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PLINY EARLE GODDARD

American Anthropologist
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PLINY EARLE GODDARD

THE sudden death of Pliny Earle Goddard on July 12, 1928, after an illness of long standing of whose presence he and his friends were unaware, removed from American anthropology one of its most vivid personalities.

Goddard was born November 24, 1869, at Lewiston, Maine. He was the fourth of seven children of Charles W. and Elmira Nichols Goddard. His boyhood was lived at Durham, where his father was market gardener, florist, and Friend minister. He entered Oak Grove Seminary at Vassalboro, which his parents and sisters had attended before him, but transferred with the principal to Oakwood Seminary in Union Springs, New York, till 1889, when he graduated to enter Earlham College in Indiana. Both in school and college Goddard largely supported himself. His Earlham training included a thorough old-fashioned course in Latin and Greek. He graduated in 1892.

Then followed a series of principalships: Rich Square Academy at Lewisville, Indiana, 1892–3; Lowell Institute, Lowell, Kansas, 1893–5; public school at Sulphur Springs, Indiana, 1895–6. He married Alice Rockwell of Palmyra, Michigan, on December 28, 1893. These early years were a period of trials and poverty. The Lowell Institute was a newly founded Friends' boarding school, which could pay its head only a percentage of tuition fees instead of a salary, and had the misfortune to open in a farming community in a year of economic disaster. The winter of 1896–7 was one of particular penury, and Goddard worked at any opening to keep his family's head above water. In the intervals of enforced idleness he began to read on the American Indians, and in March, 1897, went to Hoopa, California, as lay missionary for the Woman's Indian Aid Association, an inter-denominational organization of Philadelphia. There was no road into Hoopa

then; Mrs. Goddard had never ridden; and Goddard piloted her and carried his seventeen months old daughter Myra on horseback over the two days' trail through a snowstorm.

Hoopa proved a respite. Living conditions, though rude, were not uncomfortable; and there was peace. Goddard's informal, simple, direct ways won the affection of the Indians; and their life, still largely unspoiled from native days, engaged his interest. He set himself not only to note their customs but to record the language systematically, acquiring also a fair speaking knowledge of it. More and more the plan grew in him to make ethnology his life work; but he was without formal training or professional connections and Hoopa was remote. The turning point came with a brief visit by Stewart Culin, who was collecting games. To him Goddard confided his ambitions; and received encouragement. In the summer of 1900, the venture was made. The little family, now including a second girl, Emma, rode out of Hoopa, Mrs. Goddard and the children to return temporarily to her Michigan home, he to attempt to gain a foothold at the University of California.

In Berkeley, Goddard entered as a graduate student of Linguistics under Benjamin Ide Wheeler, then newly President and still free to teach. His courage as well as mind won Wheeler's quick sympathies, and a University scholarship came to his aid. It was during this first year in Berkeley that *Life and Culture of the Hupa* was essentially completed—a work conceived and executed in isolation and manifesting all Goddard's special genius as ethnologist and writer in purest form. In sheer quality it is not surpassed by any of his later works from the period of professional status and experience. He laid at the same time the foundations of his *Hupa Texts* and *Morphology of the Hupa Language*.

At this time Anthropology was not yet established but was being considered at the University. On the organization of a Department under the support of Phoebe A. Hearst in September, 1901, President Wheeler saw to it that Goddard received an instructorship. Here, at the age of 32, there had arrived for the first time a stable opportunity to work as a scholar and to live;

and the family reassembled. By 1902 they ventured on the acquisition of a house; in 1904 Goddard took his doctorate under Wheeler; and in 1906 he became Assistant Professor. Three further children followed: Pliny Jr., David, and Mildred. These were peaceful years, devoted primarily to research, with long field trips. Teaching load was nominal at first, and never became so onerous as to lose its stimulus. Characteristically, Goddard began by teaching what he knew at first hand, the ethnology and languages of the California Athapascans; but by 1909 he had gradually expanded his instruction to include a general course on Ethnology which had secured a following of some hundred and thirty students—at that time an unprecedented number.

Life and Culture of the Hupa brilliantly initiated the University's series of publications in 1903, to be followed by *Hupa Texts* in 1904, *Morphology* in 1905, *Phonology* in 1907. These three set a new standard of completeness for treatment of a native American language. The University had acquired the Rousselot phonetic apparatus for Goddard, who utilized it patiently to present the phonological aspects of Hupa, and subsequently of Kato, in the same detail as their structure and vocabulary. The editing of a manuscript of Navaho prayers left by Washington Matthews took Goddard into the Southwest; and he visited the Apache and Sarsi.

Anthropology at California at this time was passing from private to state support and seemed temporarily in the doldrums; so when in 1909 the American Museum of Natural History offered an Assistant Curatorship, Goddard somewhat regretfully left the surroundings which had grown congenial, for greater opportunities. The move to New York proved crucial. It injected him into new lines of work, wider activities, and personal contacts which were to make him a factor in the upbuilding of American Anthropology in which until then he had participated chiefly locally and through his personal studies. Typically, the opening came late, at forty.

Within a year, he was made Associate Curator, and in 1914 Curator of Ethnology, serving at various times as Acting Curator of the Division of Anthropology. Beginning in 1915, he was

Lecturer in Anthropology at Columbia University. He was Editor of the AMERICAN ANTHROPOLOGIST from 1915 to 1920; and founder and co-editor with Franz Boas of the *International Journal of American Linguistics*, since 1917. He served at various times on the council or as officer of the American Anthropological Association, the American Folk-Lore Society, and the American Ethnological Society. At the time of his death he was Secretary of the Committee on Organization of the Twenty-third International Congress of Americanists.

In the American Museum, Goddard quickly developed an interest new to him until then: in collections and exhibits. He threw much energy into the improvement of the display halls in his charge, and those devoted to the Northwest and Southwest were painstakingly and lovingly reinstalled under his personal supervision. An outgrowth of this work was the preparation of handbooks on these areas: *Indians of the Southwest* in 1913, *Indians of the Northwest* in 1924. These are the first general, authentic reviews of all the cultures of the two regions, and Goddard's vivid conceptualization and compact, nervous style served their best to render the booklets useful and readable.

His intensive studies continued to center in the Athapascan field. Chipewyan, Beaver, and Sarsi in the North, Jicarilla, San Carlos, and White Mountain Apache in the Southwest, all yielded collections of texts, supplemented in a number of cases by analyses of the languages and studies of the general culture, religion, or mythology of the same tribes. In later years, Goddard evinced special interest in several problems of broad bearing, such as the classification and genetic relation of languages, the history of the Uto-Aztecan stock, and the antiquity of Man in America.

In general, however, Goddard's deepest interests were not abstractly theoretical. His intuitional impulses were stronger than his purely intellectual ones; and all his work, especially his best, was highly charged with feeling. This feeling demanded concrete material to attach itself to, and sought and brought out with peculiar effectiveness what may be called its flavors, both cultural and personal. For Goddard it was not a duty but an intense satisfaction to secure his data, and so far as possible present them,

in the native speech. He did not learn this method from anthropological precedent, but developed it from within, in his years of isolation. Similarly, a culture as such meant much less to him than that part of a culture lived and felt by a particular Indian. Many of his ethnological accounts are essentially such personalized renditions from one or two individuals; and between him and his informants there always existed a strong bond of affection. Analysis per se interested Goddard only slightly, and synthesis less. It was the data themselves, in their aura of experience by personalities, that drew him and that he reproduced with felicitous fidelity. Ethnologic or linguistic study therefore always meant to him field work; not so much because this secured new or exacter materials, as because it secured the only materials really worth while in their livingness. In consequence his publications may sometimes be disappointing to those looking for comparative ethnographical data, but never to him who appreciates a clean-cut, saturated impression of a culture and the reactions of the people who lived in it. Not that Goddard was incapable of theoretical thinking. His intellect was keen and quick, his critical faculty incisive. It was only that he estimated intellectualism lightly, the human spirit and feelings reverently. To him the golden tree of life was green indeed.

The same impulses animated the man as his works. Above all, he craved and gave affection. Where this was thwarted, hostility might spring up in its place; but his enmities were frank and direct, often disadvantageously unconcealed. When he was free to act according to his nature, decisions formed themselves in him with immediacy, spontaneity, and undividedly, and he carried them out with unhesitating courage. He had his periods of indecision, discouragement, or boredom; they came when outer circumstances constrained his affective tendencies. Where an issue concerned chiefly himself, a sense of futility seemed often to invade him: he became half-hearted, non-resistant, sometimes pacifistically resigned. He needed a cause to bring out his best; in a cause, his eye lit up, the steel in him flashed, and he rejoiced in the cleanness of combat. All his life he was a hero-worshipper: and he threw into the worship a quality of heroism of his own, as well

as endless devotion. There flowed in him in these qualities much of his ancestral Quakerism, of which even external mannerisms persisted as symbols long after he had given up its formal tenets. Essentially he remained a Quaker to the end—idealist, devotee of the simple in humanity and the direct in relations, martyr if necessary. His habits were consistent. He was personally frugal to abstemiousness, fond of the homespun in speech and manner, distrustful of all incitements from the outer world, little susceptible to the esthetic forms of emotion, but sensitively responsive to the emotions of living beings. Often almost shy in casual company or official relation, he was frankness itself in the contact of man to man, and then not only at ease but overflowing with playfulness and quite unusual charm. His wit was pungent to bitingness; his fundamental humility unwavering and unabashed; his friendships were loyalties.

A. L. KROEBER

BIBLIOGRAPHY

American Anthropologist, New Series

Conscious Word-making by the Hupa. 3: 208–209, 1901.
The Kato Pomo not Pomo. 5: 375–376, 1903.
Mechanical Aids to the Study and Recording of Language. 7: 613–619, 1905.
A Confession as to Errors in Hupa Linguistics. 10: 170–171, 1908.
Wayside Shrines in Northwestern California. 15: 702–703, 1913.
The Present Condition of our Knowledge of North American Languages. 16: 555-592, 1914.
The New Stock Names announced for California. 17: 413, 1915.
Annual Reports of the Editor for 1915 to 1920. 18-23, 1916-21.
The Cultural and Somatic Correlations of Uto-Aztecan. 22: 244–247, 1920.
Facts and Theories concerning Pleistocene Man in America. 29: 262–266, 1927.

University of California Publications in American Archaeology and Ethnology

Life and Culture of the Hupa. 1: 1–88, 1903.
Hupa Texts. 1: 89–368, 1904.
The Morphology of the Hupa Language. 3: 1–344, 1905.
The Phonology of the Hupa Language; Part I, The Individual Sounds. 5: 1–20, 1907.
Navaho Myths, Prayers, and Songs with Texts and Translations. (By Washington Matthews, edited by P. E. Goddard.) 5: 21–63, 1907.

Kato Texts. 5: 65–238, 1909.
Notes on the Chilula Indians of Northwestern California. 10: 265–288, 1914.
Chilula Texts. 10: 289–379, 1914.
Elements of the Kato Language. 11: 1–176, 1912.
Sarsi Texts. 11: 189–277, 1915.
Habitat of the Pitch Indians, a Wailaki Division. 17: 217–225, 1924.
The Habitat of the Wailaki. 20: 95–109, 1923.
Pitch Accent in Hupa. 23: 333–338, 1928.

American Museum of Natural History, Anthropological Papers

Jicarilla Apache Texts. 8: 1–276, 1911.
Chipewyan Texts. 10: 1–66, 1912.
Analysis of Cold Lake Dialect, Chipewyan. 10: 67–170, 1912.
The Beaver Indians. 10: 201–293, 1916.
Beaver Texts. 10: 295–397, 1916.
Beaver Dialect. 10: 399–547, 1917.
Dancing Societies of the Sarsi Indians. 11: 461–474, 1914.
Notes on the Sun Dance of the Sarsi. 16. 271–282, 1919.
Notes on the Sun Dance of the Cree in Alberta. 16: 295–310, 1919.
Myths and Tales from the San Carlos Apache. 24: 1–86, 1918.
Myths and Tales from the White Mountain Apache. 24: 87–139, 1919.
San Carlos Apache Texts. 24: 141–367, 1919.
White Mountain Apache Texts. 24: 369–527, 1920.

American Museum of Natural History, Handbooks

Indians of the Southwest. 1913; 1927, 3rd ed.
Indians of the Northwest Coast. 1924.

International Journal of American Linguistics

Has Tlingit a Genetic Relation to Athapascan? 1: 266–279, 1920.
Wailaki Texts. 2: 77–135, 1923.
Ts'ets'aut, An Athapascan Language of Portland Canal, British Columbia. (With F. Boas.) 3: 1-35, 1924.

Journal of American Folk-Lore

Lassik Tales. 19: 133–140, 1906.
The Relation of Folk-Lore to Anthropology. 28: 18–23, 1915.

Anniversary Volumes

A Graphic Method of Recording Songs. Boas Anniversary Volume, 137–142, 1906.
Gotal—A Mescalero Apache Ceremony. Putnam Anniversary Volume, 385–394, 1909.
The Masked Dancers of the Apache. Holmes Anniversary Volume, 132–136, 1916.

American Museum Journal and *Natural History*

Navajo Blankets. 10: 201–211, 1910.
Motion Picture Records of Indians. 15: 185–187, 1915.

Language as an Index to Ancient Kinships. 16: 197–198, 1916.
Peruvian Gold of the Chimu Kingdom. 21: 447–452, 1921.
Indian Ceremonies of the Long Ago. 22: 558–564, 1922.
The Night Chant. 25: 49–53, 1925.
The Antiquity of Man in America. 26: 257–269, 1926.
Native Dwellings of North America. 28: 191–203, 1928.
Deserted Cities of the Cliffs. 28: 405–412, 1928.

Various

Assimilation to Environment as illustrated by Athabascan Peoples. International Congress of Americanists, 1906, Quebec, 337–359, 1907.
Slender-Maiden of the Apache. *In*, American Indian Life, edited by Elsie Clews Parsons, 1922.
Athapascan (Hupa). *In*, Handbook of American Indian Languages, edited by Franz Boas, Bulletin 40, Bureau of American Ethnology, Washington, 1911.
Review of: Goldenweiser, Early Civilization, an Introduction to Anthropology. The Journal of Philosophy, 20: 272-275, 1923.
Anthropology in the United States To-day. American Mercury, 6: 459–461, December, 1925.
American Anthropology and Franz Boas. American Mercury, 7: 314–316, March, 1926.
Man in America. American Mercury, 10: 67–70, January, 1927.
Permit an Anthropologist. The New Yorker, January 30, 1926.
An Anthropologist Looks at Marriage. The New Yorker, September 8, 1928.
Apache Tribes of the Southwest. Southern Workman, 39, September, 1910.

Reviews in American Anthropologist

The Northern Maidu, by Roland B. Dixon. 8: 706–708, 1906
An Ethnologic Dictionary of the Navaho Language, by the Franciscan Fathers, 12: 311–315, 1910.
Fear and Conventionality, by Elsie Clews Parsons. 17: 343–344, 1915.
Introduction to the History of Religions, by Crawford Howell Toy. 18: 277–278, 1916.
An Introduction to the Study of Southwestern Archaeology, by A. V. Kidder. 27: 461–463, 1925.

HISTORY OF ETHNOLOGICAL THEORIES

By PAUL RADIN

THE first interpretation of primitive mentality that can lay claim to any degree of completeness was that advanced by E. B. Tylor in his two famous books *Researches into the Early History of Mankind* and *Primitive Culture*. It goes without saying that no theory promulgated in England between 1860 and 1880 could possibly be other than evolutionistic and so we find in Tylor the study of the cultures of primitive people subordinated to the larger issue of their bearing on the history of mankind in general and of modern civilizations in particular. He was, in fact, not specifically interested in the analysis of primitive mentality. His interest lay rather in the determination of the nature of the basic cultural foundations from which the higher civilizations of Europe and Asia had developed. For that reason his works treat as fully, if not more so, the beliefs, customs, and superstitions of the illiterate peoples of Europe and Asia as those of so-called primitive people. If ever a series of evolutionary steps seemed perfect and free from all illusion it was the one he was so largely instrumental in establishing. For Europe he postulated first, a period in which magical rites, superstitious observances, and meaningless customs were still functioning, then one where all these elements still persisted but functioned only partially and where at least a small minority had progressed far beyond them, and finally modern Europe since the Renaissance. To him the history of Europe was but a special example of a very general cultural phenomenon. What happened there he argued, must have taken place in other regions as well—Asia Minor, Egypt, China, India, etc.

For Tylor and his school, primitive peoples represented the earliest period in a long series of cultural stages and they were studied from a definitely evolutionary orientation. As we have stated, the precise nature of primitive mentality was of comparatively subordinate interest to them. Tylor and his school began

with an axiom that represented a heritage from the eighteenth century philosophy of enlightenment, with its romantic postulation of human equality the world over. The correctness of this assumption was not doubted, and whatever misgivings the evolutionary ethnologists may at times have had were dispelled by the lesson taught by the facts collected among primitive people namely, that the latter reasoned like us but from false misespre and from ridiculously inadequate and uncritically evaluated data. Why a given people had stopped at a certain period in its development was never adequately explained. Yet the very fact that there were so many gradations, that scholars could speak of a period of savagery, barbarism, etc., and that every people had attained a little eminence along some particular direction—this held true of so-called savages too—all this seemed to confirm the hypothesis of similarity in mental processes. No cranial variations like those subsequently found—Neanderthal man, Heidelberg man, etc.—were known at the time to disturb their equanimity. Rational thinking was assumed to have antedated the domestication of man.

One of the consequences of this standpoint was perhaps somewhat curious, for it entailed the assumption of a subsidiary hypothesis, namely the multiple origin of culture. There was some hesitation at first in the case of Tylor who was deeply impressed by the similarities between certain elements in the ancient aboriginal civilizations of Mexico and India, but even with him finally the victory of the theory of multiple origin was complete. It could not very well have been otherwise, for it flowed directly from the predication of identical logical thinking among all peoples, primitive and civilized.

A third principle of interpretation must be added to the above two, the significance of cultural survivals, a principle destined to be almost more of a bane than a benefit to the study of ethnology and history. At its worst it meant that petrified customs, bearing a similarity varying from practical identity to the most tenuous of external resemblances, were massed together and then quite uncritically treated as a unified whole representative of a past cultural stage. The emotional and intellectual reactions of

the backward populations of our own civilizations about which these investigators knew something, and of primitive peoples about which they knew very little indeed, were equated without the slightest hesitation and then projected into the past. The marked symbolism of the petrified customs of European peoples and that of primitive peoples was regarded as springing from the same source. They represented the shell of outgrown or essentially functionless customs and beliefs, still accompanied by emotional reactions richly laden with what today we should call unconscious elements and the survival of an older form of thinking wherein analogy played a dominant part. In spite, then, of an analysis fundamentally correct, all symbolism was treated alike, in this way obscuring many of the psychological and historical problems concealed within it.

All these factors had their share in introducing into the application of the theory of survival a laxness that has justly brought it into discredit. Tylor himself, with his admirable sanity and sense of proportion, succeeded in keeping free from many of the defects of the method, yet he, no more than his successors, examined the basic concepts with which he was dealing. This perhaps could hardly have been expected of investigators of his time, especially when we recall the nature of the problems they set themselves to solve and the imperfect condition of the sources with which they had to content themselves.

Such were the basic psychological assumptions of the evolutionary school. It was the contention of the adherents of this method that the two ends of the historical chain were known, the first being the culture of living primitive peoples and the second, the higher civilizations of Europe, Africa, and Asia. Impregnated as they were with the triumphant atmosphere of the evolutionistic philosophy of the eighteen-seventies and eighteen-eighties, the task appeared almost luminously clear and relatively easy. What was common to all, what was generalized and unintegrated, that clearly they felt was historically the older. If that could then be demonstrated to exist among primitive peoples, the problem was solved. If some ethnologists today are surprised that an intricate culture-process could ever have been

envisaged quite so simply, if they are amazed that Tylor and his school should have felt so confident about their position, let them remember that this was the striking trait of all the scientists of the day. They all believed in a straight-line evolution beginning with an undifferentiated base and they all felt little concern for any of the problems connected with the mechanism of culture, except of the most generalized kind.

Inadequate as such an interpretation was for the data of zoology and botany, it was simply fatal for ethnology, where the known facts were sparse and had been uncritically gathered. It gave rise to schemes of development inherently misleading and deflected attention from the examination of the true nature of primitive civilizations and of the mechanism of cultural transmission. In England, the birthplace of modern ethnology, the frankly evolutionary interpretation that prevailed in the eighteen-seventies and eighteen-nineties, has never been wholly abandoned. Tylor's doctrine of animism has, it is true, been criticized there but only because it was felt to be too high a form of religious expression to be assumed as original. A stage called pre-animism, as well as one entirely dominated by magic, have been predicated as antedating it. And so the scheme persists. When, for instance, French sociologists like Durkheim and a philosopher like Lévy-Bruhl attempt to analyze anew the background of primitive culture and the nature of primitive mentality itself, we get reactions like the contemptuous attitude of Sir J. Frazer to the theories of Lévy-Bruhl, or the profound disregard of the implications inhering in the unusually accurate records published by the American ethnologists or the profound resentment of the conclusions arrived at by the German diffusionists led by Gräbner or, finally, the hysteria brought on by Rivers' and Elliot-Smith's attempt to re-examine the concept of independent origins and the nature of cultural transmission.

Today, particularly here in America, the reaction against the work of men like Tylor, Robertson-Smith, Frazer, etc. is very strong. Yet we must not forget that it is easy to be unfair to such scholars. Despite all the mischief caused by the uncritical application of evolutionary theory to the history of civilization,

the early English anthropologists by their acumen, their interpretations, and their intuitions, laid the foundations not only for the ethnology of our own time but for the more mature ethnology of the future. In many instances where they have palpably gone wrong they have been victimized by the uncritical, incomplete, and unintelligent manner in which the sources, on which they have been compelled to rely, were collected and presented. It is true enough that their failure to critically evaluate their sources is a blot which it is not easy to erase. But they might conceivably retort that it was but natural for them to assume that those whose ostensible profession it was to collect data knew their business reasonably well. Yet this hardly excuses them.

The continental theorists of France and Germany, in spite of their critical attitude toward the English school, are in certain fundamental respects no better. Durkheim, Lévy-Bruhl, Gräbner, and the psycho-analysts are if anything, worse, in the naïve way in which they select their facts irrespective of author, date, or circumstances. As we shall see, they too did not subject some of their fundamental conceptions to any adequate analysis. Without realizing it they in fact took over ideas that had grown out of the evolutionary hypothesis and the interpretations of Tylor.

The evolutionary ethnologists can be said to have left a definite heritage of concepts, first the theory of multiple origin, secondly the assumption that ethnology was, to all intents and purposes, a science, and thirdly the assumption that primitive peoples are to be equated with the illiterate and backward peoples among ourselves.

First and foremost, of course, is the concept of multiple origin, the hypothesis that all peoples have, within themselves, the possibilities of originating the basic elements of civilization. The theory itself antedated Tylor. But it was Tylor and Robertson-Smith and their comparative method which focussed attention upon it.

In Germany that curious thinker, Adolf Bastian, attempted to give it psychological depth. Bastian consistently refused to admit that the various endeavors made by some of his compatriots

to present the essentials of his theory were correct and since it is admittedly well-nigh impossible to get any very clear conception of his standpoint from his voluminous, disorganized, and incoherent works, he has been somewhat unduly neglected, especially outside of Germany. In spite of his pedantic obscurity, however, the general trend of what he wanted to say is fairly definite. Curiously enough, although he was a most assiduous collector of facts, even if in a most reprehensibly disjointed manner, it seems extremely doubtful whether his interpretations were based upon them. The actual facts always give us the impression of being mere illustrative material for a psychological and philosophical position arrived at independently of them.

Bastian represents the first of a fairly large number of ethnologists in Germany and France who definitely subordinated the facts to theories. Briefly he held the following position. In all the domains of human culture—social organization, art, and religion, but particularly in philosophy and language—there exists a definitely restricted number of ideas which have recurred again and again, and upon these ideas and concepts a particular form and characterization have been imposed by geographical and economic conditions. These latter are identical with the "geographical provinces" postulated by the great geographer Ratzel, from whom Bastian borrowed the concept. Thus, with Tylor he really accepted the prevailing view of the nineteenth century that no inherent difference existed between the mentality of primitive and civilized man.

It would be erroneous, however, to imagine that Bastian visualized the mentality of primitive man in the manner characteristic of the great English theorists. According to them primitive man simply made vague and incorrect applications of normal logical thinking. The "elementary ideas" of Bastian, on the other hand, were expressions of certain psychic activities inhering in the human mind and largely of an unconscious character. In short his theory was quite uninfluenced by either the evolutionary philosophy of the second half of the nineteenth century or by the historical method of his German contemporaries. One striking merit it possessed: it explained or, if you

will, justified the hypothesis of multiple origin in a way Tylor and the English school had never succeeded in doing. In Tylor's case there is always the feeling that the acceptance of the theory of the multiple origins of culture was an afterthought. Here, with Bastian, it is the foundation of his whole edifice.

In the United States where so much of the best ethnographic work has been done, the trend from the very earliest days was definitely anti-evolutionistic and anti-historical, the only exception, of course, being Lewis Morgan. But he has always had ludicrously little influence in America. This anti-evolutionistic tendency was always associated with a militant acceptance of the hypothesis of multiple origin, at first quite independent of Bastian's ideas. The great figures of the early period of ethnographic research in America, men like Otis T. Mason, J. W. Powell, and D. Brinton, assumed the diversity of cultural origins as axiomatic. The fashion in which they spoke of the operation of psychic forces was always vague, incoherent, and somewhat pretentious. Like the other ethnological theorists of the nineteenth century they assumed that the difference between the mentality of primitive peoples and of ourselves was one of degree and not of kind.

What can be called the s ,nd period in American ethnological theory was ushered in by Professor Franz Boas. He developed a rigorous analytical method in the study of the American Indians, which has been of far-reaching influence upon all subsequent research.[1] He, too, accepted as axiomatic the theory of multiple origins, and in obedicnce to this theory he insisted upon describing each culture in terms of its greatest achievement. The existence of such cultural peaks in every area was then interpreted as proof that every people had, unaided, succeeded in developing themselves along certain characteristic lines. Historical considerations, except some vague intertribal borrowings of a restricted nature, were, on the whole, excluded.[2]

[1] Perhaps the best example and, at the same time, the reductio ad absurdum of the method is Dr. Goldenweiser's essay, *Totemism, an Analytical Study.*

[2] This, in spite of all insistence to the contrary.

In short the so-called historical method of Professor Boas is really a purely logical and analytical one and is naïvely unhistorical. It can perhaps be best illustrated by the following example. If, for instance, it is logically probable that the method of reckoning descent in a clan might have originated either in the matrilineal or the patrilineal line and tribes are found where one or the other system prevails, Professor Boas would insist that this is all that interests us and covertly assume that this represents an original condition. In other words, a static fact of a particular period is regarded as pointing to an ultimate historical condition. If the Dakota Indians, all of whose linguistically and culturally cognate neighbors have a clan organization, do not themselves possess one, this is taken to mean that they never possessed one, despite the presence of a specific kinship terminology generally found associated with the clan and despite the fact that outlying divisions of the tribe actually have a clan organization. No more blatantly unhistorical approach can well be imagined. That a social structure like the clan can break down with ease is a fact that the members of this school will under no circumstances tolerate. In other words, we have here a frank avowal that wherever possible a non-historical explanation is to be preferred to an historical one. Now since some of the very best ethnographical data have been collected by members of the Boas school, their theoretical bias has led to a marked distortion in the collection and presentation of the facts. Quite naturally the data collected unwittingly emphasized their standpoint and this has made it very difficult to attempt any positive reconstructions. However, while the method of Professor Boas and his school has thus been a baneful influence in this respect it has had a most beneficial influence in other ways, and has enabled us to get a more complete picture of primitive society than had been known before.

The second of the heritages taken over from the evolutionary period was the idea that ethnology is essentially a biological science. Survivals were treated as though they were fossils and purely biological concepts, such as convergence, were freely bandied about. It was likewise, because of this underlying as-

sumption, that the ideas of fixity and unchangeableness of primitive peoples took such firm roots. What we have reflected here is the concept of the fixity of species. It is to this same heritage that the numerous attempts at exact and rigid schemes of classification were due. Indeed, the whole atmosphere was that of the laboratory and all interest can be said to have been centered in facts that could be quantitatively measured. Ethnologists sought to determine the traits of a given culture much as biologists sought for criteria for the establishment of species and genera. The study of the intangible factors that exist in all cultures or the application of a dynamic viewpoint, was as foreign to them as was biological chemistry to the majority of the older generation of evolutionists. Even where so-called historical schools developed, like those of Gräbner and Elliot-Smith, much of this essentially biological type of classification on the basis of specific criteria has persisted, though apparently this fact is not realized. Most baneful in its influence in the study of primitive peoples has, of course, been the concept of fixity as used by practically all the anthropological theorists. None of them, no matter how historically-minded they claimed to be, ever stopped to trace its genesis or examine its justification. It has passed into sociological and historical text-books and nothing short of a bolshevistic upheaval is likely to dislodge it for another generation or two.

The third inheritance is of a more insidious type and consists of the wholesale equation of the mentality and the culture of the illiterate peoples among ourselves with that of primitive peoples. This equation, we have seen, has a necessary corollary for the theory of evolutionary stages and seemed quite plausible enough when the resemblance in belief and custom between the two was the dominant interest. Indeed so valid did it seem and so valid does it still appear to innumerable theorists, that no investigator has ever seriously stopped to envisage the actual conditions.

Yet the moment we do so this equation loses much of its significance. The illiterate European of the Middle Ages, for instance, was always surrounded by representative members of the educated classes. Cross-currents of the most varied kind touched him at every point. There was a definitive break between the viewpoint

embodied in his usual customs and interpretations and the one he was taught by the priests to regard as true and officially sanctioned. And this break, which frequently took the form of a conflict, robbed the customs of much of their dynamic character and endowed them with a certain fixity and with a tendency to persist unchanged. This and the fact that in the tenets of the Church they had the example of a dogmatic permanence with which no individual was permitted to interfere, contributed definitely toward eliminating all personal variations in their attitude toward the fixed symbolism of custom and belief. The peasant group was to all intents and purposes an undifferentiated unit in this regard. Their symbolism, too, was of a composite origin. Part of it represented an inert survival of what had once been functional, part of it was semi-functional—the local festivals, customs, etc.— toward which the Church took a passive attitude, and part of it, finally, was definitely functional, namely the symbolism sanctioned by the Church officially.

In spite of the belief to the contrary most of the above assumptions inhere quite definitely in the theory now to be briefly considered, that of the French sociologists.

The sociological school that flourished in France toward the end of the last and the beginning of the present century under the recognized leadership of Emile Durkheim, has its roots in the philosophy of Comte and the sociology of Herbert Spencer. From Comte, Durkheim inherited his concept of society, his mania for rules, the rigidity and dogmatism of his system; from Spencer, his interest in the genesis of ideas and the comparative method. Of other influences certainly the most significant was that of the German school of folk-psychology (*Völkerpsychologie*) of Steinthal, Lazarus, and Wundt. All these various ideas and influences he welded together into a coherent system of sociology with a definiteness and a precision hitherto unattained.

This is not the place to enter into a discussion of his theory. That has been done by numerous scholars for the last twenty years. All we wish to point out here is that the fundamental tenet of Durkheim is that the study of the individual will never disclose the laws governing the society. To do that we must determine

and investigate what he so aptly called the *représentations collectives*. Now these "collective representations" can only be obtained by the comparison of one society as a unit with another, by the mutual interaction of societies. The individual can only be understood if we realize that these collective representations impose themselves upon him and determine his thoughts and actions.

In trying to properly evaluate Durkheim's ideas it is well to remember that he arrived at his concept of collective representations from a study of the data of our civilization and that his interest in primitive peoples represented an application of certain general principles to a particular set of facts. In other words it was merely illustrative.

The secondary nature of his interest in the data of primitive culture led to a curious neglect of all critical evaluation of the sources themselves. The hypothesis itself rendered variations in the facts and the attitude of individuals negligible and this seemed to be borne out admirably by the data obtained from primitive peoples. All that remained to be done, then, was to determine the extent to which the study of the collective representations among primitive peoples could throw any light upon the genesis of our own categories and logical principles. Durkheim and his school were at one with the English theorists in not predicating any essential difference between our own and primitive mentality.[3] A gradation among the cultures of primitive people was however tacitly assumed and a time-honored heirloom of the evolutionist school, namely that the Australian aborigines represented the lowest of surviving primitive civilizations, was accepted without the slightest hesitancy.

The school of Durkheim has given us no new characterization of primitive mentality specifically. What it sought to do was to explain, in terms of society, why it is that cultures, all over the world, take on certain forms and crystallize along certain lines. What Bastian ascribed to psychic necessity, they ascribe to societal necessity. The forces expressing themselves in collective representations are as fixed and definite as those expressing themselves

[3] Except, of course, Lévy-Bruhl, who in some fundamental ways does not belong to this school, although he is intimately associated with it.

in Bastian's elementary ideas. For both the theory of multiple origin was axiomatic and both systems are fundamentally unhistorical.

By thus cutting itself off from all interest in the critical evaluation of the sources and by blinding itself to the implications of the numerous variations found in primitive society, Durkheim needlessly stultified a method and a viewpoint which has numerous elements of truth in it and which, even with its many defects, constitutes a most salutary antidote to the crude and uncritical individualism of so many ethnologists and sociologists.

We must now turn to an essentially different theory although it emanated directly from that of Durkheim, that of L. Lévy-Bruhl, as elucidated for the first time in a very fascinating volume, *Les fonctions mentales dans les sociétés inférieures*. Here for the first time we meet with an interpretation of primitive culture, which one might have expected the English evolutionists to have developed, namely that primitive mentality is different in kind from our own, that, for example, our laws of logical thinking do not hold for it. The work in which he embodied these views is certainly one of the most brilliant in the whole range of ethnological literature and his lucid—somewhat too lucid—presentation of his two main contentions—the prelogical mind and the *participation mystique* of primitive peoples—have led to an unusually sympathetic reception of his views. Since it represents a real break with the views previously discussed it deserves more than a passing treatment.

We must insist, at the outset, that the manner in which Lévy-Bruhl uses his facts is open to two serious criticisms. They are, first of all, frankly illustrative of a general assumption, namely, the collective representations of Durkheim; and, secondly, they are accepted without the slightest attempt to critically control or evaluate them. This is the comparative method at its worst and is difficult to pardon in one who has set out to present certain facts in a hitherto novel way, a way which implies an entirely new psychological orientation. This total lack of a critical attitude toward his sources is Lévy-Bruhl's cardinal defect and has led to some of his most glaring misinterpretations. Take, for example,

his statement that the American ethnologist, Cushing, whose romantic proclivities were very well known, possessed a mental suppleness of so extraordinary a kind that he eventually was able to think like the Zuñi among whom he lived![4] Now this is an exceedingly vital matter. The fact that a Western European could so completely identify himself with the natives he was investigating as to be able to think like them would give to the data obtained by such a man an unusual degree of authority. We are justified then in demanding of Lévy-Bruhl on whose authority he makes such an extravagant claim for Cushing. He does not give it, but it is well known that this appraisement comes from Cushing himself. A quotation from Cushing follows recounting, in the latter's words, the supposed belief of the Zuñi that even utensils in common use, known to have been manufactured by them, possess mystical properties and may, according to circumstances, become malevolent or benevolent. No other example is given to prove this exceedingly important point. Now, in addition to the above quotation from Cushing, one in which, as a matter of fact, Cushing has been most hopelessly led astray, he stresses with approval another of Cushing's *obiter dicta*, namely the extraordinary persistence among the Zuñi of the form of utensils, down to the most minute details of ornamentation. This persistence, he insists, is due to the belief that mystic powers inhere in them. It is characteristic of Lévy-Bruhl's method that he accepts Cushing's statement and interpretation without any hesitation. His only "substantiation" comes from the vague statement of a comparatively unknown informant. Yet on the strength of these two "authorities" he, later on, infers that

> even what is in appearance the most insignificant innovation opens the door to certain dangers, may free hostile forces and eventually cause the death of the author and those connected with him.[5]

In another passage, in connection with the very common belief that the earth is sacred, quoted from Pechuel-Loesche for the Loango Negroes, he adds,

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[4] Lévy-Bruhl, 35–36.

[5] Ibid., 34.

The same belief exists among the North American Indians who consider it a sacrilege to cultivate the soil because this might mean the harming of the mystical power inhering in it and thus draw in its train the most direful consequences.[6]

No authority is given and the statement, certainly as applied to large portions of America, is quite incorrect if, indeed, it holds at all.[7] Such examples can be multiplied *ad nauseam*. How completely one-sided is his use of the sources is shown by the fact that he has actually excluded from consideration all the information bearing on the idea of a supreme deity, creation myths, etc., which has been available and accessible for some years. He has only himself to blame, therefore, if such omissions are attributed to the fact that they do not fit into his theory.

Lévy-Bruhl starts with two assumptions, the collective representations, and the fixity of culture. All the members of a tribe are pictured as thinking alike and as having the same reactions, and one tribe is just like another and can be used to illustrate the general tenets of the theory. Arawaks of Brazil are thrown together with Negroes from Loango, and Australians with Polynesians and Zuñi Indians.

For Lévy-Bruhl the fundamental trait of the mental activity of primitive people is its lack of differentiation: It is so little differentiated, he insists, that a native is

not capable of separating ideas or images of objects from the sentiments, emotions and passions that call forth these ideas and images or which are engendered by them. This interpenetration of the "representation" with emotional and motor elements takes the thought of primitive man out of the sphere of the properly-speaking cognitive activities. These representations imply not merely that he has an image of the object which he believes to be real but that he expects something from it and fears it, that a specific activity emanates from it and is exercised upon it. This is an influence . . . . occult power, which varies according to circumstances and objects, but which is always real to the primitive mind and forms an integral part of his representation.[8]

Now this form of mental activity, we know, he calls mystical.

[6] Ibid., 34.

[7] To substantiate the statement that the various parts of the body exercise magical influences, he not only uses a secondary source (K. T. Preuss) but a theory of Preuss!

[8] Ibid., 30.

Mysticism, here, is of course not to be taken in the religious sense, but signifies simply

> a belief in forces, influences and activities that are real although imperceptible to our senses. The reality of the primitives is, in other words, a mystical one.[9]

It is the mystical property of things and not the attributes given us by our sense-impressions which possess reality. To this belief, he insists, is due the primitive indifference to experimental tests of the truth of an event or a statement.

From the above flow two fundamental postulates, first the *law of participation* implying a "participation" between the individuals and objects bound together in a "collective representation"; and secondly the prelogical nature of their thought, implying an indifference to the law of contradiction.

> According to this form of mentality the opposition between the one and the many, identity and dissimilarity, etc., does not entail the necessity of affirming one of these terms if one denies the other or inversely.[10]

The ordinary cause and effect relation is non-existent, of course. From the viewpoint of the content of the "representations" such a mentality is mystical and from the viewpoint of their interconnections, prelogical.

Lévy-Bruhl's theory has been discussed so frequently within the last few years that we shall limit ourselves here to just a few observations. It has already been pointed out by previous critics of his position, that even the most sophisticated member of our community is at times subject to prelogical lapses and that not an inconsiderable portion of our community are prelogical a good part of the time. Now this very capacity of an individual to think both logically and prelogically seems to suggest that we are here dealing with a certain general psychical trait and that it is *a priori* unlikely that primitive man should therefore be completely devoid of the logical faculty, unless indeed we assume that prelogical mentality represents a period antedating the appearance of logical thinking, an inference which Lévy-Bruhl emphatically repudiates. Now if we examine those moments when we are prone to prelogical

[9] Ibid., 30.
[10] Ibid., 77.

lapses they will, I think, be seen to coincide with an attitude of indifference or of complete absorption in one particular trend of thought. In both instances the logical function is voluntarily not exercised. If Lévy-Bruhl had contended that this attitude of indifference was the dominant one among primitive people, if he had even contended that for some reason or another, primitive people were prevented from exercising their will toward logical functioning most of the time, or indeed that "pure" logical thinking was relatively rare among them, he would have been measurably nearer the truth. In the form in which he has stated his theory both the facts and psychological probability are simply against him. Methodologically, too, the very fact that the same set of data is susceptible of two interpretations, one making primitive mentality akin to ours, and the other making it prelogical, itself constitutes a ground for caution. Indeed Lévy-Bruhl seems to have fallen a victim to that very *post hoc ergo propter hoc* argumentation that he hurls against the English school and has, in fact, argued that the prevailingly affective tone of primitive beliefs and activities constitutes a denial of the possibility of logical thought.

Yet however negative be the attitude we may be compelled to take toward his analysis, to Lévy-Bruhl belongs the merit, paradoxically enough, of having envisaged the ethnological problems customarily dealt with, in a way that is more likely to lead to a penetrative analysis of certain of the aspects of primitive mentality than did previous attempts. He has caught something of the psychological spirit of our time as the sympathetic reception accorded to his views by contemporary psychologists and sociologists attests. Perhaps it is not with unmixed feelings that the positivist Lévy-Bruhl views the incorporation of his fundamental postulates into what he would call the psycho-analytic mysticism of Jung.

