting height.

[13] Fischer, *op. cit.*, p. 210.

CORRESPONDENCE IN VARIABILITY AS INDICATED BY COEFFICIENT OF LINEAR CORRELATION

The linear coefficient of correlation is a measure of correspondence in absolute variability of two dimensions or indices. We give in Tables 9–12 the available data for this comparison. There is probably no statistically significant difference in mean value of correlation coefficients of hybrids and "pure."

TABLE 11. COEFFICIENTS OF CORRELATION IN NEGROES AND NEGRO HYBRIDS (Whites and Indians: Males, Howard University students)[14]

Variables correlated	*N*	*N(I)*	*NNW*	*NNW(I)*	*NW*	*NW(I)*	*NWW and NWW(I)*
Length of head-Width of head	.22	.35	.26	−.02	.07	.14	.46
Length of head-Height of head	.37	.29	.38	.33	.25	.52	.48
Width of head-Height of head	.42	.29	.28	.02	.26	.07	.32
Width of nose-Thickness of lips	.22	.37	.26	.45	.33	−.076	.37
Width of nose-Height of ear	.16	.14	.42	.12	−.10	.20	.22
Thickness of lips-Height of ear	.08	.41	−.14	.08	−.02	.29	.13
Width of nose-Interpupillary distance	.10	.31	.37	.46	.31	.23	.02
Width of head-Width of face	.45	.77	.62	.65	.52	.70	.51
Height sitting-Length of leg	.26	.38	.49	.22	.29	.18	.61
Mean, arithmetic (9)	.25	.37	.33	.26	.21	.25	.35
Difference from Negro (N)	—	.12	.08	.01	−.04	0.00	.10

As seen in Table 11 mean coefficient is higher in hybrids than in Negroes in 4 instances, lower in 1, and the same in 1.

Total mean of hybrid groups is higher than mean of Negroes.

Where signs are the same, among Jamaican groups (Table 12) the coefficient of correlation in females is lower in Browns than in Blacks or in Whites to a greater degree than is true of males. This apparent sex differential may be due to chance.

SEX DIFFERENCES IN VARIABILITY IN HYBRID GROUPS

In most human groups males show higher mean standard deviation of indices and higher mean coefficient of variation of dimensions than do females. There is some evidence that in hybrids this sex differential, at least

[14] Herskovits, *op. cit.*, pp. 231–33.

TABLE 12. CORRELATIONS IN JAMAICA BLACKS, BROWNS (NEGRO-WHITE HYBRIDS) AND WHITES[15]

Variables correlated	*Blacks*		*Browns*		*Whites*		*Browns–Blacks*		*Browns–Whites*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Sitting height-Stature	.75	.88	.90	.66	.87	.82	.15	−.22	.03	−.16
Sitting height-Span	−.38	−.46	−.30	−.38	−.31	−.37	.08	.08	.01	−.01
Cephalic index-Span	.03	−.09	.02	−.08	−.02	.15	−.01	.01		
Wt.-Rel. sitting ht.	−.09	.12	.05	−.12	.13	.21			−.08	
Rel. kneeling ht.-Wt.	.18	.16	−.06	−.16	.23	−.29				.13
Arm length-Leg length	.81	.71	.79	.37	.80	.24	−.02	−.34	−.01	.13
Body wt.-Foot index	.04	.24	−.01	.08	−.04	.14		−.16	.03	−.06
Chest girth-Foot index	.03	.22	.10	.08	.08	.12	.07	−.14	.02	−.04
Foot index-Hand index	.27	−.06	.22	.25	.30	.28	−.05		−.08	−.03
Nose index-Skin color	.48	.21	.30	.36	—	—	−.18	.15		

[15] Davenport and Steggerda, *op. cit.*, p. 297.

TABLE 13. SEX DIFFERENCES IN MEAN STANDARD DEVIATION OF INDICES IN HYBRID GROUPS

Indices No.	*Type*	*Group*	*No.*	*Males*	*No.*	*Females*	*Male–Female*	*"Pure"*	*Males*	*Females*
9	Head and face	Norfolk Islanders	64	4.22	84	4.00	0.22			
16	Head and body	Norfolk Islanders	64	3.10	84	2.99	0.11			
9	Head and body	Hottentot-Dutch	27-39	4.47	35-43	4.89	−0.42	Bavarians	4.37	4.71
27	Head and body	Kisar-Dutch	68-80	4.05	31-55	3.90	0.15	Kisars	4.02	2.96
19	Head and body	Yucatan Indian hybrids, total		3.7		4.0	−0.3			
19	Head and body	Group A		3.6		3.9	−0.3			
19	Head and body	Group B		3.7		3.8	−0.1			
19	Head and body	Group C		3.7		4.1	−0.4			
19	Head and body	Group D		3.5		3.7	−0.2			
19	Head and body	Group E		3.3		3.4	−0.1			
20	Head and body	Negro-White, Jamaica	93	3.3	72	3.3	0.0	Negroes	3.15	3.36
8	Head and body	Sioux half-bloods	77	3.1	19	2.7	0.4	Sioux	3.13	3.06

TABLE 14. SEX DIFFERENCES IN MEAN COEFFICIENT OF VARIATION OF DIMENSIONS IN HYBRID GROUPS

Dimensions No.	Type	*Group*	*No.*	*Males*	*No.*	*Females*	*Male–Female*	*"Pure"*	*Males*	*Females*
18	Head and body	Kisar-Dutch	71–79	5.15	46–56	5.31	−0.16	Kisars	4.26	3.94
11	Head and body	Negro-White, Jamaica		5.81		5.88	−0.07	Negroes	5.78	5.48
11	Body	Norfolk Islanders	64	5.12	84	5.48	−0.36			
23	Head and body	865 Yucatan Indian hybrids, total		5.2		6.0	−0.8			
23	Head and body	221 Yucatan Indian hybrids, total Group A		5.0		5.5	−0.5			
23	Head and body	194 Yucatan Indian hybrids, total Group B		5.2		5.6	−0.4			
23	Head and body	359 Yucatan Indian hybrids, total Group C		5.1		6.1	−1.1			
23	Head and body	45 Yucatan Indian hybrids, total Group D		5.6		6.0	−0.4			
23	Head and body	46 Yucatan Indian hybrids, total Group E		5.2		5.9	−0.7			
30	Head and body	Negro-White, Jamaica	93	5.9	72	4.4	1.5	Negroes	6.00	5.88
13	Head and body	Sioux half-bloods	77	4.7	19	4.1	0.6	Indians	3.27	3.30
								Whites	4.68	4.46

in coefficient of variation of dimensions, is reversed. In pure Hawaiians (Dunn) mean coefficient of variation for four dimensions is 3.53 in 70 males, and 3.34 in 34 females; whereas in Norfolk Islanders, Polynesian-White hybrids, mean coefficient of variation of 11 body dimensions is 5.12 in 64 males, and 5.48 in 84 females. This reversal of the usual sex differential does not hold for Jamaica Negro-White hybrids, though it holds for Jamaica Negroes. Greater mean standard deviation of index is found in females in Maya-White hybrids, and in males in Kisar-Dutch hybrids, and in pure Kisars.

The data are summarized in Tables 13 and 14.

In hybrid groups for which we have data on several dimensions, only in Jamaica hybrids and Sioux half-bloods do males exceed females in mean coefficient of variation of dimensions.

UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MINN.

THE APPEAL OF PEYOTE (*LOPHOPHORA WILLIAMSII*) AS A MEDICINE[1]

By RICHARD EVANS SCHULTES

I

IN connection with a botanical and chemical investigation of the peyote plant (*Lophophora Williamsii* (Lem.) Coult.), I have pursued ethnobotanical studies regarding its use among the Kiowa, Kickapoo, Shawnee, and Wichita of Oklahoma. During these studies, additional information was received from individuals of neighboring tribes. The investigation revealed that several erroneous ideas and misinterpretations regarding the use of peyote have become widespread.

For more than two centuries, the use of the peyote-cactus as a religious sacrament has been slowly diffusing northward among the southern Plains tribes of the United States.[2] For more than fifty years, there has been a growing interest in the peyote-cult among American anthropologists. An extensive literature[3] has appeared concerning the ceremonial use of *Lophophora Williamsii* in the United States as well as in Mexico, where its use extends back probably for more than twenty centuries.[4]

Until recently,[5] the anthropological information was in a more or less chaotic state. Shonle, Wagner, and others have dealt with the diffusion of peyote and conditions making possible its rapid spread.[6] Although occasional references to the "appeal" of peyote are found, there does not seem to be any critical study of what may be termed the *appeal-phase* of the peyote problem. Petrullo, Wagner, and especially Radin[7] have devoted more attention to the appeal of peyote than have other anthropologists, but a consideration of this neglected subject from an ethnobotanical point of view should prove of value.

[1] For constant guidance and help during the entire course of my study of peyote I am deeply grateful to Professor Oakes Ames, director of the Botanical Museum of Harvard University. To Professor Clyde K. M. Kluckhohn of Peabody Museum of Harvard University I wish to express my appreciation of his interest in the preparation of this paper.

[2] Schultes, *Peyote—an American Indian Heritage from Mexico.*

[3] Consideration of general ethnological problems relating to peyote lies beyond the range of this paper, but it is pertinent to mention that information concerning the use of *Lophophora Williamsii* exists for the following tribes: Arapaho, Comanche, Cora, Delaware, Huichol, Ioway, Kickapoo, Kiowa, Menominee, Mescalero Apache, Omaha, Pawnee, Sac and Fox, Shawnee, Taos, Tarahumare, Tepehuane, Wichita, Winnebago. Peyote is known to be used in many other tribes, but detailed reports have not appeared.

[4] Rouhier, *La Plante qui fait les yeux émerveillés;* Sahagun, *Historia general.*

[5] La Barre, *Peyote Cult.*

[6] Shonle, *Peyote;* Wagner, *Entwicklung und Verbreitung.*

[7] Petrullo, *Diabolic Root;* Wagner, *Entwicklung und Verbreitung;* Radin, *Peyote Cult of the Winnebago; idem., Winnebago Tribe; idem., Crashing Thunder.*

It is not the purpose of this paper to present a complete ethnobotanical study of the peyote-cult, but rather to consider whether its widespread diffusion is due to the vision-producing properties attributed to the alkaloids of *Lophophora Williamsii* or to the supposed therapeutic properties of the plant. In a consideration of this kind, certain fundamental facts pertaining to the botanical, chemical, and pharmacological investigations relating to *Lophophora Williamsii* must be enumerated, for only on such a foundation can an accurate interpretation of peyote and some of its problems be made.

II

Lophophora Williamsii is a small, grey-green, spineless, napiform cactus possessing remarkable narcotic properties,[8] rarely exceeding fifteen centimeters in length and five or six in diameter at the top. The chlorophyll-bearing crown is less than one quarter the length of the plant. Peyote plants are normally unicephalous, but age and injury may cause them to become polycephalous, assuming bizarre shapes, often resembling a deer-hoof imprint, a circumstance which may account for the close association of peyote with the deer in Mexican Indian mythology.[9] The crown is divided into from five to thirteen broad, rounded ribs, separated by straight or spiral furrows. Transverse grooves may divide the ribs into a number of low, polyhedral tubercles, each bearing an areola from which grows a tuft of matted hairs. These tufts of greyish-white, wooly hairs give a lanuginous appearance to the plant which is of importance in etymological considerations.[10] The flowers, varying from red to pink or white, are borne on the apical areolæ at the top of the crown during June and July. When the crowns of peyote are cut off and dried, they form the so-called *mescal buttons* which are eaten in the ceremony.

Lophophora Williamsii is not a rare plant. It grows on both banks of the Rio Grande and in scattered places in Aguas Calientes, Chihuahua, Coahuila, Hidalgo, Jalisco, Nuevo Léon, Querétaro, San Luis Potosí, Tamaulipas, and Zacatecas. The Indians of Mexico and the southern plains make annual "pilgrimages" to gather it. Those tribes too distant to visit the

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[8] In considering problems in which the word *peyote* forms an integral part of the basis of argument, botanical identification is not only desirous but essential. In another paper (*Peyote* [Lophophora Williamsii] *and Plants Confused With It*), I have called attention to at least fifteen entirely distinct and unrelated plants which are known under the term *peyote*, and a large number of additional plants are confused with *Lophophora Williamsii* through its other common names, such as *mescal*, *mescal bean*, *piule*, *dry whiskey*, *ololiuqui*, etc.

[9] Lumholtz, *Unknown Mexico;* B. P. Reko, *Star-names of the Chilam Balam.*

[10] Schultes, *Peyote* (Lophophora Williamsii) *and Plants Confused With It.*

peyote-fields procure their supplies by mail from merchants in lower Texas who deal exclusively in mescal buttons.

The narcotic properties of peyote have attracted wide attention. Peyote-

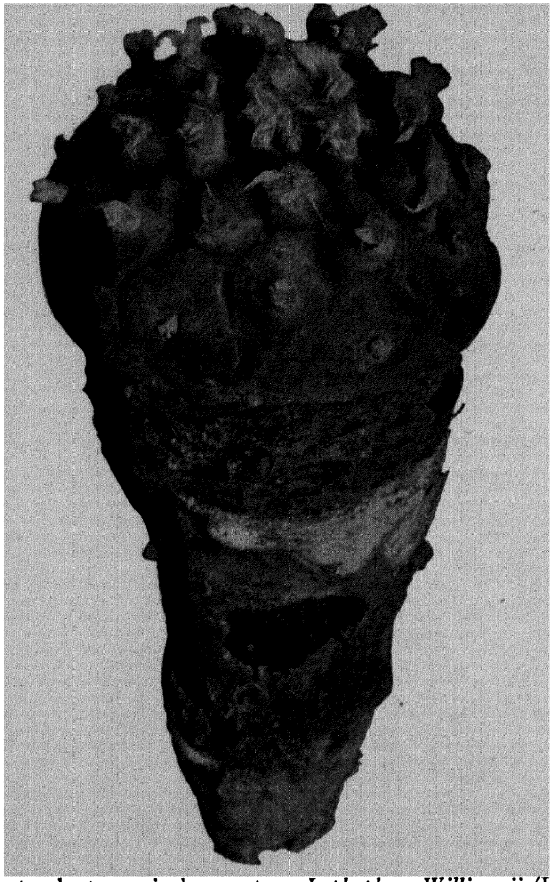


FIG. 1. Peyote plant: a spineless cactus—*Lophophora Williamsii* (Lemaire) Coulter—the sole species in a monotypic genus. The chlorophyll-bearing crown, when cut from the root and dried, is known as the "mescal button." (Natural size.)

intoxication is divisible into two general phases: a period of contentment and over-sensitivity, and a period of nervous calm and muscular sluggishness, often accompanied by hypocerebrality, colored visual hallucinations, and abnormal synæsthesiæ.[11] Alterations in tactile sensation, very slight muscular incoordination, disturbances in space and time perception, and

[11] Cushny, *Pharmacology and Therapeutics;* W. E. Dixon, *Physiological Action of the Alkaloids;* Guttmann, *Artificial Psychoses;* Hare, Caspari, and Rusby, *National Dispensatory;*

auditory hallucinations may accompany severe peyote-intoxication.[12] The most striking characteristic, however, is the occasionally induced peyote vision which is often fantastically colored.[13]

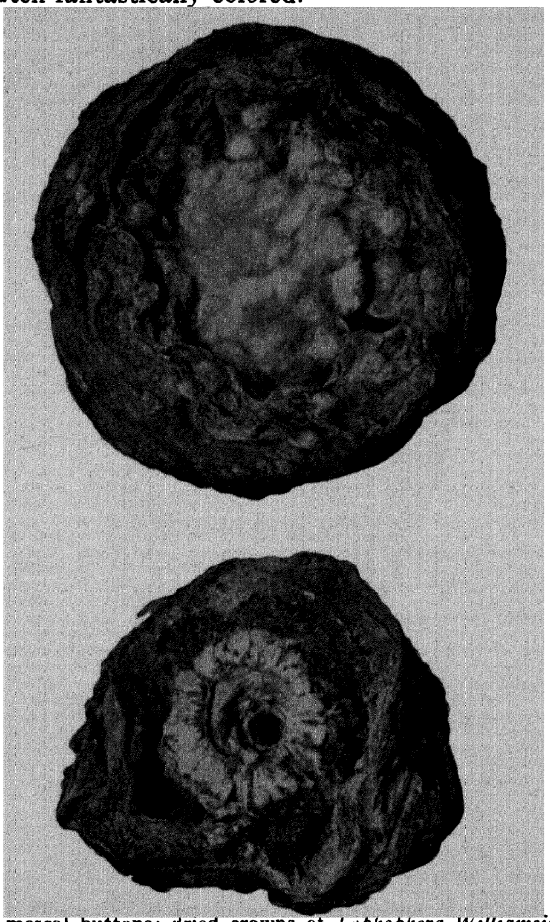


FIG. 2. "Type" mescal buttons: dried crowns of *Lophophora Williamsii*, collected in Mexico by Carl Lumholtz and sent to Gray Herbarium in 1897. These are somewhat larger than those used in the United States. ABOVE: View of top of crown. BELOW: View of base of crown (the central perforation is for stringing for transportation). (Natural size.)