The psychological inroads into ethnology, to which I wish now to turn, suffer from practically all the defects pointed out in the criticism of Lévy-Bruhl. Their knowledge of the actual data is, on the whole, not so good and is used even more uncritically. For so keen a thinker as Freud, his *Totem and Taboo* is really a

woful performance. Freud and his school have shown most interest in primitive mythology and its relations to dreams, a field that is bound to become of the utmost importance for the ethnology of the future. The interpretation of dream symbolism is still, however, in such an inchoate condition and the psycho-analysts' use of ethnographic data is still so slovenly and unintelligent that all the inferences they have so far made, are of comparatively little value. That there are extremely important inferences to be drawn is quite transparent. But even if the analyses, made by such Freudians as Rank, Abrahams, etc., should prove to be true, it would still be necessary to demonstrate that the myths of the primitive people really represent dreams they have or once had and are not simply old stereotyped patterns. That the concepts with which the Freudians work—the complexes, identification, transference, suppression, ambivalence, sublimation—that these play as great a role among primitive peoples as amongst us, is evident. Yet what that role is, only the most careful and thorough investigation can disclose.

It seems somewhat unfortunate that the only attempts made by professional ethnologists to apply the Freudian doctrines to ethnological data, those of Rivers and Malinowski, should not have confined themselves to the more prosaic task of presenting the actual facts quite free from the suspicion of theorizing.[11]

The psycho-analytic school of Adler has made no attempt to interpret primitive man and yet the main tenets of his theory could easily be applied with advantage to the ethnological data. Such concepts as the guiding-fiction, the orientation toward a predetermined goal, the will-to-power, and the inferiority complex, are likely to throw a flood of light on primitive activities and

[11] W. H. R. Rivers, Conservatism and Plasticity, and B. Malinowski, Psychoanalysis and Anthropology (Psyche, vol.55, no. 4, April, 1924). Rivers employed the Freudian doctrine of transference to explain the psychology behind the domination exercised by a small number of "immigrants" possessed of a high culture, and Malinowski employed it to prove a correlation between a patrilineal and matrilineal society and the differentiation of what is called the "nuclear complex." How dangerous such theorizing is is manifest from the fact that the "nuclear complex" arrived at from the study of the Trobriand islanders as typical of a matrilineal society, can be shown to exist among certain American Indian tribes who have a patrilineal reckoning.

thought. Indeed, related if not identical inferences have already been drawn by not a few ethnologists on the basis of their personal acquaintance with primitive communities without any knowledge of Adler's theories. Adler's *Individual Psychology* has the merit of being dynamic and of not being entangled in special sociological or psychological theories. It perhaps errs on the side of emphasizing individual at the expense of collective activities, but it, at least, leaves the path open for a psychological analysis of the real individual and not that mysterious hybrid-individual that many ethnologists and historians are so fond of.

It is the application of the psycho-analytical theories of Jung that is most likely to have the most profound influence upon ethnology. This is, after all, to be expected, if for no other reason than that Jung's attitude, in addition to containing entirely new concepts introduced by him, represents in a manner, the synthesis of current theories of psycho-analysis. He accepts the essential principles of Freud and Adler and has added his own, the latter serving both as a complement and a fusion-point for the whole. That he should so readily have accepted Lévy-Bruhl's concept of *participation mystique* and his prelogical mentality is symptomatic of the way in which he approaches primitive mentality. In the necessarily brief description of his views which we give here we shall confine ourselves strictly to those points that bear on ethnology.

Jung's viewpoint naturally falls into two compartments, the study of the nature of the psychic content and its functions, and the carrier of this content, the individual. The most significant part of the psychic content, for our purposes, is what he terms the archaic. Archaic, for example, is the quality of the image when it possesses unmistakable mythological parallels; the relation of identity with the object (*participation mystique*); concretism of thought and feeling; compulsion and inability of self-control; the fusion of thinking with feeling, of feeling with sensation, or of feeling with intuition, etc. All these, he claims, correspond with the qualities of primitive thought. Connected with these archaic elements we find "collective representations" of primitive people representing not only collective ideas but also collective feelings,

and which find their counterpoint in the general concept of right, of the state, etc. among civilized man. We are thus brought face to face with the most widely known of all Jung's concepts—that of the unconscious.

The unconscious, for Jung, are those contents and processes "not related to the ego in a perceptible way."[12] These contents he divides into two groups, the

> personal unconscious which embraces all the acquisitions of the personal existence, hence the forgotten, the repressed, the subliminally perceived, thought and felt.[13]

and the collective unconscious. The latter represents those personal acquisitions which originate

> in the inherited possibility of psychic functioning in general, viz., in the inherited brain structure. These are the mythological associations—those motifs and images which can spring anew in every age and clime, without historical tradition or migration.[14]

To Jung practically all primitive thought is, at bottom, conditioned by unconscious motivation or more specifically, by the collective unconscious. It is because he regards will as a "sum of psychic energy, disposable to consciousness," that he assumes it to be lacking in primitive mentality.

His concept of primitive thinking comes out best in what he has to say about concretism and we shall quote this *in extenso*.

> Primitive thinking and feeling are exclusively concretistic; they are always related to sensation. The thought of the primitive man has no detached independence but clings to the material phenomenon. The most he can do, is to raise it to the level of *analogy*. Primitive feeling is always equally related to the material phenomenon. His thought and feeling depend upon sensation and are only faintly differentiated from it. The magical influence of the fetich is not experienced as a subjective state of feeling, but sensed as a magical effect. This is the concretism of feeling. The primitive does not experience the idea of divinity as a subjective content, but the sacred tree is the habitat—nay even the deity himself. This is concretism of thinking.
>
> Just as *participation mystique* represents a fusion of the individual with outer objects, so concretism represents a mixing-up of thought and feeling with sensation. It is a state of concretism when the object of thinking and feel-

[12] The Psychology of the Unconscious, translated by B. Hinkle, 613.

[13] Ibid., 616.

[14] Ibid., 615, f.

ing is at the same time also an object of sensation. This coalescense prevents a differentiation of thought and feeling, anchoring both functions within the sphere of sensation, i.e., sensuous relatedness. Accordingly they can never be developed into pure functions, but must always remain the mere retainers of sensation. The result of this is a predominance of the factor of sensation in the psychological orientation.[13]

So much for Jung's concept of the psychic content and its functions as applied to primitive peoples. The examination of the carrier of the psychic content led him to conclusions of even greater import for the study of culture in general and of primitive culture in particular. These conclusions have been formulated in his well-known work entitled *Psychological Types*. He predicates four attitudes depending upon the basic psychological function to which they are oriented, namely, thinking, feeling, intuition, and sensation. These four types are again grouped together into four classes, the rational and irrational, where the quality of the basic function is stressed, and introversion and extraversion, where the preferential movements of the libido are emphasized.

As we have pointed out above, all the psycho-analysts use ethnological data in a purely incidental manner and simply as illustrations for inferences they have drawn from the study of civilized man.

Jung's doctrine of the collective unconscious has a direct bearing on problems that ethnological theorists wrestled with throughout the nineteenth century namely, the nature of similarities in culture and their origin. The English theorists explained these similarities as due to the fact that the human mind works in the same way under similar conditions and Bastian and his followers ascribed them to the existence of a limited number of Elementary Ideas. Jung, so it seems to me, finds in his theory room for both explanations. He clearly assumes a multiple origin for culture with all its historical implications. The ease with which he accepts the concept of primitive society constituting an undifferentiated whole, with practically no significant variability, the schematic manner in which he assigns the archaic elements to primitive culture, all this is definitely reminiscent of the efforts of the

[13] Ibid., 534, f.

evolutionary school for establishing a fixed, simple, undifferentiated starting-point. As a matter of fact, Jung does predicate a definite series of stages in the psychical evolution of mankind and quite definitely equates the psychic evolution of the individual with that of mankind. He has, in a fashion, projected his archaic elements into primitive mentality, precisely the same error that Lévy-Bruhl commits. In both cases we are dealing with an unconscious desire for some starting-point.

All the theories we have so far dealt with are definitely committed to the hypothesis of the multiple origin of culture without regard to whether some of these elements, particularly the so-called higher ones, originated in one particular part of the globe and subsequently spread.[16] Yet the determination of this point involves questions of the most fundamental significance. If it could be shown that all but a negligible minimum of culture elements originated but once, then the theory of psychic unity predicated by the English and American schools, the elementary Ideas of Bastian, the collective representations of Lévy-Bruhl, and the cultural implications of Jung's collective unconscious, lose much of their validity. If, for instance, it can be shown that certain symbols, specific myths, specific religious customs and beliefs, specific types of social organization, etc., have travelled from one place to another, then it would not be necessary to assume that they have arisen independently whenever we encounter them. Jung's collective unconscious would then conceivably only operate as a selective agency determining what elements are to be borrowed. The historical interpretation of primitive culture therefore means something quite different from the mere determination of certain culture elements and their

[16] We do not, of course, wish to imply that these theorists denied the existence of borrowed elements or the frequent occurrence of local culture-intermingling, but simply that their whole approach was either a biological or a psychological one. In examining a given people they rarely asked themselves the question, whether a culture could be interpreted in terms of another or whether its growth possibly represented the elaboration of some stimulus from without, but they simply assumed that the essential elements of the culture of such a people and the determinants of its growth came from within. In this sense all the theories implying the hypothesis of multiple origin are unhistorical.

dissemination. It also implies a definite psychological theory, this irrespective of whether its protagonists are aware of it or not. Of the two historical schools that arose at the beginning of the twentieth century, that of Gräbner-Foy in Germany and that of Rivers-Elliot-Smith in England, only the second realized this. We shall therefore confine ourselves here to an examination of the tenets of this second school.

It must be stated at once that it is just as essential for the historical as for the psychological schools to present accurate and critically-controlled data and much of the justifiable criticism levelled against both is that they have not done so.

Briefly stated, the Rivers-Elliot Smith theory claims that all the most significant features of primitive culture—the dual and the clan organization; agriculture; irrigation; pottery; metal-working; stone-working; architecture; sun-worship; all the higher forms of religions and ceremonial customs—all originated in Egypt and then were spread by groups of immigrants over the face of the earth. It thus follows as a corollary that the civilizations encountered by these immigrants were of the simplest description imaginable. What precisely these "archaic" civilizations consisted of has never been adequately discussed, although theoretically it is of considerable importance to know what we are to predicate for such simple cultures and how exactly we can arrive at a method for determining what they possessed. To simply subtract all those elements found in the "immigrant" culture and regard the residue as representative of the "aboriginal" civilizations, is ridiculously artificial and not even justifiable provisionally. We have here one of the fundamental weaknesses of the whole theory.

Now such an attitude necessarily means a complete denial of the theory of multiple origin. Neither Rivers, Elliot Smith, nor Perry, have had the slightest hesitancy in drawing this inference sharply. Personally we think the facts they have adduced interesting but so uncritically and unintelligently presented that no conclusions can possibly be drawn, certainly not the fundamental one that the higher cultural elements found among primitive people are to be ascribed to an immigrant group and to the influences

radiating from them. But, even if their main contention were true, this would not necessarily imply a denial of multiple origin for quite a number of beliefs and ideas which we must unhesitatingly include among the higher elements of culture. The mechanics of cultural transmission would render any inert adoption of customs and ideas even by the simplest people improbable and many of the facts adduced by the psycho-analysts or, at least, brought to the fore by them, emphasize this improbability. Rivers, as was to be expected of him, grasped both problems. He realized that the subjective attitude of the "simpler" peoples who, it was admitted, were always in the majority, toward the invader, was an essential element in explaining the latter's triumph, and that the unconscious elements so strongly stressed by the psycho-analysts, must have in some fashion or other, expressed themselves among even these "simple" peoples.

The cruder form of the theory, as expressed in the writings of Elliot Smith and Perry, is so full of inconsistencies, so slovenly in its use of data, and so oblivious of chronology that until it has radically purged itself, it can hardly be intelligently discussed. Yet in spite of all its manifest defects and crudeness it possesses the merit that it will force us to re-examine the whole concept of independent development, of psychic unity, and the nature of culture dissemination.

As we glance back over the types of ethnological interpretation that developed at the end of the nineteenth century and the beginning of the twentieth, it is quite evident that the historical-psychological approach has become fairly dominant and has supplanted the biological. But an historical or a psychological approach can be just as crude and schematic as any other, as the writings of Elliot Smith, Gräbner, K. T. Preuss, and even that of Lévy-Bruhl and the Freudians, amply attest. At times, too, what is called an historical approach, may, when more closely examined, turn out not to be so. Gräbner's Culture-strata (*Kulturkreise*) is essentially a biological-geological concept, and the historical approach of Professor Boas and some of his followers is fundamentally a logical-psychological one, further contaminated by the fact that the ethnological data are treated as natural objects.

Any interpretation of ethnological data wishing to make any claim to adequacy must unite the true historical with the psychological approach. Certain tendencies and processes that can, on the basis of well-authenticated facts, be shown to have been operative in the history of civilized peoples, cannot be summarily dismissed when discussing primitive peoples. In this respect the theory of Rivers, Elliot Smith, and Perry has been of great value. Had they been more historically-minded they could not, on the other hand, have fallen into the error of denying the existence of certain undeniable instances of the independent origin for quite a number of beliefs, customs, and techniques, nor failed to see that Jung's theories of the unconscious and of the Types, furnish a real psychological basis for the independent origin of many beliefs, ideas, and possibly even of customs. The psycho-analysts, however, are wofully weak on the sociological side. The school of Durkheim, on the other hand, with its strong emphasis on this aspect of culture, stultified itself from the beginning—Mauss excepted—by its metaphysical terminology, its denial of the individual, and its essential lack of interest in the historical approach. Now there is, so it seems to me, a comparatively simple theory which could combine even so extravagant an assumption as Rivers-Elliot Smith's migrant culture, with a firm belief in the independent origin of numerous beliefs, customs, and techniques. All we need assume is that none of these beliefs, etc., became *socially functional* until "simple" peoples had come into contact with some immigrant culture. Indeed, even if we were so to attenuate the rôle of the hypothetical invaders as to confine their influence to a minimum and to regard their culture as serving merely as a formal matrix into which elements of purely independent origin were cast, this would still not militate against the basic fact that none of these independent elements would have become *socially functional* had it not been for the presence or the impact of this assumed immigrant culture.

With regard to the basic psychological question of the nature of primitive mentality, finally, we see no reason for departing from the older view that it is essentially identical with our own, nor any reason for assuming with Lévy-Bruhl or Jung, a purely pre-

logical mentality. That the life of sensations and of motor activities plays a role utterly disproportionate to that of thought is apparent; that, much of their thinking is suffused with a feeling tone, that too, is true. But that it is identical with what Jung calls *thought dependent upon feeling*, is more than questionable. All ethnologists who have come into active contact with primitive peoples would be unanimous in affirming that thought is no more subordinated to the principle of feeling among primitive people than it is among us, nor would they agree that the laws of logic are only ostensibly present.

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THE SUPPOSED MAYA HIEROGLYPH OF THE SCREECH-OWL

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General Interpretation

A QUITE frequent hieroglyph of the Dresden Codex is the one of which a typical specimen is reproduced in figure 1, appearing at least 75 times in this pictorial manuscript. It is relatively less numerous in the Perez and the Tro-Cortesianus Codices; in the latter one the hieroglyph of the screech-owl evidently sometimes is replaced by the simpler figure 2.

The symbolic value of the hieroglyph is quite easily made out; the numerous representations in the pictorial series of the Dresden and Tro-Cortesianus Codices clearly show that the sign has two different significances, one being "death" in a broad sense, the other "fire" and related ideas.

On the other hand, the interpretation of the glyph as a figurative character is more difficult and requires a subtle investigation of the details that compose it. The opinion that the hieroglyph represents the head of the screech-owl, although sustained by the leading authorities in Maya archaeology and zoology, namely Seler,[1] Schellhas,[2] Förstemann,[3] Stempell,[4] Tozzer, and Allen,[5] is erroneous, as will be demonstrated soon.

The hieroglyph (fig. 1) consists, in my belief, in the fusion of two elementary parts, the anterior being an animal's head and the posterior the main detail of the sign Ek, "black." Figure 3,

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[1] Eduard Seler, Gesammelte Abhandlungen zur amerikanischen Sprach-und Altertumskunde, 1: 392, 1902; 4: 670, 1923. Berlin 1902–1923.

[2] Paul Schellhas, Representation of Deities of the Maya Manuscripts. Paps. Peabody Mus., Cambridge, Mass., 4: 13–14, 15, 1904.

[3] Ernst Förstemann, Commentary on the Maya Manuscript in the Royal Public Library of Dresden. Paps. Peabody Mus., 4: 196, 1906.

[4] W. Stempell, Die Tierbilder der Mayahandschriften. Zeitschrift für Ethnologie, 40: 726, 1908.

[5] Alfred M. Tozzer and Glover M. Allen, Animal Figures in the Maya Codices. Paps. Peabody Mus., 4: 338 ff., 1910.

an auxiliary drawing, shows the glyph divided in these two parts; figures 4 and 5 are two representations of the symbol Ek. A practically identical combination is the case of a hieroglyph that depicts the head of a dead man. As well in one of the variants of the day-sign Cimi (fig. 6) as in one of the hieroglyphs of the death-god (fig. 7) the human heads with the closed eye and the fleshless lower jaw possess the Ek-element in the posterior part of the face. In this case the two white beads surrounded by a black band are joined to a slightly curved line, similar to that employed in the complete hieroglyph of Ek (figs. 4 and 5). These forms prove, indeed, that the arched line similar to a 3 does not belong to the Ek-sign; so it must pertain to the anterior half of the glyph, precisely as was indicated in figure 3.

There might be raised the objection that the Ek-element of this combined sign very often has no dark outline as, for instance, in figure 8. This scruple, however, is not justified. Whether the element is drawn black or with a fine line is of no value for the reading of the glyph; there is no possibility of equivocation. Our hieroglyph is so characteristic, so singular, that it is recognized at the first glance, having the Ek-beads clear or dark; only this detail is so very small in the written glyphs that the scribe did not always succeed, or did not always want to accentuate it by darker outlining.

There might be taken the point of view that we have to do with two variants of the bead symbol of different signification, the dark one indicating "black" and the lighter one another conception. This opinion, however, receives no support in the pictorial manuscripts; the two variants appear indiscriminately in the same contexts. Besides, being such a small figurative detail, it would have been a rather impracticable variation causing frequent misreadings.

Or we might take the opinion that the cases of the darker representation of the two little beads are simply casual. Then the normal type of the element would be the lighter variant and the symbolic value Ek, "dark," of course, no longer sustainable. An absolutely distinct meaning of the detail has to be looked for,

which is not probable in view of the significance of the whole glyph and the similar case of the head with the closed eye.

At last, we might say that it was just the same whether the element was written with fine or with dark outline. Concerning the practical situation in our particular case, this is undoubtedly true, as already stated: the compound hieroglyph of the so-called screech-owl can be easily recognized whether or not the detail has black contours. But it cannot be true in a general way for the independent element or for some other combinations. Otherwise Ek, "black," would be identical with the two light beads, which is impossible. The disk with two white beads signifies "precious greenstone," "brilliant or shining stone," that is a conception directly contrary to "black."

There are, furthermore, certain variations of our hieroglyph which can only reasonably be interpreted by the premise that the detail in question is intended to be black. The situation concerning the Ek-element might thus be stated in the sentence that the light variants are theoretically incorrect, but that they can be tolerated, as they imply no confusion and possess, on the other hand, some esthetic and technical advantages over the full form.

We may, therefore, accept the thesis that the second detail in figure 3 really represents the essential part of the glyph Ek, "black."[6]

Now the forepart of the hieroglyph (see again fig. 3) shall be analyzed. Its configuration, certainly, has some resemblance to an owl's head. The upper arch might indicate the limits of the feathery veil around the eye, this being distinctly drawn. The lower part might stand for the reduced beak. These considerations and the circumstance that the sign nearly always is related to death, evidently induced the forenamed savants to emit the hypothesis of a glyph for the screech-owl. For a hieroglyphic sign representing "death" the owl, indeed, would have been a very appropriate object.

A more detailed scrutiny, however, soon weakens the stated reasons. The lower half of the first part of figure 3 has much more

[6] On Ek consult also my paper, Apuntes sobre el jeroglífico maya *ek*, "negro." Anales del Museo N. de Arqueología, etc. de México, 5 época, 1: 209–215, 1925.

similarity to the mouth of a mammal than to the beak of a bird, as represented in Maya hieroglyphs. For comparison I give in figures 9 and 10 the forepart of the heads of two quadrupeds, figure 9 being that of a jaguar, figure 10 that of a deer. Figures 11 and 12 are heads of the black spotted dog pressed into the calculiform shape of the hieroglyphic characters. In the latter two figures the mouth is identical with the same detail in our glyph; in the former the buccal line is a little more elaborate, forming part of relatively large realistic drawings, but the characteristic corner of the mouth is also represented in the same manner.

In the four mammal heads, figures 9–12, we see a dotted line encircle the mouth. This line marks, as can be seen clearly in several colored drawings of the codices, the difference between the general color of the respective animal and the lighter tones on the belly and other lower parts as well as near the mouth. The dotted line also appears in our glyph (fig. 1, etc.) but it ends at the eye instead of going around the mouth. This divergence, I am sure, can be explained in the following way. The original hieroglyph was like figure 13, that is, figure 1 with the dotted line drawn analogous to the other animal heads; but the scribes changed it to its known form, because the lower part was too crowded. This heaping of details in the lower half was not only objectionable on esthetic grounds (it disturbed the balance of the calligraphic sign), but also had certain practical drawbacks. It was cumbersome to write the dotted line between the arch and the mouth-details keeping apart from both; with the slightest carelessness the punctuated line would have touched the arch above or the mouth below. With the deviation of the dotted line to the eye the glyph acquired symmetry and graphic fluidness.

If our hieroglyph does not stand for a bird but a mammal, we might look among the pictures of these animals and their glyphs for corroboration of our thesis. Now in the Dresden Codex there appears several times a character (fig. 14) so similar to our hypothetical figure 13 that there can be no doubt of their identity in their anterior and principal part. Instead of the element Ek, the heads of the type of figure 14 have the sign Edznab, signifying probably "flint." The peculiar vertical arched line is easily to be

detected in all specimens of this head-glyph, if once the attention is called to that fact. A perusal of all these heads in the Dresden and Perez Codices leads to the conclusion or conjecture that it might represent the head of a dog; not the variety with black spots (figs. 11 and 12), but a one-colored type of which several entire representations exist in the picture manuscripts.

It might be objected that figure 14 with its dotted line around the mouth contradicts the hypothesis I just formulated about the causes of the shifting of this detail in figure 1. This contradiction is, however, only apparent. Figure 14 is a rare hieroglyph, wherefore the indicated difficulty did not become serious, while figure 1, on the contrary, is common, and in this the difficult execution of the original mouth-line was encountered again and again, calling for remedy.

Pursuing our investigation we find at least one indisputable full representation of our animal (fig. 15). The characteristic two arches behind the eye, the test detail of the glyph, are here clearly drawn and the round eye completes the proof. This animal, too, is of a uniform color without spots. Its general impression is that of a carnivorous mammal, the claws being very conspicuously drawn. Drs. Stempell[7] and Seler[8] took this animal for a deer, although the former with some hesitation. This opinion is surely erroneous. Although the picture is a little blurred, the long curved claws as shown in figure 15 can be made out. In this place the animal is conceived as the feminine counterpart of the old god D. Its principal glyph must be the first one of the series above the two figures. The second glyph of the second line probably also refers to the goddess who takes here the form of a quadruped. Indeed, in Dresden Codex 2, Codex Troano 6* and 11* a similar hieroglyph accompanies a female deity, the last two representations being distinctly that of old dames.

Continuing the search we find in Codex Troano 2 and 3 a well known mythological beast, a canine with the sign greenstone (generally taken for Akbal) over the eye (figs. 16 and 17), having

[7] Op. cit., 714, 739.
[8] Ges. Abh., 4: 546.

among its four hieroglyphs one (figs. 18 and 19) that is nothing else than the forepart of our hypothetical figure 3. In figure 16 this glyph is practically complete, while that of figure 17 can be restored easily to the form shown in figure 19. This glyph which accompanies the canine must be that of the animal himself, which in figure 17 is clearly characterized as a male deity by the lion-cloth.

Now we can draw the conclusion that our hieroglyph in form of the head of a dog-like animal with the Ek-element (fig. 1), the one with the Edznab-element (fig. 14), and the animal that represents a goddess (fig. 15) are identical with the greenstone (Akbal) mammal (figs. 16 and 17). This latter animal has been treated at length by Seler, but without reaching a definite determination; it remains an open question whether it is a domesticated dog, a coyote, or a kind of fox.[9] To these explanations of the late Dr. Seler I append the following considerations. In the Dresden Codex, colors are seldom applied to the figures; thus a white animal only means one that has in reality a uniform color. In the Madrid pictorial manuscript, however, there are large sections that show coloring and precisely the greenstone animals (figs. 16 and 17, as well as four similar beasts Codex Troano 32 and 33) pertain to such passages. We might fairly suppose that if a red dog were intended, this color would have been applied to it, while for a coyote yellow or brown would have been employed. Therefore the inference seems inevitable that a white dog is meant in these sections.

As corroborative evidence figure 20 can be adduced. By the context this glyph evidently indicates some food-stuff that served as offering to the gods. It is not very probable that coyote or fox meat would have been offered to deities; dog's meat, however was a dish frequently employed in the religious festivals of the Maya. The glyph is very similar to figure 14, although the arched vertical line does not appear.

The discussion of the available material has shown with sufficient clearness, in my opinion, that the old classification of glyph

[9] Ges. Abh., 4: 483.

figure 1 as the head of the screech-owl is wrong. The sign must be interpreted in the first place as "white dog," the head, or here only the forepart of the head, standing for the whole animal, as usual in Maya hieroglyphic writing. To this principal part of an animal head is joined the element Ek, meaning "black" and indirectly "west," "entrance to the Lower Regions." As there is no possibility of confusion with other dog-glyphs, I propose to call the whole sign for the sake of brevity the "Dog-black" hieroglyph.

Morphology

Although in its general configuration our hieroglyph is pretty uniform in all its representations, there exist many slight variations respecting form, size, and position of the different details that compose it. For a good many of these variants there can be given reasonable explanations, as esthetic motives, space necessities, a striving for clearness, the subordination of one hieroglyph to the other, etc. Morley is of the opinion that the sculptors in the execution of glyphs made "concessions to harmony of design."[10] Now the Codex Dresdensis is the work of a fine draughtsman, a veritable artist, so that we are well entitled to presume that he, too, took into consideration esthetic points of view; his hieroglyphs, indeed, are admirable specimens of calligraphy. The Perez Codex is also of artistic value, while the Tro-Cortesianus is painted by a person that had little talent. In this latter pictorial manuscript, therefore, principles of aesthetics may have had no influence.

We shall review the most notable and clearly recognizable distinctions of the various parts to which our glyph can be reduced.

The eye generally is a small circle (figs. 23, 28, 29, etc.). In many cases this circlet contains a little loop (figs. 8 and 25), characteristic of death eyes, or a curved line (figs. 1 and 62). In drawings of a small scale the circlet may dwindle down to a mere dot (figs. 37 and 64). The eyes drawn in the Tro-Cortes manuscript often tend to become small squares (figs. 24, 27).

[10] Sylvanus Griswold Morley, The Inscriptions at Copan, 259, note. Washington, 1920.

The line which joins the eye to the circumference is generally dotted, a fact easily explained by the genesis of this detail, which, as we saw, corresponds to the punctuated line of animal heads. A few times (figs. 27, 63, 68) the dots become small bars. In the Tro-Cortesianus Codex are several glyphs in which eye line and mouth line are exchanged (figs. 27 and 65). In figure 38, the head being very small, the dotted line is suppressed.

The nose, rendered by a little hook in glyphs figures 11, 12, and 20, is not at all indicated in our glyph, where simplification is the ruling tendency. The only exceptions represent figures 59 and 60, in which a hook with dots evidently stands for the detail in question.

The eye line conserves in the Dresden manuscript always its dotted character in accordance with its origin. Not so the mouth line, which ought to be in every case a full drawn line. But in fact it is quite often in the Dresden Codex only dotted, evidently with the purpose of equalizing both lines to give an effect of symmetry (figs. 42, 58, 61, 62, 67). For the same reason the circlets in the corner of the mouth have in figures 22 and 40 the same little filling as their corresponding eyes. The loop or circlet at the end of the line often degenerates into a mere hook (figs. 27, 38, 53) or disappears (figs. 47, 54, 70). In very small representations the whole mouth line may be missing (figs. 32 and 36). Rare variations, but undoubtedly indicating the mouth part, we have in figures 23, 31, 51, 55. Of these, figure 23 is especially interesting. Here the mouth is represented as in skulls (compare the first hieroglyph in fig. 42), an undulated line rendering the fleshless jaw-bone to which two teeth adhere. This variant is unique and its interpretation therefore doubtful. It may be simply an error of the scribe. But, as Dog-black is associated with death, the detail very well may have been employed intentionally.

Very uniform is the double arch showing only slight overlapping of its two curved lines (figs. 27 and 68) and minor distortions. Figure 24, however, has a notable variant, the elision of one arch. The same happens with figure 38.

Much and far reaching variation, on the contrary, is found with the Ek-element. To avoid the fusion of the small black de-

tails, the scribe of the Dresden Codex often outlines them faintly (figs. 8 and 21). That his apprehension was not unfounded is proved by figure 25 where a black spot resulted. In other cases the white beads dwindled down to mere white points (figs. 39, 40, and 41). In very small drawings, Ek became a single white bead (fig. 38) or disappeared completely (figs. 47 and 64). The painter of the Codex Troano avoided fusion of the two Ek beads by keeping them apart (figs. 26, 59, 65, 66). Sometimes they are left blank (fig. 27), a variant that also occurs once in the Dresden manuscript (fig. 28). Figures 46, 51, 53, 55 possess the Ek-detail in form of a white loop, of which figure 56 is a slight variation. Generally the Ek-detail is inserted at the junction of the two arches, which is at the middle part of the curved line (figs. 1, 8, 21, etc.). Where it was given another position (figs. 29–31), this clearly was done to fill the space more adequately; put between the arches in figures 29–31 there would have been left a great deal of space on one side of the sign and little or none on the other. The tendency to avoid large white spaces is also manifest in figures 32 and 41 where meaningless circlets or dots are inserted in white areas. In the compound hieroglyph, figure 33, the scribe had only a relatively long and narrow space for the Ek-element at his disposition. So he adapted the black portion to the sides of the beads in a way that still left a narrow white strip between the Ek-detail and the broad outline of the glyph, thus avoiding the fusion of these dark elements and maintaining a certain balance in the drawing. This expedient is very often employed with the head of the corpse as hieroglyph (fig. 34), where the space is generally very narrow.

The black contour that encircles the hieroglyphic characters takes in the Perez and Tro-Cortesian Codices the form of a quadrangle with rounded corners (figs. 26, 59, 60, 66), that is, the same shape the sculptured glyphs affect. In the Dresden manuscript the configuration forms generally an irregular figure with a point at the lower left hand corner (fig. 1, etc.). The variations of this detail do not offer great interest, for which reason I only refer to figure 35, which clearly shows that its two halves were separately drawn.

Generally our hieroglyph occupies the space of a square or rectangle whose sides differ only little. But when the sign is used as a prefix (figs. 52, 57) or in compound glyphs (figs. 53, 54) it must be accommodated into a small rectangular space, thus suffering a certain distortion. The Ek-detail is then frequently shifted to the upper part of the glyph, where sufficient space is available.

In the cases just treated, the compression is lateral. In the combined glyphs, figures 36–38, the pressure that works upon the Dog-black sign, on the contrary, is from above to below. In these figures some details have become so tiny that they nearly or completely disappeared. Thus figure 36 has lost its buccal line and retains of Ek only two dots. In figure 37 the eye is a mere dot and the mouth line a small arch. The sign that suffered most, however, is figure 38. Here only the eye, the mouth hook, one of the arches, and one of the Ek-beads remain. The figure has lost by elision about as much as figure 24, and only its place as part of the Muan-glyph enables one to determine it with security as "Dog-black" residue.

The form of the space occupied by the Maya hieroglyphs is quadrangular, ranging from a high rectangle, through the square, to a broad rectangle. Although adaptable to all these forms, the Dog-black glyph evidently fits most favorably into the last named space, the rectangle broader than high.

Very seldom the Dog-black sign is represented as a single glyph, generally it has an affix to the left and below. Both of these secondary signs have for principal effect the reduction of the available space for the proper Dog-ek glyph. Having to be written, then, within a small rectangle, the composing details must be simple and clear. Undesirable fusion of the dotted line with other parts of the hieroglyph is avoided, as we have seen, by the shifting of this line.

In the Troano Codex sometimes our glyph is upturned (figs. 26, 63) or put between two lengthwise arranged affixes (fig. 24), both expedients surely employed to secure the desired broad space in which the Ek-element of the Troano variation has sufficient room. In a certain series of the Perez Codex all signs are turned

to the right instead of the left, as commonly done. For this reason, figure 70, belonging to that series, appears inverted.

The cases treated in this section prove clearly that omission of details is caused by the smallness of the glyph; elaboration (adding of meaningless dots and circlets) by relatively large white spaces; distortion by using the glyph as affix (changing its shape from square to narrow or low quadrangle). The putting in of the Ek-detail was made in a manner to fill at best the space at disposition, whose form evidently was not always premeditated by the scribe.

Symbolism

As stated above, our Dog-black sign has in the first place the general signification "death." Thus it appears constantly among the hieroglyphs of the death-god A, and the sign itself, when personified, takes the two forms of that deity, namely that of the skeleton (fig. 39) and that of the corpse (fig. 40). Figures 41 and 42 do not have the black spots of the dead human body, but possess, as do figures 39 and 40, the peculiar collar of the death-god. All four figures are provided with hair to complete the humanization of the glyph; figure 40 is distinctly characterized by the loin-cloth as of male sex. The manikins are evidently here thought of as children of the goddesses that carry them, as already pointed out by Förstemann.[11]

Curious as are these anthropomorphisations of the glyph, they are not unique. A quite similar case occurs at Copan with the day-sign Caban. In figure 43 it, too, is employed as the monstrous head of a male human figurine.

In figure 42 the manikin represents the death-god, whose hieroglyphs (glyphs numbers 1 and 4) appear above. The hieroglyphs above figure 40 are in great part destroyed, but of the fourth one enough is left to assure us that it was one of the death-deity. In figure 44 the principal glyph is our Dog-black sign, referring to the headlong falling corpse below it.

The sign found in figure 2 as a substitute for our Dog-black glyph recurs in figure 39, only with a certain postfix not appearing

[11] Op. cit., 93.

in figure 2. The representation, figure 39, proves definitely that Dog-ek is equal to figure 2, which we shall call simply the "hook sign."

Our Dog-black glyph, furthermore, often accompanies the figures of god F. So it is quite natural that vice versa his hieroglyph stands above the little Dog-ek demon in figure 41.

The glyph appears also with God H (Dr. Cod. 3 and 7), a deity that has relation to death and sacrifice; it is painted on the alligator (Dr. Cod. 4), the earth-monster, and belongs to the hieroglyphs of the vulture (Dr. Cod. 3 and 11), the dog with black spots (Dr. Cod. 21) and the white variety (Dr. Cod. 7; Cod. Tro. 25* and 26*).

All these deities and symbolic animals have connections with death in one or the other way. But there are several other cases in which the Dog-black glyph accompanies representatives of conceptions only remotely or not at all associated with the idea of death. Especially deities of fire and the rainy season count our sign among their glyphs.

The Muan-bird, standing in figure 45 for the Dog-ek glyph, surely represents the rainy season. But as this demon evidently has the head of the horned owl,[12] this case still might be interpreted as relating to death, the owl being all the world over a bird of bad augury. By the way, there are no less than four drawings of the Dog-black sign in figure 45: the first, second, and fourth hieroglyph and the symbol held by the deity. This near relation of our sign to the Muan-god is further emphasized by the fact that it also in other places enters into the composition of the ideogram of this deity (figs. 36 and 37).

The solar deity (Dr. Cod. 11 and Cod. Tro. 23*) has the glyph as well as the red macaw (Dr. Cod. 16), the bird that symbolizes fire and the rays of the sun.[13]

The fact that the Dog-black glyph symbolized at the same time death and fire is not easily explained, but the same happens with the spotted and with the white dog; both these animals, too, are death as well as fire beasts.

[12] Stempell, op. cit., 723.

[13] Seler, Ges. Abh., 4: 552–562.

There are several compound glyphs into which the Dog-ek sign enters. In figure 46 it is united to the hook sign, a fire glyph, and in figure 47 to the character Men, a hieroglyph relating to fire and death. In explanatory texts Men and Dog-ek often appear together (Dr. Cod. 3, 4, 6, 7; Cod. Tro. 4).

Figure 48 reproduces a compound glyph that evidently replaces the Dog-black sign. It is rudely drawn, but surely corresponds to the better executed glyphs, figures 49 and 50 of the Dresden Codex. In figure 50 its subfix is the already several times mentioned hook sign. The main glyph is a hand, a fist, with a small death-eye in the upper right hand corner.

To fire and summer symbolism belong the following figures 51–57. Figure 51 and the former figure 33 have a prefix which must signify light, day-sky. In figure 52 the Dog-black sign is prefixed to the head of god E, the god of maize, and in figures 53 and 54 to the sign Tun. Both cases may refer to summer, the period of rain and vegetation, although figure 52 can be explained as a symbol of the West. Hieroglyphs figures 55 and 56, evidently only variations of the same fundamental idea, are associated with the rain-god Chac. So is also figure 51 and, therefore, we may infer that it treats the same theme as the other two glyphs. Figure 55 has a very common hieroglyph in its first place, the sign "3 Oc," which frequently accompanies sun and summer deities. In figure 56 the Oc-sign is postfixed and the cipher 3, which could not enter into the combined hieroglyph, was simply dropped. The sign "3 Oc" is evidently a fire glyph[14] and really of the same symbolic value as the prefix in figure 33. Perhaps also figure 57, the day-sign Caban with a suffix and Dog-ek as a prefix, refers to summer, vegetation, fertility.

There remain to be treated the affixes and their substitutes that accompany the Dog-black glyph. The proper Dog-ek sign like figure 1 appears in the hieroglyphic texts very seldom in this simple form, but together with a prefix and a suffix.

The most common combination is figure 58. The exact significance of both affixes is not easily made out and requires, at

[14] Seler, Ges. Abh., 1: 478. See also Beyer, La Cifra Tres en el Simbolismo Maya. Memorias de la Sociedad Científica "Antonio Alzate," 45: 459–466, 1926.

least, a long story. So, I simply call the prefix the "Wood-sign" and the subfix the "Eye-lid," leaving their discussion for another opportunity. In figures 59 and 60 the Wood-signs show elision of details, but their position leaves no doubt that they are only reduced forms of that prefix.

In other instances, however, the peculiar Wood-sign is replaced by another suffix with triangular teeth (fig. 61). This new sign also takes the place of the Eye-lid (fig. 62). This, the Eye-lid or sign of the closed eye, in turn, may be substituted for the Wood-sign (fig. 63). Of these common affixes, one (figs. 64 and 65) or both (figs. 21 and 66) may fall out.

In figure 67 two small death-eyes and in figure 68 one death-eye with nerves and sinews, as seen in figures 7 and 34, take the place of the Wood-sign.

A new prefix appears in figure 69. It is the symbol for the moon, the night, and the number twenty and it has the reduced affix form.

Figure 70 has a subfix of not exactly known significance; it is however, evidently related to fire and summer. In figure 52 Dog-ek is employed as a prefix, replacing this problematical sign.

Two circlets and three dots, a subfix we know already from the hieroglyph Death-head (figs. 7 and 34), appear in figures 51 and 54.

In figure 71 the glyph has the macaw feather[15] as prefix. This case, however, must be interpreted as showing only a casual connection of both signs. A perplexing case is represented by figure 72, as this kind of prefix is extremely rare.

Another insoluble case is figure 73, as it is unique. The number before the hieroglyph can only be 8 or 9, but it is impossible to decide which one. Although now only the traces of 8 are visible, there is below sufficient free space in which originally another dot and a piece of the bar may have existed.

The subfix of figure 74 is perhaps the same the month-glyph Pax has several times in the Dresden Codex (figs. 75 and 76). During the Old Empire this element was usually employed in

[15] To be shown in another paper.

the common hieroglyph Yax (fig. 77) and replaced by fire symbols (figs. 78 and 79) in later epochs. So its connection with fire is assured.

Figure 80 appears also only once in the codices. The prefix may represent the hieroglyph Zac, "white," but then several details are missing. The glyph belongs to a prisoner left white, although on the preceding page he is painted red.

The badly erased hieroglyph, figure 81, seems to have been Dog-ek with a prefix that in better executed variants is a raised hand. We have this human arm quite often united to another version of the dog's head (fig. 82).

In the compound glyph, figure 83, Dog-ek appears before a human figure in squatting position. This little man represents in the Dresden Codex (figs. 84–86) a demon with an animal's head that probably is that of a tortoise.[16] This reptile is associated with rain.

In a certain number of instances the Dog-ek sign is ascribed or can be referred to a cardinal point, but in most of these cases the relation is only an indirect one, as the glyph belongs in reality to a deity and it is this deity that is connected with the world region indicated. In a few other cases the glyph forms part of a larger text, and it is not clear what function it has.

There are, however, two instances in which a direct reference of the hieroglyph itself to the cardinal point seems to be sure. In Codex Troano, page 29* the east is the only region that has the Dog-ek, while on page 28* of the same pictorial manuscript it is evidently ascribed to the north. In this latter case we have to do with four columns of hieroglyphs (fig. 87) of which the second has the glyph for east and the fourth that for west, so it is very probable that the other two columns refer to south and north, although the familiar signs of these regions are not given. The third column, which contains the Dog-ek glyph, has on top the head of god F that, by its position, must indicate the north. Indeed, this deity is ascribed to that cardinal point on page 42 of the Cortesian Codex. The second hieroglyph of this column is

[16] Seler, Ges. Abh., 4: 661.

that of the death-god who, too, is found on this page of the Codex. The next glyph in figure 87 is that of the sun-god and on page 26 of the Dresden Codex he must be regarded as the representative of the northern region. So there is really sufficient reason to suppose this series of glyphs as relating to the north.

When used as part of compound glyphs the Dog-black sign generally loses its affixes (figs. 33, 47, 52, 55, and 57); in a good many cases, however, it conserves at least its subfix (figs. 46, 51, 53, 54, and 56).

Now all the notable variants of the hieroglyph Dog-ek have been reproduced in faithful enlarged drawings and extensively commented upon. The remaining specimens are of no interest, as they show only slight variation of the mentioned forms.

The Ancient Form of the Glyph

The foregoing discussion was based on material taken from the pictorial manuscripts, that is, material from the last period of the Maya civilization. Now it would be interesting to know the form our hieroglyph assumed in earlier times. As there are thousands of glyphs carved and modeled during the epoch of the Old Empire at our disposition, we might expect to find quite a number of Dog-ek characters. But the hieroglyph so common in the latest stage of Mayadom, is very rare in ancient times. In fact, only four cases (figs. 88–91) can be identified with sufficient security.[17] It must, however, be admitted that a comparison between the hieroglyphic texts of the monuments on one hand, and those of the manuscripts, on the other, is perhaps misleading, as we do not know whether both sources treat the same subject-matter. In any case, the presence of the Dog-ek glyph in two temples of Palenque proves at least that the sign could be represented in the monumental inscriptions.

If it took us a great deal of labor to bring forth sufficient arguments to make it probable that the fantastic head of the hieroglyph we were dealing with was originally that of a dog, it is,

[17] My drawings differ slightly from those published by Dr. A. P. Maudslay. I rectified the designs carefully before the originals during a four weeks' stay at Palenque.

on the contrary, an easy matter to demonstrate this thesis for the older form of the sign. Figures 92 and 93 are reproductions of the day-sign Oc, which corresponds to the Nahuan Itzcuintli, "dog." Although in these two cases the head is pressed into an oval frame, the peculiar form of the eye with its superciliary plate and the mouth part are to be found identical with the hieroglyph in question. More tangible are the similarities with figure 94, which represents the head of the canine variety of white color with black spots in more natural outlines. In figure 90 the crossed lines in the part we may call eyebrow can be made out in the original, while the other figures either never had this mark or it became effaced. Probably sometimes a spotted dog's head was carved, sometimes a plain variety, the intention being to represent the idea Dog in general.

In the posterior part of the four heads we find a symbol that has the two beads of Ek, although the black part of this detail is missing. Twice it is placed in vertical (figs. 88 and 89), and twice in horizontal position (figs. 90 and 91). These latter variants evidently were caused by the smaller and more depressed shape of the head, which did not yield sufficient space behind the mouth angle for the employment of the sign. So it was accommodated to the upper right-hand part of the head, whose ear was simply omitted.

Two notable differences of this older symbol from its later version can be made out,—the already mentioned absence of the black element, and the elision of one of the waves of the curved lines. Precisely our figures 88–91 indicate that the upper curve did not originally belong to the symbol. The double curved line originated evidently from a fusion of the eye-brow (or superciliary plate) and the cheek contour. The two representations of dogs' heads in figures 95 and 96, taken from one monument, leave no doubt on this point. The second variant has nearly the outlines of the dog head of figure 14 and of the so-called screech-owl glyph.

The ancient symbol on the dog's head, isolated from its surroundings, has the form shown in figure 97 and must have had a different meaning from the later Ek. At least, it cannot have meant directly Ek, "black." We find such a sign as figure 97 in

use in ancient and in later times and in connections allowing us to infer that it must have meant fire or light. As the dog really was associated with fire in the thinking of the Maya, this significance is not at all strange and can be accepted as very probable. When later on it was changed to Ek, this may be explained by the desire to lay more stress on the significance of the dog as representative of summer, the rainy season, the dark sky, this being no contradiction to its fire symbolism, but only a specialization.

These minor differences between the earlier and the later forms of symbolic details are not uncommon in Maya hieroglyphs. Exactly the same change took place in the sign for the moon, only in reverse order. During the Old Empire the moon always has the Ek symbol (fig. 98), which it never has in the Tro-Cortesian and Perez Codices (fig. 99). Only in the Dresden manuscript she has the symbol a few times with heavy dark outlines.

The affixes joined to the dog's head can be treated only in a cursory manner here. Three times (figs. 88–90) a subfix is used that indicates fire, and twice (figs. 88 and 90) a prefix that probably has relation to the rainy season. At least I think it can be identified with the sign that the hieroglyph of the rain-god possesses as a postfix. This emblem generally is represented in the conventional way of figure 100, but in figure 101 its similarity with the prefixes of figures 88 and 90 comes out more clearly. In the Dresden Codex this sign is connected several times with different dogs' heads (for instance, in fig. 12).

The prefixes of figures 89 and 91 have, again, relation to fire, while the subfix of figure 91 is the moon.

Conclusions

We are now enabled to draw a few general conclusions on the meaning and evolution of our peculiar dog glyph.

Its vague resemblance to an owl's head is evidently merely casual and only detected by modern archaeologists and zoologists. Furthermore, this similarity is only found in the Dresden Codex and caused by the particular way the contours of all the glyphs

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are drawn in this one manuscript. There is no indication that the Maya themselves at any time took the head for that of an owl.

It may, however, be questioned whether they in all epochs and in all regions knew the original meaning of the sign in the sense that it was derived from a dog's head. I believe, they did, although some cases seem to contradict me. We have seen in figures 39–42 the hieroglyph employed as the head of a little male figure. But we note the same proceeding with the sign Caban (fig. 43) although its main element probably is a woman's lock. But just these two cases can be interpreted as showing that the Maya at times anthropomorphised their glyphs, taking the male sex as the general representative of humanity. On the other hand, the still notable similarity to the head, figure 14, the referring of hieroglyphs, figures 18 and 19, to a dog-headed demon (figs. 16 and 17), and the animal with the characteristic double curve in figure 15, make it fairly certain that at least the scribes of the Dresden and Tro-Cortesian Codices were conscious of the original meaning of the Dog-ek sign. There remains only the Perez Codex, which is too short to allow any inference. But when the artistically and scientifically much inferior Tro-Cortesianus has evidence for the recognition, we can suppose the same for that manuscript too. We have grounds to locate the Tro-Cortesian Codex in Yucatan and the Perez in Chiapas.[18] The provenience of the Codex Dresdensis has still to be determined. In any case, two widely distant parts of the Mayan area furnish proofs that Dog-ek really was comprehended as such, although it is impossible to say that it also was named so.[19]

Concerning the Old Empire, the resemblance of the sign to the representations of dogs' heads is so striking that there cannot be any doubt as to the meaning of the glyph.

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[18] The last contribution to the localization of the pictorial manuscripts is Paul Schellhas, Der Ursprung der Mayahandschriften. Zeitschrift für Ethnologie, 1–16, 1926.

[19] Mr. Ralph L. Roys, Associate of our Department, calls my attention to the fact that there really exists such a Maya term: "Referring to your 'dog-black' glyph, I note a scalp-disease called 'ek-pek.' I have considered it a variety of ring-worm. While I am not suggesting that the 'dog-black' glyph refers to this disease, I think it is of interest to find a Maya word corresponding so closely to the glyph."

The detail Ek and its predecessor "Two Beads," the affixes, the homologous signs, the associated glyphs and deities, and, last, but not least, the head of the dog itself, all these symbols can be referred either to death, to fire, or to the rainy season.

It may be that ultimately all these apparently very different meanings can be explained by one central idea. Death representations, indeed, are very often adorned with fire symbols, while summer deities and hieroglyphs have either fire or death emblems. In the present state of our knowledge, however, it seemed to be the best to separate the symbolic values that could be safely made out, without trying to reconcile the divergences.

In the first part of this paper I refuted the idea of the dark symbol (the real Ek sign) being interchangeable with the one not meaning "black." It must, however, be admitted that there are some cases in the Dresden Codex where the scribe had no reason to leave out the black outlines (for instance fig. 8), as he had plenty of space at his disposition. So he employed the white variant intentionally. Now it can be shown that he also in a few other cases reproduced an Old Empire form of a glyph. It is, therefore, quite possible that in the Dresden manuscript the newer black Ek is used as well as the old fire symbol.

Whatever be thought of questions of detail, I think it can be accepted as proven by my deductions that the glyph discussed here is the conventional representation of the head of a dog and not of a screech-owl.

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EXPLANATION OF THE FIGURES

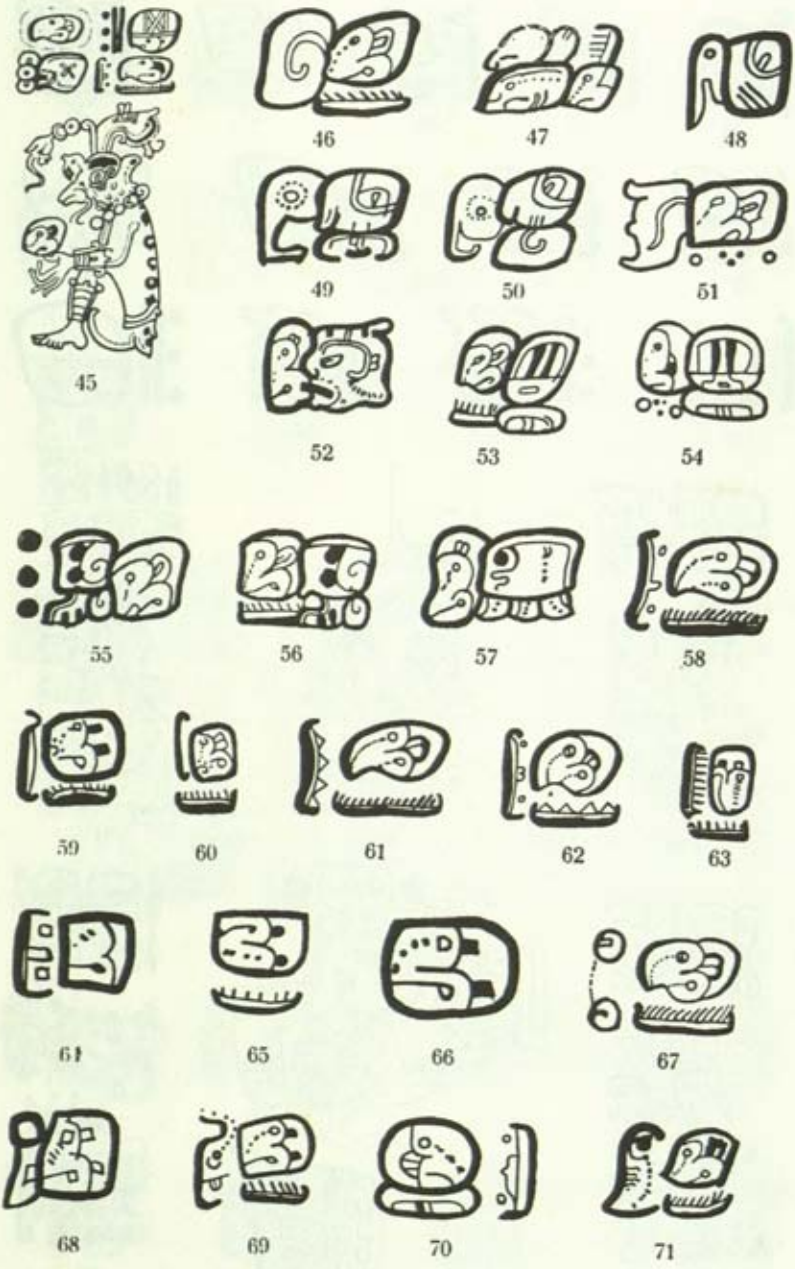
FIG. 1. Hieroglyph "Dog-black." Dresden Codex 8.
FIG. 2. The "Hook Sign." Codex Tro. 7.*
FIG. 3. Elementary parts of figure 1.
FIG. 4. Hieroglyph Ek, "black." Dresden Cod. 30.
FIG. 5. Hieroglyph Ek, "black." Dresden Cod. 30.
FIG. 6. Day-sign Cimi. Dresd. Cod. 63.
FIG. 7. Hieroglyph of death-god. Dresd. Cod. 20.
FIG. 8. Hieroglyph of "Dog-black." Dresd. Cod. 3.
FIG. 9. Forepart of head of jaguar. Dr. Cod. 8.
FIG. 10. Forepart of head of deer. Dr. Cod. 13.
FIG. 11. Day-sign Oc. Dr. Cod. 45.

FIG. 12. Hieroglyph "Spotted Dog." Dr. Cod. 42.
FIG. 13. Hypothetical older form of figure 1.
FIG. 14. Hieroglyph "Dog-flint." Dr. Cod. 4.
FIG. 15. God D and white bitch. Dr. Cod. 14.
FIG. 16. White Dog. Cod. Tro. 3.
FIG. 17. White Dog. Cod. Tro. 2.
FIG. 18. Hieroglyph "White Dog." Cod. Tro. 3.
FIG. 19. Hieroglyph "White Dog." Cod. Tro. 2. (Slightly restored)
FIG. 20. Hieroglyph "Dog-flint." Dr. Cod. 40.
FIG. 21. Hieroglyph "Dog-black." Cod. Tro. 4.
FIG. 22. Hieroglyph "Dog-black." Dr. Cod. 12.
FIG. 23. Hieroglyph "Dog-black." Dr. Cod. 58.
FIG. 24. Hieroglyph "Dog-black." Cod. Tro. 33.
FIG. 25. Hieroglyph "Dog-black." Dr. Cod. 18.
FIG. 26. Hieroglyph "Dog-black." Cod. Tro. 26.*
FIG. 27. Hieroglyph "Dog-black." Cod. Tro. 10.*
FIG. 28. Hieroglyph "Dog-black." Dresd. Cod. 50.
FIG. 29. Hieroglyph "Dog-black." Dresd. Cod. 4.
FIG. 30. Hieroglyph "Dog-black." Dresd. Cod. 50.
FIG. 31. Hieroglyph "Dog-black." Dresd. Cod. 48.
FIG. 32. Hieroglyph "Dog-black." Dresd. Cod. 47.
FIG. 33. Hieroglyph "Light-Dog-black." Dresd. Cod. 54.
FIG. 34. Hieroglyph of Death-God. Dresd. Cod. 5.
FIG. 35. Hieroglyph "Dog-black." Dresd. Cod. 5.
FIG. 36. Hieroglyph of Muan-bird. Dresd. Cod. 47.
FIG. 37. Hieroglyph of Muan-bird. Dresd. Cod. 47.
FIG. 38. Hieroglyph of Muan-bird. Dresd. Cod. 7.
FIG. 39. Goddess carrying Dog-black demon. Dresd. Cod. 18.
FIG. 40. Goddess with Dog-black demon. Dresd. Cod. 20.
FIG. 41. Goddess carrying Dog-black demon. Dr. Cod. 19.
FIG. 42. Goddess carrying Dog-black demon. Dresd. Cod. 20.
FIG. 43. Caban-demon, Copan. (After Maudslay and Morley.)
FIG. 44. Corpse. Dresd. Cod. 15.
FIG. 45. Muan-demon. Dresd. Cod. 7.
FIG. 46. Hieroglyph "Hook-Dog-Black." Dresden Cod. 73.
FIG. 47. Hieroglyph "Men-Dog-black." Dresden Cod. 53.
FIG. 48. Hieroglyph "Macaw-head-Fist-death-eye." Cod. Tro. 29.*
FIG. 49. Hieroglyph "Macaw-head-Fist-death-eye." Dr. Cod. 65.
FIG. 50. Hieroglyph "Macaw-head-Fist-death-eye." Dr. Cod. 33.
FIG. 51. Hieroglyph "Light-Dog-Black." Dr. Cod. 65.
FIG. 52. Hieroglyph "Dog-black-god E." Dr. Cod. 45.
FIG. 53. Hieroglyph "Dog-Black-Tun." Dr. Cod. 72.
FIG. 54. Hieroglyph "Dog-Black-Tun." Cod. Perez 5.
FIG. 55. Hieroglyph "3 Oc-Dog-black." Dr. Cod. 69.
FIG. 56. Hieroglyph "Dog-black-Oc." Dr. Cod. 65.
FIG. 57. Hieroglyph "Dog-black-Caban." Dr. Cod. 44.
FIG. 58. Hieroglyph "Dog-black." Dr. Cod. 15.
FIG. 59. Hieroglyph "Dog-black." C. Tro. 20.

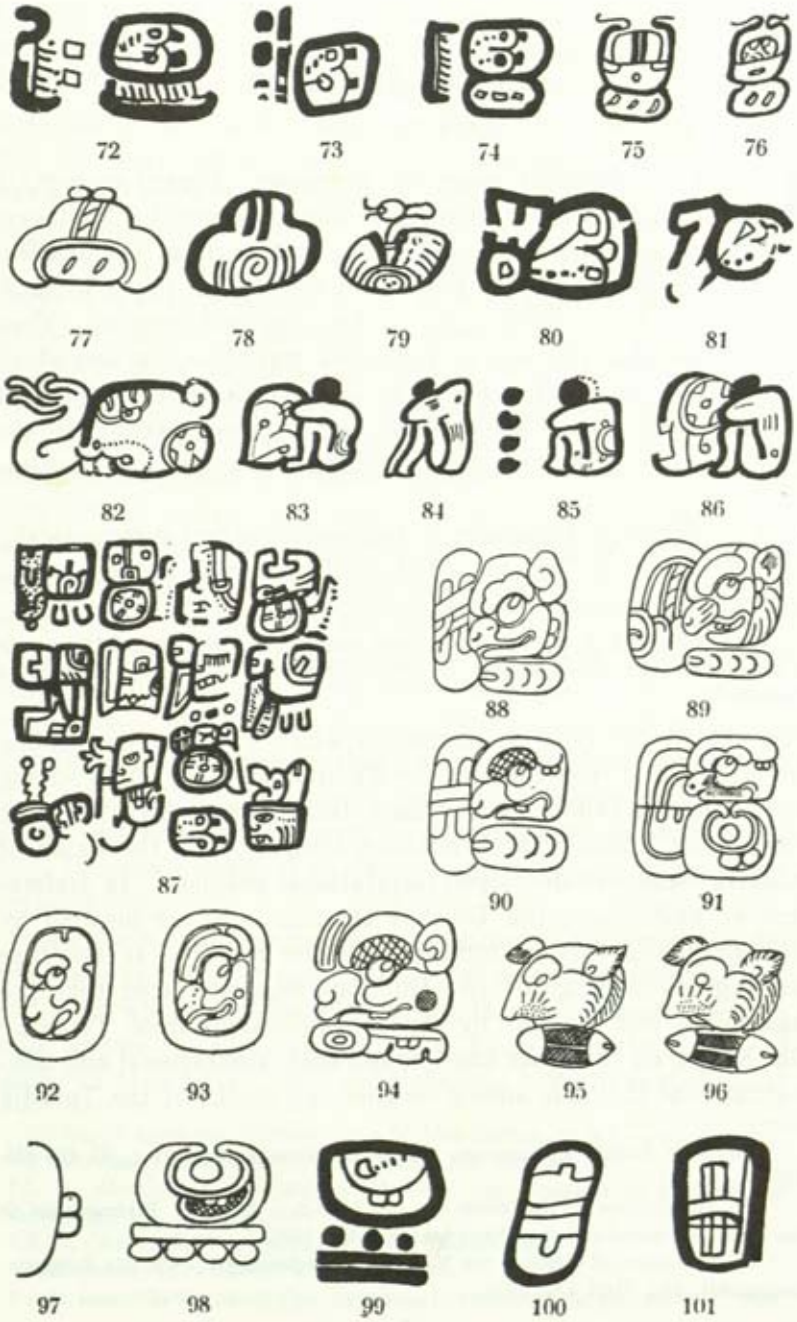
FIG. 60. Hieroglyph "Dog-black." C. Tro. 21.
FIG. 61. Hieroglyph "Dog-black." Dr. Cod. 14
FIG. 62. Hieroglyph "Dog-black." Dr. Cod. 12.
FIG. 63. Hieroglyph "Dog-black." C. Tro. 17*.
FIG. 64. Hieroglyph "Dog-black." C. Tro. 23*.
FIG. 65. Hieroglyph "Dog-black." Cod. Cort. 15.
FIG. 66. Hieroglyph "Dog-black." Cod. Tro. 28.*
FIG. 67. Hieroglyph "Dog-black." Dr. Cod. 11.
FIG. 68. Hieroglyph "Dog-black." C. Tro. 25.*
FIG. 69. Hieroglyph "Dog-black." Cod. Cort. 30.
FIG. 70. Hieroglyph "Dog-black." C. Per. 22.
FIG. 71. Hieroglyph "Dog-black." Dr. Cod. 47.
FIG. 72. Hieroglyph "Dog-black." C. Tro. 23.*
FIG. 73. Hieroglyph "Dog-black." C. Tro. 26.*
FIG. 74. Hieroglyph "Dog-black." C. Cort. 35.
FIG. 75. Hieroglyph Pax. Dr. Cod. 61.
FIG. 76. Hieroglyph Pax. Dr. Cod. 47.
FIG. 77. Hieroglyph Yax. Palenque, Palace, House D.
FIG. 78. Hieroglyph Yax. Dr. Cod. 31.
FIG. 79. Hieroglyph Yax. Dr. Cod. 73.
FIG. 80. Hieroglyph "Dog-black." C. Tro. 2.
FIG. 81. Hieroglyph "Dog-black." C. Tro. 3.
FIG. 82. Hieroglyph "Arm-Dog." Dr. Cod. 8.
FIG. 83. Hieroglyph "Dog-black-man." Dr. Cod. 72.
FIG. 84. Hieroglyph "Man." Dr. Cod. 24.
FIG. 85. Hieroglyph "4-Man." Dr. Cod. 49.
FIG. 86. Hieroglyph "Tortoise Head-Man." C. Dr. 49.
FIG. 87. Hieroglyphic Passage. C. Tro. 28.
FIG. 88. Hieroglyphic Dog-Beads." Palenque. Temple of the Sun.
FIG. 89. Hieroglyph "Dog-Beads." Palenque. Temple of the Foliated Cross.
FIG. 90. Hieroglyph "Dog-Beads." Palenque. T. S.
FIG. 91. Hieroglyph "Dog-Beads." Palenque. T. S.
FIG. 92. Day-sign Oc. Palenque. T. F. C.
FIG. 93. Day-sign Oc. Palenque. T. F. C.
FIG. 94. Hieroglyph "Spotted Dog." Palenque. T. S.
FIG. 95. Hieroglyph "Dog-Bone with ten." Yaxchilan, Lintel 18.
FIG. 96. Hieroglyph "Dog-Bone with ten." Yaxchilan, Lintel 18.
FIG. 97. Hieroglyph "Two Beads." Detail of figures 88–91.
FIG. 98. Hieroglyph Number 29, Palenque. T. C.
FIG. 99. Number 33. C. Tro. 2*.
FIG. 100. Hieroglyph "Bundle." Dr. Cod. 40.
FIG. 101. Hieroglyph "Bundle." C. Tro. 10*.

FIGS. 1–25. Hieroglyphs.

FIGS. 26–44. Hieroglyphs.



FIGS. 46–71. Hieroglyphs.



FIGS. 72–101. Hieroglyphs.

SHAMAN AND SEER

By E. M. LOEB

IN MY introductory paper on Mentawei (Pageh) culture,[1] I first suggested the necessity of differentiating the Mentawei type of non-inspirational shaman, or seer, from the inspirational or Siberian type. I propose in the present paper to show that the seer is the oldest type of Indonesian medicine-man. Then I will show that the seer of Indonesia resembles the seer of all other primitive cultures, and that the true shaman is a product of higher cultures. Finally, I propose giving an account of the Pageh seer, as illustration of Indonesian non-inspirational shamanism.

The subject of shamanism in Indonesia was first systematically treated by G. A. Wilken.[2] This author merely treated of the inspirational shaman, defining as follows:

> The conjuring of spirits into certain people—in order to get the words of the spirits from these people,—is shamanism, while the person is called a shaman.

Now this is the type of shamanism which we encounter among the Malay, and the people of the Philippines. It is found among the peoples of Indonesia who have taken over a higher culture from either Hindu or Mohammedan source. Thus the Batak of Sumatra have well-developed inspirational shamans. In Halmahera we find among the Tobelore shamans who are inspired by their *djini*, and who are forbidden the use of pork. In this case the original investigator (A. Hueting) was convinced that the shamanism was brought by the Mohammedans from Ternate.[3] Alb. Kruyt, on the other hand, found both inspirational and non-inspirational shamans among neighboring stocks of the Toradja

[1] Mentawei Social Organization. AMERICAN ANTHROPOLOGIST, n.s., 30: 408-433, 1928.

[2] Het Shamanisme bij de Volken van den Indischen Archipel. Bijdragen tot de Taal-Land en Volkenkunde van Nederlansch Indië. 1887.

[3] W. H. Rassers, Religionen der Naturvölker Indonesiens. Arch. für Religionswissenschaft, 183, Heft 1/2, 1927.

of central Celebes. The central Toradja, who have the inspirational shamanism, may have obtained it from the Mohammedans, whose influence is strong in the region. The author does not give an opinion in the matter.[4] It is safe to say, however, that no one stock of people ever has both types of shamanism, and that the inspirational type, once introduced, will exterminate the typical non-inspirational variety.

The similarity between the inspirational shamanism in Indonesia and that of Siberia is of a striking nature. The state of ecstasy is induced by beating on drums, dancing, intoxicating drink, etc. When the subject is possessed, he speaks with the voice of the spirit. He is then able to give advice from the spirit world, or to prophesy. While possessed, the medium, according to Wilken, undergoes paroxysms of hysteria, epilepsy, or other convulsions, which remind one of hypnotism, catalepsy, lethargy, and somnambulism. Wilken, who apparently regarded inspirational shamanism as the original variety, believed that shamanism first arose among mentally sick people, and that only later were other well, but susceptible, people brought into the profession. The state of ecstasy was first natural to the profession, and only later was it brought about by artificial means. This theory of Wilken presumes the autochthonous development of inspirational shamanism in Indonesia. The theory allows neither for diffusion from without, nor for development from a different kind of shamanism within Indonesia itself. Yet either of these two conditions may have occurred.

Inspirational shamanism is a widespread phenomenon, occurring among the more centrally located primitive peoples. It is found everywhere in Siberia, including the Ainu,[5] everywhere in Africa, among the Dravidian tribes of India, and the Vedda of Ceylon,[6] in Melanesia,[7] Fiji,[8] and Polynesia.[9] While inspirational

[4] De Bare'e Sprekende Toradja's van Midden-Celebes, 1: 362. Batavia, 1912.

[5] J. Batchelor, The Ainu and their Folk-Lore, 308. London, 1901.

[6] J. A. MacCulloch, Shamanism, Hastings, Encyclopaedia of Religion and Ethics, 11: 445.

[7] R. H. Codrington, The Melanesians, 209. London, 1891.

[8] B. Thomson, The Fijians, 158. London, 1908.

[9] E. M. Loeb, The Shaman of Niue. AMERICAN ANTHROPOLOGIST, n.s., 26: 394ff., 1924.

shamanism is found among the Eskimo,[10] it is doubtful whether it occurs among the American Indian tribes of the Northwest, and it is certain that the phenomenon is lacking elsewhere in North or South America. The phenomenon is lacking also in Australia and New Guinea, and among the Negritos who have remained uninfluenced by higher cultures.[11] Two important culture traits are found associated with inspirational shamanism, which are lacking in regions having the non-inspirational shaman —prophesying and exorcism. Divination is common in the old world, but it is the inspired shaman alone who can predict the future while possessed by a spirit. Exorcism is merely a different form of possession from that of inspired shamanism. In the former case one drives out the spirit from the body of the patient, in the latter one induces a spirit to enter the body of an individual.

In every primitive culture area except Indonesia, shamanism is of the inspired or non-inspired type. In Indonesia alone we find both types of shamans. This is probably due to the fact that in Indonesia very primitive culture exists almost side by side with cultures overlaid with Hinduism and Mohammedanism. Thus, in Sumatra the shaman is always, as far as I have information, of the inspired type, in the islands west of Sumatra, of the non-inspired type, or, as I have labelled it, the seer.[12]

The essentials of the seer are the obtaining of a vision and, with the vision, a guardian spirit or spirits. The seer is then able to communicate with these spirits, who aid him in curing. In the case of the true shaman the spirits speak *through* the shaman, in the case of the seer the spirits speak *to* the shaman. Both the shaman and the seer are in special rapport with the spirit world,

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[10] MacCulloch, op. cit., 443.

[11] Inspirational shamanism is lacking in the Andamans. Among the Semang exorcism has been borrowed from the Malay. (P. Schebesta, Bei den Urwaldzwergen von Malaya, 134. Leipzig, 1927.)

[12] I have adopted the word "seer" in translation of the German *Geisterseher*. This term has been used by Bamler in describing the non-inspirational shaman of the Tami of German New Guinea. The word is short, and therefore convenient. Naturally a choice of words is only a means of making a distinction. As already noted, the primitive seer is not a fore-seer. (Bamler, *in* R. Neuhauss, Deutsch Neu-Guinea, 3: 515.)

both, to use Sternberg's expression, are especially "elected" by the spirits.

> The acquisition of such a protecting spirit [through election] is usually not a result of the wishes or efforts of the shaman himself. It is not given to man to become a shaman of his own free will. The call comes against one's desires.[13]

A refusal frequently will result in death. The shaman then receives his election by being possessed, the seer through a vision. It is because the method of obtaining guardian spirits by a vision is similar in different parts of the world that a unity can be claimed for the use of the "seer concept." The main difference lies in whether the vision is sought for or comes involuntarily.

Among the Indians of North America one or the other of the two attitudes was stressed over enormous areas.

> East of the Rocky Mountains the emphasis is upon the sought vision induced by hunger, thirst, purgatives, and self-laceration. To the west of the Rockies, though we find there also the deliberate vision quest, a very widespread attitude regards the vision as unsought, involuntary, a thing of predisposition.[14]

Among the Yagan of Tierra del Fuego the vision comes unsought. The seer then becomes sick, and has to undergo the necessary course of training.[15] In Australia the vision appears to be sought. If a man wishes to become a seer he will go to a spirit cave, lie down in front of it and sleep. The man is killed, brought to life again, and furnished with a new set of organs. Thereafter he is able to see spirits.[16] The Andaman islander may either go out in the jungle to acquire a vision, or he may acquire lesser powers through dreams.[17] Among the Sea Dayak, as among the Plains Indians, a vision is sought for, and a guardian spirit obtained, for

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[13] Leo Sternberg, Divine Election in Primitive Religion. Congrès International des Américanistes, 473. Göteborg, 1924.

[14] R. F. Benedict, The Concept of the Guardian Spirit in North America. Memoirs of the Amer. Anthr. Assoc., 26, 1923.

[15] W. Koppers, Unter Feuerland-Indianern, 171. Stuttgart, 1924.

[16] B. Spencer and F. J. Gillen, The Native Tribes of Central Australia, 523. London, 1899.

[17] A. R. Brown, The Andaman Islanders, 177. Cambridge, 1922.

special supernatural powers other than curing. This may be regarded as an extension of the "seer concept." The Sea Dayak have a special word for the vision quest, *nampok*. A man would fast and sleep on the mountain tops or on the grave of some distinguished person for the sake of obtaining a vision.[18] A vision will also come unsought to the Sea Dayak in the form of a dream.[19] In Nias a vision is sought for. A young man will run off to the woods, where he remains for three or four days in order to get into contact with the spirits. The seers alone are able to talk with the spirits, and see the souls of sick people in the form of glow-worms.[20]

The question now remains as to how the seer, the oldest type of shaman, became converted into the inspirational shaman. This could have taken place by evolution within the group, rather than by diffusion from without. Both among seers and inspirational shamans it is frequently the custom for the doctor to send his own soul out of his body for the purpose of capturing the soul of the patient. Furthermore, one common cause of disease among primitive peoples, and this is especially stressed in Indonesia, is the temporary absence of a person's soul. In either case it would be a simple matter for an alien soul or spirit to take possession. In Indonesia the purpose of preparing the medium for a séance is that of inducing his soul to leave the body, in order that the alien spirit may be received. Then the alien spirit is invited to descend into the medium.[21] In other words, the concept of soul-loss among primitive peoples may everywhere, in a parallel manner, have led to the idea of soul or spirit possession.

Another, and perhaps more likely theory, is that the phenomenon of inspired shamanism arose once, in one spot, and then was diffused throughout the world, escaping only the marginal or more primitive peoples. The line of continuity connecting the peoples who have inspirational shamanism gives plausibility to

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[18] H. Ling Roth, Natives of Sarawak and British North Borneo, 1: 185. London, 1896.

[19] C. H. Hose and W. McDougall, Pagan Tribes of Borneo, 2: 91. London, 1912.

[20] J. P. Kleiweg de Zwaan, Die Heilkunde der Niasser, 42ff. Haag, 1913.

[21] G. A. Wilken, op. cit., 428.

this theory. If the people who have true shamanism in its most elaborate form were the originators, then Siberia must have been the birthplace of the art. This is certainly the region where people suffer more from nervous diseases, including "arctic hysteria," than any other known region of the world. According to Miss Czaplicka, it would be difficult to draw a dividing line between these diseases and inspiration.[22]

In spite of the fact that the shaman possesses a cultural superiority over the seer, and is able to supplant him in primitive cultures, both forms of shamanism have survived, in altered yet distinguishable forms, into our own antiquity and more recent history. The vision of the seer, the inspiration of the oracle or prophet, remain; it is only the use to which these religious leaders put their contact with the supernatural which has changed. The resemblance between the inspiration of the classical oracle and the shaman of West Africa has been noted by Tylor and others, and further comment is rendered unnecessary here. In the Old Testament when a prophet was seized by the spirit of God, he would

> put aside all restraint and act like a madman until physical exhaustion brought the fit of frenzy to an end.[23]

It would seem that the seer (rō'eh) was of greater antiquity than the prophet (nābi) among the Jews.[24] The art of inspiration evidently was a diffusion from outside. Cheyne considers Samuel a typical seer, Elijah a typical prophet. In later historical times it was his shamanistic gift which gave Mohammed his power; but the abilities of Jeanne d'Arc as a seer brought her, and for this very cause, to the stake. In truth there is no line of demarcation between the revelations of the primitive and the civilized. If religion, by definition, be limited to the knowledge of the unseen world, then the shamans and seers, who in all periods have been the main instruments in depicting this department of nature, have been its chief creators.

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[22] M. A. Czaplicka, Aboriginal Siberia, 319f. Oxford, 1914.
[23] T. K. Cheyne, Prophetic Literature. Encyclopaedia Biblica, 3: 3857.
[24] "He that is now called a Prophet was beforetimes called a Seer." 1 Samuel 9: 9.

The Mentawei Seer

(a) *The method of making the seer.*—In Mentawei the seer may be either male or female. Male seers are, however, the more common.[25] The native word for the seer is *si-kerei*, "one who has magical power (*kerei*)." This power is acquired through a vision, which comes voluntarily or involuntarily. Once the seer has the magic power he gains the aid of guardian spirits, who aid him in his cures. The seer is then able to see and talk with the spirits and ghosts; he has, according to the native expression, "seeing eyes and hearing ears."

According to Kruyt, the vision may come in the following manner. A man is sitting, for example, by his field hut. Suddenly some one comes and sits down beside him. They begin to talk, and the owner of the hut asks where the stranger comes from, and who he is. The stranger replies that he belongs to the place. The stranger offers the other man his tobacco, so that the latter may roll a cigarette. But the man notices that the tobacco of the stranger never grows less as one cigarette after another is made from it. The two start to go back to the village together, when suddenly the stranger vanishes. The man decides that the visitor cannot be a human being. When the visitor comes a second time to the field hut, he offers the man tobacco from a bamboo container. The container keeps rolling towards the man of its own volition. Then the man again decides that the stranger must be a spirit. The man talks the matter over with his father, and they decide to ask the stranger to dinner. The guest arrives, but he is visible to the clairvoyant alone. The stranger eats, but his dish never becomes empty. From this time on the man has the powers of a seer. He then proceeds to take instruction from his fellow practitioners.[26]

A man or woman may be made a seer by being bodily abducted by the spirits. According to the story of Sitakigagailau, the youth was taken up to heaven by the sky spirits (*tai-ka-manua*) and

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[25] Kruyt is wrong when he states that men alone are seers. (De Mentawaiers. Tijd. Ind. T. L., 5: 127, 1923.

[26] Kruyt, op. cit., 128.

given a beautiful body such as theirs. When he returned to earth he was a seer, and the sky spirits served him in his cures. In return he gave sacrifice to the sky spirits at the time of *punen* (religious ceremony) held for healing.[27]

The usual manner,[28] however, in which boys and girls become seers is by being summoned through sickness, dreams, or temporary insanity. The sickness or dreams are sent by the sky spirits or the jungle spirits. Malaria is the usual form of sickness. The dreamer may imagine that he ascends to heaven, or that he goes to the woods looking for monkeys. In either case, dreams or sickness, there is a temporary loss of soul (*si-magere*). Then a professional seer is summoned to make the sick boy or girl well.

When the seer enters the house, he first sings before the house altar. The people in the house only hear the singing of the seer, but the doctor is really in conversation with the spirits (*kina*) of the altar. He is trying to find out the cause of the sickness. Then the seer says to the youth, "Boy (or girl), what have you eaten, what have you planted, what have you done to make you sick? What have you done which was displeasing to our fathers, the wood spirits, and to those in the heavens? You must stop all work and eating things which are taboo. You must not eat bad meat (squirrels and birds)."

After the cure is at an end the boy recovers. If he is slow in recovering his health, however, and the spirits oppress him again, the father becomes uneasy. He says to the boy, "Boy, why is your illness not at an end? You had better get married; then your manner of life will be improved upon. That will put an end to your incorrect eating and your sins."[28a]

In the meantime the seer comes repeating his visits, questioning the spirits of the altar (*kina-buluat*). "Spirits of the altar, what has made your father [the boy] sick? Speak, do not conceal anything."

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[27] From my manuscript collection of Pageh stories.

[28] The greater part of my knowledge concerning the Pageh seer is derived from an account written in the native dialect from the words of two practitioners.

[28a] A married man (*ukui*) is also a house priest. For this reason he is under many more restrictions than a single man. Both seers and priests (*rimata*) must be married. (See my paper, Mentawei Social Organization.)

The spirits of the altar reply, "Yes, seer, you wish to find out what the sins of my father are. He has stopped eating forbidden food. Yet the spirits of the lower heaven (*tai-ka-paito*) wish that he acquire magical power (*kerei*). If my father delays in acquiring the power the spirits of the lower heaven will bring him madness from the sky."

Then the boy promises to become a seer, saying, "You, spirits of the woods, and you, spirits of the lower heaven, you make strong my body. I will at once acquire magical power. I wish it." At once a seer is summoned to give the youth his power.

As soon as the instructor arrives he goes to the woods in order to gather magical herbs. These are for the purpose of purification, of casting off all that is evil from the boy. The instructor returns with the herbs, and rolls them up. Then the instructor charms the plants, "We will make many sacrifices to you, spirits of the talisman (*kina-gaut*). You, spirits of the *umbau* plant, throw off (*rumba*) all that your father has incorrectly eaten.[29] Drive off what he has eaten, what he has planted. Fall off, spirits of the food, spirits of what he has planted." Finally the instructor throws the talisman into the river.

After all bad influence had been washed away with the evil plants named, the instructor gathers plants bearing good influence. These he charms, "We will make many sacrifices for you, spirits of the talisman, so that by your magic he [the pupil] will have clear eyes, will have changed eyes. Soon he will see with his eyes our fathers and our mothers, the spirits of the lower heavens." Then the pupil takes home his talisman and sticks it in the wall of his house. It is through this talisman that the pupil will later talk with his guardian spirits, those of the lower heavens.

Then the instructor washes the hair of the youth (*magiri*)[30] and the two go into the woods in order to search for herbs which will give the boy "seeing eyes." While they are gathering the

[29] Plants have a special magical power depending on their names. The function of a plant is thought to be the same as the word by which it is labelled.

[30] Every *punen* (religious festival) period begins with the washing of the hair (*magiri*) in the river, a special form of purification. This is not again done at the end of the *punen*, as stated by Kruyt (op. cit., 19).

plants, the instructor sings to them, "Spirits of the talisman, reveal yourselves. Make clear the eyes of the boy that he may see the spirits." The talisman replies, "Here is your magic power. If you wish to make clear the eyes of the boy, take this and that plant." The instructor and the youth gather the required plants and then go home.