Rouhier, *La plante qui fait les yeux émerveillés;* Schultes, *Peyote* (Lophophora Williamsii [*Lemaire*] *Coulter*) *and its Uses;* Wood, Remington, and Sadtler, *Dispensatory.*

The pharmacological literature is scattered and voluminous. Since the bibliography of this paper is not intended to be a complete reference list to peyote literature, but merely the most pertinent, only the more important pharmacological sources have been included.

[12] Beringer, *Meskalinrausch;* Guttmann, *Artificial Psychoses;* Klüver, *Mescal.*

[13] Klüver, *Mescal.*

Peyote-intoxication is unique in that during it consciousness is not lost, control of the limbs and senses is maintained, there is no tendency to commit acts of violence, and seldom do uncomfortable effects accompany or follow it. These characteristics are reported in the literature, and I have observed them in the field.

Many investigators agree that peyote is not a habit-forming narcotic. Its use is productive of little social and moral degradation or physical harm, notwithstanding statements to the contrary. The assertions so often made concerning its aphrodisiac properties have been disproved.[14] Furthermore, there is experimental evidence which suggests that it is definitely anaphrodisiacal.[14]

The narcotic and medicinal properties of peyote are traceable to active principles contained in the tissues of the plant. From four to eight alkaloids may be present in varying amounts and proportions: mescaline, anhalonine, anhalonidine, pellotine, lophophorine, anhalamine, anhalinine, and anhalidine.[15] Several of the alkaloids of *Lophophora Williamsii* have found minor uses in modern medicine.

In the ceremony, peyote is eaten dry, but occasionally fresh plants are consumed.[16] The dried mescal buttons keep indefinitely and are stored in bags for use. They possess a very bitter taste, but in spite of this, they are chewed and swallowed in great number by peyotists. The smallest consumption by a single person is about four buttons at each meeting. It is impossible to estimate the largest, but I have seen an Indian eat more than thirty at one ceremony. Other investigators[17] report doses as large as ninety buttons. An estimate of the average consumption, however, would probably be about twelve buttons by each person at a single meeting.

Occasionally, mescal buttons are steeped in water, and the resulting

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[14] Beringer, *Meskalinrausch;* Fernberger, *Further Observations.*

[15] Schultes, *Peyote* (Lophophora Williamsii [*Lemaire*] *Coulter*) *and its Uses.*

[16] Shonle (*Peyote*) states: "Lumholtz does not emphasize the visions in his accounts of the Tarahumare and Huichol, probably because these tribes obtain the fresh peyote used by the more northern tribes and which has therefore caused the dance to be the central feature of the ceremony rather than the quiet meditation and visions. But wherever the dried peyote is used, the vision predominates." In this connection, it must be pointed out that dried peyote *is* used in Mexico and that I have not been able to discover any difference in physiological action between the fresh and the dried peyote. Since the anhalonium alkaloids are non-volatile, it is not to be expected that desiccation of the plant tissue would have any effect on their concentration. Therefore, the difference in expression of peyote worship in Mexico and the United States cannot be attributed to a physiological effect of the plant, but, it seems to me, must be due to the ceremonial background into which peyote was naturalized in the Plains culture area.

[17] Mooney, *Mescal Plant Ceremony.*

"peyote tea" is drunk. This tea is widely used both in the ceremony and in daily life when peyote is administered medicinally. In Mexico, fresh peyote is ground on a metate, and the resulting thick brown liquid is drunk.[18] Mexican Indians sometimes add peyote, thus prepared, to alcoholic fruit juices to produce a delirious intoxication.[19] This use of *Lophophora Williamsii*, however, should not lead to its confusion with mescal, the alcoholic Agave-brandy prepared from *Agave* spp.

III

The visual hallucinations often induced by peyote have been considered of fundamental importance as an "appeal" in the diffusion of the peyote cult among the Plains Indian tribes.

It has been pointed out[20] that formerly many aspects of Plains Indian life centered around the pursuit of visions. The vision-quest "as an affair of maturity" has become widely recognized as an outstanding characteristic of Plains culture as a whole.

Since visions are occasionally induced during peyote intoxication, it has been thought that the fantastic peyote vision was so appealing that the Plains Indians adopted the peyote cult as an easy way of obtaining visual hallucinations. Shonle, for example, writes: "All over the Plains where the dried peyote is used, the Indians delight in the peyote visions and respond to their thrill, even when the dreams are terrifying in character."[21]

From the belief that the vision configuration is the integrating principle in the Plains peyote ceremony a natural inference has been that the rapidity with which peyote has spread was due to the ease with which it could become naturalized to the established pattern. According to this, peyote offered a method of obtaining visions without the self-torture and privation resorted to by some of the Plains tribes in the vision quest.

> Peyote did not have to win its way into a system of religion which was without visions. Rather, it facilitated obtaining visions already sought. It was holy medicine given to the Indian that he might get into immediate touch with the supernatural without long periods of fasting. Thus, the underlying belief in the supernatural origin of visions is important among factors contributing to the diffusion of peyote and, in a general way, defines the area of its probable spread.[22]

In my opinion, the principal appeal of peyote has been and continues

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[18] Diguet, *Les cactacées utiles.*

[19] V. A. Reko, *Magische Gifte-, Rausch- und Genussmittel.*

[20] Benedict, *Visions in Plains Culture.* [21] Shonle, *Peyote.* [22] *Ibid.*

to be centered around the therapeutic and stimulating properties of the plant and not around its vision producing properties. In other words, the peyote vision has been incidental while the medicinal reputation of peyote has been fundamental in the establishment, spread, and, to some extent, in the maintenance of the peyote cult in the United States.

IV

The medico-religious peyote cult was already established in Mexico when the Spaniards arrived. The earliest record of the use of *Lophophora Williamsii* is that of Sahagun[23] who wrote that the Chichimeca ate the root, *peiotl*, which induced amusing or terrifying visions and stimulated them in battle. He failed to note whether or not these Indians used the plant therapeutically. Cardenas[24] also wrote of the terrifying visions which followed indulgence.

Hernandez,[25] describing the plant as *Peyotl zacatecensis*, emphasized the fact that it was used in prophesying and in the treatment of pains. He did not mention peyote visions.

Likewise, Ortego, who described the Cora ceremony, made no mention of visions. Furthermore, Arlegui did not report visual hallucinations, but stated emphatically that peynote was administered as a panacea and as an aid in prophesying.[26]

Thus, from a survey of early Mexican accounts of the use of peyote, the importance of the plant as a medicine seems to overtop the importance of peyote visions.

Correlated with virtues which are valuable to aboriginal therapy, there are properties making peyote a remarkable stimulant and tonic. Indeed, so close to each other are some of the uses of the plant for stimulation and for curing disease that it is often difficult to distinguish between the two. Since these uses both pertain to the retention or the restoration of a feeling of well-being, it is obvious that they must be closely associated.

Sahagun, Ortego, and others have described peyote as a favorite stimulant in warfare.[27] Sahagun reported that it strengthened and encouraged the warriors. De la Motta[28] stated that the Spanish were severely handicapped in their conquest of the Nayarit kingdom by the resistance of the

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[23] Sahagun, *Historia general.* [24] Cardenas, *Primera parte.*

[25] Hernandez, *De historia plantarum.*

[26] Ortego, *Historia del Nayarit;* Arlegui, *Cronica.*

[27] Sahagun, *Historia general;* Ortego, *Historia del Nayarit;* Cardenas, *Primera parte.*

[28] Klüver, *Mescal.*

natives of Sierra de Alica, whose great opposition was attributed to their constant ingestion of peyote. Galvez noted the use of the plant during Tamaulipas dances, and Perez reported similar uses by the Lagunero and Acaxee tribes.[29]

Peyote is widely used as a stimulant in Mexico at the present time. Lumholtz,[30] for example, found the Tarahumare using the plant for stimulation. He tested it to his own satisfaction, comparing its physiological action with that of *Erythroxylon Coca* Lam. Diguet corroborates this, saying: "In using the drug moderately, the partaker is endowed with energy which permits him to overcome great fatigue and to endure hunger and thirst for five days."[31]

That the therapeutic appeal of *Lophophora Williamsii* is still strong in Mexico is shown by recent writers. Lumholtz wrote that the Tarahumare, Huichol, and Tepehuane apply peyote externally for rheumatism, wounds, burns, snakebites, and skin diseases. Furthermore, he stated that "it is an absolute cure against the painful stings of scorpions, and, as such, deserves to be widely known."[32] Bennett and Zingg[33] have found that the Tarahumare apply crushed peyote externally as an ointment. In this tribe "hicouri (peyote) dances are more frequent during times of sickness."[34] Peyote has been widely used in Mexico as a cure for arrow wounds; the dried, powdered root being packed into the wound until healing occurs.[35]

In Mexico, as in the United States, the therapeutic use of *Lophophora Williamsii* grades into the superstitious and pseudotherapeutic. To its use is attributed health and longevity; rubbed on the knees, it is believed to give strength in walking; in curing disease, it is said to fortify the body against future ills and to purify the soul. Unlike many herbs, peyote is not offered to the dead, but is eaten at death feasts to fortify the living.[34] Among the Zacateco, peyote is revered above all other plant remedies.[35] The Tarahumare believe that the illness resulting from touching or breaking of *Datura meteloides* Dunal can be cured only with peyote.[36]

Lophophora Williamsii continues to be valued by Mexican Indians as a powerful medicine, but its therapeutic use is not confined to the Indian population. Peyote is offered for sale in drug markets in many parts of Mexico and has been listed officially in the *Farmacopia Mexicana*. Indeed, the medicinal use of peyote has become so well known that Mexicans have

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[29] Brinton, *Nagualism;* Perez, *Historia.* [30] Lumholtz, *Unknown Mexico.*
[31] Diguet, *Les cactacées utiles.* [32] Lumholtz, *Unknown Mexico.*
[33] Bennett and Zingg, *Tarahumara.* [34] Lumholtz, *Unknown Mexico.*
[35] Alègre, *Historia.* [36] Bennett and Zingg, *Tarahumara.*

incorporated the word *peyote* into the verb *empeyotizarse*, the usual term employed among rural Mexicans to signify self-medication (with aspirin) for indisposition following alcoholic intoxication.

The emphasis on the curing powers of peyote is as great among the northern Indians who use it as it is among the Indians of Mexico. The Kiowa and Comanche, for example, the earliest recipients of peyote on the plains, rely on the cactus as a panacea. Among the Oklahoma tribes with which I worked, I found that there is hardly a disease which is not believed to be curable with peyote. Some of the ills listed as responding to peyote were tuberculosis, pneumonia, scarlet fever, intestinal ills, diabetes, rheumatic pains, colds, grippe, fevers, and venereal diseases. Among the Kiowa, partly masticated mescal buttons are packed around an aching tooth. The Delaware also practice this type of dental therapy.[37] A Shawnee informed me that peyote tea was a good antiseptic wash for open wounds and a soothing liniment if applied warm to an aching limb. It is used "as white man uses aspirin." Mooney observed: "I have also seen an Indian eat one between meals as a sort of appetizer."[38] Several mescal buttons are given three times during childbirth among the Kiowa, Kickapoo, Shawnee, and probably other Plains tribes. The frequent use of peyote as a medicine has led to the statement that the plant is employed as a habit-narcotic, but field investigators deny that this is so.

V

The sustaining properties of *Lophophora Williamsii*, together with its supposed medicinal virtues, are fundamental to practically every peyote origin myth. The peyote vision seldom enters into circumstances enumerated by the Indians as having led to the discovery of the properties of the "sacred cactus." Usually the myth relates the remarkable sustaining powers of peyote when eaten by a lost starving Indian. Similarly, a Mexican myth[39] tells of the power of peyote to save a whole people engaged in desperate battle under adverse conditions. The essential point is that the stimulating, or sometimes the curative, properties of peyote provide the central theme of most myths, making it clear that this appeal is fundamental.

VI

An historical survey of the peyote cult in America indicates that, with few exceptions, the first peyote leader of a tribe was converted as the re-

[37] Petrullo, *Diabolic Root.*
[38] Mooney, *Mescal Plant Ceremony.*
[39] Lumholtz, *Unknown Mexico.*

sult of a cure and not through a quest for visions. Once converted, he usually tried to impress his friends with the remarkable virtues of the new plant. From a position of indifference or actual hostility, many of the first advocates of the peyote cult became ardent supporters of the religion centering around it. These advocates, likewise, encountered strong opposition from the older and more conservative elements in the tribe. With such powerful forces to fight, peyote leaders would naturally make use of the most influential recommendations that peyote possessed. In the healing power of *Lophophora Williamsii*, the peyotists found an appeal which completely swept aside conservative opposition and paved the way for rapid acceptance of the plant and its cult. Radin has emphasized this as follows:

> In the early days of the peyote cult, it appears that Rave relied principally for new converts upon the knowledge of the great curative virtue of the peyote. The main point, apparently, was to induce people to try it, and I hardly believe that any amount of preaching of its direct effects, such as the hyper-stimulation induced, the glorious visions, and the feeling of relaxation following, would ever have induced prominent members of the medicine bands to do so. For that reason, it is highly significant that all the older members of the peyote speak of the diseases of which it cured them. Along this line lay unquestionably its appeal for the first converts.[40]

Of the records of early peyote leaders, only one (John Wilson) indicates that the vision was considered as an appeal, and, in Wilson's case, the curative properties of peyote were stressed as much, if not more, than the vision.

Elk Hair, who simultaneously with John Wilson introduced peyote to the Delaware, consistently refused to eat peyote, although he was critically ill. Finally, however, he submitted to the pleas of friends to have a peyote ceremony for his recovery. The "cure" was successful, and Elk Hair became an ardent peyotist.[41]

Wilson introduced a slightly different type of ceremony to the Delaware. He was not converted through a cure, but became acquainted with peyote through a deliberate effort to learn its virtues. He went into seclusion and spent several weeks in a continuous peyote intoxication, during which time he was "continually translated in spirit to the sky-realm where he was conducted by peyote."[42]

The Wilson ceremony is dominant among the Delaware today, and Petrullo feels that the reason for the failure of Elk Hair's ceremony was

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[40] Radin, *Peyote Cult of the Winnebago.*

[41] Petrullo, *Diabolic Root.*

[42] Speck, *Notes on the Life of John Wilson.*

due to the fact that "he preached the old religion, and offered only another medico-religious cult," whereas Wilson "brought to his people a new religion, a hope of building anew, a definite severance with the past." This may be true to a slight extent, but it is clear that Delaware peyotism, like that of other American Indian tribes, is essentially a medico-religious cult. Petrullo calls attention to this fact himself when he says:

> Thus, the peyotist subjects himself to the peyote intoxication, to prayer and concentration on religious matters for twelve and eighteen hours for the sake of helping a fellow man. By concerted effort, by attaining purity, by appealing to peyote, the devotees hope to win the attention of the spirit-forces and their intercession for the sick person. The personal enlightenment and other benefits that may come to one in the course of the meeting are merely incidental in relation to the major objective of effecting a cure.

This statement suggests that the element of curing and health is fundamental to Delaware peyotism.

Wilson himself considered peyote a great medicine, although his own conversion was not through a cure.

> [He] approved the use of native herbal remedies, saying that they would do good, but he pointed out that as the peyote worshipper progressed in knowledge, he could ignore the effects of the native pharmacopeia and effect his cures upon himself and others by the sole use of peyote.[42]

Rave preached about the healing properties of peyote while introducing it among the Winnebago. Like other early peyotists, he had experienced visions, but did not consider them fundamental. Radin emphatically stated:

> The first and foremost virtue preached by Rave for the peyote was its curative power. He gives a number of instances in which hopeless venereal diseases and consumption were cured by its use; and this to the present day is the first thing one hears about.[43]

This appeal of *Lophophora Williamsii* as a medicine may be duplicated in almost every tribe regarding whose peyote ceremony sufficient is known. Among the Kickapoo, Kiowa, Shawnee, and Wichita, I heard constant references to the fact that early peyote leaders in the tribes had experienced the curative powers of the plant and had taught of its medicinal virtues.

It is true that the therapeutic appeal is as vital and as influential today as it was fifty years ago. Many of the young peyote devotees whom I interviewed are sincere in their belief in the supremacy of peyote as a medicine.

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[43] Radin, *Peyote Cult of the Winnebago.*



Peyote leader, showing the costume often worn by the "roadman" of the ceremony. A symbolic peyote is painted on the cheek. (Painting by Stephen Mopope, Kiowa.)

Their faith in the plant extends far beyond its value as a physical medicament, and the enthusiasm with which they described cure after cure indicated clearly that conditions have changed little in this respect from the early days of the cult. Many who stray away from the peyote religion return to its folds in times of sickness and remain faithful when health is restored. La Barre[44] reports the case of a boy who, having left the peyote cult in his youth, returned to it during sickness twenty years later. This is probably not uncommon and it serves to illustrate once again the importance of the belief in peyote as a guardian and restorer of health.

VII

The importance of the curing ritual in the peyote ceremony has been completely overlooked by those who have written on the subject. Although a patient is not necessary to a peyote meeting, very often a sick person is treated during the course of a ceremony. This is common to both Mexican and American peyote ceremonies. Prayers for health and longevity are offered in the meetings, but definite ritualistic courses of treatment are resorted to whenever the seriousness of an illness warrants such action.

In Mexico, the Tarahumare carry out a pseudotherapeutic rite at the break of dawn.[45] No peyote additional to that consumed during the night is administered to the patient, however. In the Mexican rite, every worshipper takes part in the ritual and is believed to derive some health-giving power from the treatment, whereas in the American peyote curing ritual, the patient alone is treated.

Among the American peyotists, the curing rite is more therapeutic than is that of the Tarahumare, because additional doses of peyote are given to the suffering patient. Here peyote is used as an actual medicine, usually administered in the form of a tea. Literature on the curing rite is almost entirely lacking. Apparently, the form of the ritual is not yet stereotyped, but varies according to the preferences of the leader. The Kiowa leader who conducted the curing rite which I witnessed treated a young man suffering from tuberculosis. Leaving his place shortly after the ritual of the Midnight Water, the leader walked to the patient, lying at the side of the tipi. The fire-man handed the leader a cup of water, and the leader offered several prayers in which the words Jesus Christ were frequently used. He handed the patient fourteen mescal buttons which he himself had partly masticated before the treatment. While the patient was swallowing them, the leader waved the cup of water in cedar incense produced by

[44] La Barre, *Autobiography of a Kiowa Indian.* [45] Lumholtz, *Unknown Mexico.*

throwing dried juniper needles (*Juniperus virginiana* L.) into the altar fire. He also wafted this incense to the patient's bared chest with an eagle feather fan. Following this, he chewed several more buttons, expectorated them into his cupped hands, and annointed the patient's head with the saliva while praying. Then he picked up a glowing ember from the altar fire and, placing it almost in his mouth, blew its heat over the patient's chest. The ritual ended with a long prayer. This cannot be taken as typical of all peyote curing rites, but similar rites are practiced in most American peyote circles.[46] This phase of the ceremony illustrates one of the practical manifestations of the belief that peyote is a supremely potent medicine.

VIII

Peyote has not remained within the confines of the Plains culture area. Indeed, from the first days of its rapid spread, peyote has diffused to tribes of several culture areas. At the present time, the peyote ceremony, as pointed out by Wagner[47] is practiced in four distinct culture areas—Plains, North Mexican, Eastern Woodland, Southwestern—and in one intermediate culture area by the Mescalero Apache.

In the spread of *Lophophora Williamsii* beyond the tribes of the plains, the vision appeal could not have exercised the same influence which it is assumed to have played in the Plains tribes, for, although visions are important in many Indian cultures, only in the Plains area was the vision quest fundamental enough to have suggested the linkage of this phase of the culture with the spread of peyote. The diffusion of peyote to so many other culture areas indicates that an "underlying belief in the supernatural origin of visions" cannot, as Shonle postulates,[48] define the area of the probable spread of peyote. If, however, the spread of the peyote cult be viewed as resting fundamentally on the medicinal appeal of the plant, no "area of its probable spread" can be suggested.

IX

An indication that the medicinal appeal of peyote is of fundamental importance is found when the native names of *Lophophora Williamsii* are examined. All of the tribes of the United States which use peyote and some

[46] A Lipan peyote curing rite is described in a recent article (Morris E. Opler, *The Use of Peyote by the Carrizo and Lipan Apache Tribes*, American Anthropologist, Vol. 40, pp. 271–85, 1938). According to Opler, peyote was used principally as a curative rite among the Mescalero, and that the Lipan peyote ceremony took on a more "curative coloring" after contact with the Mescalero since doctoring is a recent innovation.

[47] Wagner, *Entwicklung und Verbreitung.* [48] Shonle, *Peyote.*

of the Mexican tribes understand and employ the term *peyote*. Some have naturalized the word into their own language. Both in the field and in the literature, I have found that the native, pre-peyote word for "medicine" has often been applied to the cactus, sometimes retaining its original connotation, sometimes losing it. The Delaware *biisung*, the Taos *walena*, the Comanche *puakit*, and the Omaha *makan*, are reported in the literature as terms formerly meaning "medicine," but now signifying "peyote."[49] Likewise, I have found that to designate "peyote," the Kickapoo use *naw-tai-no-nee* and the Shawnee *o-jay-bee-kee*, both of which terms formerly meant "medicine." Thus, it seems that there is a wide-spread understanding of *Lophophora Williamsii* as a great medicine.

In this connection, it is interesting to note that an Aztec word[50] for peyote—*ichpatl*—means, according to an analysis by Reko, "wooly medicine" or "fleecy drug."

X

A thorough consideration of the literature combined with field observations indicates that the importance of peyote visions has been exaggerated out of its proper proportion. The fact that, when visual hallucinations do accompany peyote intoxication, they are of a fantastic nature has led to a great amount of emphasis being placed on their psychological interpretation and anthropological significance. Accounts of peyote visions among Indians, however, are very rare; only a few having been reported in the literature. The rarity in the literature of these visions is in complete harmony with certain observations made in the field. Of the many Indians of all ages with whom I talked, only a few had ever experienced visions during peyote ceremonies. Everywhere among the Oklahoman tribes with which I worked I found the same disinterest in the peyote vision. There was no indication of the pursuit of visions during peyote ceremonies.

One Indian informed me that visions were exceedingly rare and were a reward to old peyotists for faithfulness to the moral teachings of the religion. Still others insisted that it was "wrong" to use peyote and the peyote ceremony as a means of obtaining visions. Petrullo[51] found the same feeling among the Delaware, and part of Wilson's teachings were:

> Keep your mind on peyote and don't think about other people around you or anything outside. Look at peyote and the fire all the time and think of it. Sit quiet and do not move around or be uneasy. Then you will not get sick [nauseated] or see

[49] Petrullo, *Diabolic Root;* Parsons, *Taos Pueblo;* La Barre, *Peyote Cult;* Gilmore, *Uses of Plants.*

[50] Chavero and others, *Mexico al traves de los siglos.*

[51] Petrullo, *Diabolic Root.*

visions. Visions and nausea are signs of bad self-adjustment to the proper religious attitude.[52]

XI

In conclusion, an evaluation of the relative importance of the peyote vision and of the medicinal and tonic properties of *Lophophora Williamsii* in relation to the diffusion and tenacity of the peyote cult may be summarized as follows:

1. The peyote vision is incidental and of little significance, as shown by the following considerations:
   (a) peyote visions are relatively rare;
   (b) peyote visions are not sought, but are often avoided as wrong;
   (c) proselytes almost without exception neglected the mention of visions as an appeal;
   (d) early writers did not, as a rule, emphasize peyote visions;
   (e) peyote has not confined itself to the Plains culture area, but has spread to other areas where the vision was of little importance in adult life.
2. The therapeutic and tonic properties of peyote are fundamental and of primary importance, as indicated by the following considerations:
   (a) all proselytes stressed the curative powers of the plant, sometimes to the exclusion of all other virtues;
   (b) most early writers mention the panacean uses of peyote;
   (c) most early peyote leaders were converted through a cure;
   (d) peyote is widely used in daily life and in the peyote ceremony as a medicine and stimulant, and has been shown to possess actual therapeutic possibilities;
   (e) the curing rite is an important part of many peyote ceremonies;
   (f) peyote origin myths are built upon the theme of the remarkable therapeutic and tonic powers of the plant;
   (g) the use of the words meaning "medicine" for "peyote" in many tribes signifies a deeply rooted and general understanding of peyote as a medicine.

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[52] Speck, *Notes on the Life of John Wilson.*

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BOTANICAL MUSEUM, HARVARD UNIVERSITY
CAMBRIDGE, MASSACHUSETTS

REPORT

AMERICAN ETHNOLOGICAL SOCIETY

The annual meeting of the American Ethnological Soceity was held January 24, 1938 at the American Museum of Natural History. New York City. The following report of the Secretary was read and adopted:

REPORT OF THE SECRETARY

Membership:

1937—Life members 15, members 128, fellows 124, affiliates 3.....270
1938—Life members 16, members 142, fellows 115, affiliates 4.....277
(As of the date of this report.)

Although 27 members and fellows were added during the year, the net change in total membership, an increase of seven, was slight, owing to the fact that a considerable number were removed from the rolls as a result of resignations, transfers, or being dropped. A considerable number of fellows have changed status to membership, so that the members' group now greatly outnumbers that of fellows. This is a healthy change which it is hoped will increase, since it makes the publication program secure.

Two members became life members during the year. The Society lost through death Felix Warburg, a life member for many years.

Meetings:

Regular meetings of the Society were held at the American Museum of Natural History. Programs presented were:

March 22, 1937. Ethnology of the Columbia River Sahaptin. Verne F. Ray.

April 26, 1937. Disintegration in Pueblo Culture. Leslie A. White.

October 25, 1937. Evolution of the State among Madagascan Peoples. Ralph Linton.

November 22, 1937. Some South American Problems. Robert H. Lowie.

January 24, 1938. Psycho-Economic Factors in the Culture of the Pilaga Indians (South America). Jules Henry.

Publications:

Volume 17 of the Publication, *Caddoan Texts* by Gene Weltfish, has been distributed. The Editor reports that delay in preparing *Arapesh* by R. Fortune for the printer may make it advisable to substitute some other volume, preferably *Tsimshian Songs* by M. C. Barbeau, as the 1937 issue or Volume 18, and hold the *Arapesh* for 1939 issue. This suggestion has been turned over to the Executive Committee for approval.

The issuance of an annual series of Monographs of the American Ethnological Society has been placed in the hands of a Board of Editors, composed of Clark Wissler, *Chairman*, A. I. Hallowell, and Alexander Lesser. Notice of the new series and the requirements for submission of manuscripts for the first or 1938 issue has been sent to all departments of anthropology and has appeared in the 1937 issues of the AMERICAN ANTHROPOLOGIST and *American Antiquity*.

No circularization for sales of publications was carried out. The sales of Volume 18 have so far been a little below previous figures. A suggestion has been made for changing agencies for the handling of the Society publications. This suggestion will be considered by the Executive Committee.

Respectfully submitted,
ALEXANDER LESSER, *Secretary*

The following report of the Treasurer was read and referred to Ruth Benedict as Auditor.

REPORT OF THE TREASURER
January 21, 1937 to January 21, 1938

CURRENT FUND

Balance, Corn Exchange Bank, January 21, 1937			$ 775.83	
Current funds, Bowery Savings Bank, January 21, 1937			1,543.02	
Cash on hand, January 21, 1937			4.03	
				$2,322.88
Receipts:				
Dues, 1936, members and fellows	$ 27.00			
1937, members and fellows	1,565.30			
1938, members and fellows	62.00			
Affiliates	6.00			
Life memberships	200.00			
		$1,860.30		
Interest, Mortbon Corporation	$ 89.25			
Bowery Savings Account	53.90			
		$ 143.15		
Sales of publications, gross		270.70		
Check issued, uncollected		10.00		
			$2,284.15	
				$4,607.03
Expenditures:				
American Anthropological Association, dues		$1,234.50		
To permanent funds, life memberships		200.00		
J. J. Augustin, printing Volume 17	$ 834.11			
Shipping and packing charges	28.20			
		$ 862.31		
G. E. Stechert Co., commissions	71.79			
Shipping, Volume 17	66.75			
Credit, overpayment 1935, balance	58.96			
		$ 197.50		
Expenses of meetings, American Ethnological Society		17.65		
Printing, stationery		25.22		
Postage		20.39		
Clerical assistance		15.14		
Safety-deposit box, rent		6.60		
Supplies, phones, miscellaneous		2.35		
Bank charges, collections		.78		
1936 uncollected check, drawn		5.00		
			$2,587.44	

Balance, Corn Exchange Bank, January 21, 1938...	609.26		
Checks on hand, undeposited.....	6.00		
Current funds, Bowery Savings Bank, January 21, 1938 ..	1,396.92		
Cash on hand.	7.41		
		$2,019.59	
			$4,607.03

PERMANENT FUND

Bonds of New York Mortbon Corporation..	$2,550.00
Permanent funds, Bowery Savings Bank	1,350.00
	$3,900.00

Respectfully submitted,
ALEXANDER LESSER, *Treasurer*

The Nominating Committee recommended that the present officers be reelected for a second year, and that the duties of the Secretary-Treasurer be divided, with the addition of a Treasurer for 1938. The slate presented follows:

President: George C. Vaillant
Vice-Presidents: Elsie Clews Parsons, George Herzog
Secretary: Alexander Lesser
Treasurer: Irving Goldman
Editor: Franz Boas
Directors: Clark Wissler, Ruth F. Benedict, Clarence L. Hay

The Secretary was instructed to cast a ballot for these nominees.

A motion was passed, following the discussion of the previous year, to hold the annual meeting in November instead of January, the first of such meetings to be that of November 1938; and to permit the Treasurer to bill members for the dues during December.

Motions were passed approving the following changes in the Constitution of the American Ethnological Society (for the original wording, see AMERICAN ANTHROPOLOGIST, Volume 19, 1917, pp. 110–11):

Article III, Section 3 (to read):

"*Fellows:* Any person engaged in work in anthropology or any related science may be elected a fellow in the manner provided in Section 2 for the election of members. Fellows shall have all the rights possessed by members of the society, except as noted in Article IV, Section 3."

Article IV, Section 3 (to read):

"All classes of members of the society shall receive free the American Anthropologist and all other publications of the American Anthropological Association which are distributed by that organization without charge to its members, and shall become members of the American Anthropological Association, that organization consenting, without further payment of dues. The Board of Directors of the Society shall have the power to propose the manner and method of distribution of all publications of the Society now being issued or which may be issued at some future date; and such proposals shall be subject to the approval of the membership at a regular meeting."

A motion was then passed approving the proposal of the Executive Committee to distribute the new series of Monographs of the American Ethnological Society without charge to members and life members only, and to charge all others a regular publication price.

The reorganization of the Section in Anthropology of the New York Academy of Sciences was noted and discussed. Drs Vaillant and Benedict were appointed a committee to cooperate with the Section.

Respectfully submitted,
ALEXANDER LESSER, *Secretary*

BOOK REVIEWS

NORTH AMERICA

Social Organization of North American Tribes. Essays in Social Organization, Law, and Religion. Presented to Professor A. R. Radcliffe-Brown Upon the Occasion of His Accepting the Chair of Social Anthropology at Oxford University. FRED EGGAN (ed.). (xvii, 456 pp. $3.00. Chicago: University of Chicago Press, 1937.)

The seven contributors to this volume were students of Professor Radcliffe-Brown (whose bibliography is included, pp. xv–xvii) during his five years at the University of Chicago. The essays, consequently, are of greater interest for their methodological and theoretical views than for their factual content. They should provide some index of Radcliffe-Brown's influence upon social studies in American anthropology.

The essentials of Radcliffe-Brown's views are summarized in an "Introduction" (pp. vii–xii) by Robert Redfield. Radcliffe-Brown, it is said, is the first person to offer a "strictly non-historical scientific method, equipped with a self-consistent body of concepts and procedures for getting specific jobs done in relation to ultimate scientific objectives" (p. x). His "science" consists of "concepts," "tentative guiding formulation," and "classification of problems" which are contrasted to the "analytic and nonconceptualized procedure of Boas" (p. xi) and which, through comparative studies, will some day produce sociological laws. The assumption that each part of society functions to produce an integrated, organic whole is basic.

In the following essays, what concrete results have sprung from the stimulus of these doctrines?

The first essay, "Some Problems of Social Organization" by Sol Tax (pp. 3–32), is largely a discourse on method. It brushes aside kinship formulations made by Lowie and others as lacking "coherence," "depth," "a general theory," and a "knowledge of the intimate psychology or sociology of particular peoples or cultures" (p. 13). It illustrates what is considered proper method by disavowing linguistic, historical, or sociological causes and attempting to explain the Omaha and Crow kinship terminologies, especially in California (where Tax has evidently not worked and lacks the intimate knowledge of "every day facts of life in the particular societies" which he demands on p. 14), by reconciling twelve very general and unoriginal "rules" governing behavior between any kin. We fail to note in this essay either clarification of social problems or positive results.