When they arrive at the house of the instructor, the latter takes a cup into which the required spirits are to be summoned. The instructor charms, "Let your eyes be clear, let our eyes be clear, so that we may see our fathers and mothers of the lower heaven." While the instructor sings, the two keep ringing their bells.[31] After the invocation, the instructor rubs the herbs on the eyes of the boy. For three days and nights the two men sit opposite each other, singing and ringing their bells. Until the eyes of the boy are clear, neither of the two men obtains any sleep. At the end of the three days the two again go to the woods and obtain more herbs, which they place in a half coconut. The purpose of the herbs is to make the bodies of the spirits shiny and beautiful, so that they will not be ashamed to reveal themselves to the boy. The instructor places the half coconut between himself and the pupil and charms, "Here, make yourself shine for your father, my children [the wood spirits]. Wood spirits, you are the owner. Shine in his eyes, so that your bodies are visible to him, do not conceal your bodies from him." This clears the eyes of the boy a little. In another two days, since neither the heaven spirits nor the wood spirits have appeared as yet, the two men gather more herbs. If at the end of seven days the boy sees the wood spirits the ceremony is at an end. Otherwise the entire seven day ceremony must be repeated.

The next thing to be done is the making of the new seer's outfit. (See pl. 2.) This is only to be worn when the seer is in performance of his duties.[32] First comes the hair ornament worn over the left ear. This is composed of chicken feathers wrapped around with bark twine. The twine is decorated with beads. The

[31] The Mentawei seers always ring bells (imported) when they charm.

[32] Due to the magical power of the outfit, it is impossible to purchase one. If a seer parted with the outfit he could not practise

outer wrapping consists of bark, with an outer covering of red cotton cloth. Next the breast band (*pangaila*) is made. This consists of brass spangles. The spangles are decorated with beads woven on coconut ribs and chicken feathers. Next the brass arm bands are hammered out. Then rattan, of the black and red variety, is decorated with beads, and wrapped around the candidate as a breech band. Three strings of beads are used as head-bands (*kirit*). The head-bands serve as telephone wires between the altar and the seer. It is through these that the seer talks to the spirits of the altar. Bamboo carriers to contain the oil used for anointing, brass arm and wrist bands are now made. Finally two bells are taken, and the handles wrapped around with red cloth. This is done so that the bells will cling to the hands of the seer. The bells are for the purpose of summoning the spirits.

Nine days are taken up in the preparation of the outfit. Then the instructor gives the final charms to his pupil. He first asks, "Are your eyes clear now, so that you can see your fathers, your elder and younger brothers [the spirits]?" "Yes, I see them clearly," replies the boy. The instructor charms, "Boy! I am here when you are in need, for I made you. You will now be able to give medicine to the people of Mentawei with cold hands.[33] You will now have seeing eyes to see the wood spirits, hearing ears to hear the words of the spirits to whom we sacrifice at the altar. May your magic power secure you long life, may it enable you to visit continually the villages of men and to cure the sick." The instructor now places the headdress on the boy, who charms, "I take this headdress as decoration so that I have magic power, that I have power in the villages of the strangers. The people of the village will look on, the people of the villages I visit will look on, the wood spirits will look on, the spirits of heaven will look on, the spirits of the sea will look on, the spirits under the ground of the village will look on, the poles (*kera*)[34] of the village will look

[33] In the native languages of the Archipelago all happiness, peace, rest, and well-being are united under the concept of "coolness" while the words "hot" and "heat" typify all the powers of evil. (C Snouck Hurgronje, The Achhenese, 1: 305. London, 1906.)

[34] The *kera* are fetish poles hung with magical plants before each village. The spirits (*kina*) of the poles keep away the disease-bringing ghosts.

Seer in full attire. Pageh.

on, all the children of the *uma* (division of village) will look on. May I derive magic power from the seers of the other villages, so that I may question the altars of other villages, that I may question the spirits of other villages, that I may join my singing with that of other seers who are also powerful. May my spirits rule over other villages, so that when I use my headdress as a means of knowing what to do I will be proficient in curing. I charm myself so that I be strong in body, that my magic power be enduring, that I have long life. Amen (*bulatnia*, may it be correct)."

Then the instructor places the breast band, the arm bands, and a leaf tail on the youth, and the magical outfit is complete. After this the instructor blinds the eyes of the initiate, so that he is unable to see for two or three days. This is done so that the people will also be blind when the seer plays his tricks on them. The seer puts ginger juice[35] in both eyes of the candidate, and charms, "Red *laiga* flower, make clear his eyes, may the faces of the spirits shine that he may see them. May the eyes of the people be blinded by this charm."

Next the instructor takes a bamboo container of a hand's length and open at both ends. He blows into both ears of the candidate, charming, "I blow into your ears, my child, so that you will be able to hear the words of the wood spirits, and the speech of the altar. I cause you to have hearing ears, seeing eyes, and cold hands. I cause you to have magic power. I enable you to visit as a seer."

(b) *Curing. The questioning of the altar.*—After the instructor and his pupil have completed all of their ceremonies, and have made the youth's outfit, they wait some time until there is sickness in one of the houses of the village, so that they may try to effect a cure. Then they go to the house in which there is a sick person.

When the seers are within the house, the pupil sings to the altar, "Spirits of the altar, tell us the cause of the sickness. You know the misdeeds of your father, of your mother. Reveal them to us, so that we know what to use as medicine." The spirits of

[35] The speciman of *laiga* blossom which I brought home was identified as *Zingiberaceae*, perhaps *Zingiber officinalis Rosc.*, true ginger. The ginger root (?) is wrapped in another plant called *laka* (sharp) when it is squeezed into the eyes.

the altar reply, "Yes, seer, our fathers the wood spirits will disclose the sins to you. The house father does not act in a correct manner." The seer replies, "Your fathers wish to do well, your younger brothers wish to do well, it is because they wish to do the correct thing that they have called on us. Give speech, O fathers the wood spirits, and tell us the cause of the sickness."

In the meanwhile the owners of the house have heard the seer singing before the altar. The answering voices of the spirits are not, of course, audible to the ordinary man. Now the house owners come in, and make speeches to the spirits of the altar, promising to mend their ways. The seer adds his plea, "You have heard, O spirits of the altar, the words of your father. He wishes to do the correct thing. Tell all the causes of the sickness which you have sent. Tell us first the main cause, and do not conceal anything." The spirits of the altar answer, "Bless you, O wood spirits. My fathers and mothers [the wood spirits] wish to be kind. Now I can reveal to you the causes of the sickness." The seer listens while the spirits of the altar are supposed to be making their revelation.

After the seer has finished singing before the altar he turns to the house father. "What have you done wrong, old man (*badja*)? Tell everything to me, be sure to conceal nothing." The house father confesses any break of the taboos which he or a member of the house has committed. Then the seer puts together all the gossip of the village which he has heard before coming to the house and the confession of the house father. Now he is in a position to make a complete diagnosis of the trouble. All this is told as if it had been revealed by the spirits of the altar. From time to time, in curing, new things are placed under taboo by the seers. In fact, in the account the seers gave me, they confessed that it is because of the work of the members of their profession that the people of Mentawei have so many *takeikei* (taboos).[36]

When the house father is told about the sins he has committed, he promises to mend his ways. The sacrifice to the spirits, and the actual curing are not done until some time later. First the

[36] *Suru* also means taboo in Pageh. The word *suru* means either sacred or taboo. The usage here corresponds to Polynesia.

instructor and his pupil must make the round of the village, diagnosing all cases of sickness. When they have finished singing in all the houses, the instructor tells the novice, "Boy, I am satisfied with you, for you have questioned the altar, for you have spoken with our fathers the wood spirits. There yet remain small things [the tricks and legerdemain of the profession] which you do not know. If you sing as I do to the altar, then you will do it correctly. As for the other matters, you have but to listen to the advice of the other seers, and presently you will know everything."

(c) *The gathering of the medicine.*—In former days, according to the missionary Börger, the seers had knowledge of healing plants. But now they gather anything which looks attractive. There are a few of the older men left who have knowledge of the curing plants, but the younger doctors do not bother to ask them for the cures. So when the instructor takes his pupil out with him, he picks up all convenient foliage, telling the younger man that his talisman is all the while directing him to the proper plants. He sings, "Spirits of my talisman, reveal to me what plants I have to gather, so that I shall be able to heal the sick correctly, so that sickness will depart from the bodies of the people, that their fevers will cool down, that their wounded flesh will heal up, that their broken bones will heal straight."

When the two seers return to their home they take all the plants and scrape them with thorn scrapers (*gigiongen*). The scraping acts as a charm, and is participated in by the wood spirits. While the seers are scraping, they sing. Some of the plants are placed in hollow bamboos with water and corked. The water is later poured over the patient. Other plants are put in a carrying-basket after being scraped. These plants are wrapped around the body of the patient.

(d) *The calling of the souls of the people* (Sogai si-magere).—When everything is in readiness, pigs and chickens are killed in preparation for the curing *punen*. Each person who is to be cured has to contribute as many chickens and pigs as directed by his altar.

While the animals are being killed and brought into the *uma* (communal house) by the unmarried men, the seers go in front

of the *uma* and invoke the souls of the inmates. (See pl. 3.) They take stems of the *bobolo* plant (*Cordyline terminalis*) to serve as receptacles for the souls of the people. One plant is taken for each household. The seers take out their bells, and sing, "Come, come, spirits of the souls (*kina-si-magere*) of our children, do not go away. Do not leave us. Here is our food, chickens and pigs." The spirits see the seers and enter into the *bobolo* leaves. The seers stop ringing their bells, and, taking the leaves, they place them on the heads of their patients. The leaves are put above the fontanelle. The object of this is to insure the safety of the life-giving soul (*ketsat*). The act is called *tutut ketsat*, or locking in the *ketsat*.

(e) *The sacrifice.*—Next the people mount to the *uma*, where the priest (*rimata*) and the seers inspect the livers of the slaughtered pigs and chickens. If the tops of the livers are clear, and the veins in the region are not crossed, the sick people will recover. Liver sacrifices are now made at the altar of the *uma* by the priest.[37] He prays, "Here is your food, spirits of the *uma*, the livers of pigs. This is to create the magic power of the seer. Let this our child be blessed by you with a long life and a strong body. May his magical power be famous. Speak to our child, reveal to him the faults of the people of our *uma*, reveal to him that which you wish done. Here is your meat, O wood spirits, the livers of pigs. May you create the magic power of this our child. He is as your father.[38] And you, spirits and owners of the *uma*, bless him and give him seeing eyes. Bless him and let his ears, which have been blown into, be hearing ones. Bless him with cold hands, bless him with hands of magic power, bless him with grasping hands,[39] bless him that his magic power be potent. You be with him when he doctors, be with him when he gathers herbs, be with him when he sings, be with him when he makes his medicine."

[37] The soul of the animal goes to the spirits with the liver, the flesh is afterwards eaten by the people.

[38] The old word *ama* is used for father, as a shamanistic term. The modern word is *ukui*.

[39] Not for the reception of fees, but so that the seer may extract *tae*, poison, from the patient.

Seer invoking souls of the people of the *uma*. Picture taken in front of *uma*. Pageh.

After the sacrifice the meat is divided, one-half going to the seers, and one-half to the people of the *uma*. The meat is put in bamboos and cooked at once, to avoid spoiling. The amount of meat fills twenty bamboos, two joints long.

(f) *The giving of medicine to the sick.*—In the afternoon following the sacrifice, the seers are ready to give their medicine to the sick. They go to the first house, where a patient lies, wearing their outfits, and bringing the herbs and implements. These consist of the carrying-baskets, the thorn scrapers, bamboo holders containing flasks of coconut oil, and the bells. First the seers wash the hair of the patient. They take some of the unscraped medicine and squeeze a portion on their hands and another portion into a cup. The latter they mix with water as a hair wash. "Our children (the spirits) wash your hair so that all evil be thrown off from your body, so that all your sins be washed away." Next one of the seers squeezes more medicine, and mixes the juice in a cup with some water. The contents are poured over the patient, who is also given a sip to drink. The seer sings, "They, my children the spirits, wash you so as to throw off evil from your body. My children wash you so that you be reminded of the correct manner of living. This is your medicine."

If the seers are giving a very thorough treatment they give seven different kinds of medicine. One variety is taken from the basket, scraped, stirred with water in the cup, and then is ready for use. Both seers ring their bells, and one sings, "Fathers, the wood spirits, this is the medicine to throw out fever from the body of the patient. You are the helpers in making potent this medicine, you are the source of our power, you charm the medicine so that the fever departs from the sick person." After the bath with the medicine, follows the usual sip. The third variety of medicine is to clean out the insides of the person, and thus cause the fever to depart.

The next three varieties of medicine are applied externally. In external treatment the Pageh seers do not make use of sucking,[40] but they do apply massage. The magical meaning of both

[40] Sucking is practised in Nias. (Kleiweg de Zwaan, op. cit., 70.)

varieties of treatment are the same, the extraction of disease-bearing objects from the body of the patient.

The fourth variety of medicine is given for the purpose of making the patient's body mobile. One of the seers sings, while the other does the rubbing. "Fathers, the wood spirits, make powerful our hands as we take hold of this medicine, for this sickness is very severe. Do this lest we be ashamed of our magic power, lest we be ashamed of our visit. Here is medicine to make supple the body, we rub it on the patient's body to make it supple." The fifth variety of medicine is rubbed on by massage (*porot*). The medicine rubbed on is for the purpose of "closing up the flesh." The seer sings while massaging, "Father, the wood spirits, make powerful our hands, so that we may massage the body of the sick man. We massage the flesh so that his bones become straight, so that he may be able to obtain his breath and recover." While the seer is massaging with his hands, his guardian spirits, the wood spirits, are massaging with theirs. According to the account, if the medicine is correct, and the body of the man approves of it, the poison (from witchcraft) comes out from the body at once in the form of a bone or some other object, and the flesh closes up. The seer may pull out of the body some remnant of a taboo object which the patient has eaten, the hair of a deer or the hair of a monkey. Or perhaps because of the man's sins, the evil water spirit (*sikameinan*) has driven water into the patient's body. Then this comes out. Whatever is in the man's body will come out, if the medicine is correct. If the object does not come out, the man will die. For the next treatment one of the seers opens his bamboo carrier and takes out his flask of oil. He holds the mouth of the flask with his finger, and allows the oil to drip out slowly. Then he rubs the oil on the body of the sick man. "Healing oil, make oily[41] the sick man, make oily the sickness, make oily the thing in the body of my child." The poison (*tae*) being well oiled, comes out readily.

The cure is now finished, and the seers give a little exhibition. They take out a short variety of bamboo carrier, dance and sing.

[41] The word *tula* means oil. When given verbal force, *tula-ake*, the word means "to make oily" or "to heal."

"We who are the fathers of the wood spirits make a spectacle for the people. We do it in order to make the sick man rejoice. We make a miracle for the people of Mentawei. Reveal to the people that we are your fathers, show them that we are in alliance with you. In this way we shall create in the village confidence in our power, we shall create confidence in our herbs, we shall show that our new decorations are worthy." While the seers sing, their medicine containers bob up and down in their hands, keeping time to the song. At last the movements of the containers become so violent that the seers are scarcely able to hold them. When their arms become exhausted the seers stop dancing. A final bath and sip is given to the invalid, and the seers depart for the next house.

When the curing is over for the day, the seers lay aside their insignia of office, and partake of food at home. The usual sacrifices are made to the altar. Then the instructor gives his final advice to the novice, "Boy, you have indeed seen the spirits to whom we sacrifice, you have heard the voice of the altar, it has come to pass that you have spoken with our fathers the wood spirits. Now you are instructed. Those to whom we sacrifice do not wish that we should make mistakes in our work, they do not wish us to commit faults, to eat forbidden foods. If we do these things the spirits will make us and our children sick, they will make trouble for us. When we go to do our work,[42] if we have committed any fault, we will not be able to see the spirits. If we have deceived the spirits of the altar they will pay no heed to us. Do not be lazy. Watch our friends the other seers; part of our magic power comes from what we have learned, part from what we have seen."

(g) *Dance of the seers* (Sairigi).—In the evening the seers dance in the *uma*. The dancing is always done in Pageh at time of *punen*, and conducted in the central room of the communal house. First the seers sing to the *uma*, "Spirits of the *uma*, we make a spectacle for our fathers the wood spirits. If there is any poison in your body, reveal it to us, so that we may find it, so that your children will not become sick." Then the people beat on the

[42] *Mukerei*, really to "make magic."

snake skin drums, and the seers dance. One of the seers goes first to the front of the *uma*, then to the back. He is looking for *tae* (poison). Anything he pretends to obtain he grasps in his hands and brings to the altar. "I have obtained this, spirits of the *uma*, reveal if there are any others." The spirits of the altar reply, "There is more poison on the roof." The people strike the drums again, and the seer again dances. He looks for poison on the roof, and obtains it. In the morning the same process is repeated, and all the fetish poles (*kera*) are likewise inspected and the poison taken from them. Then the village is clean.

Sometimes when the seers dance the *sairigi* they make the steps quicker and quicker. This is done for the purpose of falling senseless to the ground. It is by this means that the seer (the soul of the seer?) is able to communicate with the sky spirits. The seers say that they go to the sky in a boat, and that the *uma* is their boat. It is the eagles who come and bear them up. When the seers arrive in the sky they visit the *uma* of the sky spirits. They make a speech there, and beg flasks of oil from the girl sky spirits. The sky spirits are liberal, and give them the oil. The seers claim that this is the kind of oil which gives them the most magical power.

If any of the people of the *uma* were lost in the woods, or had drifted off to sea, the seers look for them in their dance, and claim to find them. When the seers regain consciousness they tell the people where the lost ones are, so that they know where to look for them. If the lost people are already dead, the seers know this, for they learned it in their dance.

(h) *Miscellaneous matters pertaining to seers.*—It often happens that a seer is called from one village to come and cure in another. A village is apt first to try its own seers, and then, if these fail, it will call on a seer from out of town. A seer will not pay his visit if the omens are not correct. In case of evil omens, the seer knows that the patient is already dead. Since the seer is allowed no contact with the dead, it would be a misfortune to visit the village.

The seer does not keep the food for himself which he obtains as pay (*upa*) when on a visit. For each person cured he will be given a pig and a chicken. These are sacrificed in the village

visited, one-half eaten there, and one-half will be brought back to serve as food for the *punen* in the home town. The seer, however, obtains for each cure a payment which he can keep for himself. This consists of a one arm's length of cloth, ten strings of beads, one live chicken, a big basketful of taro, and twenty-five coconuts. This amount is paid for a "large cure." In money it is worth about five guilders, or two dollars. A "small cure" only brings half as much.[43] The price of a cure depends on the seriousness of the case, not on the wealth of the patient. Theoretically, at least, all the people of Mentawei are on an equal financial level.

Any man or woman can be a seer. There seems, however, some tendency for the profession to run in families. At any rate, the outfit can be inherited from father to son, or from brother to brother. The outfit cannot be given away or sold outside of the family.

If the outfit, especially the headdress, becomes ruined from age, or if the seer has not practised for a long time and then wishes to recommence, he must renew his power (*masibaba kerei*). This is also the case if the seer makes a mistake in his work, or breaks some taboo. In any of these circumstances the seer becomes unable to have contact with his guardian spirits, and the people refuse to call on him. In order to renew his power the seer must have the aid of another man in the profession, and remake his outfit as in the beginning.

Mentawei Witchcraft

In Pageh the sorcerer is called *pananae*, while the poison he is supposed to inject into the victim is called *tae*. In every primitive society curing and witchcraft are directly connected with each other, being opposite sides of the same belief. If the sorcerer works by abstracting and harming the soul of the victim, then the doctor must recall the soul. If the sorcerer works by injecting foreign injurious substances into the victim, the doctor must remove them. Or, by a third method, if the sorcerer curses his

[43] This is a lot of money in Pageh. The Dutch government head tax, the only tax the people have, is two guilders a year. The seers are charged eight, because they have a profession!

victim to the hostile spirits (in Mentawei the ghosts), then the doctor must remove the curse. This is done in Mentawei by aid of the helpful spirits. Naturally the doctor must know the methods of the sorcerer, and in many places the two occupations are combined by the same practitioners. In Mentawei, however, the seer never is suspected of witchcraft. On the contrary, he is the person called upon to pick out the criminal.

One method of poisoning is to take some of the exuviae or property of the victim and give it in sacrifice to the ghosts. This method may be considered either as harmful to the soul of the victim, or else as working by a process of sympathetic magic. For example, the sorcerer will first steal some chickens from the victim. Then he will steal some yams, eggs, and cotton goods. He holds the stolen goods in the air, and striking them with certain poisonous plants, curses, "You ghosts, here is your food, your meat, your goods. I do not know the name of the owner of these chickens. But you know it. You look for him and aid my blow, so that he dies."

There are many ways in which the food, possessions, or exuviae can be worked upon by the sorcerer. The goods can be placed in a swampy place. Then as the goods grow mouldy, the owner becomes sick. The goods can be placed high up on the top of a tree. When the sun burns the goods, the owner becomes sick with fever. The goods can be placed behind the hearth, so that they gradually become burnt. In all of these cases the ghosts are invoked to aid the process of witchcraft. In case the sorcerer wishes to kill the small children of a man, he will take some of their decorations, toys, or food. These he will throw into the river and conjure the ghosts, "This is your dwelling-place, spirits of the food and toys of So-and-so. May the children become dark red with fever. May they have coughs, asthma, etc."

Sometimes the sorcerer appears to work by sympathetic magic, aided by the ghosts; at other times it is the souls of the victims which are directly attacked. As an example of witchcraft by sympathetic magic, it may happen that the sorcerer will bury a *putput* fish in the fields of the victim. This fish is able to inflate its body with air. The sorcerer curses, "This is your dwelling

place, spirits of the *putput*. As you swell up, may the body of So-and-so likewise swell up. May fever and sickness come to him." Or a man may wish to harm a woman, because she has taken another lover. Then he takes some of her cloth and places it in a hollow bamboo on the fire. He conjures, "This is your dwelling place, spirits of the cloth of So-and-so. As you get hot, let the woman get dry inside, so that she will never be able to have children. As you close together, spirits of the bamboo, may the insides of So-and-so close together, so that she never will have children." If, in spite of the curse, the woman becomes pregnant, the sorcerer takes some of her cloth and puts it on the fork of a tree or on a thorn. He curses, "Here spirits of the cloth of So-and-so. In the same way in which I hang you up here on a thorn, may the child of So-and-so hang up in pregnancy." In illustration of the way in which the soul of a person may be abstracted by the sorcerer, the following method is instructive. The sorcerer cuts open a bamboo between the two joints, and places inside the cloth and decorations of his victim. He then throws the bamboo into the river and lets it drift off to sea. He conjures, "This is your dwelling place, spirits of the cloth, spirits of the decorations of So-and-so. As you drift off, spirits of the bamboo, take with you what is inside. In the same way may the soul of So-and-so, and the souls of his father, mother, and children, drift off, and die."

Frequently it is only the property of a person which is damaged by the sorcerer. Thus, the chickens of the victim may be killed. The sorcerer will either cut his own chicken-coop, or else he will hold his knife in a threatening position directed at the chicken-coop of his enemy. He conjures, "You ghosts, incite the following animals to eat So-and-so's chickens: the chicken weasel, the leguan, the eagle, the python." The sorcerer may throw a piece of the *aileppet* plant (the name means "cold") into the chicken basket of his enemy. He charms, "You *aileppet* make the inside of the basket cold, and kill the chickens." The sorcerer may also blind the hunting dogs of his enemy by taking a bit of their meat and corking it up in a bamboo cooker. With the aid of the ghosts, the eyes of the dogs are thereby closed up. Even the traps[44] of

[44] Traps in Pageh are for catching deer and monkeys. The fall trap is called *gulak*, and a trap with closing door called *luluplup*.

an enemy may be bewitched. The sorcerer will spit on the trap and charm, "I spit on you, spirits of the trap, so that the monkeys and deer will have an aversion to you and you will never trap any more animals."

In Pageh the seer is called upon to extract poison (*tae*) from objects and people. This function of the seer has already been described. The foreign object could have become lodged in a man by the spirits, because of the man's breaking of a taboo, or it could have been sent by the ghosts. It is usually believed, however, that a sorcerer has placed the object. Actually, there is but little witchcraft practised. A seer finds the objects which he himself has brought with him, and which he produces from the walls of the *uma*, or from the fields by legerdemain. Often a man will wish to ruin an enemy. He then "salts" his own field with *tae*, and summons the seer to find it.

A considerable part of the seer's influence is due to the fact that he is called upon to pick out sorcerers. If a case of sickness is said to be caused by witchcraft, and the patient dies, the family asks the seer to name the murderer. According to Kruyt,[45] the seer goes to an uninhabited island for the purpose of determining the culprit. When he returns, he does not name the supposed culprit, but gives instead a description of his appearance and clothing. The people of the *uma* then go to the priest (*rimata*) with the information. A council of the more influential men follows, and if the culprit is condemned he is at once captured and brought bound to the graveyard. There the sorcerer is hung, this form of punishment being used in Pageh in order to prevent blood flowing on the ground. The body is buried without ceremony under leaves and twigs. The family of the executed sorcerer are then informed of the act, and warned not to complain lest a similar fate overtake them. Sometimes a sorcerer is left on a deserted island, or simply expelled from the village. The natives, however, claim that they execute this type of criminal "for his own good." For as long as a sorcerer remains alive, "he cannot help dealing in the forbidden magic." The dead sorcerer is not able

[45] Kruyt, op. cit., 139.

to gain admittance to the native land of dead souls. The seer has no obvious self-interest in his selection of the criminal, for he does not acquire any part of the possessions of the deceased. The wealth remains in the family, and is not confiscated. Wars or feuds do not arise from witchcraft cases in Mentawei, for the accused person is always a member of the same *uma* as the victim.

According to native theory, it is usually the man or woman of superior ability and abundant possessions who is bewitched. Thus, it is stated that a man is "poisoned" because he is diligent and has many domestic animals. His family therefore wish to get him out of the way, so as to inherit his goods. Again, if a person is extraordinarily successful in the hunt, or is merely long-lived, the sorcerer kills him from jealousy. A frequent cause for supposed witchcraft arises from a dispute over the boundaries of fields, or jealousy over a woman. Actually, it is the superior type of native who is accused of witchcraft, and eliminated from the group. If a man is more successful in the hunt or in fishing than his neighbors, if he is more diligent and acquires more possessions, he is the person picked out by the seer, he bears the onus of the group suspicion and envy. It is not by natural means, argue the natives, that So-and-so is long-lived, or is rich in possessions. If he were not possessed of magical powers, if he were not in league with the evil ghosts, he could not have been so successful. Witchcraft, then, is one of the methods by which the people of Mentawei maintain their ideal of communism and equality.

Summary

The Mentawei seer acquires his guardian spirits by a vision, either sought for or involuntary. The vision, if sought for, is obtained by a process of abnegation and purification. After the seer has obtained his power he can see and talk to the spirits. He remains in special rapport with his own guardian spirits, who aid him in curing. Disease is caused primarily by the ghosts, who are allowed by the spirits to enter the village when a taboo is broken. The ghosts then steal the souls of the people. Disease is also caused by sorcerers who work by sympathetic magic, by soul abstraction, and by the placing of "poison" in objects and in

people. The seer cures by recalling souls, and by extracting poisons. He also is in position to conciliate offended spirits.

The Mentawei seer is never possessed by alien spirits, he never exorcises spirits from the body of a patient, he never prophesies. The closest approach which the Mentawei seer makes to prophesy is in his "trip to the sky." In this case, however, the seer is gifted with supernatural vision rather than with a knowledge of the future.

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ORGANIZED SALISH BLANKET PATTERN

By MARY LOIS KISSELL

WEAVING has an interesting story to tell in relation to Salish nobility blankets. Indeed, the textile industry about Fuca strait, Puget sound, gulf of Georgia, and lower Fraser river is one of the most novel in North America. In general, Salish design is more or less pictographic in character and unadjusted to the decorative field;[1] but a few old webs have come to light in recent research for the Bureau of American Ethnology, which show much appreciation in pattern organization of an unaffected vigorous kind.

Earlier when in their interior home this people clothed themselves in dressed skins; but after migrating to the coast they adopted the blanket. Yet although the new home was on the outskirts of the highly developed Coast Indian weaving art, they did not take over its methods or implements, but utilized totally different ones. There is what seems to be a foreign loom, possibly from Colombia, South America; an archaic style of spinning not found elsewhere in the world;[2] and a strange domestic fleece-bearing dog that furnished textile fiber and is thought to have come from Asia.

This animal was raised solely for clothing purposes, carefully tended in dog folds and for pure breeding kept on small coast islands away from the house dog; a woman's wealth was rated by the number of these she owned.[3] Dog hair was not the only textile fiber; wild goat wool was even more frequently used, especially in the interior near the mountains, the goat's habitat; also there were bird down and many vegetal materials. Thus it

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[1] Franz Boas, *in* J. Teit, Thompson Indians. Am. Mus. Nat. Hist., Mem. 2: 389.

[2] M. L. Kissell, A New Type of Spinning in North America. Am. Anthr., n. s., 18: 246-270, 1916.

[3] G. Vancouver, Voyage of Discovery to the North Pacific Ocean (London, 1798), 1: 266, 284. P. Kane, Wanderings, 210. J. K. Lord, Naturalist in Vancouver Island and British Columbia, 2: 215-217. M. Eells, The Twana, Chemakum, Klallam Indians of Washington Territory. Smith. Rept., 1887, p. 630.

is incorrect to group all Salish blankets under the term "dog hair blankets" as has at times been done.

It is the special nobility garment with elaborate design which interests us here; although there is a general blanket either plain or simply striped or checked with slender lines; and also an eider robe. The special garment is of at least four distinct types: the Fuca strait, the Fraser delta coast and archipelago, the Lillooet, and the Yale each with different pattern plan; indeed, it is their unlike plan which most strongly distinguishes them. Yet ordinarily design motifs of the coast Salish types are more slender and elongated, while those of interior Salish types are thicker; but at times both styles occur on the same web. Other identifying characteristics as to type are shape and fiber materials.

That this locality which proved so favorable to white man's fur trade activities, was equally so to native trade and intertribal communication with distant localities—a highway for outside ideas—is revealed in the decoration of these webs. The mouth of the Fraser is the seat of the most perfect and best organized of this weaving ornament; and it appears in major and minor patterned stripes as on the geometric embellished Chilkat robe.[4] The Salish are not creators but borrowers[5] and adapters; here they borrowed the early Chilkat pattern plan.

Of this Fraser delta and archipelago type, two located webs are known and one that is not recorded. The last is of dog hair yarn mixed with a little goat wool, and is thought to have been collected by Lewis and Clark in 1804–1806, and is now in the National Museum, Washington (pl. 4*b*). It emphasizes its major stripes by a forceful design and whitening their ground through the clever means of adding to the yarns more creamy-white goat wool. A lower Fraser river blanket in the Perth Museum, Scotland (pl. 4*c*), though collected before 1833, has a weft of commercial yarns. It marks its major stripes with an emphatic design and greater stripe width. A Haro archipelago dog hair blanket in

[4] M. L. Kissell, The Early Geometric Patterned Chilkat. Am. Anthr., n. s., 30: 116, 117, 1928.

[5] Franz Boas, Ethnological Problems of Canada. Journ. Roy. Anthr. Inst., 30: 533-534, 1910.

a

b

c

a Carrying straps

b Dog hair web blanket

c Lower Fraser river blanket

the Oxford Museum, England (pl. 5), reflects in its less perfect design and stripes of one width throughout, a location which is the southern end of this weaving center. For more of this interesting descriptive detail, one is referred to the forthcoming Bureau publication, "North Pacific Coast Blankets."

Beside a prevalent influence of North Pacific coast culture upon Salish weaving design, there is this specific inspiration of the Chilkat pattern plan. But in the difficult transfer from the unstretched one-beam loom web fabricated in complex wrap and twine technics, to the Salish stretched warp loom suited to straight technics, we recognize a remarkable skill in adaptation. The special blanket is not a natural textile development as is the general blanket with straight twill weaves in coarse yarns; here the more elaborate design required finer yarns which are unworkable in straight weaves on the clumsy loom. Thus the need for technical invention, which resulted in a special combination of weaves peculiar to the Salish nobility blanket–a wicker-twine technic. Twine weave binds in the diagonal edges of all wicker-woven designs and also lays in horizontal, zigzag, serpentine, and other difficult motifs. Thus while the pattern plan is an external inspiration, in the adapting it to the Salish loom we discern an internal factor at work; the loom itself is a powerful agent in the movement away from pictographic expression.

The Fuca strait type, a two-bordered web with plain field, is well established by an old Klallam blanket in the National Museum collected by Gibbs, and by Kane's portraits of Indian chiefs and the royalty of 1847 about Fort Victoria, all of whom wear the garment. An interior type from the neighborhood of Yale has a field pattern moving about a center point and a narrow surrounding border; all remaining examples are woven with colored commercial yarns. From farther north comes a fourth type, probably Lillooet, with pattern plan of striped panels (pl. 6); the one unidentified web in the National Museum, Washington, was collected by the Wilkes expedition in 1841. The warp is of dog hair and weft natural color and native dyed goat wool. Its most interesting feature is the large number of "three rythms" that occur in the design; for a persistent feature in all Salish

blanket pattern outside the Yale type is the "three rhythm" arrangement, which may appear as a design or a color combination.

Plate 4*a* illustrates two very splendid Salish carrying straps in the same Museum secured by Wilkes's expedition. The one on the left with refined constrained decoration is without doubt a Fraser delta coast web; that on the right with fuller heavier design shows characteristics of interior weaving centers. Enough has been said to convince that here weaving has been instrumental in the development of pattern; and that while in many instances the art is crude, best blankets show the loom's remarkable accomplishment.

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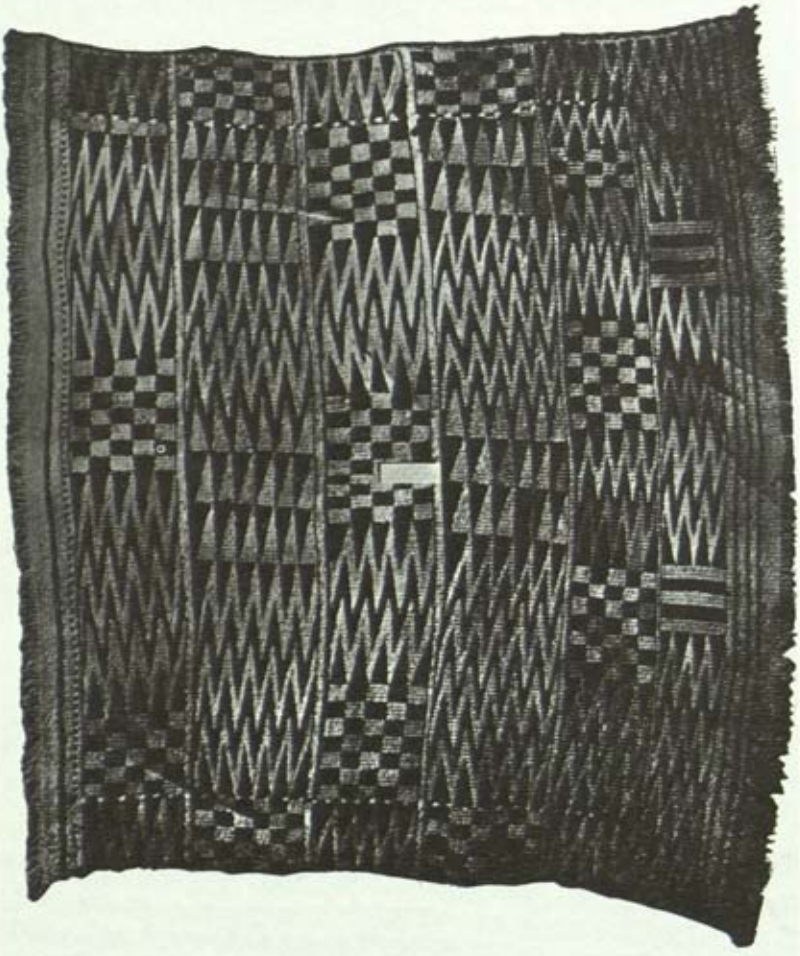
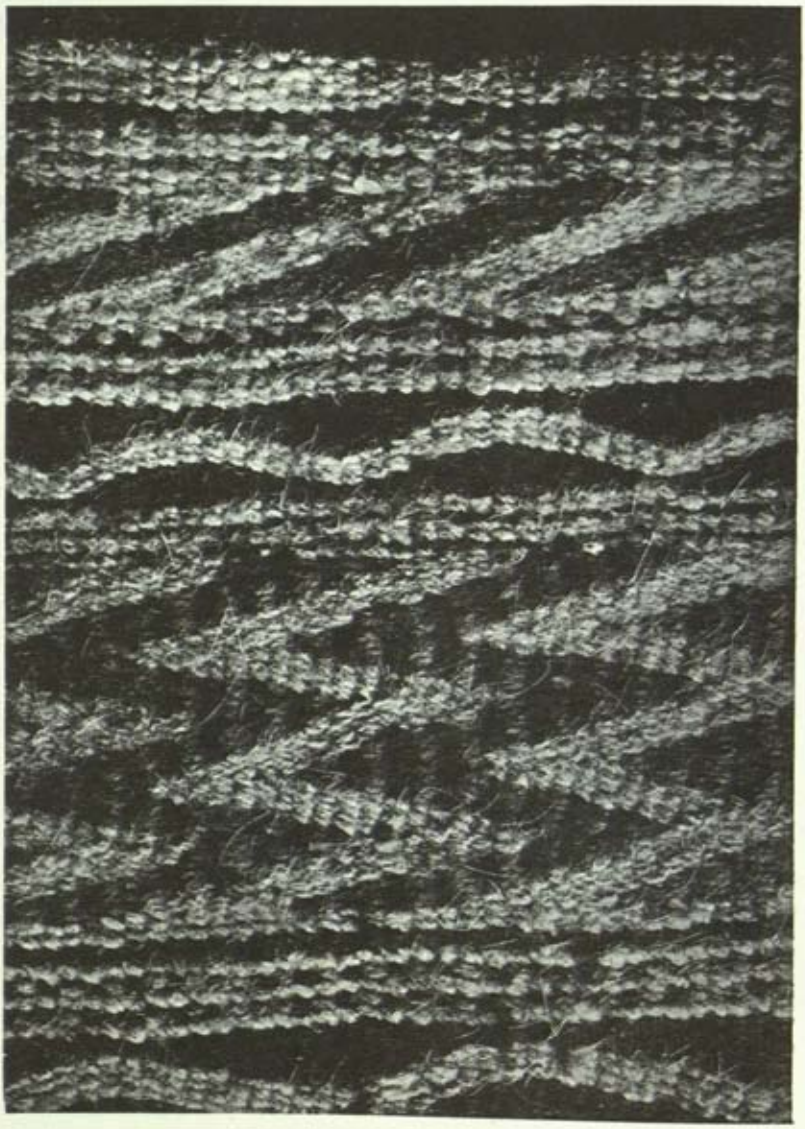


Striped panels blanket, probably Lillooet.



Haro archipelago dog hair blanket

THE ORIGIN OF SERVILE LABOR GROUPS

By WILLIAM CHRISTIE MACLEOD

Capital

THE CENTRAL and eastern Eskimo are a grouping of native American tribes among whom there were definite tribal areas but apparently no personal or family property in land; such private ownership may have existed with regard to the summer hunting and fishing grounds, as it did among the western Eskimo, but so far as I know no note has been made of such. With the central and eastern Eskimo this absence of private land ownership makes private ownership of capital (production goods) stand out in especial relief in descriptions of Eskimo life, as a factor making for the differentiation of rich and poor in the tribe.

When an Eskimo man lost essential hunting equipment, or had never inherited or otherwise acquired such, he—and, if married, his wife and children and other dependent relatives—were liable to become a family of social dependents. It appears that usually such person or family of persons was given employment and support by those individuals or families who were blessed with plenty of hunting equipment. Boas writes of these capital-less men among the central Eskimo:

> Sometimes men are adopted who may almost be considered servants. Particularly bachelors without any relations, cripples who are not able to provide for themselves, or men who have lost their sledges and dogs. They fulfil minor occupations, mend the hunting implements, fit out the sledges, feed the dogs, etc.; sometimes they join the hunters. They follow the master of the house when he removes from one place to another, make journeys in order to do his commissions, and so on.

The resulting household disposition is indicated by another author:

> The principal family has, of course, the best place, the servants, widows, and orphans, if there be such, have to content themselves with a place near the door, where the cold is most severe.

Turner notes for the Eskimo of the Ungava district in Labrador that if, as sometimes happens, a young man marries without

possessing adequate capital—sled, dogs, harpoons, boats, bladders, knives, tent skins, etc.—he must take an economically subservient place in his wife's parents' household. Sometimes personal ability, intelligence, health, strength, enterprise, and such personal qualities, are noted as associated with superiority in wealth. Reed notes of the various families of the Eskimo of Hudson strait that

> some were always found richer in food and household goods than others. The men in these wealthy families, as might be supposed, were either physically stronger, or better hunters, than their fellows.

And, as might be supposed also, the rich looked down upon the poor. Crantz makes note of one social advantage of wealth among the Eskimo of Greenland:

> If several Greenlanders live together, they keep an angekok, to avail themselves of his advice. And if they do not keep one, they are despised or pitied by the others as being poor men.[1]

Capital, Servants, and Slavery

Nieboer, in his interesting but methodologically defective study, *Slavery As An Industrial System*, seizes upon this significance of capital among the Eskimo to explain the absence of slavery among the central and eastern Eskimo. In addition he notes that the use of the production goods or capital of the Eskimo required great skill and expert training. He concludes therefore, for the Eskimo, that

> A man destitute of capital cannot provide for himself, and is therefore at the mercy of the capitalist. Now the Eskimo capitalist most often allows such men to share his house and food, and makes them feed the dogs, etc., rather as a means of procuring employment for them than because such work requires hands outside the family. The capitalist does not want laborers, but even if he did, there would always be widows and orphans, and men destitute of capital, who would readily enter into his service. The Eskimo have to struggle with "unemployment" difficulties, not with scarcity of hands, therefore a slave dealer visiting them would not find a ready sale for his stock-in-trade.

[1] F. Boas, Central Eskimo. 6th Annual Report, Bureau of American Ethnology, 580–580. D. Crantz, Historie van Groenland, 1: 186, 215, 1767. C. A. Ribbach, Eskimo of Labrador, 286, 1876. Reed, Eskimo of Hudson Strait. Proceedings of the Canadian Institute, 1889–1890, p. 225. L. M. Turner, Ungava District. 11th Annual Report, Bureau of American Ethnology, 186, 190, 205, 1894; also Crantz, op. cit., 1: 201–202, and 3: 180 (note).

He elsewhere reaches the universally applicable conclusions that "where subsistence is dependent on capital, slaves are not wanted," and, secondly, that "where only highly skilled labor is required, slaves cannot be of any use."[2]

In pursuing his thought and reaching these conclusions Nieboer overlooks a number of important points which I think invalidate his conclusions. (1) He assumes that the labor of the capital-less "servants" among the Eskimo was accepted by their employers as merely a token of their willingness to do something in return for their support *and was not socially necessary labor*; for this he has no warrant in any sources. This servile labor, such as feeding the dogs, fixing sleds and harness, and so on, was necessary work, and there is no definite indication that "servants" were taken on by capitalists beyond the point where their labor was unproductive. (2) Nieboer then proceeds *to ignore the absolutely essential and large place of productive equipment in the economic life of other primitive peoples*, such as the Indians of the northwest coast of North America (who were large slave-holders), ignoring also the fact that about as much skill was required in the use of the equipment of these peoples as in the use of that of the Eskimo. (Incidentally, he was wholly ignorant of the facts of the land tenure of these northwestern tribes.) (3) He neglects the fact, further, that servile free labor and slave labor usually are found in the same community: *the presence of such free labor among the Eskimo therefore does not explain the absence of slavery.*

Servile Labor Among Slave Holders

Let us note something of the economy of the northwest coast of North America, where there were so many slaves that estimates for some of the tribes give the slave population as about one-fourth

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[2] H. J. Nieboer, Slavery as an Industrial System, pp. 254, 419 seq., 1910, 1920. For further criticism of Nieboer's theses, see MacLeod, Debtor and Chattel Slavery, (Am. Anthr., n. s., 27: 370–380, 1925); Economic Aspects of Primitive Slavery (Am. Anthr., n. s., 30: 632–650, 1928); Some Social Aspects of Primitive Chattel Slavery (Jour. Social Forces, 1925); Further Aspects of Chattel Slavery (Jour. de la Société des Américanistes de Paris, 1927); Marriage, Illegitimacy, and Divorce in a Primitive Pecuniary Culture (Jour. Social Forces, 1926 [dealing with debtor slavery, principally, of a peculiar type]).

to one-third of the total. Canoes were capital, privately owned. The great forty-foot canoes used for trading and for slave raiding were very costly; only a rich man could own one. The cedar trees from which these better canoes could be made grew only in certain localities, and had to be obtained in intertribal trade, with the cost mounting with the distance from the producing tribe, because of middlemen's profits. Possession of an excellent canoe enabled its rich owner to maintain and increase his wealth through the use of the canoe. He might rent it out, at times, or use it for slave-raiding and for making trading voyages. As among the Eskimo, further, the ability to get the materials to construct a house was lacking on the part of some in the community and these had to become to some extent dependent on the owners of houses who would accord them shelter. As in the case of canoes, on the northwest coast, the cedar used for the plank houses of the natives was obtainable virtually only on Vancouver island. Fishing weirs, deer fences, fishing stations, smoking houses and such for preparation of preserved fish and fish products, whaling and sealing equipment, and so on, were capital owned by persons or families to the exclusion of others who might be dependent on the food produced with their use. Great skill and long training were required in the use of whaling equipment, for example, in the hunting of sea otters, in the hunting of animals in the mountain valleys (also privately owned), and in much else. There was, besides, a large range of occupations requiring a minimum of skill. Some of them were pursued by the women and it was usually to these the slaves were put; there was the hauling of fish, the gathering of firewood,[3] the cutting of logs and planks, the drawing of water, the smoking of fish, and so on. Much of this labor, however, was done not only by women and slaves, but, as among the Eskimo, by servile free

[3] On capital, and skill, among the northwest Indians, see, for example, E. C. Parsons, The Dene of Anvik, Alaska (Anthropos, 65); F. Boas, The Nootka (British Association for the Advancement of Science, 585, 1890); ibid, The Kwakiutl, ibid, 832, 1889; J. Teit, The Thompson Indians (Jesup Expedition, American Museum of Natural History, 1: 293–294, 1900). For a very different group of primitive peoples compare B. Malinowski, Argonauts, 186.

On the significance of firewood gathering see my note on *Fuel and Early Civilization*, AMERICAN ANTHROPOLOGIST, 1925.

men. Boas, for example, writes of the Nootka[4] of Vancouver island, that if a man were the owner of an especially productive fishing station (and a good weir for its effective utilization) he might employ his less fortunate neighbors. When these neighbors came to work for him, the owner would appoint *a boss* who would receive in payment the catch of two days, while the other workers, organized into crews, received each a great deal less for their labor.

With the Haida and Tlingit, Swanton writes, some entire groups had become so poor in land and capital that they were unable to maintain respect for themselves on the part of other groups. Rich clans sometimes appropriated the copyrights to heraldic privileges, songs, dances, and so on, which properly belonged to others who were too poor and too ill-equipped for fight to resist the infringement on their rights. In some villages there were entire aggregations of households, a local sub-clan, whose members

> formed a class of servants only higher in the social order than the slaves,

who might have no chief of their own, although plainly constituting a group of freemen, recognizing as their head chief the chief of some other sub-clan of their clan located in a village perhaps hundreds of miles away.[5]

These poor commoners all along the west and northwest coast of North America were thoroughly despised by their betters, and made to feel the ignominy of their inferior social position. Hill-Tout, speaking of the Coast Salish of Vancouver island and the nearby mainland, notes that at the puberty ceremony ("naming feast") of girls, at which a girl is "introduced," presents are distributed to the guests, and

> if the father is wealthy, he will throw other blankets among the common folk to be scrambled for.[6]

In Kwakiutl potlatches, commoners received as presents only "worn-out blankets and even fractions of the same." And it is

[4] Boas, op. cit., 568–569, 1890.

[5] J. R. Swanton, The Haida. Jesup Expedition, Memoirs, American Museum of Natural History, 5: 347 seq.

[6] C. Hill-Tout, Salish and Dene, 163, 1907; and The Coast Salish (Canadian Archaeological Report, p. 227, 1905).

among the Kwakiutl that the chief of a sept orally announces to the people the decisions of the sept council, but

> on delivering speeches he does not speak to people of low rank, but converses with them through messengers.[7]

In famines among the Tsimshian the rich let the poor starve. One of their tales pictures the poor dying of hunger and disease and cold, while the rich are in their warm winter houses of the winter villages, eating, with large stocks of provisions. One sees vividly these desirable houses "with smoke rising from them." And the tale-teller takes the situation as a matter of course; *there is no note of distaste or protest for the legal sanctions which make possible such contrast between the well-fed rich and the famine-suffering poor.* In other tales, and in the narratives of Europeans who have visited the coast, we see the commoners shivering in the wet and cold in bark-paper clothes, while the rich—nobles and bourgeois—have at hand their plenty of stored and valued elk-skins, sea-otter skins, and blankets made from mountain goat's or dog's wool woven with soft feathers.[8]

Allen emphasizes the subservience, among the Athabascans (Tinne, Dene, or -tana) of the Atna or Copper river and their other Athabascan Alaskan neighbors, of the servile vassals to the nobles or *skillies*—the "blood relatives of the chiefs"; and he indicates the significance of capital ownership in the maintenance of this relationship. For example:

> The *skillies* are necessarily many, and not a few of them have vassals at their beck and call. I have seen one, fourteen or fifteen years of age, sitting within a few feet of the river, order a man six foot tall, a vassal, to bring him water. These menials are used for all kinds of work, and are as completely under the control of their masters as they possibly could be, yet I never heard of corporal punishment being administered to them. It is but natural to suppose that *a threat of depriving them of food or shelter, in their poverty-stricken condition would be sufficient incentive to urge them to any length of obedience.*[9]

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[7] Boas, General Report (British Association for the Advancement of Science, 833, 1889); Curtis, The Kwakiutl, 138, 1910; Petroff, Population of Alaska (U. S. Census, 172, 1880).

[8] Boas, Tsimshian Mythology. 31st Annual Report, Bureau of American Ethnology, 158, 399, etc., 1916.

[9] H. T. Allen, Report of an Expedition to the Copper, Tanana, and Koyokuk Rivers, Alaska. 49th Congress, 2nd Sess., Ex. Doc., No. 125: 59, 136, 1887.

The reality of the servility of these capital-less individuals is abundantly evidenced in Allen's narrative. Allen, a democratically-inclined American army officer, was more than surprised at the facts himself. He wrote:

> I did not have time, nor was it in my instructions, to attempt any reform in their social and political customs; yet, had we been less dependent on the natives, I should certainly have let them understand that the ablest worker was the chiefest man, rather than to continually make presents to the recognized tyones [chiefs]. On one occasion, when I attempted to snub a lazy chief by making a much-prized present to one of his vassals, and a splendid worker, rather than to himself, he pocketed the article and took all the credit to himself for possessing such a valuable worker.[10]

We may conclude our observations then by the summary observation that both among the central and eastern Eskimo, and likewise among the Indians of the northwest coast of North America, the private ownership of the means of production, capital, and land made for the differentiation of labor classes within the community. The relatively rich in the means of production carried on occupations requiring especial skill; those relatively poor in the means of production rendered more or less of their services in relatively unskilled occupations, to the rich, in return for a measure of subsistence. The nature of the socio-economic process among the Eskimo specified is so similar to that of the Indians specified that the absence of slave labor among the former and its extensive use among the latter cannot be explained by any economic determinism. There is no reason to believe that slavery would not be economically feasible among the central and eastern Eskimo. Presumably psychological reasons exist which have prevented the diffusion of the institution of slavery among the central and eastern Eskimo villages.[11]

Group Superordination on Vancouver Island

We have already noted the existence among the Haida and Tlingit of compact groups of households, which have evidently become servile labor groups as a result of depression socially

[10] *Ibid.*

[11] On the distribution of slavery see MacLeod, Debtor and Chattel Slavery (Am. Anthr., n. s., 27: 370–380, 1925).

consequent upon poverty; *cases of differentiation within a community due to the operation of factors intrinsic to the group.* We have now to consider the case of violent superposition of one group upon another or foreign group.

Along western Vancouver island were a number of tribes of Nootkan speech,—the Nootka, or Nootka people—of which the Nootka tribe, properly the Mooachat tribe, located on Nootka sound, were but one of the number of tribes of similar language. Speaking of his own day, Sproat, who lived among the Vancouver tribes, wrote:

> The Nootka tribe, which consists of about 500 warriors,[12] is not only more numerous than almost any of the neighboring tribes, but far exceeds them in the strength and martial spirit of its people; and in fact, there are few nations within 100 miles either to the north or south, but are considered as tributary to them.[13]

This would mean, apparently, that the Mooachat tribe was supreme over virtually all the Nootka tribes from about Quatsino sound to the north,—above which were the Kwakiutl tribes,—to Barclay sound on the south.

Sproat's observation may be considered in connection with a note from Jewitt who lived among the Mooachat Nootka as a slave from about 1803 to 1806. Jewitt noted the fact that canoes from other tribes frequently called at the Mooachat village, primarily, it seems, to trade, but:

> Many of the articles thus brought, particularly the provisions, were considered as presents, or tributary offerings, but this must be viewed as little more than a nominal acknowledgment of superiority, as they rarely failed to get the full amount of their presents.[14]

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[12] Therefore something less than 2000 population.

[13] Sproat, Scenes and Studies, 74, 1869.

[14] Jewitt, Narrative, 79.

Jewitt notes that the Mooachat did *not* practice head flattening, while the Wickinnish to the north did, and the Makah to the south also did. He also notes the two contrasting types of head flattening, that of the Kwakiutl north, and that of the Puget sound south.

The ending of *aht* or *art* to a tribal name is good evidence that the tribe is Nootkan. The Ahts are the Nootkan tribes.

In Jewitt, the Wickinnish are one-third less distant to the north than the Makah are to the south.

This is a little obscure, but I have good reason to conclude it to actually evidence a measure of subjection of these distant tribes to the dominant Mooachat. Jewitt also noted that on the west coast of Vancouver island there were no tribes for many miles north and south which could hope to challenge the Mooachat to a test of strength. To the north, the first tribe free from Mooachat domination was the Wickinnish (apparently a Kwakiutl tribe), and to the south, apparently all the island tribes were dominated by the Mooachat, but the Makah Nootkans, of Cape Flattery of the Olympic peninsula of Washington, were apparently completely free and independent. Among tribes which he states were *tributary* to the Mooachat, Jewitt mentions the Aitizzarts, whose stretch of coast was the principal source of the dentalium shells, the natural resource which furnished the native money of the coast tribes. A money-producing tribe would make a most profitable tributary. The Estiquates, as far to the north as the Makah were to the south, were also mentioned as being actually tributary.[15]

Jewitt gives a vivid account of a surprise night attack of the Mooachat, in which he went along as a slave warrior, and for bravery in which, his master, the tribal king, granted him his freedom. The attack was on the village of the Accharts, southwards one-fourth of the way to the southern end of the island. The Mooachat expedition was led by the tribal king, Maquinna, and consisted of forty canoes, each holding from ten to twenty men. The Acchart village consisted of fifteen or sixteen houses (the Mooachat village had only twenty), and these were "on a steep hill, difficult of access, and well calculated for defense." The community was taken by surprise in the night, and utterly destroyed; many prisoners, however, male and female, were taken, and made slaves.[16]

I cannot, however, altogether reconcile with this general overlordship of the Mooachat, the further description by Sproat of a war between the Clayyoquot tribe south of the Mooachat, and the Kyyoquat tribe north of the Mooachat. Perhaps both Sproat

[15] Jewitt, 36–37, 76–77, 101.
[16] Jewitt, 121–123, 124, 131.

and Jewitt overestimated the range of Mooachat dominance. At any rate, in Sproat's own day, the Clayyoquot became amenable to the persuasions of their most famous warrior, "a restless, ambitious man," by name, Setakamin. They consented to make war, under his leadership, on the Kyyoquats. With him went twenty-two canoes, each containing from ten to fifteen men. It is significant to note that

> Part of the crews were natives of small neighboring tribes dependent on the Clayyoquats.

The flotilla proceeded north to the village of the Hishquayahts, where

> Setakamin ordered the Hishquayahts to be ready in the morning with their contingent.

This Hishquayaht tribe was "a tributary tribe of the Clayyoquats," and had to furnish six canoes, fully manned.

The aim of the Clayyoquat expedition was to either make the Kyyoquahts "tributary" or to exterminate them in the attempt if necessary. Incidentally prisoners would be taken and enslaved. However, the Clayyoquat attack failed and the attackers were driven off. The Kyyoquahts then became offensive. A trade war ensued, the southern tribe stopping all northbound canoes. Seta kamin, the leader who had failed, fell under the popular disapproval.

> Such a state of matters soon produced discontent, and turned the anger of his own tribe against Setakamin, whose restlessness had caused the war. So strong a feeling was manifested against this chief that he shut himself up in his house for more than three months, and did not venture once out of doors for fear of being shot. . . . .[17]

Two Subjected Groups in British Columbia

While at the Mooachat village Jewitt made note of an outlying hamlet inhabited by the Klahar,

> a small tribe which has been conquered and incorporated into that of the Nootka, though they must be considered to be in a state of vassalage, as

[17] Sproat, 188, 195, 196; cf. also my note on this situation in a study of Trade Restrictions in Primitive Society (Am. Anthr., n. s., 29: 271–278, 1927).

they are not permitted to have any chiefs among them, and live by themselves in a cluster of small houses at a little distance from the village.

This apparently was a sort of primitive ghetto or such, but one in which the heads of households of the subordinated people had no official or social standing. A Mooachat war song contains the following lines:

> You little know, you men of Klahar,
> What va'iant warriors we are . . . .[18]

The curious status of the Klahar among the Nootka bears comparison with that of the Kwikwitlem among the Kwantlem. The Kwantlem were the Salish tribe who occupied the mouth of the Frazer river; they were one of the fourteen closely related tribes of the river. While on the river, Boas heard of a fifteenth tribe living at the mouth of the river, which was reported not to own any land and which, unlike each of the other river tribes, had no tribal epic or tradition and no tradition of a tribal ancestor. They were reported to be the descendants of slaves of a Kwantlem chief. This chief, according to the Kwantlem story, had established a new fishing station and had ordered his slaves to go and live there. Five generations later wars had ravaged the coast and the slaves found themselves without a master, accidentally become freedmen. They continued to live as a body at the old station, under their own chief, considered as a new tribe yet a tribe living on land belonging to the Kwantlem tribe and not politically or socially on a par therefore with the other river tribes.[19] This group of whom Boas heard was undoubtedly the Kwikwitlem tribe later reported by Hill-Tout.

The native tale of the origin of the Kwikwitlem tribe is interesting if true; but the native report is very likely a mere tale and the Kwikwitlem a group formerly free and subordinated by the Kwantlem. This origin tale may be compared with the more apparently fictitious story told by the Nez Percé about the Walla Walla. The Reverend Samuel Parker recorded the story of the Nez Percé that:

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[18] Jewitt, 74, 166. At least a portion of this song is in Kwakiutl.

[19] Boas, The Lower Frazer. British Association for the Advancement of Science, 456, 1894.

The Walla Walla Indians are descended from slaves formerly owned by the Nez Percé Indians. They permitted their slaves to reside among them and to intermarry in their families, and, reasoning on the principles of natural justice, they concluded that it was not right to hold in slavery their own descendants, and liberated them, and they are now a respectable tribe.[20]

This tale must have grown up since the disappearance of slavery on the Oregon plateau under American influence.

In both the Kwantlem and the Nez Percé tales, however, possibly the term slave has been used not to mean actually "slave," but merely "subject." There is, for instance, a tale of the Chetco of the Oregon coast about their subjection of another tribe in which the subject tribe are spoken of as slaves but were very likely merely in the status, say, of the Klahar among the Nootka. This Chetco tale may be fiction, *but it indicates that so far south there existed at least the conception that a foreign tribe might be economically and politically subjected and exploited.* The story tells that the Chetco were migrants from the north; that in the territory in which they finally settled down in Oregon they found two aboriginal races; one was warlike, which they exterminated, while the other was docile. Of these docile indigenes—the Wogies—it is said that they

were skilful in the manufacture of baskets, robes, and canoes, and had many methods of taking game and fish which were unknown to the invaders. Refusing to fight, the Wogies were made slaves. .... One night however, after a grand feast, the Wogies packed up and fled, and were never more seen.

The Wogies were white-skinned. When the Chetco first saw Europeans they thought they were the descendants of these old time Wogie vassals or slaves of their's.[21]

The Kwikwitlem connection with a fishing station is reported by Hill-Tout, after native tradition, as having been rather recent. It was during the rule of the Kwantlem head-chief preceding him, who was still ruling in 1904, that the Kwikwitlem, then living in a certain good location were forced to remove to where they finally dwelt. During that chief's rule it was

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[20] S. Parker, Journal, 1842. On p. 249 Parker notes that already slavery had "long since" disappeared from the Oregon plateau!

[21] S. Powers, Tribes of California. Contributions to North American Ethnology, 69, 1877, citing Chase, 1873.

that the Kwikwitlem were sent away from their very desirable camp on the slopes of the hill .... to the marshy flats opposite, across the river. These marshy flats they were compelled by the Kwantlem to fill in, with stones and gravel, and thus to convert into fishing grounds for them [the Kwantlem]....

Hill-Tout records two different traditions of the Kwantlem concerning the origin of Kwikwitlem subjection. One is that the Kwikwitlem were brought into being by the Creator expressly for the purpose of being "slaves and servants" of the Kwantlem. Another story states that the Kwikwitlem were the indigenes of the mouth of the Frazer and that they were subjected by the invading migrant Kwantlem. Hill-Tout very briefly describes the status of the Kwikwitlem.

They were a subject tribe held in servitude by the Kwantlem, who treated them as their slaves and servants.[22]

This of course is unsatisfactory. We should have liked to know just who profited by Kwikwitlem labor, and how the exploitation was carried on.

Group Subordination and Language Consciousness in Northwestern California

In northwestern California war is reported as being conceived of as in no way distinct in principle from murder. Consequently a war could end only on the basis of mutual compensation for damage done. *Under this system a peace treaty was more costly to the victor than to the loser.* For every person injured or killed by each side there had to be compensation paid; the side which had done the most damage therefore had to pay the most. Kroeber writes:

There is no group of tribes in California better developed to enjoy tribute than the Yurok and their neighbors, and none to whom the idea was so utterly

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[22] Hill-Tout, The Kwantlem, 408; Archeology of the Frazer Delta, 444; and The Halkonalem; all in the British Association for the Advancement of Science, Report for 1902. The hill referred to is now occupied by the town of Westminster, B. C., near Vancouver, B. C. On p. 409 Hill-Tout notes that the Kwantlem were the dominant one of the fourteen river tribes; and that originally they were tribally "endogamous," because they would not sully their "royal blood" by extra-tribal marriage.

foreign. The *vae victis* of civilization might well have been replaced among the Yurok, in a monetary sense at least, by the dictum: "Woe to the victors."[23]

Not only did this conception of war make superior military effectiveness in war a misfortune to the superior party, but Kroeber indicates that *by making impossible or impracticable the retention of captives, it had its effect in making for the absence of chattel slavery in northwestern California.*

I am inclined to think that these generalizations apply merely to those wars which are or were actually blood feuds, and that in olden days in northwestern California, as in the rest of America, real war, in which the victor gains, was known.

In the first place the blood-feud type of war and peace-treaty making, noted as peculiar for northwestern California, I find among the Tlingit! *Presumably, it was general on the whole northwest coast.* A Tahltan tradition tells of a war between the Tahltan, the Taku tribe of Tlingit, and of the meeting of the parties at odds to arrange for the conclusion of peace. The war parties of the Taku and the Tahltan face each other, headed by their respective chiefs, ready to negotiate a peace if possible, and to begin a new battle if peace cannot be agreed upon. The tradition continues:

> The chiefs sat down, and, taking sticks, counted the numbers slain on each side since the war began. The chiefs sometimes brandished their knives, and several times fell near a-fighting before a satisfactory arrangement was reached. During the war a larger number of Taku had been killed than those of the Tahltan, and since the life of each man, woman, and child on both sides was reckoned at a certain price, the Tahltan had to pay a considerable amount to the Taku. On the conclusion of the agreement, the Tahltan feasted the enemy, and each of the parties gave a dance. When they parted, one important man of each party went with the other to stay for one year as hostage. At the appointed time the following year, the two tribes met again at the same place and exchanged a large number of presents. The Tahltan paid the blood-money they owed, and a peace was consummated between the two tribes which has lasted to the present day.[24]

Yet in this region there was subjection of foreign groups, tribute taking, and enslavement of captives. In olden days it appears

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[23] A. L. Kroeber, Handbook of the Indians of California. Bulletin 78, Bureau of American Ethnology, 49, 1925. The conception described obtained among the Yuki also; see Kroeber's index on "War."

[24] J. Teit, Two Tahltan Traditions. Journal of American Folklore, 318, 1909.

there was likewise such in northwestern California as well as in coastal Oregon.[25] I will quote the following very interesting observation of the reliable journalist-ethnographer, Powers, concerning the Hupa neighbors of the Yurok:

> Next after the Karok they are the finest race in all that region, and they even excel them in statecraft, and in the singular influence, or perhaps brute force, which they exercise over the vicinal tribes. They are the Romans of California in their valor and in their wide-reaching dominions: they are the French in the extended diffusion of their language.
> They hold in a state of semi-vassalage (I speak always of aboriginal acts) most of the tribes around them, except their two powerful neighbors of the Klamath, *exacting from them annual tribute in the shape of peltry and shell-money*, and they compel all their tributaries *to this day*, to the number of about half-a-dozen, to speak Hupa in communication with them.
> Although they originally occupied only about twenty miles of the Lower Trinity, their authority was eventually acknowledged about sixty miles along that stream, on South Fork, on New River, on Redwood Creek, on a good portion of Mad River and Van Dusen's Fork; and there is good reason to believe that their name was scarcely less dreaded on Lower Eel River, if they did not actually saddle the tribes of that valley with their idiom.
> Although most of their petty tributaries had their own tongues originally, so vigorously were they put to school in the language of their masters that most of their vocabularies were sapped or reduced to bald categories of names.[26]

The localities mentioned as subject by Powers were the territories of the Chilula, Chimariko, Whilkut, Lassik, and Nongatl peoples; while the inhabitants of lower Eel river, who are placed in the doubtful column, were the southern Wiyot, whose neighbors of the upper section of the Eel river were the Nongatl. The Wiyot are linguistically closely akin to their neighbors above on the coast, and the languages of both are of Algonkian stock. The Chimariko speak a very primitive form of Hokan speech, very different even from the language of the near-by Hokan-speaking Shasta and even more different from that of the Hokan-speaking Pomo. The Nongatl, and probably also the Whilkut, spoke languages which, while of Athabascan stock like the language of the Hupa, were extremely different from Hupa and unintelligible

[25] Boas, The Tillamook, p. 5, writes of these Oregon Indians: "If a chief demanded a tribute from the people of another river, and it was denied, a war would result." Compare also the note on the Oregon Chetcos, above.

[26] Powers, 73–74. In Powers the whole is one paragraph and there are no italics.

to Hupa-speaking persons. The Chilula neighbors of the Hupa spoke a language very similar to Hupa but whether intelligible to Hupa-speaking persons I am unable to learn; probably it was. At any rate Kroeber writes that the Hupa considered the Chilula as kinsmen, and they did not war on each other, whereas the Hupa considered peace with the other tribes we have mentioned as merely a truce.[27] In view of Powers' notes it would seem that the Chilula had been subjected and completely assimilated to Hupa culture and speech, but the other tributary tribes were very restless under the Hupa yoke and managed to retain their own speech. It is altogether unlikely that the Wiyot of the coast had been subjected by the Hupa. The Karok of the Upper Klamath (of Hokan stock, linguistically) and the Yurok of the lower Klamath and the coast, were indomitable so far as Hupa arms were concerned. Looking at the facts geographically, we see that the Hupa are reported to have held tributary the tribes of the mountain river valleys south of the junction of the Trinity and the Klamath rivers, but were unable to dominate the tribes resident on the coast at the mouths of the rivers. These mountain tribes dominated by the Hupa, who were also a mountain or interior people, were disadvantaged geographically as compared with the Hupa, just as the Hupa were compared with the tribes of the coast. The Hupa possessed the valley of a greater stream which was, unlike the streams held by the subjected tribes, navigable to canoes. The Hupa villages or population were more concentrated and probably more sessile than that of any of the subjected tribes, and the Hupa were richer than the others. The Chilula are described as a "less settled and poorer hill people"; while the Whilkut were considered by the Hupa and coast tribes as "a sort of wild Thracians of the mountains."[28] Racially, however, despite the wide differences of environment and language, all the peoples of northwestern California and southwestern

[27] On California geography and language see Kroeber, Handbook.

[28] Kroeber, 128. Most of the Hupa resided in Hupa valley, a beautiful stretch of eight miles on the lower Trinity river, "containing a greater stretch of level land than can be aggregated for long distances about." They also owned the canyon below and the river above.

Oregon were alike—with slight local variation; they were all of tallish stature and round heads. The up-river Karok, and next to them, the Hupa, were however of superior physical type as compared with the coastal tribes below them,—perhaps because of their rather more vigorous life.

It is possible to understand the Hupa desire to conquer the coastal Wiyot of lower Eel river; or, if they ever did, aside from the carrying on of a blood feud, to proceed against the Yurok of the lower Klamath valley and coast. For the Hupa—unlike the mountain tribes just south of them—had use of and need for canoes, but the redwood trees, from which alone canoes of quality could be made in this region—and from which also planks of quality for house building were made—grew only on the coast. The Hupa—and Karok—of the mountain valleys had to pay goodly sums of their wealth to the Yurok and other coast peoples in exchange for the redwood canoes and house planks they desired. But why should the Yurok subject the hill tribes, poorer than themselves and with no products the Hupa themselves did not have? Tribute, greed, may have been the sole motive. Tribute was taken in deer skins. Powers writes of the Chimariko (Chimalakwe) concerning the deer-skin tribute (and, incidentally, of the aboriginality of this tribute-taking) that:

> The New River branch were interesting as affording indubitable proof that the Hupa exacted tribute from certain surrounding tribes, for, at the time the whites arrived, the Chimalakwe were paying them yearly a tax of about seventy-five cents per capita—that is, an average deer skin.[29]

Conceivably, however, this Hupa domination of the interior may have been primarily incidental to attempts to bring wider pressure on the richer coast tribes.

Unfortunately we are given no further details as to how the tribute was collected, nor by whom. In the case of spies, whom the Hupa employed to seek information among foreign groups, we read that some Hupa rich man would pay their wage. And the Hupa seem to have had more of national unity among them than their Yurok and Karok neighbors.

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[29] Powers, 92; cf. p. 74 for note of spies hired by the Hupa.

I have elsewhere pointed out the general absence in eastern North America of group prejudice based on difference of language.[30] The Hupa, however, did have such prejudice, it seems, despite the fact that they lived in a region of great linguistic variety where neighbor villagers of different linguistic groups learned one another's languages and where many natives, especially those engaging in trade, knew from four to six languages[31]; a region, moreover, where, despite the pressing need of such, there had evolved no common medium of intercourse such as the sign language of the Plains Indians.

Powers' statement concerning the Hupa pressure for the linguistic assimilation of the tribes subjected has been quoted. Recent information would indicate that the Hupa not only refused to speak the language of subject tribes, but the language of any other tribe save their own, even in trade. Why this linguistic superciliousness, apparently unique in primitive America? *It seems to have been a socio-political phenomenon consequent upon the merest accident—upon a peculiarity of Hupa grammar*, which certainly in itself is not in any way even remotely to be derived from psychological causes. In Hupa grammar there was a distinction of two genders. One gender included only adult persons speaking Hupa or one or another of the dialects intelligible to Hupa-speaking people. The second "sex" or gender included all aliens in speech, and, along with them under the same category, all other creatures unintelligible to Hupans—animals and babbling babes, even though of Hupa parentage!

Slave-Killing and the Origin or Diffusion of Slavery

In the Americas, generally, slaves were slain at times in order that their souls might render service in the spiritual world to those of the dear departed. Hereditary slavery in the Americas is found only on the north Pacific coast of North America; here we will confine ourselves to the mortuary and the sacrificial killing of slaves on the American north Pacific coast. By thus *examining*

[30] W. C. MacLeod, Origins of the State (Phila., 1924).

[31] Powers, 44, 73.

some of the cultural context in which the institution of hereditary slavery is set we may better be able to appraise the suggestion that the institution in America is the product of diffusion from the north Pacific coast of adjacent Asia, and not an independent development.

Ordinarily slaves were killed merely that the deceased might have slave labor to wait on him in the other world. The richer the deceased had been, the more slaves were sent to accompany him. Favorite slaves of the master were those usually selected. Thus, Gibbs writes for the Puget Sound region:

> Slaves were killed in proportion to the wealth and rank of the deceased.[32]

And Swan, for the Makah of Cape Flattery:

> On the death of a chief, his favorite slaves were killed.[33]

And Kotzebue writes of the Tlingit:

> When the master dies, two slaves are murdered on his grave that he may not want attendants in the other world; these are chosen long before the event occurs, but meet the destiny that awaits them very philosophically.[34]

McFie, for a people who are apparently the Kwakiutl, indicates that slaves may be sent to the other world *in advance of* the dying. He makes note of the case of a native whose daughter was ill and not expected to recover, and who therefore killed a slave

> to prepare for the coming of his daughter into the unseen world.[35]

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[32] G. Gibbs, Tribes of Washington and Oregon. Contributions to North American Ethnology, 188, 203, 1869.

[33] J. Swan, The Makah of Cape Flattery, ibid, 10, 1869; cf. Boas, The Shuswap, British Association for the Advancement of Science, 463, 1890.

[34] Kotzebue, cited in H. Bancroft, Wild Tribes, 1: 108–109. Langsdorff, Voyage, 345, 1817, notes that both male and female slaves were killed. See also, in general, Langsdorff, op. cit., on the Aleuts, cited in Bancroft, op. cit., 86, 89, 93; Lisiansky, Voyage, 200, on the Kadiak; McFie, Vancouver Island, 448; Dunn, Oregon, 87; Lord, Naturalist, 1869, mentions killing of enslaved white men by Vancouver Island Indians; Schoolcraft, History of the Indian Tribes, 5: 654, for the Oregon plateau; Petroff, Population of Alaska, U. S. Census Reports, 152, 159, 1880, on the Aleuts; Morice, Western Dene. Canadian Institute Transactions and Proceedings, 1892, on the Carriers; Emmons, The Tahltan, Museum Publications (Univ. of Penn.), 29, 1911; Boas, The Lkungen, 365; and The Bilqula, 419, in the British Association for the Advancement of Science, Annual Reports, 1890; Boas, The Shuswap, ibid, 463.

[35] M. McFie, Vancouver Island, 432, 1865.

A variety of methods were employed to effect the death of slaves destined for immolation; but generally I can discover no culture-area segregation of practice nor any rationalizations of the variety of methods used by one and the same group. Our data on methods is particularly inadequate for the coast above Puget sound.

In the Puget Sound area and below on the Columbia river slaves were sometimes starved to death; sometimes tied to the corpse and left thus to starve—in which case if the slave was not dead within three days he was ordered strangled to death by another slave.[36] On the Columbia also a slave's arms might be tied behind him and another slave ordered to stab the victim. Sometimes slave mortuary victims were merely thrown into the river and drowned.[37] Among the Chinook and the Makah the slain slave was sometimes interred.[38] Among the Shuswap and the Thompsons of the plateau it seems that slaves were usually buried alive under the corpse.[39] With the northern Tlingit a slave might be cremated along with the corpse of his master.[40]

We have one vivid description of an actual Chinook funeral with mortuary immolations. A chief's twenty-year old daughter had died. The corpse was wrapped in a mat and placed in a canoe-coffin. The father of the dead girl ordered a slave bound hand and foot and tied to the corpse; then both bodies, living and dead, were enfolded in a second mat, the slave's head being allowed to protrude in order that he might be able to breathe. It was then ordered that if within three days the slave was still alive in the coffin that another slave should strangle him, using a cord for the strangling.[41]

Another vivid account is from the Wascopum Chinook. A boy slave—a prisoner from the Klamath—was tied face to face with a corpse, alive. The corpse was a boy, the dead son of the chief.

[36] Gibbs, 188, 203.

[37] Curtis, The Chinook, 89, 99.

[38] Ibid, 89; also Swan, Makah, 10.

[39] Boas, Shuswap, 463; J. Teit, The Thompson Indians, Jesup Expedition, American Museum of Natural History, 328.

[40] Lisiansky, 241.

[41] Schoolcraft, History of the Indian Tribes, 2: 71 seq.

Both living and dead were then placed in the large charnel or grave house, where the stench of the many decaying bodies was frightful, and the darkness with the surrounding skeletons and corpses maddening. This boy was released by some Europeans before he died or went crazy.[42]

Where potlatching obtained, slaves were slain in the course of the potlatch. The element of wealth ostentation was especially obtrusive in potlatch killing; killing slaves was merely incidental to the general "killing" of property of all kinds. Much or most potlatch killing of slaves, particularly in potlatches of mortuary association, such as the mortuary or ascension potlatches given by the heir of a chief, was done with a view to sending the slaves to service of the deceased in the other world. In "honor of"[43] a person, slaves were sometimes emancipated instead of slain.[44] Emancipation on the coast seems clearly to be merely an ameliorative development out of prior killing practices.

Besides mortuary potlatch killing, however, there was considerable wanton killing of slaves in and out of potlatch merely to show the killers' and owners' general disdain for wealth.

The Ainu[45]—but not their neighbors, the Gilyak[46]—in their bear-cult ceremony strangled the sacrificial bear by resting a pole across its throat, and having men at both ends of the pole press down until the weight strangled the animal. Simpson (circa 1840) describes what was apparently the same method among the Sitka Tlingit, used in this case in slave killing. He writes of the bad treatment of slaves:

> They are butchered without the excuse or the excitement of a gladiatorial combat—to make holidays. . . . . To show how diabolically ingenious their masters are in the work of murder, six slaves, on the occasion of a late merry-

[42] Allen, Oregon, 259–261.

[43] Cf. Dall, Alaska, 423, 1870.

[44] On emancipation see Emmons, Tahltan, 29; and L. Shotridge, Tlingit War Helmets, Museum Journal (Univ. of Penn.), 48, 1919; and, as regards effects on the sib, MacLeod, Further Aspects.

[45] D. MacRitchie, The Ainos. Supplement to vol. 4 of the Internationales Archiv für Anthropologie, 29, 1892. Plate 10, figure 9, reproduces an 18th century Japanese print of Ainu bear strangling.

[46] See A. I. Hallowell, Bear Ceremonialism, American Anthropologist, n.s., 26: 1–174, 1928.

making at Sitka, were placed in a row, while a pole, loaded with a chuckling demon at their end, ground away at the *backs* of their necks till life was extinct.[47]

Chase gives a more adequate account of such pole-strangling carried out as a foundation sacrifice. I will quote Chase, putting into italics certain peculiarly significant details. Chase writes of the Tlingit:

The ceremonies attending the building of a house as practiced previous to 1867 are described as follows: When a chief or wealthy man has decided upon the site, the relations and friends are notified to appear at a certain date on the chosen spot. . . . . The rectangular space for the building is then cleared, a spot for the fireplace designated, and four holes dug, wherein the corner posts are to be set, and then comes the most shocking part of the performance. A slave, *either man or woman*, is blindfolded and compelled to lie down face uppermost *on the place selected for the fireplace*. A sapling is then cut, laid *across the throat of the slave*, and at a given signal, the two *nearest relatives of the host* sit upon the respective ends of the sapling, thereby choking the unhappy wretch to death. But *the corner posts* must receive their baptism, so four slaves are *blindfolded*, and one is forced to *stand* in each post hole, when, at a given signal, a blow, on the forehead is dealt with *a peculiar club ornamented with the host's coat of arms*. More speechmaking follows, the work of building commences, and is continued to the completion gratuitously by the guests. . . . .[48]

For the Haida Dawson writes that formerly they "sometimes" made house post sacrifices.[49]

The Tlingit, it seems, anciently buried a slave under the mortuary pole or grave post. Dawson writes that the Haida knew of this Tlingit practice but never followed it themselves. To judge from Tsimshian tales, this practice of burying the slave under the mortuary pole also obtained among the Tsimshian.[50]

It is problematical whether this *sacrificing* of slaves extended farther south than this. In the following note on the coast Salish

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[47] G. Simpson, Narrative of a Journey Round the World, 1841–42, 1: 242–243, 1847.

[48] W. G. Chase, Notes From Alaska. Journal of American Folklore, 6: 51, 1893. His notes were made from native informants in 1886. Lisiansky, p. 24, notes Tlingit house post sacrifice. Niblack, Northwest Coast Indians (Report of the U. S. Museum, Smithsonian Institution), p. 357, 1888, describes the use of, and illustrates, the "slave-killer" clubs. I have since found the Ainu-Tlingit method of pole-strangling among the Pomo of California,—in Powers.

[49] G. Dawson, Queen Charlotte Islands. Canadian Geological Survey, 132, 1880.

[50] Dawson, 180; Boas, Tsimshian Mythology, 434.

it is likely that mere property ostentation is evidenced, but it may, on the other hand, be a real example of human sacrifice. Kane wrote of a group who are probably the Quinault, coast Salish of Vancouver island, that

I was told also, by an eye witness, of a chief who, having erected a colossal idol of wood, sacrificed five slaves to it, barbarously murdering them at its base, and asking in a boasting manner who amongst them could afford to kill so many slaves.[51]

The coincidence of Ainu and Tlingit custom in the matter of *the very unique trait of pole strangling* should be considered in connection with the correspondence of mummification practices among the Ainu and the immediate neighbors of the Tlingit to the north, the Kadiak and the Aleut.[52] Many other facts of course bear witness to the fullness of intercourse of the Ainu and other paleo-Siberian cultures or peoples and the North American northwest coast Indians.