The next five essays ("The Cheyenne and Arapaho Kinship System," Fred Eggan, pp. 35–95; "Kiowa-Apache Social Organization," J. Gilbert McAllister, pp. 99–169; "An Outline of Chiricahua Apache Social Organization," Morris E. Opler, pp. 173–239; "The Social Organization of the Fox Indians," Sol Tax, pp. 243–82; "Eastern Cherokee Social Organization," William H. Gilbert, Jr, pp. 285–338) contribute, with varying degrees of accuracy[1] and originality, solid facts based

[1] See, e.g., Truman Michelson, *Sol Tax on the Social Organization of the Fox Indians* (American Anthropologist, Vol. 40, pp. 177–79, 1938).

largely on field work. Each has a very similar topical arrangement: kinship terms, patterns of kinship behavior, and social behavior at different periods in the life-cycle. If these essays are distinctive, it is in their liberal use of Radcliffe-Brown's favorite, though not original, terminology (e.g., "function," "reciprocal behavior," "generation," "duties and obligations," etc) and in the scope and emphasis of their interest.

That interest should center in certain segments of social behavior, especially in kinship terminology, is an unassailable matter of personal taste. If, however, the reader expects to find solid achievements of the kind heralded in the "Introduction" he will be disappointed. No essay even attempts to give proof of the organic unity of the society described. Nevertheless, it seems to be assumed that each social practice is integrated in a total system of social behavior. This assumption harmonizes with the lack of interest in history and the statement that "in dealing with interrelations found in a social system, or the adaptations exhibited, a borrowed trait is just as good as one which is independently developed" (Eggan, p. 75). This indifference to history would be justified only if each practise were the only possible one within the whole. If, however, a practise could be radically altered without affecting the whole, it might be explainable not as a manifestation of some "general factor or principle" or " 'active agent' behind the descriptive principle" (Eggan, p. 72) but solely as the result of diffusion. Evidently preoccupation with the theory of the organic unity of society has prevented Radcliffe-Brown or the present essayists from even raising the problem of whether practises could be altered and still function in the total society.

Some of these essays also fall short of the complete analysis of social behavior that we are led to expect. Analysis of kinship behavior, important as it unquestionably is in the societies, tends to monopolize attention at the expense of full study of factors regulating the behavior of non-kin. Moreover, attention to typical behavior, epitomized in the ego chart, does not suggest that egos might behave very differently toward their kin if they differed in wealth, status as chief, warrior, or shaman, or in other social roles. Finally, we fail to see that the formulations in these essays have yet brought us closer to scientific laws or are more likely than other types of study to lead to such laws.

Without reference to the promise of a new methodology, many readers will regret certain omissions in these essays. They will regret especially that, dealing with modern, acculturated, and more or less well documented tribes, the theoretical views of the writers have precluded serious attention to available history and that concern with standard behavior has largely prevented inclusion of material on individual differences.

The foregoing remarks apply in varying degrees to the different essays. After all, none of the authors is in complete agreement with Radcliffe-Brown nor he with them. Opler's study of the Apache, for example, is largely above reproach on all scores. It is a strikingly good piece of work from any point of view, providing a well-balanced picture of Apache society and including even much case material. Incidentally, it makes no protestations of methodological faith.

If some of these essays are disappointing when reviewed with reference to Radcliffe-Brown's theories, it is first because the hopes remain unfulfilled; second, because preoccupation with theoretical dogmas has caused omission of kinds of material valued by most anthropologists. On the other hand, they contain much substantial fact. And to Radcliffe-Brown's credit it should be said that in stimulating greater interest in certain phases of social organization, especially kinship, he has unquestionably brought about more intensive and better field investigation of these phenomena, even though we cannot concede that the essential concepts and methodology are uniquely his.

"The Underlying Sanctions of Plains Indian Culture," by John H. Provinse (pp. 341–74), develops another phase of Radcliffe-Brown's interest—primitive law. It is a useful summary of the social, legal, and religious sanctions of behavior, which are classified largely according to Radcliffe-Brown's categories. As clarification of concepts is a cardinal point with Radcliffe-Brown's followers, however, one is a little distressed to find that whereas pp. 344–65 describe "primary sanctions" which protect group interests and pp. 365–70 describe "secondary sanctions" which protect individual interest, p. 371 states that "secondary sanctions are not really secondary at all, but are primary ones. . . . "

The final essay, "The Place of Religious Revivalism in the Formation of the Intercultural Community on Klamath Reservation," by Philleo Nash (pp. 377–442), is essentially historical and therefore strikingly unlike the previous essays. It would be difficult to find a better illustration of the value of history in giving the fullest meaning to the function of an institution. A well documented study, it explains revivalism as a phenomenon of deprivation occurring "within the framework of either acceptance or rejection of values and skills associated with white culture" (p. 442).

JULIAN H. STEWARD

BUREAU OF AMERICAN ETHNOLOGY

Petroglyphs of Oregon. L. S. CRESSMAN. (University of Oregon Monographs, Studies in Anthropology, No. 2. 78 pp., 6 pls., 52 figs., 22 maps, chart. Eugene: University of Oregon, 1937.)

This is the third of a youthful but promising series concerned with the anthropology of this little known region. Following the objective, scientific method of descriptive recording with mapped distributions of design elements instituted by Steward (*Petroglyphs of California and the Adjoining States*), Cressman's careful and worthwhile contribution fills the gap between the Columbia River and the northern limit of Steward's study. The paper is primarily concerned with distributions, thus minimizing the dangers attendant upon interpreting petroglyphs as records whose "messages" may be "read and translated."

The introduction is concerned with terminological matters, the definition and listing of design elements and a statement of the problem. A pictograph is defined as "any design applied by the medium of pigment" and a petroglyph as "any de-

sign cut into the rock either in silhouette or as a solid figure." The term "combined design" denotes a combination of the two media. Part I describes some 60 sites as regards location, their classification as a petroglyph or pictograph site, and lists the types of design elements for each. Part II contains a discussion of the distribution of sites with a map showing pictograph, petroglyph, and "combined design" site locations. Part III discusses design elements in the order of numerical frequency of occurrence. Maps show the distribution of single design elements within the territorial limits of Oregon. Parts IV and V are short treatments of possibilities of interpretation and chronology.

Cressman concludes by defining four areas: (1) the Willamette Valley petroglyph area of primitive and widespread design types; (2) the southeastern Oregon petroglyph area, and extension of the Great Basin type; (3) the north-central Oregon pictograph area, apparently intrusive from the east; (4) the Klamath Basin, a petroglyph and pictograph area, distinguished from the north-central pictograph area because of the use of one paint to outline another.

A separate treatment dealing with interpretations is planned for a future date.

ROBERT F. HEIZER

UNIVERSITY OF CALIFORNIA

The Fort Belknap Assiniboine of Montana: a Study in Culture Change. DAVID RODNICK. (125 pp. New Haven: Author, 1938.)

Adventure on Red River. Report on the Exploration of the Headwaters of the Red River by Captain Randolph B. Marcy and Captain G. B. McClellan. GRANT FOREMAN (ed.). (xxxi, 199 pp., illus. $2.50. Norman: University of Oklahoma Press, 1937.)

Red Cloud's Folk: a History of the Oglala Sioux Indians. GEORGE E. HYDE. (xi, 331 pp., front., 2 maps. $3.50. Norman: University of Oklahoma Press, 1937.)

Dr Rodnick has presented the material on the Fort Belknap Assiniboine in three parts. The first two sections, or about half the volume, deal with the historical data and the aboriginal culture. The third section discusses the economic problems on the reservation and the conflicts arising during the process of adaptation to white culture.

The historic and ethnographic sections are a welcome addition to the relatively small amount of material available on the Assiniboine. Hitherto Lowie's early paper (in Vol. 4 of the Anthropological Papers of the American Museum of Natural History, published in 1910) and Denig's report written about 1854 but only recently published (in the Forty-sixth Annual Report of the Bureau of American Ethnology) have been the principal sources. In addition to fully utilizing these Rodnick has made an exhaustive search of historical documents and obtained valuable new material directly from informants on the reservation. Thus not only is there much more ethnographic information now available, particularly on the religious and social organization, but every opportunity was taken to check and emend previous investigations. The result is a well-rounded ethnography as complete as present conditions will permit.

The willingness of the Assiniboine to absorb an alien culture, noted from the time of their earliest contacts with the Cree, has been characteristic of their relations with the whites. In spite of strict disciplinary measures in the schools and prohibitions against harmless dances, which naturally tended to dampen enthusiasm, white culture seems to have remained the *sine quo non*. Problems arising in the current process of adjustment appear to be engendered by a sense of failure to become white rather than through conflict between tenaciously held aboriginal beliefs and forcibly imposed foreign patterns. Such failure often invokes a resentful, antisocial attitude quite comparable to that found among many white groups living in a marginal economy.

The present situation is effectively illustrated by a wealth of case material supplemented by data on economic conditions, disbursements of loans and rations, population statistics, educational curricula, and similar records. The economic potentialities, or rather lack of them, on the reservation are clearly presented. Vacillation between agriculture and grazing economies seems almost inevitable, for neither is well adapted to the land. It is possible that more reliance upon the natural products of the region, all of which did not disappear with the buffalo, might bring more real prosperity to the community than dependence on a money economy to provide stale store bread and jello.

This collection and collation of Assiniboine material is an important contribution to the history and ethnography of a relatively little known Plains tribe. The presentation of reservation conditions in the light of historic data should emphasize the necessity for a knowledge of aboriginal backgrounds prior to the adoption of administrative policies. Sociologists and psychologists will likewise find much pertinent data on the stresses which inevitably arise during a period of cultural assimilation.

With the publication of this new edition of Captain Marcy's journal the valuable description of the Comanches (pp. 154–77), who inhabited the upper Red River country in 1852, is made generally available. Mention is made of Wichita, Kiowa, Quapaw, and other tribes, but little ethnographical data is offered except for brief descriptions of Wichita villages (pp. 37, 162) and an illustration of a village (p. 128). A contemporary map of the upper Red River country giving the locations of various villages and tribal territories is included.

Red Cloud's Folk is a history of one of the Teton Sioux tribes, the Oglala, from the period of early migration from the headwaters of the Mississippi until the time their identity was lost on the reservation. Information obtained from the Indians has been carefully correlated with a detailed study of the early sources, with the result that we are given an interesting and consecutive narrative which is illustrative of Indian-colonizer-trader-soldier relationships on the Plains.

NATHANIEL KNOWLES

NEW HAVEN, CONNECTICUT

Navajo Shepherd and Weaver. GLADYS A. REICHARD. (xviii, 222 pp., 15 pls., 25 figs. $3.75. New York: J. J. Augustin, 1936.)

This is the second of Dr Reichard's studies of Navaho weaving and its human

environment. In the first, *Spider Woman*, the author gave a narrative account of her experiences as an adopted member of a Navaho family and an apprentice weaver. The second might be called a technical supplement to the other, a manual of weaving as practised by the Navaho today. By no means drily factual, it is intended primarily for weavers and students of weaving. It is a compendium of the Navaho lore of the loom.

Dr Reichard is the sixth person to make a major contribution (quantitatively speaking) to this general topic. Matthews, Hollister, Pepper, James, Amsden, preceded her; each doing what he considered a pretty comprehensive study. They, being men, almost necessarily wrote as observers of this feminine craft, and their writings have the weakness, the omissions, of the by-stander's version of what happened. Dr Reichard, a woman, first of all learned to weave, then wrote about it as a weaver. We have long known how Navaho weaving looks; now, thanks to her, we know how it feels. She writes of the labor, the errors and frustrations and minor triumphs that lie behind the finished product on which her male predecessors fixed their admiring eyes.

Weaving in the best of circumstances is beset with problems scarcely apparent to the observer. As practised by the Navaho, it bears the additional burden of a harsh environment and a primitive implementation. Understanding them, we can better appreciate the achievement of the many generations of weavers who worked out the procedure to which Dr Reichard fell heir when she became a "Navaho" weaver. Only a subjective study such as this can supply that third-dimensional quality essential to a full and true picture of any craft.

CHARLES AMSDEN

SOUTHWEST MUSEUM

Prehistoric Antiquities of Indiana. ELI LILLY. (xiii, 293 pp., 88 pls. Indianapolis: Indiana Historical Society, 1937.)

In the preface of this de luxe archaeological report Mr Lilly very modestly set forth the real purpose of his book:

> The object in writing . . . was to interest more of the people of Indiana in the relics of our vanished predecessors, and to stimulate inquiry into the prehistory and archaeology of our state. The pursuit of this subject has led the author along such pleasant paths that he is desirous of sharing them with others.

Because the reviewer spent a few seasons directing excavations in the Hoosier state before Mr Lilly became actively interested, he wishes to point out the debt archaeology, as well as anthropology as a whole, owes to Mr Lilly because of his enthusiastic response toward assisting in the solution of many scientific problems in the northern Mississippi Valley.

The story told by *Prehistoric Antiquities of Indiana* is just as entertainingly written as the format suggests. It combines modern scientific viewpoints relative to the migrations of man to America, his possible origin and antiquity (Chap. 1). In the tentative outline of the prehistory of Indiana (Chap. 2) Mr Lilly touches upon controversial subjects and cleverly sublimates the theories of all. Any dif-

ference of opinion that might exist between the author and specialists in the field is of such a nature that even the professionals are divided as to the correct solution. The abundant use of footnotes not only clarifies details, but gives credit to everyone who has contributed anything to the archaeology of the state.

The second chapter (pp. 21–36), which deals with the prehistory of Indiana, should be read by all archaeologists interested in the complex problems of cultural variations in this mound area. The author has carefully summarized and remarkably simplified the classifications without detracting from the important element traits which are used as a basis for segregating these prehistoric variations.

Chapter 3 contains a description of some of the outstanding prehistoric sites within the state. Here the author reviews and interestingly sums up the original dry field reports. An excellent guide for the expansion of state and local parks and presentation of important stations is thus effected.

The remaining seven chapters describe, classify, and illustrate various types of artifacts from the entire state.

The eighty-eight illustrations are reproduced by a recently developed deep-etched lithographic method from prints made by an experienced photographer. The arrangement of specimens on these plates is unusual and attractive. For example, discoidals (p. 157) are mounted around the picture of a carved shell gorget showing the use of these stones. Carved tobacco pipes (p. 199) are placed on a pressed specimen of *Nicotiana attenuata*. Other specimens are on white sand, bear robes, tree sections, old archaeological survey maps, etc.

Another important contribution is the extensive bibliography on Indiana prehistory. Mr Lilly began its compilation many years ago, as it was first published in May 1932. In its present form it is considerably enlarged and revised. All general publications are first listed. Then under each county within the state—alphabetically in order—appear pertinent publications arranged by authors.

This book combines general as well as specific topics dealing with the prehistory of Indiana. It is neither too detailed nor yet so general that students lose the full significance. It can serve as a source for the more detailed archaeological reports and will appeal especially to those interested in the general problems within the mound area. The author's purpose is adequately fulfilled.

FRANK M. SETZLER

UNITED STATES NATIONAL MUSEUM

A Concise Blackfoot Grammer Based on Material from the Southern Peigans. C. C. UHLENBECK (Verhandelingen der Koninklijke Nederlandsche Akademie van Wetenschappen te Amsterdam, Afdeeling Letterkunde, Niuewe Reeks, Deel 41. 240 pp. Amsterdam: N. V. Noord-Hollandsche Uitgeversmaatschappig, 1938).

The present full length grammar is a valuable document in a series of important Blackfoot contributions which include special grammatical papers,[1] dictionary,[2] and

[1] The following were published in the same series as the work now reviewed: *Flexion of Substantives in Blackfoot*, 1913; *Some General Aspects of Blackfoot Morphology*, 1914; *Philolog-*

texts.[3] The author records all the details of Blackfoot grammar which he was able to find—really, a very full roster. But his presentation of these details is not economical. Thus, a dozen different symbols represent vowels where only three symbols are needed. When a linguist makes more distinctions than a language makes, there is naturally some duplication in the use of different symbols.[4] Again, the symmetry of Blackfoot word and stem classes is somewhat obscured by the introduction of Indo-European categories and metaphors from physics.

Now it would have been possible for the author to have said we have three vowel phonemes, with such and such phonetic characteristics of each (while most Algonquian languages have four or more vowels); we have only one type of paradigm in which both prefixes and suffixes are employed (Micmac lacks this type and instead has paradigms with suffixes but no prefixes, but most Algonquian languages employ both the Blackfoot type and the Micmac type); we can compare the historical stratum in which assibilation of -t- occurs with the time when original -ki- became assibilated to -ksi- (while in a scarcely less common development, -s- precedes -t- and -k-)—and so on. In this way the main features of Blackfoot would be brought into clear relief and the marginal details subordinated. The danger, of course, is that unproductive details might be lost in the shuffle. In Professor Uhlenbeck's work each detail is given equally loving attention, whether applying to a few words or to every word in the language.