Under American and Canadian influence slave killing among these Indians rapidly disappeared, after having long persisted during the period of Russian contacts. It is somewhat surprising that the practices should have completely disappeared rather than that there should have occurred a substitution of images of slaves, or of animals, instead of real slaves. Emancipation is the only substitute for killing noted. The Tlingit certainly knew of the Aleut practice—which in its turn historically goes back to the practices of the Chinese and neighboring peoples—of placing images of people and animals with the dead and wooden imitations of real implements of work and hunt; yet they did not imitate the scheme.[53]

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[51] P. Kane, Wanderings, 216, 1859. Sproat, p. 154 seq., speaks of the "sacrifice" of a slave at the beginning of the winter secret society ceremonials, apparently among Kwakiutl. The slave was stabbed and was not buried. It is important that I add these recently acquired notes. Curtis, Haida, 10: 127, says that in the hole prepared for a totem pole the Haida buried either a slave or a dog. Boas, Tsimshian Myths, 259, gives a tale in which a Tlingit woman is enslaved in the interior; redeemed, she tells her people that "they intended to kill me when they put up a totem pole in winter." Some archaeologist should look under a few poles and houseposts.

[52] MacLeod, Mortuary Aspects of Northwest Coast Culture, American Anthropologist, 1925.

[53] MacLeod, Mortuary Aspects.

A note in Schoolcraft, 6: 622, concerning the Oregon plateau, is certainly not to

Chattel Slavery and the Whale Hunt

We will conclude by noting a correlation which may be of real significance for early American economic history. Whaling—by which I mean not only the mere hunting of whales, but a complex which includes the use of certain implements and certain technique, and certain associated social practices—and hereditary chattel slavery had been diffused southward on the American north Pacific coast just about the same distance. *I see no reason for either or both having been diffused no farther save lateness of the initiation of their southward diffusion*—of their introduction, perhaps, from Asia. Until the present, I could find no evidence for the practice of whaling among either the Haida or the Chinook. Dawson, for example, could find no evidence of the Haida ever having pursued the whale, although, like the natives of northwestern California, they considered a stranded whale a great prize. But Strong, who was among the Haida about 1850, says that in the "old days" *the Haida* were the most expert whale harpooners on the coast. He describes one of the harpoons used in their whaling. He also conversed with an old Chinook woman, about this time, who informed him that within her memory *the Chinook* of the coast used to go out whale hunting off the mouth of the Columbia river.[54] The Quileute whalers, of the Olympic peninsula of Washington, in preparation for whaling, made use of their ancestors' skulls, preserved for this purpose[55]—a practice similar to the mummy use found as far north as the Aleut.[56] Curiously enough, the Tlingit, with whom hereditary slavery obtained, and pole strangling, did not adopt whaling. The Tlingit went sealing and porpoise hunting and ate the "flesh or blubber" of these creatures, but, writes Langsdorff:

> Whale fat they never eat; it seems from some prejudice to be forbidden to them. . . . . They show the same kind of horror at it that a Jew does at the idea of eating swine's flesh.

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be taken to indicate substitution of horses for human victims. All immolations, the writer says, are discontinued "where there are any white settlers among the Indians."

[54] Strong, Wahkeenah, 111, 113–114, 124.

[55] A. B. Reagan, Whaling . . . . of the Olympic Peninsula of Washington. Natural History Magazine, American Museum of Natural History, 27, 1925, and photograph.

[56] MacLeod, Mortuary Aspects.

The Yakutat Tlingit were an exception to this rule.[57]

Dr. Leo Frachtenberg tells me that the Quileute gave up whaling decades ago—somewhat later than the Makah from whom originally they had learned whaling, *because the large-scale whaling of American whaling vessels made it an economy for the Indians to buy whale products from the Americans rather than to go whale hunting themselves.* So late as 1916, however, if not also today, the Quileute were profitably pursuing the seal hunt in their native fashion, selling their product to American traders. Had it not been for the influence of the competing American whalers from about 1836 on, in the matter of whaling, and the suppression of slavery by Americans from about 1865 on, both whaling and hereditary slavery I presume would by this time be recorded from aboriginal northwestern California.

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[57] Langsdorff, Voyage, 411–412, 1817; evidently the source of the notes by Dall, Holmberg, and Niblack, for which see MacLeod, Mortuary Aspects, op. cit., 147.

THE POSSIBLE MIDDLE AMERICAN ORIGIN OF NORTHWEST COAST WEAVING

By RONALD L. OLSON

BLANKETS of dog's hair, mountain goat wool, fireweed cotton, feathers, and of various combinations of these materials were manufactured in considerable numbers on the northwest coast of America in aboriginal times. The art virtually disappeared soon after the arrival of the whites and today it is an old Indian, indeed, who preserves even a memory of them. Unfortunately, less than a dozen of these blankets seem to have been preserved, while the number of the looms extant is certainly not more than half that number.

A fairly large number of early travellers and pioneer ethnographers have described the spinning and weaving of the area, but for the most part with indifferent success.[1] More recently several excellent descriptions of the technique have appeared[2] and a few attempts have been made to solve the problem of its origin.[3] The possible explanations are that the art is a local development, unconnected with comparable features in either the Old or the New World; that at least the two-bar loom and the spindle are recent innovations due to early European influence; that the historical origin is to be sought in Asia; that it is an elaboration of the suspended warp basket weaving of the greater part of northern North America; and, that it is a far-flung outpost of the more highly developed craft which is found over a large

[1] F. W. Howay has given an excellent compilation of mentions by the early explorers and traders down to 1860 (Wash. Hist. Quart., 9: 83–92, 1918). The early ethnographic material is largely that of Boas (Mem. Am. Mus. Nat. Hist., 8, pt. 2; and Rept., Brit. Assoc. Adv. Sci., 1890: 562–715), and Niblack (Rept., U. S. Nat. Mus., 1888: 225–386). Briefer accounts have been given by Teit, Morice, Eells, Hill-Tout, and Curtis.

[2] The best are those of Emmons (Mem. Am. Mus. Nat. Hist., 3, pt. 4); Kissell (Amer. Anthr., n.s., 18: 264–270, 1916); Willoughby (Amer. Anthr., n.s., 12: 1–10, 1910); and Heye and Orchard (Leaflets, Mus. Amer. Ind., Heye Found., no. 5).

[3] Kissell, op. cit.; Wissler, The American Indian, 53–59 (New York, 1922); Kroeber (Amer. Anthr., n.s., 25: 1–20, 1923).

section of southern North America and the greater part of South America. Each of these hypotheses has certain evidence in its favor, and none can lay claim to anything like the bulk of it. The problem would be much simpler if there were not so many variations in the northwest weaving methods.

Among the Tlingit, Haida, Tsimshian, Kwakiutl, and probably the Nootkan tribes and the Bella Coola, the loom was a single bar supported by two uprights. Over this bar the warp strands were suspended and the woof strands woven in, chiefly by the simple twining technique. The Chilcotin, Thompson, Lillooet, the Salish tribes of the southern coast of British Columbia, all the coastal tribes of Washington, and an undetermined number of those in eastern Washington seem to have used the two-bar or half-loom. The use of dog's hair, feathers, and fireweed cotton seems to have about the same distribution as the two-bar loom. The wool of the mountain goat is used throughout the region. Shuttles are unknown; the weft yarns are inserted singly, in pairs, or in threes with the fingers. The use of the spindle seems to coincide with that of the two-bar loom, the only exception being the Kwakiutl of Vancouver island.

The opinion that the weaving in this area is only an elaboration of the basketry and rabbitskin blanket techniques is based on the continuous distribution of one or both from the Aleutian islands to eastern Canada and from the Arctic to Yucatan.[4] Further, in both these and the Northwest Coast blanket the weaving is with the fingers, commonly in simple or twilled twining; and the weaving is done from the top downward.

It seems unlikely that the technique has Asiatic affiliations, since the looms of the Ainu, on the northeastern periphery of the Asiatic weaving area, are of an entirely different type, and are certainly related to those of southeast Asia.[5]

The notion that the spindle and loom have been introduced by whites is backed by rather flimsy evidence. It is true that

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[4] Wissler, op. cit., 57.

[5] Hugo Ephraim, Ueber die Entwicklung der Webetechnik und ihre Verbreitung ausserhalb Europas (Jena, 1904).

Kane[6] gives us the earliest mention of either the spindle or the loom, but where is an earlier mention of the suspended warp loom, which no one would deny is aboriginal? If the two-bar frame and the spindle were European introductions it does not seem likely that their use would have spread from tribe to tribe over so great an area in such a short time. As to spindles, the common employment of stone and whalebone argues against their being introduced by whites. For the most part, the statements of the natives clearly and decisively indicate that both the spindle and two-bar loom are ancient. No doubts of their being native elements are expressed in the writings of Boas, Teit, Morice, Niblack, or other ethnographers who have dealt with this area. It must be admitted, however, that spindle whorls are rather uncommon in the archaeological collections from the area. This is partly explained by the frequent employment of wood and whalebone, neither of which is a very enduring material. A few stone whorls have been collected from the Kwakiutl and Thompson areas.[7]

That the spinning and weaving of the area are local developments might be argued on the basis of their seeming geographical isolation and because of their differences from comparable traits in the rest of the Americas. I will presently show that neither of these lines of evidence is as strong as it seems at first glance.

There remains the possibility of the Middle American origin of the spinning and weaving of the area, i.e., that these arts are historically connected with comparable ones known over virtually the whole agriculture-pottery area of the New World. It is generally conceded that proof of historical identity may be considered valid provided either continuous distribution or the presence of extrinsic similarities can be demonstrated. Both methods may be used in the comparison with the northwest technique with its more widespread potential relative.

Some years ago Bushnell published an article which gave a résumé of the data relating to the uses of buffalo hair in North

[6] Paul Kane, Wanderings of an Artist among the Indians of North America (London, 1859).

[7] C. F. Newcombe, Guide to Anthropological Collection in the Provincial Museum, 37, 63 (Victoria, 1909).

America.[8] It appears that blankets of this material were woven by the Arikara, the Cheyenne, the Nez Percé, and the "Osage and neighboring tribes." It seems likely that the practice of twisting the hair into yarn which is used for weaving of one sort or another was practically co-extensive with the range of the buffalo itself. The scattered nature of the distribution in the tribes named is more probably due to inadequate data than to absence of the trait in other parts of the area. The Nez Percé case is especially significant in the light of Curtis' statements that

> among the Columbia River tribes yarn of the mountain goat was woven into blankets of rather coarse texture, and the Nespilim and the Kalispel women also made robes of strips of fur from the muskrat, the beaver, and the otter, while the Sanpoel sometimes used a long, soft grass.[9]

On the basis of these data it seems plausible that the art of weaving had a continuous but somewhat random distribution from the Northwest Coast up the basin of the Columbia and across the Plains area to southeastern United States where several types of looms were in use. These latter seem to link definitely with those of the Antilles and South America.[10] The weaving on the Northwest Coast (and perhaps that of the Plateau and Plains) differs from the other types in that the weft strands are commonly twined into the warp in pairs or threes. But the weaving of some sort of strands of twisted wool or hair on a frame is a sufficiently definite trait to deserve treatment despite these variations.

The case for the distribution of the spindle is more difficult. Until more definite data are obtainable its presence on the Northwest Coast is best explained by its intimate association with the weaving of twisted strands. Archaeology may eventually provide evidence in cases where the whorls were made of enduring materials. Too much stress should not be laid on the difference in size of Northwest Coast and other American spindles. Some specimens from the Northwest are but two inches in diameter—

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[8] David S. Bushnell, The Various Uses of Buffalo Hair by the North American Indians. Amer. Anthr., n.s., 11: 401–425, 1909.

[9] Edward S. Curtis, The North American Indian, 7: 72 (Cambridge, 1907–1924).

[10] Wissler, op. cit., 55, 59; James Adair, The History of the American Indians (etc.), 422–424 (London, 1775).

surely not so great a size when it is remembered that the yarn was commonly a quarter-inch or so in diameter.

Another evidence of the possible kinship of Northwest weaving and that of the rest of the Americas is afforded by an identical manner of winding the warp threads so that the completed fabric is a cylinder, or is a square which needs no hemming. Newcombe has described the process as follows: the loom

> consists of two vertical posts, in which slots are made at various distances, to receive the ends of two rollers, of which sets of different lengths are kept, and are fixed in place by means of small wedges. Having set these up, a stick or cord is fastened to the sides, horizontally, between the rollers. The warp is fastened to one end of it, and then passed over the rollers and round the stick, returning in the reverse direction. This is repeated until the vertical warp threads are all in place. A ball of twisted wool is then fastened to one edge of the weft [warp?] and is passed from side to side, between the warp strands, making a kind of twilled matting, without the aid of sticks or combs to tighten up. The worker, who sits on the ground in front of the loom, loosens the wedges from time to time, and by turning the rollers, brings a fresh part to a convenient position. When all is finished the cross line of stick or cord is unfastened and pulled out, leaving looped ends, and the blanket comes away without any cutting.[11]

The fabric forms a cylinder when the cord is left in position. Although this method of winding the warp was not always employed it probably was known to all the Northwest tribes who used the two-bar loom.

Nordenskiöld has described an identical method of winding the warp in several regions of South America.[12] It is found among the Chacobo, Chiriguano, Yuracáre, and Chané of Bolivia, the Mataco of the Argentine Chaco, and is reported for the Ijca of the Guajira peninsula, virtually on the shores of the Caribbean. This last is especially significant, since it shows a possible link with North America. The "loom with three cross rods" mentioned by Wissler for the Southeast and by Hunter for the Osage, Kickapoo, and Kansas might be taken to mean warp winding of this type.[13] A Peruvian bag in the collections of the Field Museum

[11] C. F. Newcombe, op. cit., 51–53.

[12] Erland Nordenskiöld, Comparative Ethnographical Studies, 2: 174–177 (Göteborg, 1920).

[13] Wissler, op. cit., 59; John D. Hunter, Memoirs of a Captivity Among the Indians of North America, 289–290 (London, 1823).

(cat. no. 169702) seems to have been woven in this fashion.[14] Dr. Nordenskiöld, in a personal communication, has stated that he thinks it very improbable that so special a feature would be invented twice; that the similarity in the Northwest and South America is a case of historical relationship rather than of parallelism. The practically continuous distribution of loom weaving, discussed above, strengthens this view and, conversely, the extrinsic similarity suggests that the stimulus to the weaving found on the Northwest Coast is the same stimulus which is responsible for all the loom weaving of the remainder of the Americas. In figure 1 I have indicated the tentative areas of different types of weaving and the region within which hair, wool, and cotton are twisted into yarns for weaving. The inset in the same figure is a diagrammatic representation of the special method of winding the warp strands, described above.

At least two extended analyses of the weaving of the Northwest Coast have been promised for the future.[15] If, as seems highly probable, it eventually proves to be of Middle American origin, the cases for other Northwest Coast traits might be profitably reexamined. The possibilities of historical kinship of such Northwest traits as age-societies, sib and moiety systems, and the solstitial calendar with comparable features in the rest of America have been examined and for the most part rejected. On the other hand, definite Middle American influence may be seen in such traits as the use of the metate by the Lillooet of British Columbia, and the growing of tobacco by Haida and Tlingit. Even the chewing of tobacco mixed with ashes or lime is known in South America.[16] The use of the balsa by the Thompson and Shuswap of British Columbia is probably linked with the knowledge of similar craft elsewhere in the Americas.[17] In the realm of weaving is the

[14] For this last datum I am indebted to Miss L. M. O'Neale, Research Assistant in Anthropology, University of California.

[15] Cf. Kissell, op. cit., 264; Gunther, Klallam Ethnography. Univ. of Wash. Publ. Anthr., 1: 225, 1927.

[16] W. E. Roth, An Introductory Study of . . . . the Guiana Indians. 38th Ann. Rept., B. A. E., 242–243 (Washington, 1924); Wissler, op. cit., 25–27.

[17] James Teit, The Thompson Indians. Mem. Am. Mus. Nat. Hist., 2: 256 (New York, 1900); The Shuswap. Same series, 4: 532 (New York, 1909).

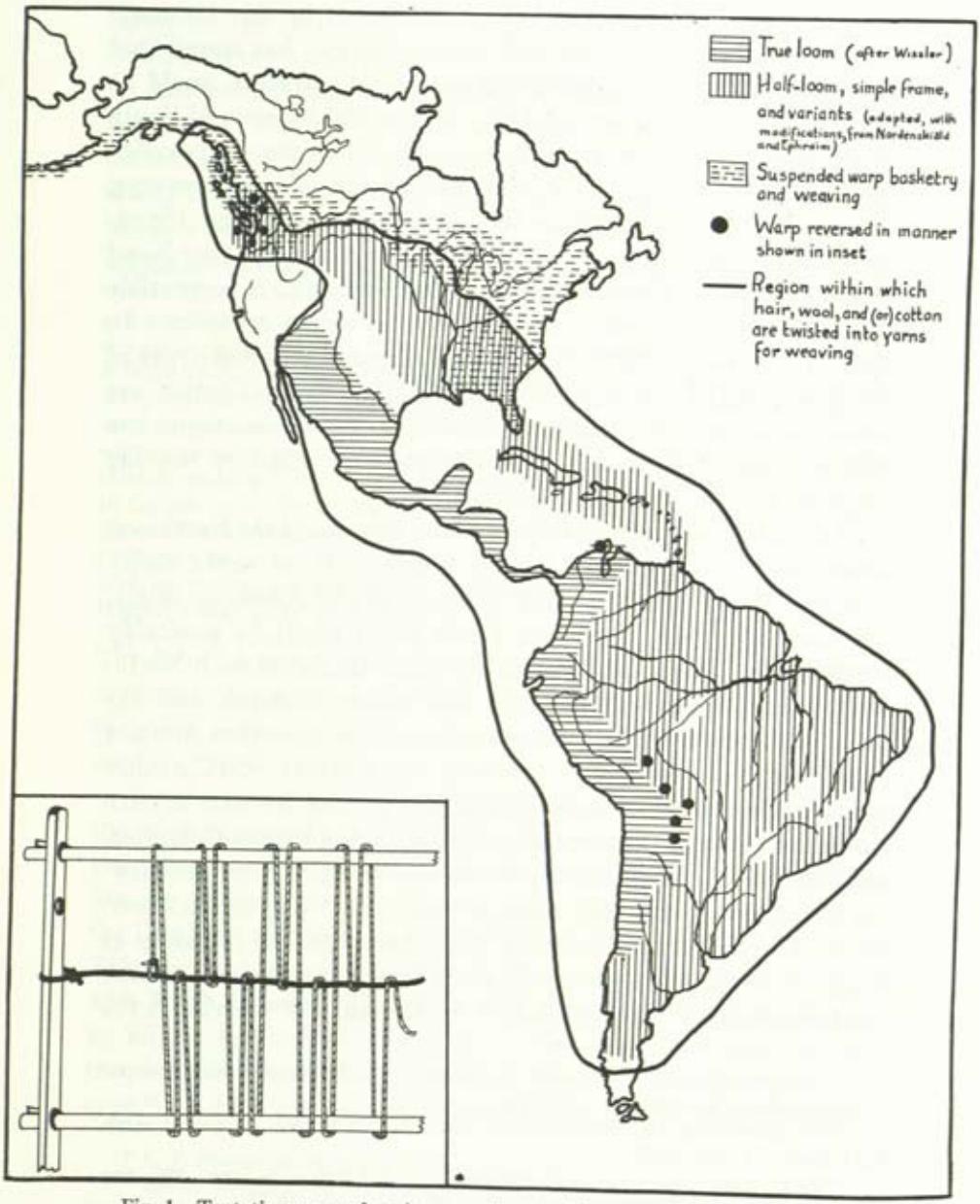

Fig. 1. Tentative areas of various weaving techniques in the Americas. Inset: Diagrammatic representation of the method of winding the warp so that its direction is reversed.

manufacture of blankets or mantles from yarns of the hair of shaggy dogs by the Chono of Chile.[18]

Tobacco, pottery, agriculture, sib and moiety systems, age-grade societies, and weaving extend far up the Missouri basin, and some of these beyond it; the Mound-Builder culture was once an outpost of high culture; and recent investigations in the California-Great Basin area extend the distribution of pottery in that region very considerably. In short, there are evidences that the Northwest Coast was not always as geographically isolated from the influences of Middle America as it was at the opening of the historic period. As we have seen, several traits show definite evidence of having traversed the Plains-Plateau gulf and of having become transplanted to the Northwest Coast. It seems possible that a dimly defined path of diffusion had been beaten across the northwestern Plains area. Other seeming parallels, notably those of social organization, geographically isolated from comparable traits found elsewhere in America may, contrary to present-day opinion, prove to be historically related. It is true that a few of the features enumerated here seem, in the light of internal evidence, to be of distinct origin. But the case for separate development is decidedly weakened by the probability of historical identity for others. Unless one wishes to outdo the extreme diffusionists in presupposing the stability of traits, the qualitative differences cannot be regarded as positive proof of parallelism or convergence in each case.

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[18] John M. Cooper, Analytical and Critical Bibliography of the Tribes of Tierra del Fuego. B. A. E., Bull. 63: 44, 194, 204 (Washington, 1917).

THE ARTIFACTS OF THE POTOMAC VALLEY INDIANS

By TITUS ULKE

THE term, "Potomac Valley Indians," in this paper is used to designate, in general, all of the various tribes, such as the Analostans, Piscataways, Nacostians and Tuscororas that once lived and hunted in the valleys of the Potomac river and of its tributaries. My study, however, includes the work of the extinct Indians of Johnson island in the Susquehanna river, as this locality furnished the best collection of material for illustrating the manufacture and evolution of the bannerstone. (See pls. 7–14, reproduced from original drawings by the author.)

The following descriptions and the conclusions reached are based upon observations while gathering many thousands of Indian manufactures in the regions cited, upon facts noted during my abode among the Ojibwa, Sioux, and Blackfoot tribes, and upon a study of archaeological papers and of the fine collections in our National Museum.

Arrowpoints.—Those in my own collection vary in size from 5/8 to 1¾ inches in length, 7/16 to over an inch in width, and from hardly over 1/16 inch to nearly 1/2 inch in thickness; in shape from broadly or very narrowly triangular to narrowly or broadly elliptic and arrowshaped; they are rounded or straight on the sides or base, outwardly or inwardly curved on the cutting edges or base, and some of them are provided with hastate, sagittate, or outwardly perpendicular barbs above their bases, while others are without any barbs at all. The particular functions of these barbs were first, to hinder or prevent the extraction of the arrowpoint from the body by the human enemy in battle, or by big or little game in hunting; and, second, to facilitate the secure retention of the arrowpoint on the shaft by the securing means fitting into the groove generally provided immediately above the barbs. When the arrowpoints were quite small and without barbs they were evidently used for small game only and could of course be more easily retrieved.

The material of which the arrowpoints were fashioned was firstly and mainly, quartz, from transparent to opaque, and all of its common varieties, including rock crystal, amethyst, rose quartz, milk quartz, hornstone, jasper, chalcedony, onyx, firestone or flint, and agate; secondly, fine-grained sandstone; and lastly, rhyolite, aporhyolite, fine-grained hard trap, and similar eruptive rocks found in this region.

In color arrowpoints range from white to black, purple, red and rose pink, yellow, brown, blue, grey, and green.

The following characteristics were evidently required for good arrowpoint material: (1) hardness; (2) ability to furnish a sharp point and edge; and (3) conchoidal fracture, so that the arrowmaker could readily shape the rough arrow blank by flaking pressure and avoid heavy loss by undesired cleavage or fracture.

It is an interesting fact that rhyolite rock does not occur *in situ* within 75 miles of Washington, D. C., as far as is known, and that some of the Indians mined the rhyolite in a quarry near Blue Ridge Summit, Pennsylvania, apparently carrying the rough slabs down to the Potomac along the old York, Columbia, and Chain Bridge trail, as is evidenced by caches found every 30 or so miles along this route and several workshop sites or chip piles along the tops of the Virginia hills near our Chain Bridge. An Indian quarry for obtaining cobblestones of quartz and suitable gravel for making arrowpoints can still be seen on the south side of Piney Branch, near the 16th Street bridge, in the city of Washington.

Spearheads.—Spearheads were made of the same material as arrowheads, but were more often fashioned from rhyolite, which could be readily worked into thinner blades than quartz.

In size some of the spearheads here reached a length of 5 or 6 inches and a width of 2 inches and some fine ones were less than 1/4 inch thick. In general they may be considered as being but larger arrowpoints adapted to be fastened to a heavy shaft of tough wood, rather than to a light shaft of arrow wood (*Viburnum acerifolium*) or the like. Barbs are also less commonly provided on the local spearheads. Neither the latter nor any of the arrowpoints were ever polished.

Knives.—A typical stone knife in my collection is a blade of rhyolite, 7 inches long by 1⅝ inches in average width, and 6/8 to 7/8 inch thick. It is centrally and longitudinally keeled on one face and rounded on the other, and gradually tapers to a point.

Stone hammers and axes or adzes.—These, whether used for felling trees or for killing, varied greatly in size and shape. One in my collection weighs but 8 ounces while others reach two pounds and over in weight. All of them are grooved to receive leather thongs, split spruce roots, or the like means for fastening them to a handle, which apparently was often bent to fit against a flat base provided on one side edge of the axe or hammer. These axes were usually pecked and polished. One of my rough blanks of fine-grained brown sandstone is about 6½ inches long by 3½ inches wide and 1¼ inches thick, with a broad groove located 2 inches from the flat hammer end, and tapering down at the cutting end to a 1-inch chisel edge.

Another polished axe of trap rock is only 4 by 2 by 1¼ inches in size with a smooth groove 1¼ inches from the rounded hammer end. A third axe of dioritic rock is 6 inches long, flat on one edge, carved on the other, and with a groove 2½ inches from the larger hammer end. A fourth fine axe is egg-shaped and nearly symmetrical in outline; it has a very shallow groove around it 1½ inches from a well rounded hammer end, and a tapering chisel-like cutting edge. An unusual axe that is sometimes called a "Buffalo Skinning Knife" is a concave-convexly curved axe of grey sandstone with a groove unusually near the broken flat hammer end (i.e., distant less than 1 inch) and more or less rectangular in section. These axes and sometimes spearheads, and even larger arrowpoints, were often made, it appears, by first splitting large cobblestones of the desired kind in half, and then roughing the halves thus obtained by percussion with other heavy cobbles into laterally symmetrical but rough so-called "turtle stones," which were usually sharply pointed at one end, very broadly rounded at the other, and nearly flat on one side, and on that side still exhibiting some of the original smooth surface of the cobblestone from which they were fashioned, but provided with

7 or 8 large conchoidal facets on the rounded opposite side. The further shaping and finishing of these blanks was apparently effected by a finer chipping or flaking by means of pressure with smaller stones or bones, and pecking with pecking hammers, generally made of quartz, and polishing with rounded but rough pebbles of sandstone. Three of the various methods of hafting forked or bent handles of tough wood to grooved stone axes by means of rawhide, or its equivalent, are illustrated in plate 8.

Celts (chisels).—These were usually made of a tough and dense greenstone, sandstone, or dioritic rock. They did not vary very much in size, being generally about 5 inches long, from 1½ to 2 inches wide, and from 5/8 to 1 inch thick. They were tapered from a slightly curved chisel edge, about 1 inch long at the small end to a straight or slightly curved chisel edge at the butt, which is about 1½ to 2 inches long. Apparently they were always given a smooth finish.

Scrapers and combined scrapers and awls or drills.—These appear to fall naturally into two main classes, those of the first being about 2 inches long, 1⅛ inches wide, and from 3/8 to 6/8 inches thick, and of a fairly broad isosceles triangle shape, with their chisel-like bases curved or straight and used for scraping only. The second class, i.e., the combined scrapers and awls or drills, are elongated and slender, about 2½ to 3 inches long and 1 inch wide at their straight chisel base, but gradually tapering up to a slender point at the other end to a blunt point that may be used for drilling, perforating, or reaming out a hole to enlarge it. The material used for simple or combination scrapers is quartz, sandstone, rhyolite, and similar kinds of rock, and they were never smoothed very much or polished. Sometimes a broken-pointed arrowpoint or spearhead was made to serve as a scraper by providing it with a broad chisel edge instead of a point.

Drills or awls.—Such artifacts found in the Potomac valley resemble very slender or narrow unbarbed arrowpoints and are made of similar material, but measure 1½ to 1¾ inches in length, and only 7/16 to 5/8 inch in width. They taper to a sharp point at one end, and at the base to a sharply or broadly rounded chisel edge or to a blunt-pointed end.

Pecking hammers.—These were usually circular or polygonal rough discs of quartz or the like, about 2¼ to 3 inches in diameter and an inch thick, provided with irregular but sharp pecking points or edges.

Rub stones.—Rub stones for use in smoothing surfaces of axes and the like, after these latter had been roughed out and pecked, were commonly irregularly kidney-shaped or elongated circular disks of sandstone or the like, flattened on the sides and usually provided with a slight depression in the center of one flat side for convenience in holding. The rough sandpaper-like edges served to grind down and smooth the surfaces that were operated upon, a rough-grained stone apparently being first used, followed by a finer-grained stone for finishing.

Pestles for crushing or grinding.—A pestle made from a tough dioritic rock and probably used for crushing corn or the like was found by me in two pieces on the Donaldson farm on the hill above Potomac Landing in 1915. It is a peck-finished symmetrical utensil approximately 14 inches long by 2½ inches in greatest diameter, tapered to a blunt point at the handle end, and at the butt end terminating in a flat surface evidently adapted for crushing grain. Another pestle, made from a dense gneissoid rock, fairly smooth-finished, was apparently adapted particularly for grinding, as the butt end is rounded. It is elliptical in section, but larger at the butt and gradually tapering to the handle end; and is 7 inches long and in its elliptical section measures 1¾ by 2½ inches.

Anvils.—These, locally, were merely large stones, chiefly sandstone, spalled off to provide a flat, horizontal, upper working and lower supporting surface.

Bowls of pottery.—The pottery sherds found about Washington and particularly on the hills of the Virginia end of the Chain Bridge vary in thickness from a little over 1/8 of an inch to 1/2 an inch and over. Their composition indicates a baked mixture of clay and fine sand. In every case the exterior wall of the pottery bowl was *ornamented* either by curved or straight lines, which sometimes appear twisted like the strand of a rope and then form diamond-shaped mesh sections over the surface,

with a straight line running parallel to the edge of the bowl, and again the ornamentation appears as if impressed with a piece of woven cloth or bark, evidently while the pottery mixture was still soft or moist. The inner walls of the bowls were usually smooth in finish. These sherds are evidently fragments of vessels for cooking, drinking, or eating purposes and some are blackened within.

Bowls of soapstone.—At the soapstone quarry on Connecticut avenue in Washington, D. C., near Albemarle street, and lately, I am sorry to say, obliterated, I found many fragments of soapstone bowls or dishes, and one bowl roughed out but still in place in the quarry wall. They varied both in size and thickness, and were probably chiefly used in cooking, in view of their fireproofness. Many of the bowls were provided with integral supporting knobs or feet.

Soapstone pipe.—I discovered what appears to be a pipe along Eastern Branch some years ago. It is a slightly flattened piece of sandstone nearly straight, about 4 inches long and 1¼ inches in diameter at the larger end, where the beginning of a drill hole is apparent, to about 3/4 inch in diameter at the mouth end.

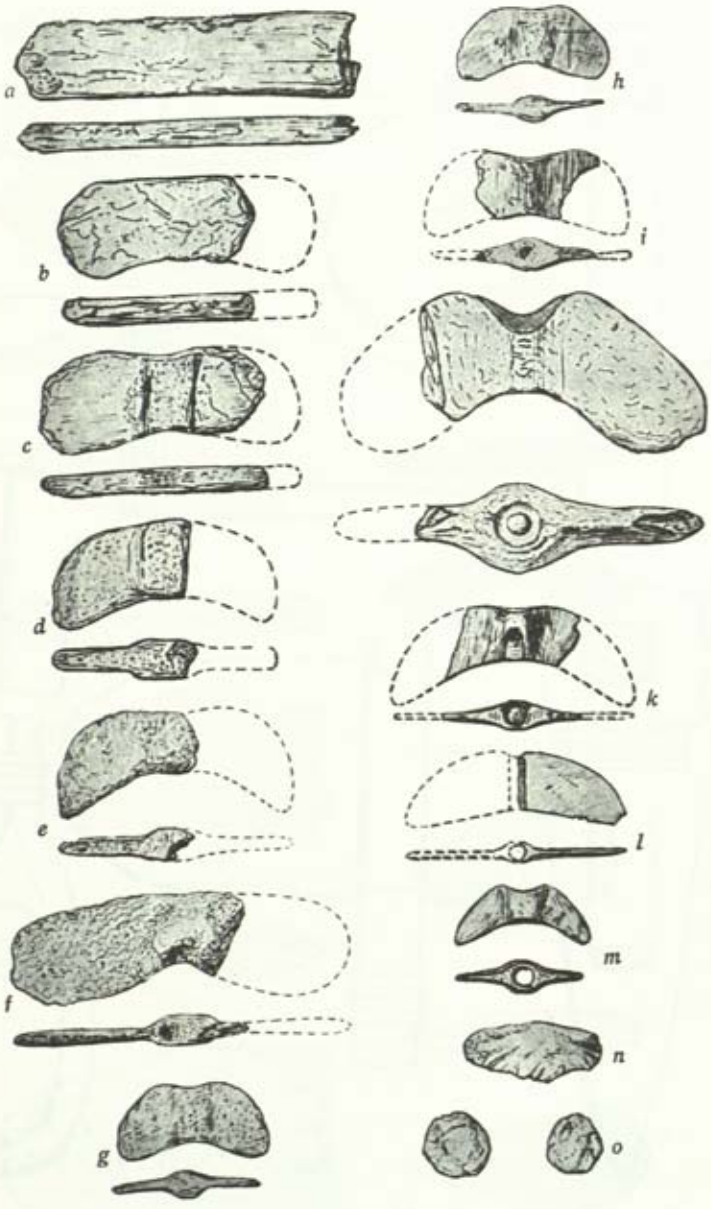
Tally markers.—A notched tally marker of dense talcose schist rock was picked up on the Donaldson Farm Indian village site along the Potomac. It may have been used to indicate the number of fish caught by the user as cases of like use have been noted along the Susquehanna.

Ornaments and toys.—An ornamental thin and flat-sided smooth-finished fragment of a fine-grained argillite, exhibiting a tiny bridge of netting mesh scratched on it and evidently perforated for suspension on the breast or chest, was picked up near Potomac Landing. Another ornament or toy was a double V-shaped piece of slate. A flat circular disk of dense shale may have been used in a game. A flat rounded and smooth-finished fragment of light grey argillite, pierced in its center for suspension, was apparently used as a body ornament.

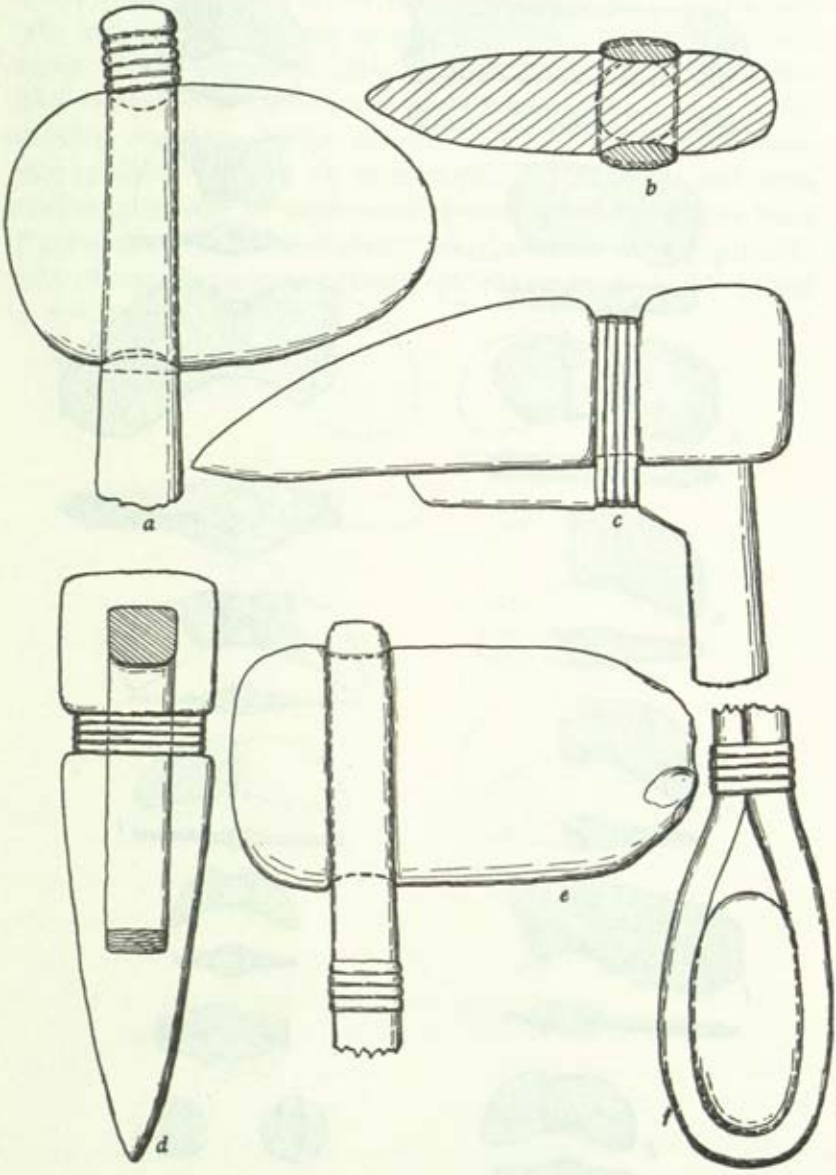
Bannerstones.—My collection contains only a left wing of a local bannerstone, which was made out of a talcose greenstone, finds of bannerstone being quite rare. My specimen is smooth-

finished, showing part of the wall of the elongated central drill hole, and indicates a wing spread of 5 inches and a depth of 2 inches. Several forms of "slate" bannerstones, and the probable chief mode of their manufacture or "evolution," are shown in the attached drawings, which are self-explanatory. Bannerstones were probably inserted on wooden poles or on wood and bone handles, and used for ceremonial purposes, perhaps at the head of processions. Because of their beauty, relative rarity, and difficulty of manufacture their possession was no doubt highly prized by the Indians.

1448 CLIFTON STREET,
WASHINGTON, D. C.

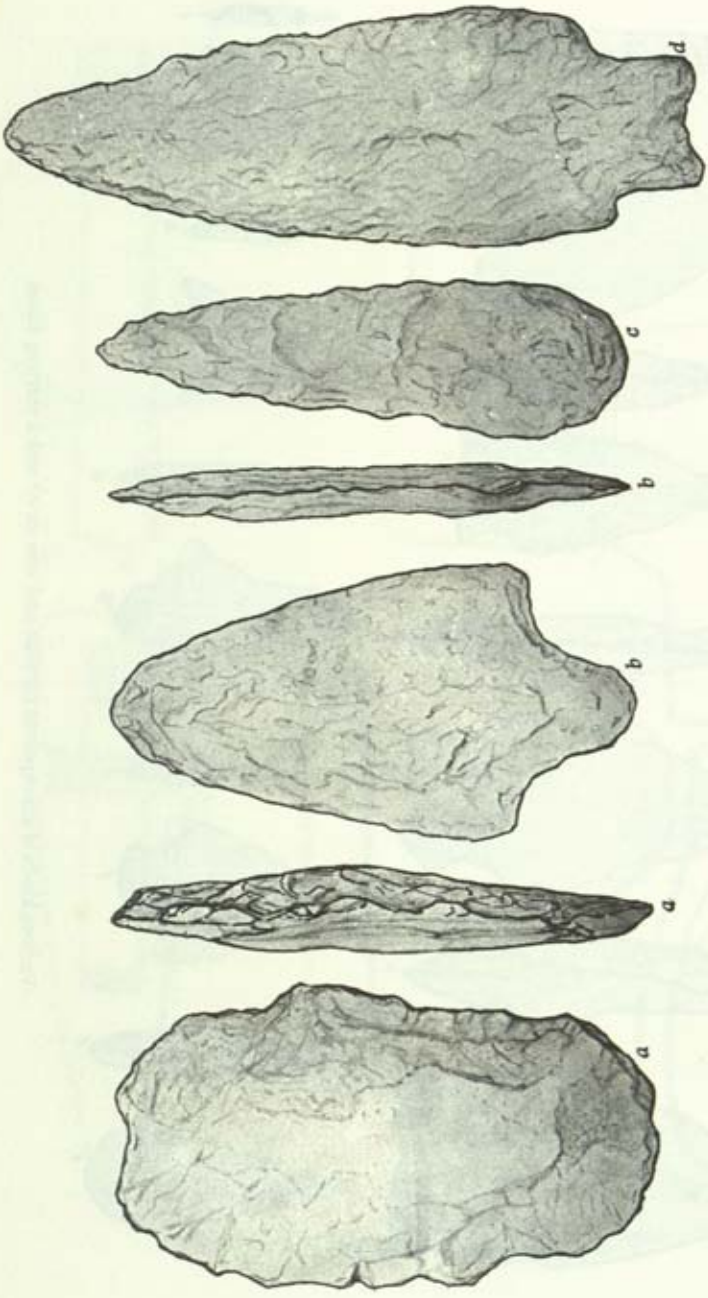


Evolution of the bannerstone.

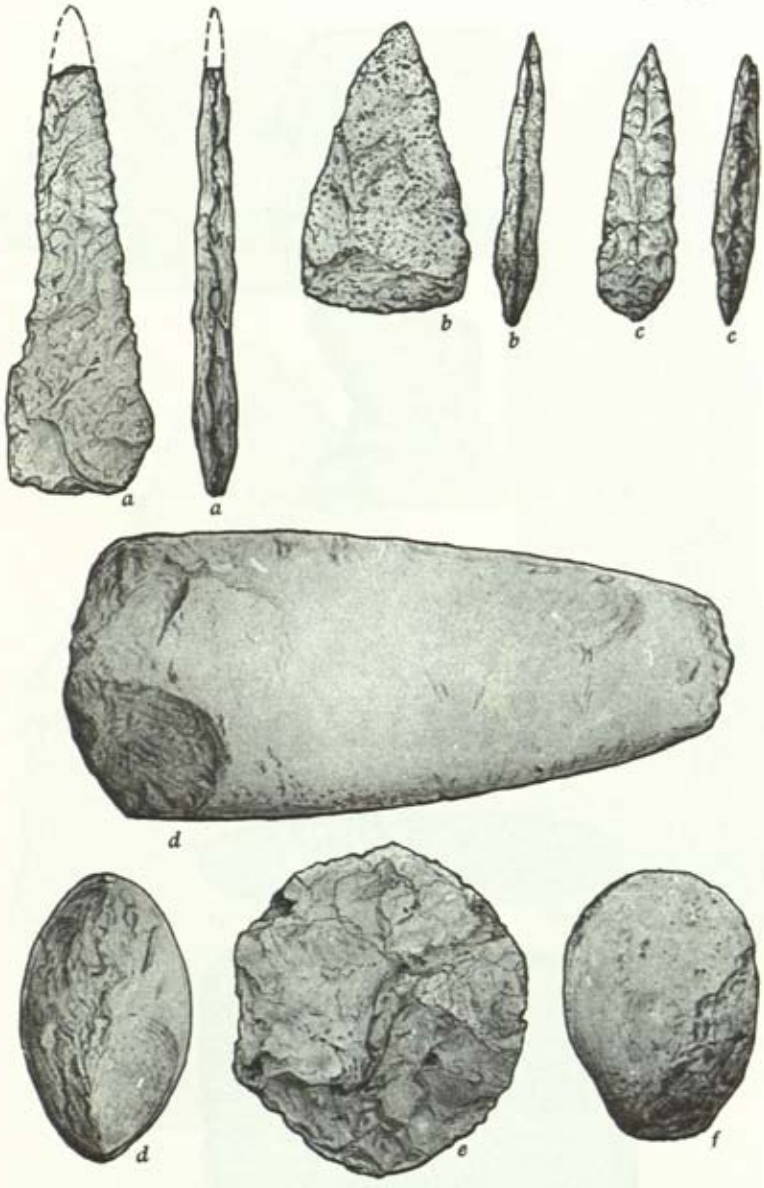


Three methods of hafting handles to stone axes.

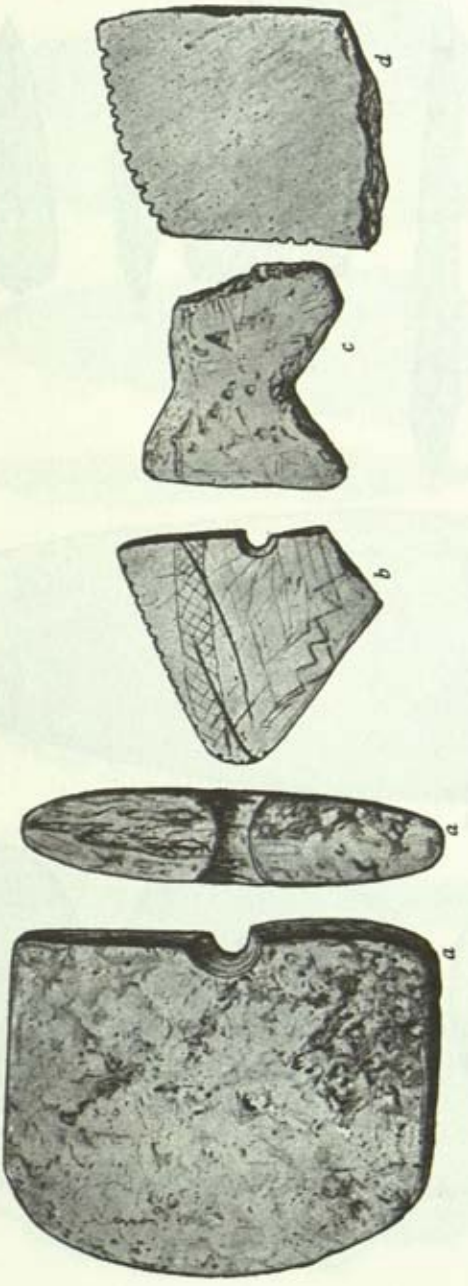
Various kinds of arrowpoints (in plan and side elev.) and a starting blank.



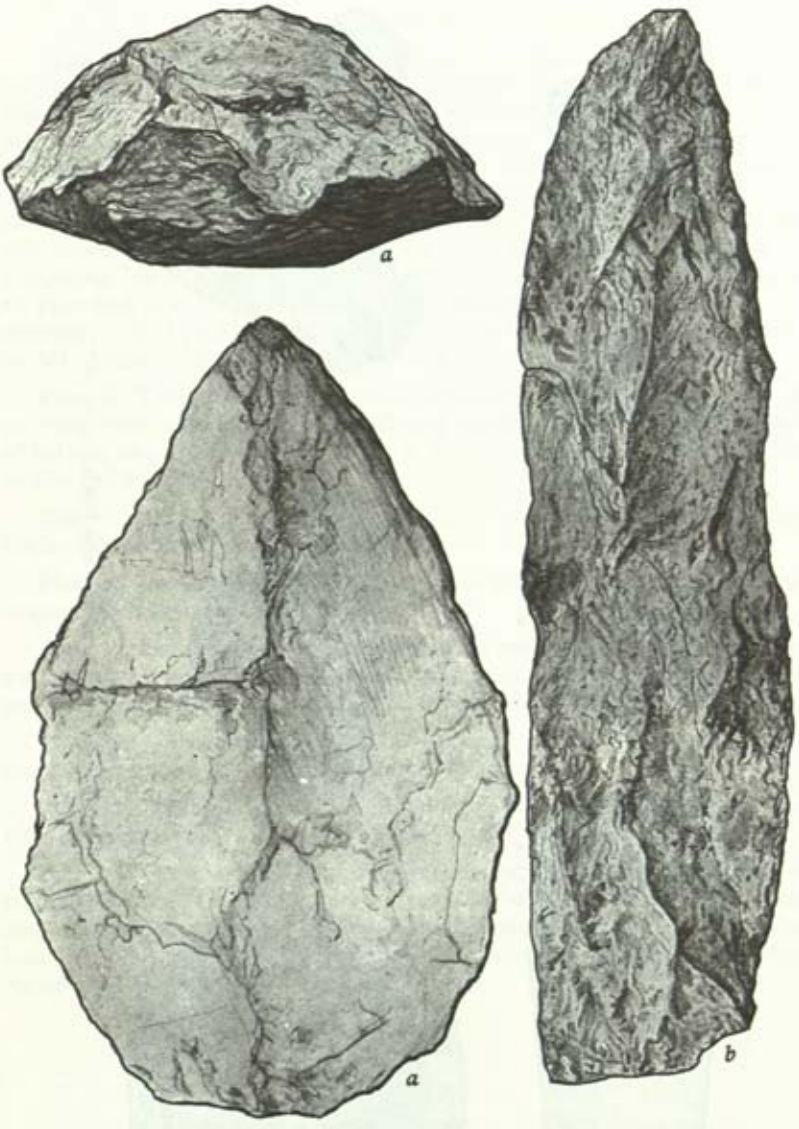
Various kinds of spearheads (in plan and side elev.) and a starting blank.



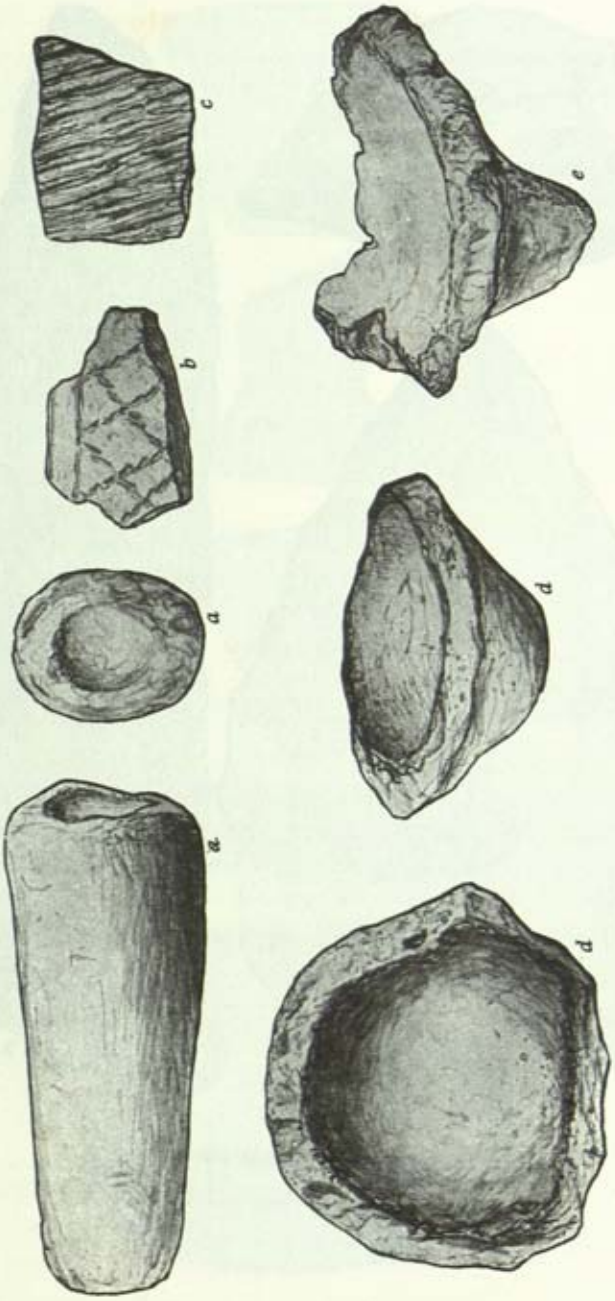
Scrapers and drills (in plan and side elev.), pecking hammer, rubbing stone, and chisel.



Ornaments, toy, and tally marker.



Turtle stone and stone knife blade.



Clay and soapstone pipe and bowls.

Explanation of Plates

Plate 7. Evolution of the bannerstone. *a*, plan and side views of the rough blank; *b*, plan and side views of roughly-shaped block; *c*, plan and side views of block marked for pecking; *d*, plan and side views of block partly pecked; *e*, plan and side views showing advanced pecking; *f*, plan and side views showing pecking nearly completed; *g*, plan and side views showing pecking completed; *h*, plan and side views showing effect of scraping; *i*, plan and side views showing scraping completed and hole started; *j*, plan and side views showing hollow drill core; *k*, plan and side views showing half completed hole; *l*, plan and side views showing wing of polished bannerstone; *m*, plan and side view of finished bannerstone; *n*, sandstone polishing implement; *o*, flint pecking hammers. These specimens of slate were collected on Mt. Johnson Island, Pennsylvania, by John L. Baer.

Plate 8. Three methods of hafting handles to stone axes. *a*, *b*, side and sectional views showing hafting to a forked handle; *c*, *d*, side and bottom views of hafting to an L-shaped handle; *e*, *f*, side and top views showing hafting to a looped handle.

Plate 9. Arrowpoints. *a*–*i*, showing plan and side elevation of various kinds of arrowpoints, and a starting blank.

Plate 10. Spearheads. *a*–*d*, showing plan and elevation of various kinds of spearheads and a starting blank.

Plate 11. Scrapers and drills, pecking hammer, rubbing stone, and chisel. *a*–*c*, showing plan and side elevation of scrapers and drills; *d*, showing plan and butt view of chisel or celt; *e*, pecking hammer; *f*, rubbing stone.

Plate 12. Ornaments. *a*, half of body ornament (views of face and broken end); *b*, ornament; *c*, toy (fragments); *d*, tally marker.

Plate 13. Turtle stone and stone knife blade. *a*, showing plan and end view of turtle stone; *b*, stone knife blade.

Plate 14. Pipe and bowls. *a*, soapstone pipe bowl (roughed and hole started); *b*, fragment of border of a bowl of burned clay; *c*, sherd from a clay bowl (ornamented on outside), *d*, basal portion of broken bowl or burned loam, showing plan and side elevation; *e*, fragment of soapstone bowl, showing one of the supporting knobs.

INCA RELICS IN THE ATACAMA DESERT, CHILE

By H. W. NICHOLS

DURING the winter of 1926 the Geological Section of the Captain Marshall Field Brazilian Expedition of Field Museum had an opportunity to make a brief inspection of the ruins of two deserted Inca towns, Lasana and Pucara, and of two Inca burial places in the Atacama desert of northern Chile. H. W. Nichols of the Expedition was accompanied by Hermann Eggers, a German mining engineer who has been interested in these ruins for the past thirteen years.

Lasana (pl. 15) is the ruin of a fortified Inca village which, it is believed, was abandoned at the time of the Spanish conquest. It is in northern Chile in about the latitude of Antofagasta on the Rio Loa in the heart of the desert at an altitude of probably eight thousand feet. It is indicated on some of the larger maps and is not far from the modern village of Chiu-chiu, which appears on most large scale maps. It occupies half of a low but steep rock hill on the floor of the quebrada of the Rio Loa, which gorge has at this point precipitous walls with an estimated depth of three hundred feet (fig. 1). It is enclosed by three loop-holed walls with narrow streets and dwellings between, and the walls of the stone houses coalesce to form a number of other rings of walls, so that altogether the place was as strong in a military sense as it undoubtedly was in an olfactory way. The town is built of small irregular blocks of tufa set in mud mortar and the masonry work is irregular and poor (pl. 15). Lasana is small: two of us estimated the size as 120 feet wide by 300 feet long. The town consists of a huddle of rooms opening from each other and separated into groups by narrow footways or streets. There is also a small patio inside the outer walls. The walls of stone are in practically perfect preservation and are approximately six feet high. No vestiges of the roofs, which were apparently of thatch on poles, remain. As wood does not decay in this climate, the disappearance is presumably due to the value of wooden poles to the Quichua farmers.

Lasana from pampa above gorge.

The main street of Lasana, showing character of masonry.

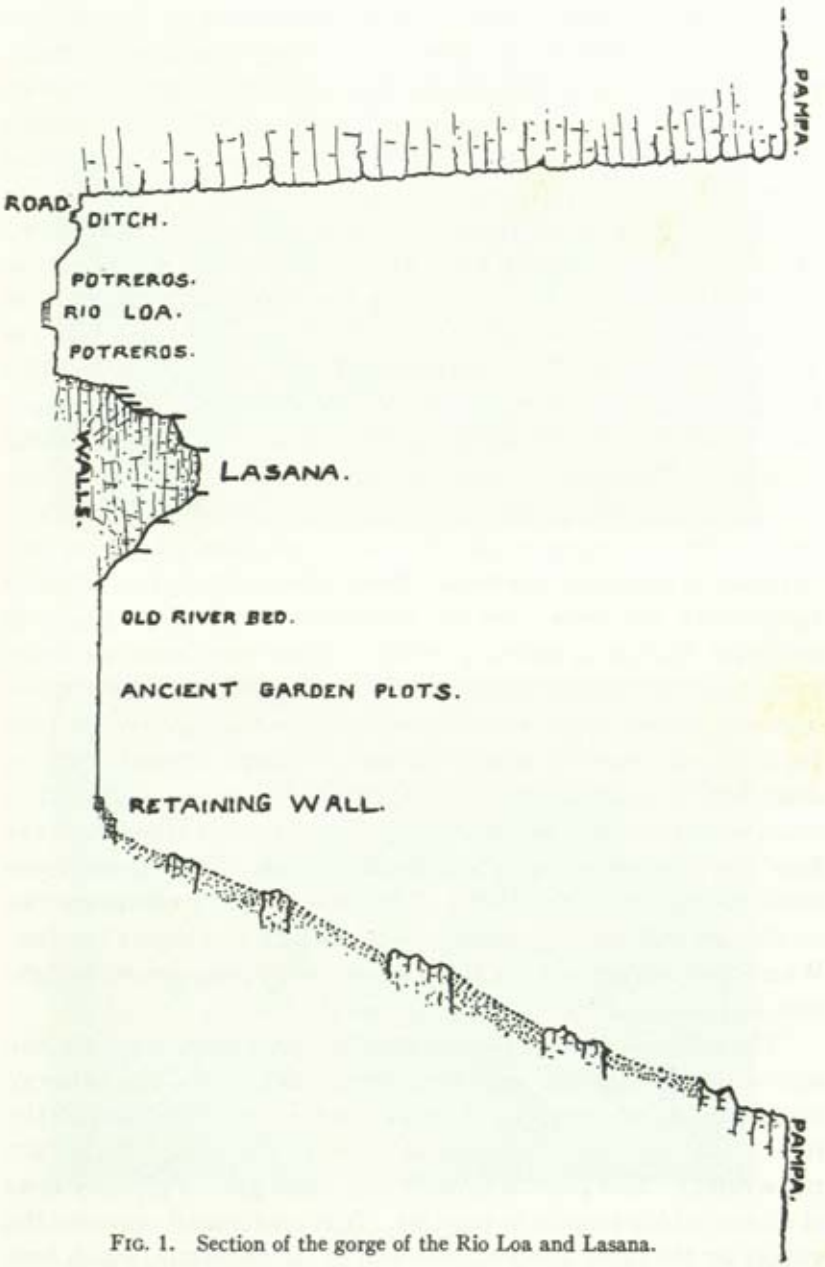


FIG. 1. Section of the gorge of the Rio Loa and Lasana.

The region for many miles around is destitute of vegetation, except for irrigated fields. There are no implements or utensils, or large fragments of them in the town. The only signs of human occupancy left are small fragments of pottery, broken stone pestles and mortars, small pieces of fabric and fabricated wood, and numerous corncobs. In one of the larger rooms, which Eggers thinks was the residence of the medicine-man or priest, were two skeletons. In one of the walls were built in a few bones, either human or of sheep. The same thing was observed in the walls of the ancient church at Chiu-chiu. The rooms are small but are not of uniform size. They are intended to be rectangular, but like the field boundaries of the modern Indians are really quite irregular. The doors vary in width and height and are often irregular in outline. Windows are small and are not always present. They are more numerous in the outer walls, where they served as loop-holes. One photograph (pl. 16) shows windows (there are two of these) in the shape of a cross. These apparently had no religious significance but were, like the loop-holes of the same shape in medieval Europe, a military device. These loop-holes are in an inner wall, but opposite them in the outer wall are large window openings so that the loop-holes command a wide territory opposite the main entrance. The main gateway through the outer wall is defended by guard-rooms to which the only access is through a small elevated hole. Most of the rooms had under the wall at the floor level a small niche to hold food supplies. There is one room much larger than the others. The floor of this room is on two levels, one half or less being elevated about a foot above the rest. Where the two levels meet there is a masonry pier, sixteen to eighteen inches square, which rises to the roof level.

The entrance is on the side where the rock slopes. The opposite side of the hill is precipitous and faces the Rio Loa. The gateway opens on a desert plain, which is an ancient elevated bed of the river. This was once irrigated, as traces of the former ditches are still evident. This plain is divided into small garden plots by rows of stones which remain in position. It is terminated opposite the village by the three hundred foot wall of the quebrada, which here is mostly incoherent gravel talus. This talus has been prevented

Loopholes in walls. Lasana.

Grave at Pucara.

WARREN
OLDE STYLE

from encroaching on the gardens by a complex system of retaining walls, which are still effective. A corral and another stone enclosure, apparently a storehouse, may or may not be of ancient origin. To the rear and above and below Lasana are Quichua farms and irrigated fields.

Pucara is another deserted Inca village, which lies almost adjacent to Chiu-chiu. It rests on the flat pampa of the Atacama desert in a place where the conformation of the country permits some irrigation from the waters of the Rio Loa and there are irrigated fields nearby. It is much larger than Lasana and like the latter is supposed to have been abandoned at the time of the Conquest. Some of the better buildings have been re-roofed and are now inhabited by Quichua farmers. It is more ruined than Lasana. In many of the walls only the lower two or three feet of masonry remain in position. It had not the defensive strength of Lasana, as it stood in the open pampa and the defensive works were not so elaborate. The defenses were two loop-holed walls, each with a shallow ditch. Owing to lack of time only a few minutes were spent here.

There are two large pre-Spanish burial places near Chiu-chiu. In the nearer, which is about a quarter of a mile from Pucara, the burials are in catacombs in small chambers enlarged from natural openings in a bed of loose-textured rock. At some unknown time extensive systematic excavations were made here, leaving a large flat-bottomed pit with walls from five to seven feet high. This work seems to be that of a scientific expedition rather than that of treasure-seekers, for it was systematically performed and all mummies, artifacts and other objects of interest were removed, leaving only small fragments of pottery, coarse textiles, numerous fragments of stone pestles and mortars and broken-up bones. This is in strong contrast with the excavations in the other burial place, where the digging has been by curio hunters and the surface is covered with mummies and broken objects in great variety.

The pampa of the Atacama desert is here a plain formed by the filling of a deep valley between two mountain ranges by wash from the mountains, so that the soil for an unknown but great depth is composed of sands and gravels mixed with large angular

boulders. For many miles around Chiu-chiu this loose material is penetrated, interbedded and overlaid by calcareous tufas deposited by waters effluent from volcanoes and their associated solfataras. In places these tufas appear as typical Mexican onyx, in other places they form a cement which binds the loose gravel into rock. In still other places the tufas are absent and sands and gravels remain unconsolidated. At the graves a thin layer of sandy gravel covers a bed of fairly pure tufa. This bed is from two to five feet thick. Below it is another bed three feet thick of loose-textured, honeycombed tufa with stalagmitic and stalactitic forms and numerous openings. Below this loose-textured rock is another bed of firm tufa (fig. 2). The burials are in the porous bed in small

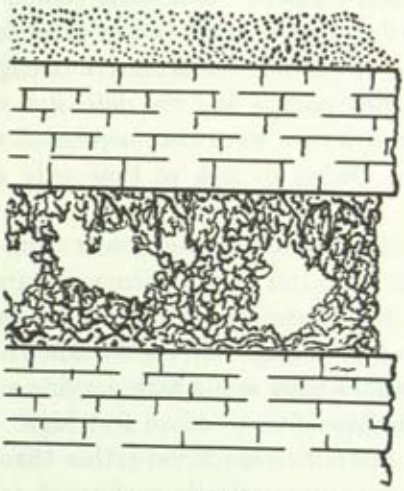


FIG. 2. Section of ground where burials occur.

natural openings which have, when necessary, been enlarged (pl. 16). Small, irregular tunnels often connect adjacent openings. Most of the graves broken into at the edges of the excavation are blocked by detritus. The few that could be entered have been so disturbed that nothing of the original arrangement could be determined. Enough remains, however, to indicate that the bodies were mummified and that the objects buried with the bodies were of the same nature as those found at the more distant burial place. About half a mile from this burial place is another believed by

local collectors to be older. The bodies are in gravel and the graves are shallow. The bodies are about three feet below the surface and are mummified. The mummies are perfectly preserved. They are buried in a sitting position with the knees drawn up against the abdomen and they are wrapped with cord. Some are wrapped in a coarsely woven fabric, which is corded to the body. The bodies are clothed and wear ornaments. Various objects, such as arrows, wooden spoons and drinking cups, pestles and mortars of stone, and in some instances silver dishes are buried with the mummies. Nearly all of these are broken. As no excavations were attempted by the party, the placement of bodies and objects in the graves was not determined and an accurate description of the clothing of the mummies cannot be given. Many of the graves have been opened by curio hunters and mummies, bones, fragments of blankets, broken pottery, and pieces of wooden implements are scattered over the ground. The place occupies the floor and slopes of a dry valley. The sandy gravel or gravelly sand in which the burials were made is underlain by tufas like those nearer Chiu-chiu.

Local collectors say that at one end of the burial place the skulls are characterized by the presence of an extra bone of triangular shape in the rear which they call the "inca bone" and that as they proceed toward the other end of the burial place this bone (fig. 3) becomes more obscure until finally there is only a nearly

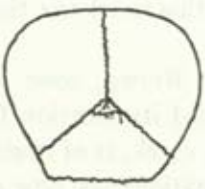


FIG. 3. "Inca Bone."

obliterated suture. This bone was observed on many specimens but it was not possible to verify the observations of the amateur collectors as to distribution.

This place is in the salt desert not far from the nitrate fields and the presence of quantities of salt and niter in the soil may account for the preservation of the mummies.

FIELD MUSEUM,
CHICAGO, ILLINOIS

THE COP-ÉH OF GIBBS

By C. HART MERRIAM

GEORGE GIBBS in 1853 introduced the name "Cop-éh" along with a short vocabulary obtained from an Indian said to be from a stream called "Putos Creek" [Putah Creek]. (Schoolcraft, *Indian Tribes*, 3: 421 and (vocab.) 428–434, 1853). But the artist, Henry B. Brown, who in 1851 and 1852 worked among the Indians of Sacramento valley, wrote the name "Copeh of Gibbs" on his annotated map of northern California, placing it well up in the hills near Cache creek.

Anthropologists, unaware of Brown's work, have been much puzzled as to the identity and location of the tribe. Powers is silent, while Barrett (*Ethno-Geography of the Pomo*, 285, 1908) and Kroeber (*Handbook of the Indians of California*, 355, 1925) state that they were unable to obtain the name from surviving Indians. It was with great satisfaction therefore that I was told by a very aged Indian woman living in Capay valley that Ko-pắ was the name of a large village in the broad flat part of that valley, about half a mile south of the ranch postoffice named Brooks. This was confirmed by a Kotena (Klet'-sel) Indian, and also by an old Patwin, who for many years had made his home in Capay valley. Obviously it was this rancheria that gave the name Capay to the valley.

The fact that Henry Brown, soon after the publication of Gibbs's "Cop-éh," changed its location from Putah creek to the foothills bordering Cache creek, is of itself sufficient evidence that he had first-hand information—as now confirmed. And in view of the confusion of geographic features in this part of California at that early date, it is by no means surprising that Gibbs erred in the identification of the creek from which his Indian came—particularly since the two streams in this part of their courses are only a few miles apart.

The identification of the name "Cop-éh" became of more than passing importance when it was adopted as a stock name

for the Wintoon by Henshaw and Mooney in 1885 [written "Copean"]; by Mason in 1889 [written "Kopean or Wintun"]; by Powell in 1891 [written "Copehan"]; and furthermore because of its persistent occurrence in the literature of Anthropology.[1]

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[1] Cop-éh, Gibbs, 1853; Copeh, Latham, 1854; Cop-éh, Buschman, 1860; Copeh, Bancroft, 1875; Copeh, Gatschet, 1877; Ko-pé, Powell, 1877; Copeh, *Handbook American Indians*, 1907; Copeh, Barrett, 1908; Kope, Kroeber, 1925.

BOOK REVIEWS

METHODS AND PRINCIPLES

Primitive Art. FRANZ BOAS. Institute for Comparative Culture Research, Oslo, 1927. (Harv. Univ. Press.376 pp., 15 pls., 308 figs.)

In this volume, his lectures before the Oslo Institute, Dr. Boas has brought together in systematic treatment the essence of all his numerous studies on primitive art, plus a wealth of new material. The parts of the work are: Introduction; The Formal Elements in Art; Representative Art; Symbolism; Style; The Art of the Northwest Coast (nominally based on his famous 1897 paper, but really quite thoroughly rewritten with many additional considerations and data); Primitive Literature, Music, and Dance (50 pp.); Conclusion. All the old friends are there—Alaskan needle cases, the Northwest beaver, Aztec cursive sherds, Plains parfleches, Huichol embroideries, imbricated Plateau baskets—besides hundreds of new ones: Congo pile cloth, Andaman body painting, New Zealand and Melanesian spirals, Zuñi pots, Kaffir headrests and Bushman ostrich egg incisings, Sauk and Fox rawhide boxes, Swedish bronze, Egyptian paintings, Dayak designs, Megalithic, Yoruba, and Arkansas pottery, Australian shields, Marquesan tattooing, Cameroon masks, Benin bronze heads, the Chiriqui armadillo and New Guinea frigate bird, Haussa and Chinese embroideries, Palaeolithic pictographs may serve as samples. Many of the illustrations are freshly drawn or redrawn; many possess intrinsic esthetic value; and all are beautifully executed.

Since no one has ever dreamed of characterizing Dr. Boas as a theorizer or synthesist, the reader will not look for him to have developed a thesis which alone subsumes his whole book. In the charmingly written preface, from which even an autobiographical allusion or two has not been suppressed, Dr. Boas enunciates two principles which he believes should guide all ethnological investigations: the fundamental sameness of mental processes in all races and in all cultural forms of the present day; and the consideration of every cultural phenomenon as the result of historical happenings. The object of the work is the determination "of the dynamic conditions under which art styles grow up." The growth of individual art

styles is touched upon only incidentally, says Dr. Boas; the specific historical problem requires much fuller material than we now possess.

As compared with his earlier work in the field, Dr. Boas is more occupied with formal elements, virtuosity, motor habits, technical determination and perfection, stability of patterns of action, rhythm, slovenly execution, expression, and impression. Symbolism, conventionalization, dissection, interpretation, representation find their place, but it is a balanced one. The chapter on literature and music is essentially comparative. It may fairly be said that every aspect of primitive art is examined; that the analysis is patient and conclusive; and that if simple, broad conclusions are lacking, the fault is in the multiplicity of factors playing on all cultural phenomena. If Dr. Boas had done nothing else than prove this basic methodological point, his book would have been worthwhile. In addition, he has provided the soundest, most penetrating, and probably most comprehensive work existing on primitive art—and by implication perhaps on civilized.

One question may fairly be asked in an endeavor to place the work in the movement of science. Where, here, is the "historical method" of which Dr. Boas has so often been considered the avowed and leading exponent? The farthest he goes is to suggest that a certain Bushman design may have been taken from the Zambesi Negroes, or that the art of the interior of British Columbia is subject to Plains influences. In his own field of the Northwest Coast he ventures no more than that the most highly ornamental style is northern in origin, that the south possessed a more geometric style, and that among the Kwakiutl in the middle, a northern invasion can be traced. As to the origin of the northern Haida-Tsimshian-Tlingit style, there is not even a hint.

It seems evident that to Dr. Boas and his school "historical" means essentially realistic as opposed to speculative, a readiness to deal with the complexity of phenomena and factors existing in the world, instead of trying to find simplistic pseudo-explanations. Of history in the sense of the historians and culture historians, such as Sophus Müller or Eduard Meyer or Laufer or Cumont write it, there is not a trace. His is the method of the laboratory scientist as against the student of natural history; of the physiologist against the so-called systematist. Of the merits of the two approaches, there need be no discussion here. But it would be misleading to consider a non-historical method, essentially allied to that of Wundt, historical

merely because it recognizes the historical complexity of cultural phenomena. When the web of the space and time relations of phenomena, as they occur given in nature, is torn apart for the examination of dynamic elements as such, the approach, whether apparatus and experiment are used or not, is that of the laboratory instead of that of nature. This procedure may be "scientific" to a higher degree; it is not history nor natural history. And history is what Dr. Boas, in this as in all his work, with one or two brief and hesitant exceptions, has avoided doing, and apparently sheers off from distrustfully. This too appears to be the reason that he views with equal alarm, in his preface, the historical conclusions of Wissler, Spinden, and Kroeber, which after all are inductively founded in generalizations drawn from data in their natural space-time relations, and the essentially deductive or intuitional explanations of Graebner, Schmidt, and Elliot Smith. And from the point of view of his method, Dr. Boas is right: neither of these historical approaches can attain to the positiveness of his own demonstrations of specific, localized, "dynamic," or causal influences.

What Dr. Boas has done in all his work is to analyze unremittingly, to examine new possibilities of explanation, to balance these one against another, to limit each with the most unsparing critical rigor. More intensively perhaps than any other student, certainly over a wider range of human phenomena, he has known how to control a highly fertile intellectual imagination by unflinching self-criticism, and has thereby led the way in the establishing of anthropology, so far as without experiment it can be a science, among the brotherhood of sciences. *Primitive Art* exemplifies these qualities at their purest; its comprehensive range renders it monumental.

A. L. KROEBER

The Building of Cultures. ROLAND B. DIXON. (New York: Charles Scribner's Sons, 1928. x, 312 pp. $4.00.)

Primarily this is a devastating attack on Wissler's extreme position of environmental determinism and schematic distributions, on the extreme diffusionists, Elliot Smith and Perry, Graebner and Schmidt. It is concerned only secondarily with the whole problem of the building of cultures.

What Dr. Dixon would write on these topics could, I think, have been anticipated by his colleagues. He has been for years a staunch upholder of the integrity of American cultures against the

diffusionists and stoutly conservative in his use of inferential methods. That he does not add materially to his views in this new volume in no way detracts from its merit, for it is essentially a vehicle for amplifying them. We will all agree that it is high time someone set limits to the extremists, and few have Dr. Dixon's qualifications for the task.

The limits of environmental determinism are obvious to all but the wilfully blind. On the whole its effects are indirect, "permissive, not mandatory," even when they may be at a maximum as with cultures whose contents are small. Those who would derive the totality of a culture from its environment, as Wissler has of late been inclined, must reckon with the purely cultural facts that basic traits are by no means confined to a single culture area and that no culture area is uniform within itself. Wissler's present position is the more astonishing in the face of his own unanswerable emphasis on the psychic element in the culture-environment relation of some fifteen years ago.

The environmental discussion is but a preface to one of discovery and invention, which turns ultimately on the question of culture parallels. The factors that make novelties possible are opportunity, need, and genius, each a variable, hence in combination kaleidoscopic in results. Yet the more general the opportunity, the more widespread the need, and the lower the genius required, the greater the possibility of approximate duplications hither and yon. What the extreme diffusionists will not see is that the "psychic unity" necessary for culture parallels is little more than the most generalized forms of these three factors.

The body of the book is a discussion of diffusion, or more properly of distributions; always objective and external, for Dixon is more inclined to a syllogistic array of its forms than interested in its subtle psychic interactions. He insists on the complexity of diffusion, its erratic course and differential nature, and revolts against Wissler's schematic simplification. Wissler is taken to task for gross errors in copying data, for glossing irregularities of type and distribution to bolster his schematic presentation of zoned concentric distributions. Yet he concedes a partial validity:

> We have seen that in the diffusion of trait-complexes, within the area of their origin, the erratic spread does indeed produce a roughly zoned distribution, but one which is far from symmetrically concentric. The nucleus is rarely central in location and there is no necessary relation between

distance from the trait nucleus and the extent to which the complex is developed. Nor is there any similar relation in time, i. e., we cannot say that because one tribe is nearer to the nucleus of the trait-complex than another, therefore it will receive the complex sooner (p. 179).

An almost Puritanical adherence to evidence and logic dictates that concession along with the strictures.

Fully discussed examples of distribution are many: the outrigger canoe, blowgun, moccasins, arrow release, sun and grass dances, and mummification are scrutinized because they were the source of Wissler's and Elliot Smith's contentions; to these Dixon adds the alphabet, printing, the pottery-agriculture complex, Chinese civilization as a complex, fire-piston, betel chewing, plank canoes, and tie-dyeing. While it cannot be said that these are novel cases, the amplification and scrutiny he gives to the outrigger and plank canoe, to tie-dyeing and mummification, and to that pseudo-complex of Oceanic traits in South America, revitalizes them. And no small measure of his success is due to utilizing historic materials; a source we others are all too inclined to overlook. I, for one, having to teach these old and familiar processes, am grateful for the fresh stock of illustrations.

The attack on the almost ribald heliolithic theory is one of the most satisfying sections of the book. The evidence on which it is based simply shrivels under Dr. Dixon's pen: the discrepancies in the composition of the complex as conceived by Smith and Perry, gross discrepancies in its dating, the admitted break-up of the complex even before leaving Egypt, the lack of correlation in the distribution of its elements, their increasing frequency the more remote from Egypt, that capstone of the whole, mummification, reduced to a single parallel in Torres straits, and the general garbling and ignorance of the data. One might add that the Egyptologists question the authenticity of the very complex itself!

Of the *kulturkreis* theory, only one special phrasing is discussed—the Oceanic origin of South American parallels. The procedure is the same conscientious asking what are the facts of distribution; not so spectacular as projecting a grand scheme but more productive of sound results. Of the nineteen traits of Schmidt's Oceanic complex, ten are wholly absent in the South American region of which they are supposed to be characteristic, four are found as frequently outside this area, three are relatively rare, one is not comparable, and only one, a windbreak, remains. Nor do they occur together in a single tribe, as a true complex would. And by what light did Graebner-

Schmidt hit upon the Oceanic culture as an archaic complex in the first instance?

There is no space here for a critical scrutiny of Dixon's handling of distributions and his inferences. There can be only admiration for his honesty to evidence and sobriety of judgment. Yet at times Dixon is so insistent on an inflexible logic as to seem obtuse. I gather, for example, that primary, secondary, and tertiary arrow-releases developed in that order because they are so ranged in manual complexity. Now I have a strong suspicion that this is a logical separation only, and that, as the local methods are usually described as modified forms of one or the other, we shall find that the common American method, e.g., lay between all three and was quite variable. Again, to argue that the coincident distribution of pottery and agriculture is no true complex because pottery extends beyond the environmental limits of cultivation, is an obviously unfair test. (Incidentally, I would remind him that it has been suggested that the *tertium quid* of the association is that both were feminine arts.)

Somewhat similar is his discussion of Wissler's assertion that traits diffuse in time proportionate to distance. That the peyote cult reached Nebraska from its Oklahoma source as quickly as it did a neighboring reservation is a tribute to the railroads, not to Dixon's perspicacity. This is also true of some of his discussions of the geographic position of diffusion nuclei. He views his distribution maps paper-wise, too literally. Surely one must see in the maps of the sun dance distribution, e.g., the wall of the Rockies which gives to the Plains its linear aspect. When Wissler speaks of "concentric" distribution we ought to permit him the use of the term analogically where ringed distributions are impossible or at least improbable. Dixon above all, with his knowledge of historic contacts and his insistence on them, should have seen the necessity of reading them into the maps and not insisted on an uncompromising literalness of interpretation.

Of the ostensible subject of the book, the building of cultures, little enough is said directly. True, the manner in which the environment is made the subject of discovery and invention is exhaustively treated, and something of the psychic elements in these processes as well. Diffusion is discussed at length, not primarily for the sake of combating the diffusionists, but for an understanding of its complex behavior. In the direct exposition of the building of cultures, these two are blended. The essential process is seen as one of repeated

local specialization with subsequent releveling by diffusion. That is, a fair weighting is given to the appearance of the host of novelties which give a culture its distinctive color as well as to the diffusion that has undeniably taken place. Almost without exception American anthropologists, at least, will find themselves in agreement with Dixon's general position.

In the long run, however, this defines the problem of the building of cultures as little more than a recapitulation of culture history. This is inevitable with the sort of analytic approach Dixon inclines to, concerning himself only with externals and limiting attention to their historic rôles. The vogue of culture history reconstructions is with us. I think it can be said to be Kroeber who broke the dam of our reserve—was it really caution? It seems to have been quite unintentional on his part. In an endeavor to accent the rôle of diffusion as against the evolutionists (or better parallelists), he surely swung too far in giving to diffusion a quite unwarranted share of the credit. Unless one reads *Anthropology* with care the impression is left that he denies practically any individuality to local cultures. For him as well as Dixon the touchstone was culture parallels, and I think one can put his finger on the exact spot where the explanation of parallels was left to diffusion. He says that in place of independent inventions we may speak of parallelism and convergence. There he made a fatal error, for parallelism is not the same thing as independent invention. What of the thousand and one things that give individuality to a culture apart from the traits that have parallels elsewhere?

The process of culture building is not alone concerned with historical reconstruction. There are at least two other aspects of equal importance; the dynamics of culture and the culture trait as a symbol of personal behavior. The dynamic view can be expressed in the form of a few typical questions: What makes for the stability of a culture area in time and space? How does the patterning of thought and action take place? What latitude is permitted to individual activity and how do new forms arise from this? and so endlessly. I am not willing to insist that cultural dynamics should claim our undivided attention; those aspects that claim our interest are dictated by our tastes. But I do maintain it were well to guard against the notion that culture history tells us all we need to know. Culture history, as a recent example only too plainly showed, can be sterile indeed!

Dr. Dixon's book is well done, despite a certain logical oversys-

tematizing. Its usefulness may be judged by the fact that I have given it at once to a class for their unrestricted use.

LESLIE SPIER

Sex and Repression in Savage Society. BRONISLAW MALINOWSKI. (New York: Harcourt Brace & Company, Inc. London: Kegan Paul, Trench, Trubner & Co., Ltd., 1927. 285 pp.)