For historical interest, it is often the very unproductive features which have greatest relevancy. Thus, Blackfoot is shown to have ablaut in reduplicative syllable (nisó *four*, nániso *eight*, p. 7) which is also rare in Fox but highly productive in Shawnee. This phenomenon may have served as the prototype from which the pan-Algonquian ablaut of initial syllable vowels, without reduplication, was derived by haplology; then Blackfoot "napui-, nap- *standing*, a variant of nipui-, nip- *standing*" (p. 7) would be explained as having for underlying forms *nanipui-, *nanip-. So also, the fact that Blackfoot compounds are either endocentric or exocentric will prove strategic in historical reconstruction. In the grammar, as presented, these relevant data are not slighted; the author's purpose is accomplished: his work does indeed

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ical Notes to Dr. J. P. B. de Josselin de Jong's Blackfoot Texts, 1915; *A Survey of the Non-pronominal and Non-formative Affixes of the Blackfoot Verb*, 1920.

[2] Also in the same series (with R. H. van Gulik): *An English-Blackfoot Vocabulary*, 1930; *A Blackfoot-English Vocabulary*, 1934.

[3] Also in the same series: *Original Blackfoot Texts*, 1911; *A New Series of Blackfoot Texts*, 1912.

[4] Our increased understanding of phonemes since 1911 removes the presumption that the "vacillation" in Uhlenbeck's orthography reflects error in hearing. See Truman Michelson's review of Uhlenbeck's *Original Blackfoot Texts* (American Anthropologist, Vol. 13, pp. 326–30, 1911. Michelson's technical strictures are nonetheless justified. Like Uhlenbeck, Michelson had direct field experience with Peigan Blackfoot; the present reviewer has heard only North Blackfoot. Where the latter's field notes disagree with Uhlenbeck's recording, dialectic difference rather than lack of accuracy may be suspected.

advance the day when a comparative grammar of the entire Algonquian stock will be possible.[5]

C. F. VOEGELIN

DEPAUW UNIVERSITY

Tseh So, a Small House Ruin. Chaco Canyon, New Mexico. (Preliminary Report.) DONALD D. BRAND, FLORENCE M. HAWLEY, FRANK C. HIBBEN, et. al. (Anthropological Series, University of New Mexico, Vol. 2, No. 2, Albuquerque, 1937.)

This is more than a report on the initial excavations at Tseh So. It is obviously an introduction to future investigations planned by the University's Department of Anthropology for its General Field Session, a summer course offering students practical field experience.

The "Introduction" (pp. 17–37), by Dr Brand, presents the scheme of the report; the history of research in Chaco Canyon from Spanish and Mexican times to "the modern period," beginning in 1920, and includes a check list of place names in and near the Chaco. In this summary, which shows what a magnet the Chaco Canyon ruins have long been and how little of scientific worth has been published about them, the author corrects several oft-repeated errors concerning observations made before "the modern period" and then echoes a few of his predecessor's misconceptions and even misstatements regarding more recent studies.

Next follows the report on Tseh So. Part I, "The Natural Landscape" (pp. 39–65), also by Brand, considers the location of the ruin together with the geology of Chaco Canyon, the latter's climate and water supply, its biota, and its natural resources including vegetable, mineral, shells, and animal.

Part II, "The Site and the Excavations" (pp. 67–84), by Frank C. Hibben, identifies Tseh So as a Pueblo II ruin. Beneath it were the remains of a Pueblo I structure and beneath the latter, a Basket Maker III pithouse. Portions of the first two were excavated. A beam fragment from Tseh So gave the date A.D. 922 plus. Surely, as the author says, a more instructive site for excavation by a student group could not have been found.

Part III, "Summaries and Conclusions," includes: (1) "Summary of Pottery from Tseh So" (pp. 85–87) and (2) "Succession of Chaco Canyon Masonry Types" (pp. 88–89), by Florence M. Hawley; (3) "Stone and Other Artifacts" (pp. 90–99), (4) "Mammal and Bird Remains" (pp. 101–106), and (5) "Vegetable Remains" (pp. 107–11), all by Hibben; (6) "Subsistence" (pp. 112–14), by Brand; (7) "The Place of Tseh So in the Chaco Canyon Culture Pattern" (pp. 115–19), by Hawley. With so many cooks in the kitchen, it is only natural that some of the pudding's ingredients should be doubled. Data presented in earlier sections are repeated here.

The "Bibliography" (pp. 120–33), compiled by Brand, "is a combined working

[5] Dr. Uhlenbeck requests that the following corrigenda to his paper be noted. Page 14, lines 27: add "The independent word for *nose* is moχksisís." Page 20, last line, and page 21, line 1: cancel asétsiksko and its translation, and read "is based on a word" (instead of "are based on words"). Page 138, line 3: read "the loss of the *t*" (instead of "the loss of the *k*"). Page 142, line 27: read "omá pokána" (instead of "omí pokái"). Page 183, line 18: insert before *we* "*today*."

and general bibliography pertaining to various phases of research in the Chaco Canyon area." It is the most comprehensive yet published.

In addition there are three apendices: I. "Floor Deposition and Erosion in Chaco Canyon" (pp. 134–39) and II. "Burials from Mound 50 and Mound 51" (pp. 140–62, with summary of published data from other ruins and comments thereon), both by Donovan Senter; III. "The Refuse Dump of Mound 50" (pp. 163–72), by Dr Hawley. A "Working Bibliography for the Appendices" appears on pages 173–74.

This preliminary report finds its title, and much of its subject matter, in field-work of the General Field Session during August, 1936. Its usefulness, however, is greatly increased by inclusion of the results of related researches by the senior author and his associates. Other investigators may not agree with all the deductions offered; a few may even question some of the data, especially when these obviously have been too hastily considered. For instance, the pithouse which Douglass dates A.D. 777 should be classed as Pueblo I[1] rather than Basket Maker III, as stated (p. 115). And the skeletons exhumed by Pepper are in the American Museum of Natural History, not the United States National Museum (p. 143).

The reports certain to follow this one will be awaited by all students of Southwestern archaeology and especially by those interested in Chaco Canyon. It is to be hoped, however, that the university editors will find it possible henceforth to use a somewhat larger type and paper of greater opacity. One may properly question whether savings realized by employing 8-point type, inadequately leaded and in full-page lines, compensates for the undeniable loss of readers. In the number before us, for example, the reviewer was unable to read more than three or four pages at a sitting. And he is not alone in his protest against an editorial trend of the day. Ten-point type, leaded, is more expensive but authors and editors will be rewarded by a larger audience whenever it is used.

NEIL M. JUDD

UNITED STATES NATIONAL MUSEUM

MEXICO AND SOUTH AMERICA

Die Mexikanische Bilderhandschrift Historia Tolteca-Chichimeca: die Manuscripte 46–58bis der Nationalbibliothek in Paris. Teil I: Die Bilderschrift nebst Übersetzung. KONRAD THEODOR PREUSS AND ERNST MENGIN. (Baessler-Archiv, Beiträge zur Völkerkunde, Vol. 9. 104 pp., 25 pls., figs. RM25. Berlin: Dietrich Reimer, 1937.)

Early in the twelfth century the great unified political state and civilization in central and eastern Mexico called Tollan underwent a train of misfortunes and sank into a dark age of disintegration, petty wars, emigrations, and wandering groups that is one of the greatest mysteries and challenges confronting the cultural anthropologist and cultural historian of the Americas. For surely the roles of anthropologist and historian in the field of understanding aboriginal American culture (or cultures) cannot long be kept distinct. More and more we have to take into account a view of American cultures that has historical depth, and only by so doing will the

[1] Neil M. Judd, *Two Chaco Canyon Pit Houses* (Annual Report, Smithsonian Institution for 1922, 1924), p. 409.

bewildering wealth of detail accumulated by ethnographers, archaeologists, linguists, folklorists, reveal its significance and shape itself into a clear picture It should already be rather evident that a good many roads on the cultural map of America, though not of course all roads, lead to Mexico. And the cultural anthropologist, though in his restricted field of interest he may be concerned mainly with some particular culture far from that area, can hardly help wondering what this upheaval in a great settled civilization, numbering its millions, neighbor and sharer with the Mayan culture but much more in contact with the north, did to affect his grasp of the deeper meanings of things within his own field. It must have had many repercussions near and far.

Perhaps the most important and extensive Aztec chronicle, except the Annals of Quauhtitlan, that throws some light on this period is the Historia Tolteca-Chichimeca, now for the first time completely and reliably translated directly from and printed parallel with the original Nahuatl text. To Messrs Preuss and Mengin, the authors of this magnificent and scholarly work, all students of American culture are most indebted. The Historia was set down in Nahuatl written in the Latin alphabet not long after the Conquest, from a deposit of local history partly transmitted orally and partly fixed in a set of pictures, maps, and hieroglyphs, published in the book on twenty-five plates. It is known that these Aztecs (using this term in a general sense), the inheritors of what remained of Toltec culture, were historically-minded, and kept local annals with great care. The historical value of such annals has, I feel, been rather underestimated than the reverse. These Aztec writings are in a way similar to the Chilan Balam books of the Maya, but, I should say, much more extensive and rich. The historical implications of the tale told in the Historia are not for this review to say; they need to be dug for, but they are there. Very many sidelights are thrown on early Mexican culture: here are old customs, songs, rituals, prayers belonging to the ancient cult of the Great Spirit or Ipalnemoani, which was the religion of Quetzalcoatl that may have preceded the Aztec pantheon. The translation is on the whole excellent; and considered simply as a linguistic feat it is a colossal achievement. It is translation of the most difficult kind, with most of the difficulties surmounted in masterly fashion. It is not always as literal as it could be, though this may mean a gain in readability. Thus "centecpantli yn altepetli yn ima yn icxi mochiuhticac ym toltecatli yn iyapo yn itetepo cattca" is rendered "Zwanzig Quartiere gab es, die die Siedlung der Tolteca ausmachten;" but read rather "one palace-city extended its hands and feet which were the Toltec municipalities." This is not said in a carping spirit, for such matters are minor; the reviewer realizes that he could not have done so well, and in his own translations from the same manuscript has been more widely in error than these scholars, who have evidently spent many years in research, and have brought a wealth of learning in Mexican antiquity to bear on their task. It is said rather in the hope that more workers in this field may be stimulated to use linguistic tools, and to realize that there exists an old American literature that has things to tell us.

B. L. WHORF

YALE UNIVERSITY

Origins of the Tainan Culture, West Indies. SVEN LOVÉN. (ix, 697 pp., 19 pls., 1 map. $11.00. Göteborg: Elanders Boktryckeri Aktiebolag, 1935.)

This weighty volume is far more than a translation of Lovén's 1924 work: *Ueber die Wurzeln der Tainischen Kultur*, the text has been brought up to date to conform with the results of researches published during the intervening decade, and one hundred and sixty pages more have been added upon the topics of "Social Conditions," "Burial Customs," and "Religion." Unfortunately the recent revolutionary discoveries of Rainey and Rouse in Puerto Rico and Haiti, as yet published only in very sketchy notices, were not available to Lovén; he admits in private correspondence that these will somewhat modify his conclusions. Also he has never had the opportunity to study the large Antillean archaeological collections in this country.

The book is virtually a requisite for all research in the field of Antillean archaeology. Apparently every work with any bearing upon the subject, especially the oldest historical sources, has been digested, and the footnote references are multitudinous. Each cultural element, tangible archaeological object or trait, is treated exhaustively; its resemblances and possible connections traced throughout the Americas; and conclusions as to its point of origin, development and migration reached. Although the "Proper Tainan Culture" is limited to the islands of Puerto Rico and Española (Haiti and Santo Domingo), the cultures of all the Antilles and parts of the adjacent mainland are included in the study.

With this method of treatment, conclusions as to cultural origins are naturally scattered throughout the book, but especially considered in the first chapter on "Immigrations and Indian Elements" and summarized in forty pages at the end.

Lovén believes that there were no pre-Arawak migrations from South America, but some from Florida to the Greater Antilles: the Siboney, from the western and southern coasts of Florida, to Cuba, and a related culture to Española; another stone culture came from Georgia, probably by way of the Bahamas, to the Virgin Islands. These were on a pre-pottery horizon, and introduced rude flint cultures of late Paleolithic aspect. The Island Arawak populated the Antilles by waves from their original homes around Trinidad and Paria, Venezuela, at a rather remote period when this culture was relatively simple. Many important features of continental Arawak culture had not then been developed.

He holds the old theory of an originally wide-spread "Archaic" pottery culture; pottery of which type, mainly wide-mouthed vessels, was carried from South America by the early Arawak emigrants. Later they developed "vaulted" vessels and painted pottery in the Lesser Antilles and Puerto Rico. At first they had only celts but axes were introduced later.

The Arawak of Puerto Rico and Española, the Tainos, developed the highest Antillean culture, adopting some elements from the earlier Siboney. This Tainan culture later affected the Virgin Islands and the eastern part of Cuba. The culture of Jamaica always remained essentially archaic, little affected by later developments and influences. Influences were constantly felt from the mainland: elements

such as high-backed seats and snuffing-tubes were adopted from the Colombian highlands, and other elements, generally those of higher cultural aspects, including the ball-game and the tongue-drum, from Yucatan. The ceramics were considerably influenced from Florida.

The Arawak of the Lesser Antilles, the Igneris, did not achieve so high a plane of culture as the Tainos, and were more affected by later influences from South America. There is a close resemblance between the pottery of the Lower Amazon and that of the Lesser Antilles. The Carib conquest of these islands was at a very late date and had slight influence on the archaeology; most of the so-called Carib objects from the Lesser Antilles are Ignerian. The Carib hardly touched the Greater Antilles.

Most of the above conclusions are orthodox or acceptable. The Floridian origin of the Siboney is not universally accepted as proved, as Lovén assumes. Regarding the influences from highland Colombia, Yucatan, and Florida, while he presents logical arguments, the problems need more intensive study by, or with the help of, archaeologists expert in these fields. The temporal horizon of each element on the mainland needs to be taken into consideration, as well as the negative evidence of the possible traits that were not transmitted. The greatest stumbling-block is the relative or absolute absence of the elements in the intervening regions. For instance, there seems to be no trace of Maya influence in Cuba, and the evidence of any trade between Cuba and Yucatan is of the slimmest nature.

The format and typography, like those of all Swedish publications, are perfect; the English translation good on the whole but occasionally poor and confusing, with some orthographical errors. Although the table of contents is very detailed, such a large work needs an index. In addition to the voluminous footnote references, the bibliography should have been compiled at the end

J. ALDEN MASON

UNIVERSITY OF PENNSYLVANIA MUSEUM

Les Indiens Uro-Čipaya de Carangas. A. MÉTRAUX. (Journal, Société des Américanistes, n.s., Vol. 27, pp. 111–28, 325–415, 1935; Vol. 28, pp. 155–207, 337–94, 1936.)

The Uro-Chipaya occupy a region of about 100 square kilometers in one of the drabest and least productive parts of the Bolivian high plateau in the southern part of the Province of Carangas. The tribe in 1931 numbered "not more than 350 individuals," practically all of whom live at least part of the year in permanent habitations in the village of Chipaya. The principal purpose of the expedition, as stated by the author, was to recover what remains of the Uro language, fast dying out by reason of the encroachment of Aymara, Quichua, and Spanish. The fourth part of the report is devoted to a short discussion of the language and a vocabulary carefully annotated with respect to borrowed words. The first three portions of the report deal with ethnography of the Chipaya, with the greatest space given to religion and material culture. The point of view is predominantly that of com-

parative ethnography and the description procedes in most parts against a workmanlike background of bibliographic reference to the general cultural situation of the Andean plateau.

As for material culture

there is nothing in the present industry of these Indians which can be considered as properly belonging to them uniquely or as representing a survival of their former civilization. All their material goods are those known from ancient or modern Aymaras or of general provenience of the Indians of the Andean high plateau. . . . The interest of the Chipaya tribe therefore does not reside in their originality of material culture, but in the fact that their relative isolation has permitted them to retain many objects and techniques which have disappeared elsewhere. It is as a relict of the Inca rural life that they interest us and not as representatives of an isolated ethnic group (Vol. 28, p. 204).

The same statement is applicable to all other aspects of the culture, except language, in the light of this report.

Chipaya is located at an altitude of about 12,000 feet (3700 m.). The soil is fit for little but grazing sheep and llamas. Periodic inundations with crude impounding of water by man prevent the region from being an absolute desert. It is clearly a refuge area, with Aymaras occupying the more favorable territories on all sides. The village (or tribe) is divided socially, physically, and numerically into two almost equal parts, or sayas, which are not necessarily exogamous; the sayas function as two almost independent units; considerable rivalry exists among them, and they come together only at certain religious feasts and for political purposes concerned with the Bolivian government. One saya contains a subdivision, warta aylu. Métraux sees suggestions of the aboriginal Andean dual division (as exemplified at Cuzco) and the ayllu of Peru in this social organization. The tribe as a whole unites politically under a corregidor (a comparatively recent office) and religiously in maintaining a church. Marriage takes place in the church; descent is patrilineal; marriage is matrilocal until the birth of the first child. Religion is essentially pagan, a few Spanish phrases and Saints' names representing the only influence of Catholicism.

The affinities between Chipaya and Aymara, especially in the religious domain, are so close that we can consider the Uro of Carangas as the last representatives of the former civilization of the Bolivian *puna*. . . . If the "superstitions" of the Aymara and Chipaya are the same, they are preserved among the latter in a purer and more complete form (Vol. 27, p. 327).

Many other Chipaya traits of pre-colombian Andean provenience, which we have no space to mention here, are discussed.

One gathers, in short, from this report that the Uro-Chipaya culture represents one of the purest remnants of the rural culture of the Inca empire, and that the Uro have obtained most of this through contact with the neighboring Inca-ized Aymara. Practically nothing is said concerning the problem of the ultimate provenience of the Uro peoples themselves and the entire, somewhat mooted, question of their Arawak connections is referred to only in passing (Vol. 27, p. 402). The report is to be commended, especially for its meticulousness.

JOHN GILLIN

OHIO STATE UNIVERSITY

AFRICA

Witchcraft, Oracles and Magic Among the Azande. E. E. EVANS-PRITCHARD. (xxv, 558 pp., 33 pls., 9 figs. $7.50. New York: Oxford University Press, 1937.)

As we delve more deeply into the problems of culture, society, and their relation to the individual it becomes increasingly plain that most of the ethnological reports now extant constitute little more than preliminary surveys. This book is an excellent example of the direction in which anthropological literature is now moving. It devotes five hundred and forty-four pages to a discussion of only certain aspects of Azande supernaturalism, and we must await the appearance of other volumes now projected to gain any picture of Azande existence as a whole or even orient this material to the rest of native life. However, we may feel confident that when these volumes have appeared we will have a more complete account of Azande life than of that of any other uncivilized people. Furthermore, this account will not be confused by sweeping generalizations about "primitive man."

Even without its companion volumes this book is of the utmost importance. It provides a datum point for the comparison and, in part, for the analysis of other African systems of supernaturalism. It also throws a flood of light upon the workings of the Azande mind. As the author repeatedly points out, this whole system of magic is a closed one, containing within itself the explanations for all failures and thus insulated from the impact of experience. Given his premises, the logic of the Azande magician is as perfect as that of a worker in non-Euclidian geometry. Lastly, it is a record of field work whose techniques could scarcely be better presented with convincing frankness. The author failed to get information on a very few minor points and says so with a candor which is reassuring. Every conclusion is supported by a wealth of case material and if there is any error it is on the side of overskepticism.

RALPH LINTON

COLUMBIA UNIVERSITY

A Handbook of Tswana Law and Custom. I. SCHAPERA. (xiv, 326 pp., map. $7.00. New York: Oxford University Press, 1938.)

Law and Authority in a Nigerian Tribe: a Study in Indirect Rule. C. K. MEEK. (xvi, 372 pp., 2 maps. $6.00. New York: Oxford University Press, 1937.)

Both these works are a further contribution to the cooperation of ethnological field work and the practical problems of British administration in Africa. Such works showing "Anthropology in Action" have been familiar in the past decade, and are likely to increase in number and scope because of a growing interest in the practical application of ethnological method to problems of social and economic adjustment between Europeans and Africans.

These works of Dr I. Schapera and Dr C. K. Meek deal respectively with the Bechuanaland Protectorate of South Africa and Nigeria in west Africa. Students who are unfamiliar with recent problems and methods of ethnology in relation to

administration will be helped by a perusal of general introductory works such as L. P. Mair's *Native Policies in Africa* (London, 1936), and D. Westermann's *The African Today* (London, 1934).

Dr Schapera's work is confined almost entirely to the presentation of a detailed summary of social structure and law among the Tswana. A future publication will deal with Tswana government and law as actually seen in practice. The work consists of a vast amount of well-classified factual material, beginning with detailed analysis of social structure, sources of Tswana law, and the principles of tribal constitution. Family law, the law of property, law of contract, and legal wrongs form the headings of succeeding chapters. The final chapter on procedure contains a valuable verbatim account of an actual trial, with questions and answers. Appendixes deal with genealogical tables of Tswana royal families and lists of Tswana age-regiments.

Dr Meek's contribution follows a similar outline in which he presents an account of the history and environment of the Ibo tribe. A clear outline map is very helpful in locating the subtribes. Other chapters of importance deal with sacred sanctions of law, social and political structure, titles, age-grades, law and its administration, marriage laws, and laws of inheritance.

The main difference of presentation employed by the two authors is shown in Meek's final summary of the practical bearing of ethnological study on present-day problems of Ibo administration. British authorities have carried the principle of Indirect Rule to the highest point of its development; such rule is a breach by which people may pass from the old culture to the new. Meek gives a working definition and an explanation of what he means by Indirect Rule under which "the function of the controlling power becomes that of the teacher and trustee rather than that of a master and a dictator."

After completing an historical survey dealing with experiments in taxation and law court procedure, Meek asks what lessons of practical value can be gleaned from the ethnological data, considered in conjunction with historical events since the year 1900 A.D.

Of primary importance is the subject of kinship grouping; this gives the basic unit of law and authority which is vested in a village council. Such a society, though emphasizing communal responsibility, gave scope for individual development. Native administration must continue to employ these basic structures.

In the indigenous system of law notable families, priests, and titled men were of importance, but the Ibo system never favored an oligarchy based on wealth and title alone. Ibo law employed methods of retaliation and compensation as instruments for maintaining social equilibrium. Ibo law shows points of correspondence with the European system, but there exist many important divergencies in European and Ibo attitudes toward witchcraft, adultery, theft, and homicide.

In Ibo society communal responsibility through families and age-grades was stressed, but today the English conception of complete individual responsibility is being recognized in all Ibo courts.

Sanctions in Ibo society were religious and magical. The earth deity Ala was a guardian of morality, and the ancestral spirits too were custodians of conduct Meek asks, "What will happen when the old standards decline?" but he foresees a natural and easy adjustment. He favors cultivation of judicial power among village councils, which should be regarded as at least preliminary courts or clearing houses from which the more serious cases can be passed on to European authority. Further research, especially on the system of land tenure, is necessary.

Treatment of witchcraft presents a serious problem, for the Ibo concept regards the witch-doctor as a safeguard against the anti-social use of magic, whereas, on the contrary, European law condemns and punishes with great severity the finding and execution of witches.

For the future Meek predicts that the Ibo system of magical and religious sanctions will decline, and the law will tend to become more secularized. There is some fear that educated native lawyers will use their knowledge to exploit their own people, but care must be taken that superficial education does not destroy the loyalties that now unite an Ibo community. Educational systems must not neglect the training of women.

Both Meek and Schapera have done well to avoid the mass of legislative detail which have rendered certain works of this kind extremely tedious. Both authors have presented their data without asking the reader to follow a wearisome repetition of Parliamentary acts, reports, orders in council, and the amendments thereto.

Borrowing from Lord Lugard's preface to Meek's work, one may say that the two volumes reviewed here are an exhaustive account of the social institutions and in the case of Meek's work, there is a description of the way in which anthropological knowledge was successfully applied to the solution of problems of administration

WILFRID DYSON HAMBLY

FIELD MUSEUM OF NATURAL HISTORY

OCEANIA

Papuans of the Trans-Fly. F. E. WILLIAMS. (xxxvi, 452 pp., front., 19 pls., 36 figs map. 30s. Oxford: Clarendon Press, 1936.)

Mr Williams is to be congratulated on having carried through a remarkable and most difficult piece of work requiring an indifference to physical discomfort approaching heroism, for the Moreland District of (British) Papua, formerly British New Guinea, extending from the Fly River to the Anglo-Dutch boundary, is one of the most unpleasant areas of the habitable globe. Mr Williams humorously, to one who has visited it, calls it a country "of few attractions." A vast swamp in the wet season and for the most part parched waterless land in the dry, it has this advantage to the anthropologist that it has suffered little foreign and no direct missionary influence. Nevertheless the country is difficult from the standpoint of anthropologic study, for it is divided into a considerable number of language areas and small weak "tribal" groups which in the past have been disorganized by raiding parties

the Tugeri (Marindanim) from beyond the Dutch border. To judge from the variation shown in their photographs these people may well be of mixed origin, and this view is developed in the introduction contributed by Haddon, who thinks that at least two strata can be determined. Whether this is so or not, they present certain cultural peculiarities, namely the drinking of kava and the practice of sodomy, the latter especially in connection with the initiation of youths. In this volume it is the culture of the Keraki tribe that is in the main described.

The majority of the population are rather small men of moderate build; the average height of 61 Keraki being 1.61 metres, average weight 113 lbs. and cephalic index 74.2. Williams gives measurements of other groups, in which the cephalic index varies from 72 to 75.2, and in one group, the Wiram, the stature reaches 1.67 metres. With regard to Haddon's two strata of population, it is worth noting that over the whole area westwards from the Oriomo River there is the legend that the original inhabitants lived in a tree without the knowledge of fire, from which condition they were delivered by a hero who came from the north, who gave the people new food plants. All over this country the new elements of culture are associated with definitely nomad people. There is also a legend of two brothers, one who might perhaps be regarded as Papuan and the other as Melanesian, i.e., from the description of their appearance.

Kava drinking occurs not only among these Trans-Fly peoples but also among the Marindanim and the Masingara, while as Landtman points out it plays an important part among the Kiwai in some of the ceremonies. It is also drunk in north New Guinea, at Astrolabe Bay and the Huon Peninsula.[1] It should be added that the Trans-Fly people have the bull-roarer, and initiation ceremonies. They also have a form of wooden digging stick with a geometrical form of ornament which superficially seems not very different from that of the area of the Fly estuary.

In considering the culture of the Trans-Fly people it is to be remembered that according to Wirz (the authority on the Tugeri) the Tugeri consider the almost uninhabited coastal area from the Bensbach eastwards to the Wasi-Kussa to be the home of their ancestors. Indeed they claim it as their own land, though this has not led them to attempt to settle there or prevented their exterminating as far as possible the wretched Trans-Fly natives of this area. They did, however, sometimes make temporary settlements in this area.

As already hinted the tribes are largely dialectical units, and tribal names are not village or district names. Socially the village is the ordinary unit, though a number may combine for feasts, especially initiation, and for raids. The Morehead area, including Keraki, is divided into three patrilineal groups forming two exogamous moieties, which theoretically have faces of different shape, though Mr Williams could not confirm this.

C. G. SELIGMAN

TOOT BALDON, OXFORD, ENGLAND

[1] Haddon, Man, 1916, No. 87.

Studies in Indonesian Culture: I. Oirata, a Timorese Settlement on Kisar. J. P. B. DE JOSSELIN DE JONG. (Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam, Afdeeling Letterkunde, n.r., Vol. 39. 289 pp. Amsterdam: N. V. Noord-Hollandsche Uitgevers-Maatschappij, 1937.)

The author of this volume, known to American anthropologists principally for his Blackfoot researches, spent a year traveling through the eastern part of the Indonesian area, stopping off for periods ranging from a few weeks to four months in five of the islands visited. His purpose in making this trip was twofold: "firstly to furnish a reliable contribution to our very scanty knowledge of the cultures and languages concerned, and secondly to reconnoitre this ethnological field of study with a view to the possibilities and requirements of future research work." The results of his survey he intends to publish in a series of monographs under the general title *Studies in Indonesian Culture.* The present book is the first of the projected series. It embodies the material collected during five weeks of field study in Oirata, a village in the southeastern coastal region of the island of Kisar, which lies off the northeastern tip of Timor. The people of the village are descendants of immigrants who came over to Kisar from Timor in the first half of the eighteenth century.

Having only a short time at his disposal, the author decided to investigate the culture by studying the language. His statement of faith in this method is as follows:

> As any field worker knows, or ought to know, there is no better way of approach to a culture than the study of the language. In many cases, especially when the explorer has to make the very most of his time, it is the only possible way. For, even when the other characteristic elements of culture are entirely unapproachable, for the time being, owing to distrust or fear or shame or other obstructive feelings and considerations on the part of the native community, the language nevertheless remains accessible all of the time: the explorer's seriously applying himself to its study is—so far as my experience goes—never distrusted but is, on the contrary, one of the best ways to establish friendly relations, disarming suspicion, overcoming false shame, and getting the better of whatever disguised or open counter-action there may be. At any time, moreover, language is the indispensable way of approach to the unwritten literature which embodies the essentials of the culture.

The consequence of the application of this method is that the report concentrates primarily on the linguistic aspects of the culture. Almost half of the book is taken up with phonetical and grammatical notes and an extensive vocabulary of native words. The remainder, except for a brief analysis of the social organization and a population register of the community, consists of a presentation, in Oirata and English, of the principal tribal myth, followed by an "ethnological analysis" of the story. The narrative describes the creation of the world and man, and follows the wanderings and adventures of the earliest progenitors of the Oirata people during the mythical period between the creation and the founding of the present village by the human descendants of the legendary ancestors. It ends with the arrival of "the Company" (the Hollanders) in the island.

Since eastern Indonesia is still a relatively untouched area ethnographically, and since Kisar is one of the islands least represented in the literature on the archipelago, the present reviewer, who admittedly is more interested in the general

aspects of East Indian culture than in its purely linguistic and legendary features, would have preferred a more comprehensive, even though perhaps shallower, discussion of Kisarese culture as a whole to the treatise we have here, which is, after all, primarily a report on the language and mythology of one community in the island. Nevertheless, personal biases aside, the material presented in the volume is significant and competently handled. Forthcoming publications in the author's series on eastern Indonesia will be awaited with interest.

RAYMOND KENNEDY

YALE UNIVERSITY

A Preliminary Consideration of Aboriginal Australian Decorative Art. DANIEL SUTHERLAND DAVIDSON. (Memoirs, American Philosophical Society, Vol. 9. xiii, 147 pp., 91 figs. $2.00. Philadelphia: University of Pennsylvania Press, 1937.)

L'Art des Iles Marquises. WILLOWDEAN C. HANDY. (55 pp., 20 pls., 24 figs. 60 fr. Paris: Les Editions d'Art et d'Histoire, 1938.)

Dr Davidson's monograph is called preliminary by way of emphasizing the need of further research. For all the prominence of Australian culture in anthropological literature, little is on record about symbolism in graphic art, techniques of craftsmanship, or the place of art in the whole culture. The author gives some glimpses: restriction of the art to men, power attributed to totemic designs on certain boomerangs, association of the concentric circles motive with sacred objects. But his emphasis is on distribution of design elements as a clue to history.

The study is confined in the main to the decoration of portable artifacts, which is essentially geometric. Another kind of decorative art, stylized portrayal of natural objects by painting or incision on the walls of rock shelters, has been treated separately,[1] and is mentioned here only in the exceptional instances where naturalistic motives appear on artifacts, apparently by transference from the rock designs. After a systematic description, a number of distributions are presented and interpreted. The general conclusion is that "the continent seems basically to be an art unit." But five main design areas and several sub-areas are brought out. It is characteristic of the author's careful empiricism that the areas overlap, that their transitory character is insisted on, and that the concluding section again emphasizes the promise of the field for further investigation. Although Australian art is extremely simple, it is still alive and changing.

Strikingly different both in subject matter and treatment is Mrs Handy's essay on the elaborate Marquesan art. A new book on this subject braves comparison with the monumental study of Karl von den Steinen.[2] On the whole, this one stands the test. It is based on original field study, especially of the tattooing which is so prominent in Marquesan art that both authors have devoted whole volumes to it.[3]

[1] D. S. Davidson, *Aboriginal Australian and Tasmanian Rock Carvings and Paintings* (Memoirs, American Philosophical Society, Vol. 5, Philadelphia, 1936).

[2] Karl von den Steinen, *Die Marquesaner und ihre Kunst* (3 vols., Berlin, 1925–1928).

[3] Steinen, *op. cit.;* Willowdean C. Handy, *Tattooing in the Marquesas* (Bulletin, B. P. Bishop Museum, No. 1, 1923).

Moreover, the main objectives of the two works differ. While Steinen aimed, by meticulous analysis of decorative detail, to trace the historical development of the style, Mrs Handy's primary purpose is to show the role of graphic art in native life. Though Marquesan art is largely a thing of the past, she achieves a vivid and sympathetic picture.

The strength of the work is in this functional coordination, and in suggestion, rather than in historical analysis. When it comes to interpreting the designs, Mrs Handy suggests a number of sources in nature besides the two—human figure and the crisscross of plaited work—that Steinen regarded as primary. She also brings out a greater variety of other influences. Data assembled in support of these interpretations are rather meager. Yet Mrs Handy leaves the impression that while Steinen may well have brought out a fundamental process, he has hardly accounted for all of such a wayward growth as an art style.

A final comparative section seems to overstress the possible influence of distant lands. Peru and Melanesia are suggested as sources of diffusion. Resemblances with Northwest Coast North America are attributed, tentatively and not convincingly, to voyages of Marquesans in American and European whalers. Resemblances even with China are mentioned, but are dropped non-committally. None of these possibilities can be categorically dismissed. But at least the concluding emphasis on such long shots is out of character with the evidence for local specialization that pervades the body of the book.

E. G. BURROWS

HONOLULU, HAWAII

ASIA

Typen chinesischer Volksmärchen. WOLFRAM EBERHARD. (437 pp. Helsingfors: Suomalainen Tiedeakatemia [Academia Scientiarum Fennica], 1937.)

Chinese Fairy Tales and Folk Tales. WOLFRAM EBERHARD. (Desmond Parsons, tr.) (xiv, 304 pp. 10s.6d. London: Kegan Paul, French, Trubner and Co.)

These two books are an extremely valuable contribution to a field of study hitherto hardly cultivated. The 99 Chinese merry tales published in the original in Peking (1901) by Baron Guido Vitale belong for the most part to the category termed anecdotes and *Schwänke* by Dr Eberhard. A more significant contribution was the *Narrations Populaires* by Father Leon Wieger, published as Nos. 5 and 6 of his *Rudiments.*[1] The interesting volume entitled *Chinesische Maerchen,* published by Richard Wilhelm,[2] promises more than it really gives; there are comparatively few genuine fairy tales in this collection, most of the otherwise attractive stories are lacking those characteristics essential to this type of literature.

About ten years ago a group of young Chinese folklorists started working the hitherto unexploited mine of Chinese folk tales and fairy tales. But not more than about 3000 stories have been collected in an area about as large as Europe excluding Russia. Nevertheless, Eberhard thinks that it is already possible to make an in-

[1] Ho-chien-pu, 1903. [2] Jena, 1914.

ventory of the most important types of Chinese fairy tales, but he supposes that the boundaries of their distribution cannot be clearly drawn as yet. It appears that the Chinese folklorists devoted themselves chiefly to the task of collecting materials, which, of course, is the first step. Only one fairy tale, the story of Meng Chiang, has been studied in all its ramifications and transformations. The result is a book of three volumes: *Meng Chiang nü ku-shih yen-chiu-chi*, by Ku Chieh-Kang.[3]

Dr Eberhard's own investigations, which were enriched through material collected and placed at his disposal by Mr Ts'ao Sung-yeh, are based upon contemporary folk tales, including such types as legends, drolleries, fables, and even anecdotes and stories. The motifs appear to be very constant, but their integration into a tale is comparatively variable. The creation of fairy tales has not yet died out in China.

The author has been striving to eliminate all material coming from literary sources, even if the stories built up with it are living in the mouths of the people. This applies to anecdotes, legends, sagas, theatricals, and so-called "dead fairy tales" which are no longer known and told by the people. This limitation is, of course, very desirable, but also very difficult, and in many cases at the present stage of our research it will not be easy to draw the lines of demarcation very definitely. That matters very little. The principle is sound and the only one to follow. The elaborate typology gives 215 types of fairy tales and 31 types of drolleries (*Schwänke*). The author indicates every variant and transformation, and states his sources very carefully. He shows much acumen in demarcating the various types. A. Aarne's scheme is only loosely adhered to. Among the *Schwänke* those of which Hsü Wên-ch'ang, the Chinese Owlglass, the Balbn Sang of the Lamaist lore are the most prominent. Dr Eberhard devotes about fifty pages to an inventory of stories connected with this famous name (see also *Folk Tales and Fairy Tales*, Nos. 116–122, pp. 272–76).

It is impossible to give an idea of the rich contents of both books in a brief review. The whole shimmering tissue of popular fiction woven by the Chinese mind, in which the very soul of that wonderful people reflects itself and into which it escapes from oftentimes too grim a reality, is spread out before us. Both books supplement each other, the one providing fascinating reading matter for hours of leisure, the other solving and putting problems for working time. Eberhard is right in looking for solution primarily in the area within the Great Wall. However, China, though far, far from owing everything to Buddhism, still has a considerable debt of gratitude to it. This is conspicuous in legends more than elsewhere. Take, for instance, the curious story of the Eighteen Lohans (*Typen*, p. 190, Type No. 131 = *Folk Tales*, No. 86, p. 242: "How the Eighteen Lohans Became Immortal"). The reformed robber is a well-known type of edifying story and we do not need look for outside impulses for its conception. But here it seems to me that the very etymology of the word may have prompted the motif. Pali: arihan, explained by popular etymology as "foe-killer;" > Sanscrit: arhan > Chinese (a-)lo-han is misinterpreted as sha-tse, "Killer of the robbers" (i.e., the passions incited by the senses), and also as meaning

[3] Canton: Sun Yat Sen University, 1928.

the killing robber. The question whether a lo-han can sin at all is a favorite subject in disputations. It seems that the possibility of a double entendu has given rise to the legend. There are numerous instances of a similar type, but to point them out was not within the scope of the work.

The conclusions Eberhard draws from his research are particularly interesting. He states that the assertion that fairy tales reflect the oldest tradition of a people is not true for China without qualification. Whereas the deluge version of 2000 years ago has almost all the motifs of the recent versions, the Meng Chiang legend in its form of 2500 years ago is *toto coelo* different from that of our own times. Fox stories, so characteristic for and preponderant in the literary tradition, do not play so important a part in folk lore (p. 373). The cow (buffalo), rather than the dragon, was the original deity of the rivers.

Very remarkable is the attempt to assign the various types of tales to certain cultural areas. Eberhard distinguishes four areas of southern Chinese civilizations: coastal or Yüeh-civilization, southern or Ch'u-civilization, Tangut (or pro-Tibetan) civilization, and the more or less hypothetical Li-civilization. This calls, of course, for corroboration.

In the last paragraph of his results, Eberhard deals with the fairy tales in their relations to stages of civilization.

The significance of these two books lies in the fact that they lay, for the first time, a solid ground to build upon. That justifies the hope that the young author, who already has made his debut as a sinologue by his excellent studies in Chinese astronomy, will furnish us with more results of his thorough and methodical research.

Figures designating the type of tales placed on top of the pages would have added to the convenience, and a more careful use of the German language to the pleasure of the reader.

FERDINAND LESSING

UNIVERSITY OF CALIFORNIA

China at Work. RUDOLF P. HOMMEL. (x, 366 pp. 535 illus. $5.00. New York: John Day.)

This is one of the books which for me it is a special pleasure to review. By a very strange coincidence the title of the book is identical with the title of an exhibition I put on in the Ethnological Museum in Berlin several years ago. I wonder how much more effective that exhibition would have been if I had had that book then at my disposal.

Problems are lying in the street; one must only have the eyes to find them. The author, now, is one of those blessed persons who do have eyes. He has a mind for the significance of the insignificant. I recall with pleasure what the engineer and the simple workmen discovered in the exhibition just mentioned, when scanning the tools with the trained eyes of an expert. They never could stop wondering how the Chinese, with these simple and oftentimes rather crude tools could make such

elaborate things. From the way the tools were used they drew the most interesting conclusions, which had escaped me. I considered then the idea of starting a greater collection of utensils and implements than that we had in our museum, and to publish them; but now I am happy that I gave up that idea because I would not have been able to do it as intelligently as Mr Hommel has.

This book is indispensable to any student of Chinese material civilization and of comparative ethnology, as well as to every curator of an anthropological museum which includes the Far East.

I wonder what conclusions may be drawn from a comparative study of these implements? So far as I know, Paul Leser's *Westöstliche Landwirtschaft*[1] is the only attempt in this direction. Mr Hommel's book gives ample material for further contributions to this fascinating field, in which the late Dr B. Laufer was such an outstanding representative.

Most of the illustrations are good or at least sufficient, the drawings are a great help, measurements are given throughout, and an index facilitates the use of the rich material.

Every curator of Far Eastern collections should check his stock and complete it with the help of this book, if he can afford to do so, before it is too late. Western materials, tools, and machinery have already changed the situation, even in remote areas. But I think it is still possible to acquire good used objects (this is essential) at low cost.

FERDINAND LESSING

UNIVERSITY OF CALIFORNIA

The Alishar Hüyuk; Seasons of 1930–32; Part III. HANS HENNING VON DER OSTEN. (Publications, Oriental Institute, Vol. 30. xxiv, 496 pp., 15 pls., 289 figs. Chicago: University of Chicago Press, 1937.)

The final report on the Oriental Institute's excavations at Alishar in central Asia Minor consists of three impressive volumes each dealing with certain cultural epochs of the site, beginning with the Chalcolithic and continuing through the Copper, Bronze, Hittite, and subsequent periods which terminate with the Osmanli Turkish stratum. The present volume, the third of the series, reports from the second half of the first millenium B.C. and onward, and contains the general summaries, interpretations, and analyses of the cultural, cranial, and other data obtained at the site during the seasons 1930–32. Results of the 1927 season under Dr von der Osten and Dr E. F. Schmidt and of the 1928–29 seasons under Schmidt have been previously published.

As before, the main objective was the great citadel mound and its surrounding terraces where the identification of culture levels based on ceramic changes was continued and a Chalcolithic culture, previously considered Neolithic, containing ceramic types comparable to those of early "Black Earth" and Danubian wares of eastern Europe was found. The Chalcolithic finds may not be representative because

[1] *Festschrift P. Wilh. Schmidt*, Vienna.

the excavated area for the period was very limited, but the pottery, mostly a dark slipped ware, was of high order and indicated primary development elsewhere. The extensive use of copper and a red-slipped ware identified Copper Age strata designated in the 1928–29 report as earliest Alishar, or Alishar I. A cylinder seal analogous to a seal of Jemdet Nasr type from Khafajah, Iraq, dated the beginning of this period to about 3,000 B.C. and the analogy of certain ceramic forms to those of Troy II to III gave the hazardous dating of about 2,300 B.C. for its end. Flexed burials in large jars appeared intramurally. Well founded is von der Osten's suggestion that the Copper Age culture at Alishar was due to dissemination or to migration from south Caucasus regions where early metal industry centered and pottery generic to that of Alishar occurs.

A handmade painted pottery occurring in strata below wheelmade monochrome ware indicative of the period of the Hittite Empires provided reason for a correction of sequence of the two wares from the report of 1928–29, in which the monochrome stratum was assigned to Alishar II and the painted pottery to Alishar III. The designation of Early Bronze Age for the period of this painted pottery is arbitrary, since tin content in the copper objects was insufficient to satisfy the term and copper with sufficient tin was found in Copper Age strata. There seems little to justify ascribing the Early Bronze Age to migration since the culture is a continuation from the preceding plus changes in the pottery which could be ascribed to local causes or to alien contact; and of the three crania from this level only one indicates radical change from long to round head form.

The finding at Bogazköy to the north of Alishar and at Alishar of a few cuneiform tablets of presumably Cappadocian provenience and of not too certain date in association with wheelmade monochrome ware seems inadequate to define an "Old Hittite Empire" of 2,000 B.C. To us the term Hittite applies to a ruling minority of the thirteenth and fourteenth centuries B.C. and not to a general culture extended in space and time in Asia Minor. Excavations of 1931 at Bogazköy have demonstrated that former Alishar IV, assigned in the 1928–29 report to the New Hittite Empire, belongs to the Phrygian period following the Hittites. Iron, scanty in the period of the Hittites, became common in Phrygian levels. The respective cultures subsequent to the Phrygian seem not representative of their periods in Asia Minor nor have all their strata at Alishar been chronologically subdivided.

After a most thorough treatment of the fifty-three crania found in the eight culture periods at Alishar Dr Krogman, a co-author, makes a contribution of fundamental importance. By summarizing the facts and theories relating to present day and to Neolithic European and Asiatic races and to Paleolithic man, Dr Krogman demonstrates origins and interrelations of main racial groupings of Europe and elsewhere. Possibilities of checking racial movements with culture trend in ethnic crossroads such as Anatolia are greatly increased by works of this character. Other authorities, also contributors to this volume, have made valuable identifications and analyses of pottery, metal, glass, and many other excavated materials.

The format is very commendable with its many figures, plans, maps, and charts, each proximal to its textual reference. Admirable are the pottery color plates

without which no archaeological report based on ceramics would be complete. A unified bibliography for the cultural material would facilitate reference utility of the volume. One can hardly accept von der Osten's remarks on the seemingly all-prevailing influence of geographic environment on culture, and the inclusion of a political history of Asia Minor in an archaeological report tends to divert the perspective from cultural issues. On the other hand the author has admirably applied to his interpretations of the Alishar cultures his wide knowledge and familiarity of data from the many other archaeological sites of the region, thus allowing him, among other things, to identify archaeological materials found at Alishar with certain specific ethnic groups known from other sites. Dr von der Osten has greatly widened the pathways to better understanding of the Anatolian cultures and it is to be hoped that the work begun at Alishar may be continued.

HENRY A. CAREY

NEW YORK CITY

PHYSICAL ANTHROPOLOGY

Zur Rassenkunde der Jugoslauen. B. ŠKERLJ. (Zeitschrift für Rassenkunde, Vol. 7, pp. 143–81, 1938.)

Investigations were conducted on 871 men and women who in 1933 had assembled for sport exercises in the city of Ljubljana. Their ages ranged from 18–26 years. The results lead to the deduction that the human first of all appears as a man or a woman, then as a constitutional, and finally as a racial type. On the basis of this assumption the following trigrouping is proposed:

Male	Leptosome	Eurafrican
Indifferent	Indifferent	Dinotaurian
Female	Eurysome	Eurasiatic

The four principal somatological features considered were stature, cephalic index, eye and hair color, each applied to the ten racial subgroups which in turn were recognized as showing metrical and descriptive affinities with one another. Additional features comprised a variety of other observations so as to round out the somatological interpretation.

The following somatic race type description is based on the author's racial diagnoses as represented in one of his recent papers.[1] He concludes that in Jugoslavia all the European races are recognized, but that the racial tenor is held by the Dinarids, Alparmenids (Alpids and Armenids), and Savids (North Jugoslavics), with an emphasis on the Dinarids. In the coastal regions, however, the Atlantids are the prevailing type.

Mesocephaly rooted more or less decisively in dolichocephaly predominates in the Nordid, Mediterranean, and Atlantid elements, while in all the other racial groups brachycephaly is most pronounced. Stature varies according to type and location.

[1] *Die rassische Gliederung der Menschheit* (Zeitschrift für Rassenkunde, Vol. 4, pp. 284–306, 1936).

The author's type diagnosis on metrical and descriptive evidence is exceedingly competent and representative, and, by virtue of painstaking and exact methods, affords a valuable means of anthropological interpretation of Jugoslavian racial composition.

BRUNO OETTEKING

COLUMBIA UNIVERSITY

The Negro's Struggle for Survival. S. J. HOLMES. (xii, 296 pp., 10 figs. $3.00. Berkeley: University of California Press, 1937.)

No one interested in the Negro-White problems in this country or simply in population dynamics can fail to find Professor Holmes' volume on the biological trend of the American Negro of considerable importance. To an anthropologist who is slowly becoming inured to the great mass of literature giving static cross-sections of populations and cultures, this dynamic picture of an important and large racial group becomes also extremely refreshing.

In this book which by the way is very readable, Professor Holmes tackles the problem of the biological future of the Negroes in the United States. He treats this subject from a Darwinian viewpoint as the struggle of two rival species, Negroes and Whites, inhabiting the same territory. And it is his thesis that "among rival groups, the one with the greater preponderance of births over deaths, or the greater net fertility, will naturally prevail." So it is that in the main this volume contains a very careful and sober discussion of the history of the Negro population growth in this country, the question of the rates of natural increase among the Negroes, the trend of Negro mortality, birth rates, infant mortality, immunity and susceptibility to disease, the causes and biological effects of Negro migration in different sections of the United States, the results of race mixture, and the extent of miscegnation. Much of this pertinent data is presented with the assistance of a liberal allowance of clear and well-arranged statistical tables scattered throughout the text, and in order not to make the reading too confusing a number of such tables are relegated to the appendix where they may be consulted when necessary.

Certain interesting conclusions are derived from this analysis by the author, some of which may be briefly mentioned here. For one thing, it appears that the rates of natural increase of whites and blacks in the United States have become more nearly equal at the present time than they were in previous decades. This may be in part ascribed to the very rapid growth of the Negro population in the decade between 1920 and 1930. In addition Holmes will have us believe that "it is not impossible that in the near future the Negroes may be increasing more rapidly than the whites."

Actually whether or not the Negro population will increase or decrease relative to the whites, Holmes says depends on many factors. Of no small importance is the future course of economic development and policy in this country; the trend of the government policy towards immigration of alien peoples; the general decline of the birth rates among whites; the recent fall of the birth rate in the rural whites of the south; the relatively slow reduction in the fertility of the urban Negro population; the maintenance by the Negro of a more favorable balance of births and deaths

compared with the whites; the much further reduction in infant and child mortality in the Negro population owing to recent advances in the medical sciences and in public health administration; the problem of the control of venereal diseases among the Negroes; the reduction in mortality in the Negro population with improved educational and economic status; and the fast growing sense of responsibility towards the promotion of the welfare of the Negro population.

Thus it can be seen that this volume contains a plethora of food for thought, and it is the opinion of this reviewer that it merits the close attention of both social and physical anthropologists.

CARL C. SELTZER

HARVARD UNIVERSITY

GENERAL

Lehrbuch der Vòlkerkunde, unter Mitwirkung von Fachgenossen. KONRAD THEODOR PREUSS (ed.). (viii, 466 pp., illus. RM. 25. Stuttgart: Ferdinand Enke, 1937.)

This cooperative effort is essentially a handbook or guide book to the realm of ethnology, rather than a systemic textbook. There is a vast range of topics within the fields of music, language, material culture, decorative art, social life, law, religion.

At the end of each major section is an extensive bibliography, containing, in most cases, more than two hundred citations. There is a list of ethnographic museums in every country in the world, and a list, by country, of ethnographic journals and series; and there is an excellent index of authors and topics cited in the text. There are musical scores and many plates of illustrations.

The volume gives the impression of a condensed encyclopedia, arranged topically rather than alphabetically, with special attention to outline and bibliography. The high quality of the content is sufficiently attested by the list of contributors: Thurnwald, Preuss, Schneider, V. Sydow, Deeters, Adam, Nevermann, Westermann. Westermann gives a *revue* of aboriginal populations, an account of the influence of European civilization upon primitive peoples, and a forecast of the future of primitive tribes.

WILSON D. WALLIS

UNIVERSITY OF MINNESOTA

Communication Has Been Established. ASTLEY J. H. GOODWIN. (xi, 267 pp. 17 figs. 10s. 6d. London: Methuen, 1937.)

Communication, according to Mr Goodwin, means the transportation of goods and people from one place to another. The main body of the book shows how (1) topographic units (deserts, fertile valleys, rivers, seas), (2) technological developments (roads, sledges, wheels, carts, boats), (3) needs of subsistence (water, salt, etc.), and (4) needs beyond subsistence (trade in gold, silk, etc.) have combined to help or hinder travel in prehistoric, historic, and ethnographic times. Finally, even language and writing are admitted as factors in communication (pp. 230–55).

C. F. VOEGELIN

DEPAUW UNIVERSITY

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BRIEF COMMUNICATIONS

THE PHONETIC VALUE OF GLYPH C OF THE MAYA SUPPLEMENTARY SERIES

Probably one of the most important problems facing the Maya archaeologist of today is that of the phonetic value of the characters in Maya writing. This question, dormant since the turn of the century, has recently been re-opened by B. L. Whorf in a paper entitled *The Phonetic Value of Certain Characters in Maya Writing*,[1] and is later represented by an additional paper by Mr Whorf in *Maya Research*,[2] and two by R. C. E. Long[3] in the same journal. Mr Whorf's standpoint has been that Maya hieroglyphs are a true writing in the strictest sense of the word. In his definition of writing, Whorf states "to each written sentence there must recognizably correspond one and only one spoken sentence possible according to the linguistic structure of the particular language." Long believes that, although there may have been considerable phonetic elements in Maya writing, it had never reached the stage where it could express a complete grammatic sentence, a view which would probably be endorsed by the majority of present authorities on Maya epigraphy.

Mr Whorf's published works represent only a small part of his work in this field—work which is presented in full in a much larger monograph not yet published. Until the publication of this larger work, a full discussion of Mr Whorf's methodology would be premature. In this paper, we wish to discuss only one of his interpretations, one which, for several reasons, we believe to be invalid principally on epigraphic rather than linguistic grounds. We wish to stress in advance the fact that the present discussion is one of a restricted nature and does not imply Whorf's methodology as whole to be valueless.

In *The Phonetic Value of Certain Characters in Maya Writing*,[4] Whorf has offered a phonetic interpretation of the hand sign and its superfix in Glyph C of the Supplementary Series. A normal Glyph C consists of three principal elements: (1) a hand, (2) a variable superfix, and (3) a characteristic moon sign. The hand sign, Whorf states to have the phonetic value of *ma*.[5] In his Figure 11[6] he then illustrates five occurrences of Glyph C, from which he derives four basic types for the superfix above the hand sign:

1. A death's head, as on Stela 1, Piedras Negras.
2. A Kin, or sun sign, as on Stela 24, Naranjo.
3. A head, probably the head-variant of the Kin, as on Zoömorph G, Quirigua.
4. A curl or loop, as on Stelas A and N, Copan.

[1] Papers, Peabody Museum of American Archaeology, Vol. 13, No. 2, 1933.

[2] *Maya Writing and its Decipherment* (Maya Research, Vol. 2, pp. 367–82, 1935).

[3] *Maya and Mexican Writing* (Maya Research, Vol. 2, pp. 24–32, 1935); *Maya Writing and its Decipherment* (Maya Research, Vol. 3, pp. 309–15, 1936).

[4] *Op. cit.*, pp. 30–35.

[5] The phonetic value of the hand in Maya glyphs has been discussed in detail by Long (*Maya Writing and its Decipherment*, pp. 27–29). Although in accord with the latter's suggestions, we have no further comments to add at this point.

[6] *Ibid.*, p. 31.

He then states that

. . . these four forms of the first half of Glyph C have one striking feature in common. They are forms which sometimes have the phonetic values *la* and *le*

which statement is accompanied by the declaration:

The scope of this paper does not permit tracing all the evidence which leads me to suspect these phonetic values.

We will summarize, however, the evidence he does offer.

The death's head and other symbols, he associates with verb stems bearing this connotation, notably *la-*.

The Kin sign he states was

apparently used not only to write the word *k'in* sun, day, but also the verb *lem*, shine, be bright. Both of these uses were first ideographic and then both became phonetic when removed from their original contexts. Thus the sun sign could be used in other words to convey the sounds *lem* and *le*.

Thirdly, the head-form of the Kin sign could of course be used with the same phonetic values as the ordinary radiating form.

Finally, the loop, twist, or curl could easily be read rebus-wise as *le*, because of the common Maya word *le*, loop.

As to the final component of Glyph C, the moon sign, he states

It would be beyond the purpose of this article to enquire into its phonetic value; we need at this stage only to transcribe its meaning as "LUNATIONS."

The final translation of the four types then follows:

Stela 1, Piedras Negras	3 *la-ma* LUNATIONS
Stela 24, Naranjo	3 *'lem-ma* LUNATIONS
Zoömorph G, Quirigua	5 *lem-ma* LUNATIONS
Stela A, Copan	6 *le-ma* LUNATIONS
Stela N, Copan	(1) *le-ma* LUNATIONS

We do not wish to explain in detail at this point the Maya system of numeral classifiers. This is explained in detail by Tozzer.[7] Suffice it to say that in Maya a classificatory particle is usually used in counting, showing into what class the objects counted fall. For example, *tul* is the classifier in use for animate objects; so one would say "three-*tul* men" instead of "three men"—in Maya *oš-tul winik*. Whorf states that reference to Tozzer's grammar will show that "a classifier used for periods of time is *lem*." In the above summary, he claims that all the translations of the hand and its superfix represent the classifier *lem* attached to the Maya numerals, the first case, for example, ideally reading "3 *lem* LUNATIONS."

We have a great number of exceptions to take to this thesis. Perhaps we had best start with his classifications of the superfixes. In the first place, anyone well acquainted with Supplementary Series texts would recognize immediately that this

[7] Alfred M. Tozzer, *A Maya Grammar* (Papers, Peabody Museum of American Archaeology, Vol. 9, 1921), pp. 103–104, 290–92.

Form 2 superfix and Form 4 were identical. Neither bears more than the vaguest resemblance to any known form of the Kin sign. The unity of form of the two types becomes immediately evident upon even cursory examination of its very numerous occurrences. Form 3, which he calls "probably the head variant of the Kin" has no characteristic in common with any proven head-variant for this sign. It is, in fact, almost its direct antithesis. The head-variant for the Kin sign, as we know it from very frequent examples, is always characterized by various symbols of old age or death, snag-like teeth in the front of the mouth, fangs from the back of the mouth, wrinkles, and crossed bones or other death symbols in place of the eye. Whorf's Type 3 is very common as a simple, round-nosed, "young" head with none of the grotesque distortions which are diagnostic of the Kin sign. The author can hardly overemphasize the certainty with which the above corrections are made. We are dealing here with the primary and best known of Maya glyphic configurations.

All of the four types picked by Whorf occur almost side by side at single sites; and even were these forms legitimate as basic types it seems highly improbable to the author that they all would have been used to express the single morpheme which he finds in Glyph C. The concept which we know to have been expressed by Glyph C is an omnipresent and integral part of the Initial Series-Supplementary Series mechanism. It is hard to believe that in the same period at the same sites they would have used so many differently derived phonetic patterns to express the same word.

The phonetic distortions of *lama*, *lemma*, and *lema* to read *lem* seem to some experts to be open to considerable doubt. As to their validity, Whorf is rather silent:

> In the writings *lema* and *lama* we may have either old forms with a final vowel, or else forms in which the hand-sign is to be read *m* instead of *ma*. We need not at this stage bother very much about the reason for the variant writings *lema* and *lama*.

No evidence is forthcoming that any "old form" with a final vowel ever existed. At any rate, we seem to be dealing, here, with a variation from a postulated original.

Long has already pointed out certain reasons to believe that caution must be observed in using modern Yucatec as an avenue of approach to the language of Old Empire times.[8] The dates of the codices are, to be sure, uncertain; but here we are dealing with actual inscriptions on Old Empire monuments. Both Thompson[9] and Gates[10] have pointed out, for example, that Chol month names seem to bear a much closer resemblance to the forms of the Old Empire monuments than do the Yucatec ones.

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[8] Long, *Maya Writing and its Decipherment*, pp. 312–13.

[9] J. Eric Thompson, *A Maya Calendar from the Alta Vera Paz, Guatemala* (American Anthropologist, Vol. 34, pp. 452–54, 1932).

[10] W. E. Gates, *A Languin Kekchi Calendar* (Maya Society Quarterly, Vol. 1, pp. 29–32, 1931).

Up to this point, we have assumed that the meaning of the classifier *lem* is that given by Whorf. Mr J. Eric Thompson has pointed out to the author that this does not seem to be true. It was apparently an oversight on Whorf's part, but Tozzer certainly does not say that *lem* is a classifier used for periods of time. We quote what he does say: "*Lem.* For times; *hun lem* 'once'." The distinction between "times" and "periods of time" is rather obvious. The actual referents of these English homonyms are of widely different meaning.[11]

In summary, we believe for several reasons that Whorf's interpretation of Glyph C could not possibly be valid. In addition to various linguistic objections, we have shown that his basic glyphic interpretations are not possible. Finally, we have considerable evidence on which to base our belief that the whole is founded on a misinterpreted statement in Tozzer's *Maya Grammar*—a belief which Dr Tozzer himself has confirmed.[12]

E. WYLLYS ANDREWS

CAMBRIDGE, MASSACHUSETTS

NAVAHO BASKETRY AS MADE BY UTE AND PAIUTE

The factors contributing to the disappearance of Navaho crafts were well analyzed by Mr Harry Tschopik, Jr in his recent article on *Taboo as a Possible Factor Involved in the Obsolescence of Navaho Pottery and Basketry.*[1] There is some question, however, of the correctness of his statement that baskets made by the Paiute and Ute for use in Navaho ceremonies[2] "are made according to Navaho ritual

[11] In a recent communication, Dr M. J. Andrade expressed himself in accord with the thesis of this paper, and was kind enough to offer the suggestions we quote in the following:

"There is no ground for asserting that *lem* could not have been used for periods of time, nor is there any for asserting that it has been so used. It is more likely than not that the use of classifiers as we find them in Yucatecan Maya is a special development peculiar to that language or dialect. Indeed the use of *lem* as a classifier could possibly have come about since the Motul dictionary was written. Of that, of course, we cannot be sure. All we can say is that the Motul dictionary does not list that use of *lem*, nor any close to it. We find it in Beltran's grammar, wherein we read: '*Lem.* Para veces; como *hun lem*, una vez.' In Pio Perez' dictionary we find: 'LEM: vez, ocasión'."

[12] Since this paper was submitted for publication, the author has been in extensive correspondence with Mr B. L. Whorf, and wishes to record his indebtedness for several valuable suggestions relative to the broader linguistic aspects of the questions involved—suggestions which have been incorporated in the text. Mr Whorf has allowed me to state that he has now altered his opinion on the use of *lem* in Glyph C He retains the same phonetic elements *ma* and *l*, but equates the combination now to *mal*, a classifier somewhat similar to *lem*, for which he considers there is much more evidence of use with periods of time than there is for *lem*. As, however, his previous standpoint has appeared widely in print, and this is the only case thus far where a product of his methodology may be discussed from an epigraphic or calendric viewpoint, the publication of this paper seems justified.

[1] American Anthropologist, Vol. 40, pp. 257–62, 1938.

[2] In a recent short paper, I described this manufacture by the Ute and Southern Paiute in *The Navajo Wedding Basket—1938* (Museum Notes, Museum of Northern Arizona, Vol 10, No. 9, March, 1938). The data were obtained during a culture element distribution study for the University of California.

requirements." Whereas numerous regulations encumber and discourage the Navaho basketmakers, the Ute and Paiute reported only one ritualistic rule: miniature baskets had to be completed in one day. If Ute and Paiute basketmakers were not practically free from ritual requirements, it would be difficult to explain why increasing numbers of them find making baskets for the Navaho a lucrative and pleasant craft. In appearance, the baskets made by the Navaho and those made by the Ute and Paiute for the Navaho are almost identical, and the Navaho do not seem to mind at all that the "foreign Indians" do not observe the Navaho taboos. Many Navaho see the baskets while they are being woven and sometimes get the baskets directly from the Ute and Paiute women. Traders, however, distribute most of them.

In this little problem of the Navaho baskets one comes face to face with some of the most fundamental and baffling questions arising from a study of culture. Mr Tschopik answers some questions concerning the loss of useful arts in his statement, "When their articles became wholly ceremonial in use, they became surrounded by so many ritual restrictions that they have recently become obsolete, or at least obsolescent." True for the Navaho; but let us go a step farther. Because the baskets still are necessary for ceremonial use, the Navaho pay a good price for them to the Southern Paiute and Ute, who, unrestricted by taboos, have acquired a new art during the last decade or two. Not the art of basketmaking—they already had that —but the art of making a particular basket in a manner previously unknown to them. To make the wedding basket, the Ute and Southern Paiute acquired a new shape, the technique of elaborate decoration (which they lacked), and changed their direction of coiling and their method of sewing.

Here is a case of diffusion. An art is taken over by the Ute and Southern Paiute because it provides articles for the Navaho which are "wholly ceremonial in use." The same factors that cause obsolescence among the Navaho cause new growth among the Ute and Paiute.

OMER C. STEWART

UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

NOTES AND NEWS

CORRECTION

In the article on *The Social Structure of the Ramkôkamekra (Canella)* by Curt Nimuendajú (American Anthropologist, Vol. 40, p. 54, last line, 1938) the term "signal-trumpet" should be substituted for "signal-drum." Drums, as Snr Nimuendajú informs the translator (letter of March 16, 1938), do not occur among the Gê tribes.

ROBERT H. LOWIE

RECENT DEATHS

George Bird Grinnell died in New York City on April 11th in his eighty-ninth year. His first expedition in 1870 to collect vertebrate fossils brought him in contact with Pawnee and Blackfoot. Through the years that followed he produced a series of books and papers indicative of his sympathetic and authoritative grasp of their life. Among these are *Blackfoot Lodge Tales*, *The Fighting Cheyennes*, and *The Cheyenne Indians.*

The Rev Adrien Gabriel Morice died in St Boniface, Manitoba, on April 21st, aged 79. For many years he was the sole contributor of material on the northwestern Athaspascan groups, numbering among his contributions *Notes, Archaeological, Industrial, and Sociological, on the Western Dénés* and the monumental *The Carrier Language (Déné Family)*.

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