The work is in four parts: I, The Formation of a Complex, II, The Mirror of Tradition, III, Psycho-Analysis and Anthropology, and IV, Instinct and Culture.

Part I contains a first-hand study of family life among the Trobriand islanders. These natives of a small archipelago lying off the coast of southeastern New Guinea have developed a matrilineal system in which the husband is supposed to be unrelated to his children (impregnation being effected by spirits), and male authority and responsibility are vested in the wife's brother. The father thus becomes the elder friend or companion of his children and the establishment of the Oedipus complex is obviated. The author concludes that it is necessary

> not to assume the universal existence of the Oedipus complex, but in studying every type of civilization, to establish the special complex which pertains to it.

In part II it is shown that the dreams, obscenity, and myths of these Melanesians mirror the matrilineal complex. Part III is a destructive criticism of the Freudian dogma that the Oedipus complex is the "primordial cause of culture." Part IV sets forth the author's "positive views on the origins of culture" and of human family organization. It is regarded as "the most important and at the same time the most debatable" section of the book.

> The group of parents and children, the permanence of the maternal tie, the relation of father to his offspring, show remarkable analogies throughout human culture and in the world of higher animals. But as the family passes under the control of cultural elements, the instincts which have exclusively regulated it among pre-human apes become transformed into something which did not exist before man: I mean the cultural bonds of social organization. We have now to enquire into this transformation of instinctive responses into cultural behavior (p. 192).

No one is likely to question the fact that this transformation is the most significant episode in the history whose course the author has undertaken to trace. But in order to understand the changes

which have occurred during the passage from generalized anthropoid behavior to the specialized conditions found in man it is essential to have some idea of the psychological beginning of the process which is being studied. This beginning, Doctor Malinowski assures us, is to be found in certain well-marked differences between the instinctive sexual activities of man and the homologous doings of his anthropoid relatives. In this crucial part of the argument the author displays complete ignorance of simian sexual psychology as set forth in such easily accessible studies as Hamilton's "Sexual Tendencies of Monkeys and Baboons" (Journ. Anim. Behavior, 4: 295–318, October, 1914) and Kempf's "The Social and Sexual Behavior of Infrahuman Primates with some comparable facts in Human Behavior" (The Psychoanalytic Review, 4: 127–154, April, 1917). Montané's "Notas sobre un Chimpancé nacido en Cuba" (Mem. Soc. Cubana Hist. Nat. "Felipe Poey," 1: 259–269, 1915; separates issued, without reference to the original publication, under the title, "Un Chimpancé Cubano") is another well known contribution to the same subject; but it is likewise passed without a word.

It would be interesting to know what form the last part of Doctor Malinowski's book might have taken had this mass of available knowledge been given its appropriate place.

G. S. MILLER

The Mothers. ROBERT BRIFFAULT. New York: The MacMillan Co., 1927. 3 Vols.

In 1920 Professor Lowie stated in his book, *Primitive Society*, that there was not a single theoretical problem on which modern anthropologists are so thoroughly in accord as that concerning the former and present non-existence of a "matriarchate." If this statement holds true, and I have no doubt that it does, then the present three volumes of Mr. Briffault do not tend to place him in the ranks of modern anthropologists. Mr. Briffault, in a manner similar to that of his precursors, came upon the idea of a former matriarchate as a convenient tool on which to hinge the idea of social evolution. The concept was, of course, assumed not only a priori, but even in contradiction to all known ethnographic facts. The author, in the quiet of his study, modestly proposed "to draw up a list of the forms of the social instincts, and to investigate their origin." Having progressed in his investigation to this extent, he discovered, to his surprise,

that the social characters of the human mind are, one and all, traceable to the operation of instincts that are related to the functions of the female and not to those of the male.

Hence the necessity of a primordial matriarchate.

In spite of the somewhat peculiar premises upon which the present work rests, the contents are often of interest and value. Mr. Briffault brings even more erudition to his subject than did Westermarck. He broaches topics which are important and somewhat new to anthropology, such as the evolution of our present relations between the sexes. From the point of readability the work is marred by the inexhaustible list of examples, from the point of science by innumerable dogmatic generalizations. The third volume, which deals mainly with the social conditions and literature of medieval Europe, is by far the best of the three.

In the first volume Briffault draws a distinction between sex instinct and love, or the tender emotions. He traces these reactions to the animal world, and shows that the sentiments of tenderness and affection between the sexes are not originally connected with the sexual impulse, but with an entirely different instinct, the mating instinct. The operation of the sexual impulse does not demand anything beyond the performance of the sexual act, while mating, or an association between the sexes, is a special adaptation to the reproductive functions of the female. This is due to the fact that with the extension of maternal care the female is placed in a position of disadvantage as regards self-protection and the procuring of food. In the course of biological evolution, therefore, the feelings of tenderness and affection, of which the offspring is the primary direct object, become extended to the male. On the other hand, sexual attraction, or sexual hunger, as it has been aptly called, is a form of voracity. "For love is sadic, and as cruel as hunger." It would be more accurate, according to Briffault, to speak of the sexual impulse as pervading nature with a yell of cruelty than with a hymn of love.

> Therefore love and lust must remain antagonistic among human beings. They are not only opposed, but essentially incompatible. They may alternate, but can never completely blend. Love, tender feeling, is a common cause of 'psychical' impotence.

The importance of this distinction is obvious in primitive marriage, for in primitive society sexual relations do not imply sexual association and the motives which lead primitive man to marriage are unconnected with the sexual impulse. Mr. Briffault

furthermore believes that the primitive man has no feelings of tenderness or affection towards his wife.

The distinction is, however, of the greatest importance in the formation of social groups. For,

> just as the transferred affection of the female for the male is a direct derivative of maternal love, so likewise all feelings of a tender, compassionate, altruistic character, which are in direct contrast to primitive biological impulses, and, while almost entirely absent in animals have become distinctive of human psychology, are extensions and transformations of the maternal instinct and are directly derived from it. All tender feelings, and altruism in the male, must have arisen through maternal love, and through the transference of these instincts to the male. Therefore these sentiments and social virtues which are necessary to the existence of any form of human society have their original root in the feeling which characterizes the relation between mother and offspring.

Hence the dedication of these three volumes to *The Mothers*, the source from whom these blessings flow.

This same year we have had released another system of sociology from the pens of Keller and Sumner. Both systems deny the gregarious instinct as a factor in the formation of social groups. Briffault only admits of mother love as a molder of social groups, while Keller and Sumner advocate sexual love, vanity, hunger and fear as being the primary socializing forces. So the layman must take his choice.

If all of our socializing forces have arisen from maternal love, it is only natural that they should have first arisen when society was in the form of a matriarchate. And what cannot be found must be invented. So the matriarchate was "that peculiar arrangement adopted by nascent humanity." If now we agree with Briffault that nascent humanity existed in the form of a matriarchate, we need no longer be troubled by any of the other problems of anthropology, we may rest assured that our authors will have an explanation of them all. Exogamy arose because the males marry later than females, so that it was only natural for males to go and seek mates in other groups, and the females to remain at home. Without troubling ourselves as to the modern accepted meaning of the word "exogamy" we can then turn to the author's explanation of the origin of the taboo against incest. In a matriarchal group

> if the men were the sexual mates as well as the brothers of the women, patriarchal succession would be established, and their authority and rivalry would bring about patriarchal dominance.

The mother-in-law taboo arose because the young males joining the new group regarded their new mother-in-law in the same manner as they did the mother of their own group. Secret societies were originally founded by women, and male societies arose, as Heinrich Schurtz would not have expressed it, a weak and pale imitation of the women's original magical societies. Most of the taboos of primitive peoples were first enforced by women. For the women, when they were not in the proper condition to receive males, isolated themselves of their own accord, and forbade the men to approach them. Here again the author must be dealing with that period of "nascent humanity" concerning which he appears quite well informed. At any rate, he considers the taboos placed on men by women during their periodic unfitness as the earliest taboos imposed on the natural instincts, and embodied in human traditions.

Early in the first volume Mr. Briffault stated the theory that cultural and social evolution is the all-important factor in the development of the love sentiment in man; that romantic love is profoundly influenced by literature and tradition, and that no one would be subject to it in the same form had he never read a novel or seen a play. Once Briffault is removed from the dangerous ground of actual anthropology he appears in a far better light. Certainly his treatment of "Romance" in the third volume is well worth reading. This subject called for a critical review of the romantic literature of the European Middle Ages, for it was out of the "romantic" literature of this period that the unique type of European "romantic" amatory sentiment developed.

It is of interest to note that the term "romance" was first applied to compositions made in the current speech of the people of France, who ever since the days of Roman domination had been proud to call themselves Roman citizens or Romans. Romantic literature means, therfore, the popular French literature of the early Middle Ages, as opposed to the learned literature. Already in the literature of the twelfth and the thirteenth centuries the distinctive characteristics of the European conception of romantic love were manifested in full-blown perfection. But this love was of course outside of marriage. In the latter part of the thirteenth century the conception of chivalric, or "courtly" love, received its greatest development. But this was done, not in the romantic narratives, but in the form of lyric poetry in the hands of the troubadours.

The changes which occurred in the nature of love poetry in

Europe are of interest, showing the remarkable influence which literature can exert over culture. Originally love poetry did not occupy an important place in the literature of pagan Europe. Love songs there, as among primitive people in general, were regarded in the light of magic spells by which the lover endeavored to bewitch the object of his desires. Among the northern people, to address a love song to a girl or woman was an indictable offense, and was often punished like any other form of witchcraft. In the second stage of lyric love literature, the sentiments expressed were frank, and to the point, but in good odor. In the third stage a reform was placed on the poetical conception of love; it was converted from the sensual to the chaste, or "romantic" (using our present and unique sense of the word). This remarkable alteration was brought about for the sole purpose of disarming the severity of the clergy.

The transformation in the conceptions of romantic love, the idealization of the relations between the sexes which is presented in the course of literary evolution, were not dictated by changes in public sentiment, but by the influence and by the pressure of the Christian Church. It was imposed upon popular literature by the Patristic conceptions, which pronounced the extinction of the human race to be preferable to its reproduction by sexual intercourse. The sentimental idealization of the sex relation has thus assumed a character which is without equivalent in any other culture, and was unknown in the cradle of European civilization in the Hellenic world. In the light of it, under the rubrics of love, courtship, and marriage, the modern anthropologist elucidates the psychological and sociological phenomena presented by primitive man and woman, by the savage and the barbarian.

In looking at Briffault's work as a whole, it seems strange that a writer who was able to trace the interplay between culture and transmitted ideas so clearly in European civilization, should have failed so utterly to grasp the rudiments of scientific principles in dealing with primitive cultures. In explanation it must first be observed that Briffault entered his study of European culture without preconceived ideas; in describing the development of the concept of romantic love, of the influence of art on human conduct, and of human conduct on art, he merely interpreted documentary history. In these chapters the "Mothers" and the mythological "Matriarchate" were for the moment disregarded. Secondly, it seems likely that a different kind of understanding, a different art or technique, is required for the dealing with primitive culture than that gained by the ordinary student in his library research. While it is true that the difference between the primitive and the civilized culture is

quantitative rather than qualitative, yet there is a definite dividing line; the use of writing and the storing up of individual ideas and opinions. This distinction brings about a definite, although again quantitative, change of attitude between the individual and his community. In primitive society the individual is born into a one-dimensional mode of conduct and mode of thinking, that prescribed by his group. His worth is estimated by his conformity. In civilized society the individual is again under pressure to conform, but he has resource to a second dimension, that of the inherited arts and sciences. His ultimate worth is judged by the value of his contribution to these. Here it is variation and not conformity that counts. The student, therefore, who studies civilized societies must begin by the study of this second dimension. He first gains an impression of the customs and ideals of a civilized community by catching their reflection as set down in the writings of its greatest men, that is to say, variants from the norm. Then, if he is able, he can check up on the actual life of the people, and discover the relation which the theoretical mode of conduct bears on the actual, the influence of the ideal on the actual, and the actual on the ideal.

In a primitive society, on the other hand, theory and practice tend to combine. There is no ideal set of customs or manner of thought with which the people are endeavoring to catch up. On the contrary, their chief endeavor is to preserve the ancient, the ways of the dead ancestors. Literature, art, and modes of conduct are all judged on the same standard, their conformity to set pattern. Changes do occur, but these are due to diffusion from without, not, as a rule, to inspiration from within the group. Hence the student in his study of a primitive society should first endeavor to catch the meaning of its culture as a whole. Then each isolated custom, each myth, each symbol of art, will fall into its compartment in the cultural entity.

It is perhaps because Mr. Briffault has never understood the significance of the psychology of one primitive group, that he has failed to organize one acceptable theory to cover all primitive groups. The chief theory advanced, and that on which most of the others hinge, is that mother love developed into male altruism, and this in turn made man adapted to live in social groupings. Yet I should be very much surprised if one could translate the word "altruism" into any primitve language. Primitive man is devoted to the interests of his group for quite self-interested reasons, his devotion is quite as automatic and subconscious as is his hatred of outsiders. The word

"altruism" was in fact first coined by J. S. Mill in the nineteenth century. The concept of "altruism for its own sake," which is perhaps the only kind of altruism which can be placed in opposition to egoism, is a thorough-going product of civilization, and as such can hardly be referred back to the instincts. The concept belongs in fact to the second and idealized plane or mode of conduct into which civilized man is born. This concept, while unattainable, has yet had its influence on modern philosophy and conduct.

E. M. LOEB

PREHISTORY

The Upper Paleolithic Age in Britain. D. A. E. GARROD. (Clarendon Press, Oxford, 1926. 211 pp., 1 map, 2 pls., 49 text figs.)

Since 1897, when Sir John Evans published his last revised edition of *Ancient Stone Implements of Great Britain*, we have had no general treatise on the antiquities of the British Isles. More than once during the last fifteen years the reviewer has urged on certain of the English archaeologists the necessity for such a work. By way of reply, Reginald Smith of the British Museum in 1922 said ironically that Englishmen had time and money for studying the archaeology of any section of the world, except England. Miles Burkitt, of Cambridge University, on the other hand, made a vague promise that he would supply the desideratum; but, like the delinquent son of the parable, he has enjoyed himself in other people's vineyards and merely looked across the fence at his own. Now, however, we may thank a daughter of Britain for having begun the task with the concise but comprehensive volume cited above. Miss Garrod has limited her survey to the Upper Paleolithic, including bare mention of the underlying Mousterian horizon and a brief summary of the culminating phase locally differentiated on the continent as Azilian. Tardenoisian, and Maglemosian.

Authentic European discoveries of Upper Paleolithic remains, it would seem, were first made in England and were brought to light as early as 1823—that is to say, some thirty-five years before the scientific world was ready to accept such evidence. Naturally enough, therefore, the full value of the recovered relics not being realized, some of them have been scattered and lost during the century that has passed. Moreover, in those early days the significance of stratigraphy was not clearly understood and so the recovered artifacts were mixed and many clues to their sequence destroyed. The author

obviously set herself a considerable task when she undertook to search the literature, to trace the scattered collections, and to segregate them as well as might be into genetically related typological series. The time was ripe, however. Miss Garrod had profited by years of training under the Abbé Breuil and was thoroughly familiar with French and other continental standard horizons of industry. Besides, new and more or less important excavations had recently been made in England, giving a real stratigraphic basis for determining the chronologic position of any locally peculiar features of the successive industries.

The evidences of strictly Upper Paleolithic man in Britain are thinly scattered; but they range, remarkably enough, over fully the southern three-fourths of England proper—including Wales—and may perhaps be regarded as reaching the Kintyre peninsula of southwestern Scotland. This takes the culture north to latitude 54 degrees, if not to 55 degrees 30 minutes. Unless possibly Montelius was correct in claiming a Solutrean culture stratum for Sweden, we have to go clear to the headwaters of the Ob and Yenisei in Siberia to find traces of the Paleolithic in such high latitudes. Definite proof is furnished also that Pleistocene man in England lived close to the ice front and that he advanced and retreated with the glacier. Naturally enough, therefore, most of the archaeological sites dealt with are caves—there are twenty-one of them, scattered through the western and lower northern shires. In the southeast, where there are no caves, seven open-air stations (in part mere surface finds) are indicated, but these have yielded little of positive value.

Proceeding with the cave stations in geographical order, the author furnishes a succinct statement for each as to situation, shape and size, the character of the floor deposits, the enumeration of the faunal species, a classification and description—with illustrations—of the artifact contents of each layer, and finally a comparison of the given culture complex with the corresponding ones on the continent, thus fixing its approximate chronological position. The results are interesting in respect to several details which cannot be set forth here. Generally speaking, the lithic remains of Upper Paleolithic man in England are relatively scanty; bone, antler, and ivory objects are rare; cave art is nearly absent—the parietal sort perhaps completely so. The Aurignacian level is most strongly represented; but a proto-Solutrean, with traces of the final phase, is indicated; and the Magdalenian, though incomplete, is characteristic as far as

it goes. In short, from the beginning of the Paleolithic to the end, England appears to have been influenced to a greater or less extent by developments on the continent both north and south of her own latitude.

It is scarcely in place for an outsider to offer comment and criticism on so meritorious a piece of work. The general student, to whom the scattered literature is not available, no doubt may wish, for example, that the map was larger and more complete, that the Mousterian and Epipaleolithic industries were illustrated. In other words, there are points where the book becomes a key to the literature rather than a summary of the facts contained in the same. Incidentally, the famous "Red Lady" of Paviland, according to Professor Keith, is a gentleman.

N. C. NELSON

Prehistoric Man. Written and illustrated by KEITH HENDERSON. (New York: E. P. Dutton and Company, 1927. XIII, 276 pp., 102 text figs.)

The title of this book is exactly the same as that given to a few previous works by various authors; it is but another indication of the present widespread interest in the story of man before the dawn of history so-called. But the resemblance between Mr. Henderson's work and that of his predecessors ends with the title. This does not mean that he has written something entirely new as to facts; on the contrary, he has culled largely from the stores that were gleaned by those who have depended primarily on original sources. It does mean that his point of view is different from one who is accustomed to digging out facts and delivering them naked to the light of day. Mr. Henderson is a master at "dolling up" these naked facts and this in itself is an art not to be despised. The frills and furbelows with which a vivid imagination may clothe forms may be very attractive in themselves, but they may be misleading if they cover up defects that should be seen, or prevent the onlooker from differentiating between living forms and those that are dead and meaningless.

In prehistory as in every other field of scientific endeavor it is well to be sure of one's facts first; the dressing will then be an easy matter, especially in the hands of one so versatile as the author. In this respect his work is so well done that the unsuspecting average reader will take it for a serious scientific treatise on prehistory; while the

indulgent serious-minded specialist will be inclined to overlook slight scientific inaccuracies as he is carried along by the swift and colorful current of the author's imagination.

And yet the reviewer cannot refrain from breaking the romantic spell by calling attention to only a few blurred spots in the prehistoric background of this otherwise appealing story. On page 82, one is led to infer that the term *limande* is applied to a type of Solutrean implement; whereas it is applied to a much earlier type of implement dating from the lower Paleolithic period. One might also conclude from his text that Predmost is a cave rather than a loess station (p. 85). The assagai head of bone with cleft base (fig. 37) is typical of a certain phase of the Aurignacian epoch, not the "Magdalenian" epoch. Again on page 147, in discussing megalithic monuments, one finds this statement: "The barrow at Calvados in Brittany, conceals twelve separate chambers," etc. The particular barrow of which he speaks is not at Calvados nor is it in Brittany; obviously he has in mind the *tumulus de la Hogue* at Fontenay-le-Marmion in the department of Calvados. But the department of Calvados is not now nor was it ever a part of Brittany. These are some of the jolts the special student is bound to feel before completing what the author calls in his preface

> a sort of picnic tour, starting at some godless hour before the dawn of humanity and observing at ease during the vast journey until gradually, now on this side, now on that, the first landmarks of history begin to appear on the horizon.

GEORGE GRANT MACCURDY

La Madeleine, son gisement, son industrie, ses oeuvres d'art. L. CAPITAN et D. PEYRONY. (Publications de l'Institut International d'Anthropologie, no. 2. Paris: Emile Nourry, 1928. 40 f.)

La Madeleine rock shelter is one of the most splendid of the paleolithic stations that string along the beautiful Vézère valley in the Dordogne. Although it was explored by Lartet and Christy as early as 1863, and has given its name to the richest of the paleolithic periods, its industries have not hitherto been well recorded. This publication may be regarded as a definitive account of the site. It naturally concerns itself mainly with the results of the investigations of Dr. Capitan and M. Peyrony, in the periods 1910–13 and since 1926, for the earlier explorations were ill controlled and the material has been largely scattered.

Apart from two or three Solutrean fragments found on the original floor and Gallo-Roman remains at the present surface the entire culture is Magdalenian, and a systematic account of the three levels is given. The initial phases of the culture are not as well represented here as for example at Laugerie Haute, a little further along the valley, but the development of the bone harpoon, so admirably illustrated at this site, the rise and decline of conventionalized designs alongside the naturalistic representations in the engraving of bone, and the early occurrence of sculpture including bas-reliefs in soft stone, may be clearly traced. These developments are very fully illustrated in a large series of drawings and photographs. The survival of occasional Mousterian and Aurignacian forms among the tools of this period is emphasized and the characteristic Magdalenian blades, graves, parrot-beaks, etc., are portrayed in M. Peyrony's excellent drawings. The small "*pointes à dos courbe*" and the engraved pebbles relate the most recent levels of La Madeleine to the culture of Mas d'Azil, and it is suggested that an ill defined Azilian horizon already existed at La Madeleine.

Characteristically, but very unfortunately, no scales are given with the illustrations, nor even with the map of the La Madeleine-Les Lyzies district (a 1/50,000 enlargement of the *Carte de L'Etat Major*?). Apart from this defect the volume should serve as a splendid album of the Magdalenian flint and bone industries.

The ceremonial burial of a child (5–7 years), found at the eastern end of the station in 1926, is briefly described. Girdles of pierced shells and teeth encircled the brow, neck, elbows, wrist, knees, and ankles of the child who lay extended on his back. Red ochre stained the soil in contact with the bones, and the head was encircled by three small stones arranged in a semicircle around it, but whether the cavity in which the skeleton lay was natural or artificial could not be determined. The original burial was however very shallow, for the skull had been crushed soon after by trampling. This interment belonged apparently to the early period, since it lay in the level of the primitive harpoons.

C. DARYLL FORDE

South Africa's Past in Stone and Paint. M. C. BURKITT. (Cambridge: University Press, 1928.)

Since the middle of last century stone implements of "paleolithic" aspect, prehistoric "Bushman" settlements, and rock paintings have

been reported from the southern part of the African continent. More recently papers by Peringuey, Goodwin, and others, and Mr. Neville Jones's *Stone Age in Rhodesia* have familiarized us with some of the results that have been accumulating, but it has been difficult, in the absence of a general summary, to grasp the full significance of this work. At the invitation of the University of Cape Town Mr. Burkitt has undertaken an extensive tour of the important sites and collections in the Union of South Africa and southern Rhodesia. From his great experience in the classic areas of paleolithic archaeology he has been able to institute significant comparisons of the South African material with the more systematized products of the European industries. His book is therefore far more than a summary of known results. At every point the standards of his European experience are brought to bear on problems of classification and typological relationship.

Although exploration and analysis are still in their beginnings it is already clear that the South African area presents peculiar problems and great rewards to the prehistorian. Stations exhibiting a clear stratification are almost unknown and river gravel sequences have not yet been obtained. The more uncertain criteria, typology, patination, depth of deposit, etc., therefore, assume great importance. Since flint is practically non-existent in the region the South African industries were executed in fine-grained quartzite, dolerite, indurated shales, etc. The special qualities of these materials have greatly influenced the appearance of implements, and advantage was taken of them in the development of techniques unknown in the European area. The prehistoric period covers the whole range of human occupation from the time of the arrival of people in a cultural stage parallel to the early paleolithic industries of Glacial Europe down to the "Bushman" cultures existing at the time of European colonization. In the absence of glaciation and established faunal associations it is at present impossible to establish a comparative chronology with other areas and it is rightly insisted that the "Lower Paleolithic" in South Africa cannot be assumed to be even approximately contemporaneous with the Chellean and Acheulean of Western Europe. It is clear nevertheless that these African "paleolithic" industries, of which four variants appear to be established, exhibit most remarkable parallels with the European, and cultural continuity is obviously to be sought.

The Victoria West industry of the Cape has a special and limited distribution. The characteristic tools are *coups de poings* (fist

hatchets) associated with massive beak-shaped points vaguely resembling a rostro-carinate, and discoid tools often trimmed to a cutting edge round the entire circumference. These implements clearly indicate the influence of the raw materials (quartzite and dolerite) in the general massiveness and coarseness of flakings. That they are not recent is clear from the deep patination and extensive weathering normally exhibited. A *coup de poing* of this type has been recovered from the lowest (i.e., most recent) terrace of the Vaal river.

The artifacts of the Stellenbosch industry are of finer workmanship and were among the first to be recognized in South Africa. They have been recovered widely throughout the Union and southern Rhodesia. The typical implement is a boldly flaked pear-shaped *coup de poing*, varying considerably in size from a few inches to a foot. Burkitt notices and illustrates an extraordinarily close parallel in form and technique with early North African tools from southern Algeria. With the Stellenbosch *coup de poing*, like the Acheulean in Europe, is found the ovate, a lighter thinner tool, in general more delicately flaked and frequently symmetrical along both axes. The S-twist, so characteristic of both these tools in the Acheulean, also appears frequently in the Stellenbosch industry. As in North Africa a cleaver occurs in association with these implements. "In shape it reminds one of a large Campigny axe for the working edge is straight or only slightly curved, and is more or less at right angles to the length of the tool, being formed by the intersection of two large flake-scars slightly inclined to one another. This edge is what in a normal *coup de poing* would be the butt end of the tool. . . . . The whole gives the impression that the tool was made by a similar technique as the *coup de poing* of which it is undoubtedly a near relative. It is . . . . obvious that their absence from the lower Paleolithic industries of Europe is at once explained by the difference of the material used for making tools in the two continents. With any substance of a flinty nature an edge produced by the intersection of two large flake surfaces slightly inclined to one another would be far too brittle for use, except in the case of very small tools or for comparatively delicate work. Also it would not be at all easy to produce such a very more or less straight edge. Made from quartzite, however, which is essentially a tough material, they form effective implements and were easily made. . . . . Both in North and South Africa their association with ordinary pear-shaped and oval *coups de poing* fixes the industries and culture to

which they belong" (p. 66). Variants of the normal Stellenbosch implements occur. They are especially noticeable in the Pneil and Vaal river industries. On the grounds of their wide distribution in association with Stellenbosch forms, Burkitt rejects Goodwin's suggestion that they should be regarded as a separate culture. This Vaal river technique produces a *coup de poing* with the cross section of a scalene triangle—it is essentially a product of the tough quartzite raw material by reversed flaking. Precisely the same technique in quartzite is reported by Tarel from Tabelbula, southern Algeria (cf. R. Tarel, Gisements préhistoriques de l'oasis de Tabelbala. Rev. Anthrop., 24, 1924).

The Fauressmith industry, a more localized culture in the Orange Free State differs from the Stellenbosch in the more delicate character of the tools. *Coups de poing* are again typical, although small side scrapers and disc-like tools are found. The material here is indurated shale, and it is suggested that this is conducive to superior workmanship. Burkitt is inclined to regard this industry as later than the Stellenbosch and indicative of a "strong, middle Paleolithic influence." The occurrence of resolved flaking and prepared striking platforms on certain pointed flakes confirms him in this view, but no stratigraphical evidence is in the meantime available.

Evidence of increasing skill within the Stellenbosch culture appears to be indicated by the stratified station at Montague Cave (C. P. Ashton), where Goodwin has found several successive industries of this culture separated by sterile layers. "It has been definitely proved at this site that the pear-shaped *coups de poing* . . . . are older than the flatter and more oval forms which never appear on the lower layers. . . . . My own belief is that the situation is really analogous to that in Europe, namely that there existed an earlier lower Paleolithic, i.e., Chellean stock, the pre-Chellean stage being perhaps absent, and that later Acheulean developments were introduced or developed *in situ* on parallel lines with the really astounding result that exactly similar industries occur in both regions. As a matter of fact most of the Lower Paleolithic implements found in South Africa would, in Europe, be classed as Acheulean" (p. 74).

No pure Middle Paleolithic stations have so far been discovered in South Africa, but implements which in Europe would be called Mousterian, including roughly made "Levallois flakes," have been reported from several sites. They are best represented at Glengrey Falls near Queenstown. Burkitt remarks that "it is quite possible

that the Middle Paleolithic culture survived long in North Africa and only penetrated into South Africa at a comparatively recent date."

An important station yielding implements similar to certain Upper Paleolithic forms in Europe, including gravers of various types, occurs at Howieson's Poort. This industry "can be matched tool by tool from the industries at Elemanteeta in Kenya. Similar *burins*, too, are of common occurrence in the Capsian industries of North Africa." In the "Still Bay" culture of the southern coasts Mr. Burkitt again sees the influence of "Neoanthropic" man in a presumably Upper Paleolithic stage on the preceding culture of South Africa. The most distinctive tool is a sort of laurel leaf blade, often worked to great thinness with pressure flaking. Colonel Hardy has collected a series of tools, which suggest the development of this form from a "Mousterian" point and Leakey has claimed a similar evolution in Kenya. Burkitt accepts these typologies and tends therefore to consider "that these pressure flaked lance heads, which have such a wide distribution" are not type fossils of the Solutrean culture . . . . but an indication of contact between Middle Paleolithic and Upper Paleolithic." Such typological evolutions are dangerously enticing, but in the absence of stratigraphic data must remain uncertain, and Burkitt admits that "why such contact should produce these lance heads, it is perhaps not easy to say." Since the Still Bay culture is restricted to the south coasts his tentative suggestion is that "the Neoanthropic culture which gave rise to the Howieson's Poort industry played a not inconsiderable part in the evolution of the Still Bay culture . . . . and that the Still Bay culture was a derivative of . . . . a hybridisation of Neoanthropic and Lower Paleolithic elements, which had already been subjected to Middle Paleolithic influences" (p. 87). It is, however, difficult to explain the complete absence of pure Upper Paleolithic industries unless the hybridisation suggested had occurred further north and previous to the arrival of these cultures in the South African area.

The later cultures of the area, although still relying mainly on chipped stone tools, are completely dissociated from the paleolithic cultures, the forms are distinct, and generally microlithic. A limited use of stone polishing occurs; incised pottery sherds and disc beads of ostrich shell confirm the later date. These cultures are related to the surviving Bushman cultures on the one hand, and to the famous South African rock paintings on the other.

The Wilton culture of the southern Cape province undoubtedly arrived from the north. Its sites extend through Uganda (the Magozi culture), Kenya, and Rhodesia. In southern Rhodesia it is unequivocally associated with the later rock shelter paintings. The characteristic chipped implements are delicately chipped lunates, made in southern Rhodesia, at Gokomere near Fort Victoria, almost entirely of clear quartz. Bone tools, chiefly awls, are found and the material is usually unfossilized, i.e., the organic matter has not been entirely leached out. The lateness of this culture is confirmed stratigraphically at Montague Cave where Wilton tools overlie deposits containing *coups de poing*.

The Smithfield culture is at present restricted largely to the western Orange Free State and appears on the known distribution to force a wedge into the territory of the Wilton culture, with which it was probably contemporaneous. Smithfield tools are larger and coarser than Wilton; concavo-convex side scrapers, duck bill end scrapers, and flaked points are the typical stone tools. In the earliest stage this culture was, so far as is at present known, largely concentrated in the Reit valley. Burkitt considers that its absence in southern Rhodesia suggests an autochthonous growth in the Reit valley itself. But the mural art associated with Smithfield culture does occur in Rhodesia, and he admits that the typical concavo-convex scrapers "are formed by a very specialized technique, and yet the only other area where such objects are commonly found is in the Nile valley, and in the Fayum where they occur in predynastic industries. . . . . It is quite possible to maintain the theory that a [subsequent] migration from the north . . . . introduced a culture which interacted with that of the Paleolithic Fauressmith folk still living in what is now the western part of the Orange Free State and the adjacent district of the Cape province, the resulting hybrid industry being partly determined by the fact that indurated shale was the material close at hand for tool making" (p. 98). Despite the differences it is not impossible that the Wilton culture was responsible, for Wilton crescents do occasionally occur in the Lower Smithfield. The Upper Smithfield culture shows finer workmanship and is undoubtedly very recent. Trade beads of European origin and tools of bottle glass are fairly well authenticated, while typical Smithfield duck bills (end scrapers) were being manufactured by "Bush" folk in recent times. The kitchen midden industries along the coast represent not so much a distinct culture as the modification by a "strand-looping"

existence of the life of various groups who have moved down to the shore. The foundation of the culture is nearly always Wilton, but it cannot be assumed that the "strandloopers" were, without exception, Wilton folk.

Paradoxically, the mural art of South Africa affords more abundant stratigraphical information than do the settlements, for many rock surfaces were used over a long period and the superposition of paintings and gravings in various styles and colors is consistent over wide areas. The collation of this material has resulted in the establishment of definite sequences. In southern Rhodesia three major stages are clear: (1) flat or outline drawings of animals in a simple naturalistic style in red, yellow, and brown successively, (2) the dark claret series in a distinct and more angular style, and (3) the clumsier earthy yellow, white polychrome series of more recent date. In the Orange Free State the rock paintings begin with the dark claret series, which here appears more developed and modern than in the north. Many of the later polychrome series are of great beauty in this area, and elaborate scenes occur. The distribution of the paintings of this "Central Art Group" coincide with that of the Smithfield culture, and it is with industries of this period that they are always found associated. The rock engravings of animals which are found over approximately the same territory are also apparently the work of Smithfield men, and among these a stratigraphical series has also been obtained.

The paintings of the Southern Art Group, i.e., in the coastal belt, are on the other hand invariably associated with the Wilton culture. The paintings are quite distinct in style and far inferior to the Central Group. They are poorly drawn representations of animals, men, and human hands in a uniform bright red color.

This art may be expected to throw considerable light on the prehistoric fauna of the area; the buffalo and elephant appear in the early and middle Rhodesian series and in the "claret" paintings of the Central Group. The close relations of some South African paintings with Mediterranean forms has long attracted attention. Burkitt does not deal with this problem in detail, but referring presumably to the earlier southern Rhodesian group, claims that "there are paintings occurring as far north as eastern Spain, which are exactly similar in style to those found at definite periods widely distributed in certain areas of South Africa." There is an indication of associated ceremonialism at the Dombashawa site in southern Rhodesia, where "one

scene [of the Claret series] represents a human being pouring out rain, depicted by a number of dashes, over what must be meant to represent a tree. A tradition exists among the local Bantu natives today which connects this cave with the production of rain" and until recently offerings were brought for this purpose. Burkitt considers that "during its earlier phases the art was definitely connected with spots where ritual acts took place, although in some cases we find examples dating from the earliest times in sites which were undoubtedly homes. . . . . Later on, especially southward in the Union, it is quite likely that the older significance was somewhat lost." Investigation of scarcely known groups, such as the paintings of the northeast Transvaal and Uganda, is urgently necessary for the furtherance of all these problems.

It is clear then, as Burkitt concludes, that the story of South Africa is "a series of migrations from the north drifting slowly into the country one after another and, having arrived, intermixing with each other and sometimes forming new local developments, the whole process continuing until quite recent times." Mr. Burkitt has successfully indicated the wide significance of the problems of South African prehistory and the considerable results already achieved. His book should at the same time greatly stimulate the interest of South Africans in the early occupation of their continent, for the exposition is extremely lucid and the several cultures are admirably illustrated by Mrs. Burkitt.

C. DARYLL FORDE

ASIA

The Yukaghir and the Yukaghirized Tungus. WALDEMAR JOCHELSON. (Mem. Amer. Mus. Nat. Hist., 13=11: 135–342, of the Jesup North Pacific Expedition, Leiden, 1924.)

This part of Dr. Jochelson's monograph is devoted to Religion and Folk-Lore. The tales are supplementary to material published in Russian, and a good many of the samples presented are given in the original with both an interlinear and a free translation. A Yukaghir-English vocabulary is appended.

Needless to say, Dr. Jochelson's paper forms a substantial contribution to our knowledge of Siberian ethnography, especially as he constantly calls attention to differences from, or resemblances

with, the Tungus and Yakut. His general remarks on primitive religion in the introductory chapter are remarkably sane. He does not draw a sharp line between magic and religion and very properly points out that what are often described as distinct stages are only "coexistent elements which we find in the religions of even the most primitive peoples." (P. 137.)

The Supreme Deity of the Yukaghir is a vague being who neither has prayers addressed to him nor receives any sacrifices (p. 235). The Sun is a beneficent being who actively guards morality, punishing bloodshed and incest. Of the beings controlling nature, three stand out conspicuously—the Owners of the Earth, of the Fresh Waters, and the Ocean. Animals were believed to have individual protectors, as well as general protectors of the species. Shamans are assisted mainly by the souls of animals and birds. While the notions of the soul are inconsistent, some characteristic ideas appear. For example, the unborn child is supposed to be entered by the soul of an ancestor; and a head-soul is distinguished from that of the heart and a third pervading the entire body. On death, the first-mentioned leaves for the Kingdom of Shadows. There is no cult of the dead; if anything, the spirits of the deceased are hostile to living members of the family (pp. 140–161).

Death is due to the intrusion of a spirit which destroys the inner organs and frightens away the head-soul (p. 221). The shaman accordingly descends to the Kingdom of Shadows where the head-souls dwell (p. 157) or extracts the intruder (p. 203).

According to the author, the shaman anciently represented his clan. After his death, his flesh was separated from the bones, dried, and divided among the surviving kinsmen, as were the bones. The skull, with a piece of wood and a face mask, was made into an idol, which became an object of worship (p. 163). At present, shamans are professional doctors without distinctive kin affiliations. His dress has been altered through Tungus influence. The coat represents a bird skin by means of which the shaman can fly (p. 169). The garments have a tendency to resemble the dress of women (p. 174). However, there were no women shamans (p. 193). "Every shaman has his favorite spirit-girls" (p. 197). Dr. Jochelson gives several accounts of shamanistic performances, one of them conducted by a Tungus of definitely neurotic type.

Athanasy used to call forth his spirits with such wild onomatopoetic screams, whistling, grinding of teeth, and terrible facial contortions that the Yukaghir

would be terrified. In general, his performance was like an attack of madness or delirium tremens (p. 199).

I had not observed among any other Siberian peoples a shamanistic performance quite so furious and stormy. Indescribable screams, cramps all over the body, jumps, big and small, kept on for two or three hours. I, as a spectator, was so exhausted, and my nerves were so unstrung, that I could not do any more work that evening (p. 200).

Several details on other topics merit attention. As among some American tribes, the women go after the carcass of game killed by their husbands (p. 147). The corpse is not taken out by the entrance, but by raising the edge of the tent cover where the deceased lies (p. 232). Riddles occur, eight of them being given in text (p. 314).

All students of ethnography will feel profound gratitude for having Dr. Jochelson's valuable researches made accessible to them.

ROBERT H. LOWIE

PHYSICAL ANTHROPOLOGY

The Racial Elements of European History. HANS F. K. GÜNTHER. (New York: E. P. Dutton and Company. 279 pp.)

Rassenkunde des deutschen Volkes. HANS F. K. GÜNTHER. Twelfth edition. (Munich: J. F. Lehmanns.)

The author of these works is undoubtedly a man of considerable erudition and of great industry. Unfortunately he seems to be a Nordomaniac. To those of us who attempt to maintain the proper scientific attitude of impartiality in racial studies it is a matter of considerable regret that discredit has been brought upon physical anthropology by writers who allow themselves to be carried away by class and race prejudice. It is a real tragedy that a man of Günther's ability should allow his work to be vitiated by his ever present bias.

The reviewer cherishes no ideal of racial equality. He considers it wholly possible that there may be psychological correlates of the physical combinations whereby races are distinguished. He would welcome any scientific demonstration of a relationship between the objective physical criteria of race and psychological states or mental abilities. Up to the present time not one scrap of scientific evidence has been presented to indicate the intellectual superiority of the Nordic race over the Alpine race or over the Ainu race or over any other race. If we accept the very dubious intelligence tests at their face value (and these are the only means of mental measurement at

present available) we find that there is only one group of people who are demonstrably superior to most others in intelligence, namely, the Jews. But the Jews are not racially homogeneous and are not predominantly Nordic. The reviewer, though of purely British descent, cannot watch Jewish young men year after year carrying off the majority of the scholastic honors and not a few of the athletic honors in a great university, without the conviction that Nordic superiority is a dismal farce.

Günther's books are full of portraits of obscure and famous persons, each labeled according to his supposed racial affinities. Picking out racial types from portraits is an amusing game, if one does not take it too seriously. Some of Günther's identifications are more than amusing; they are laughable. The cut of Ludendorff (*Rassenkunde des deutschen Volkes*, 74) is labeled "vorwiegend nordisch." The distinguished Prussian appears to be brachycephalic from this portrait. The reviewer fails to find President Hindenburg in the Nordic Valhalla, but that Corsican Viking, Napoleon I, is there.

These books contain a great deal of interesting and valuable discussion of racial data. This is particularly true of the *Rassenkunde*, which can be recommended to critical anthropologists. The other book will undoubtedly receive a favorable reception among members of the Ku Klux Klan and of the "Nordic Guard."

The reviewer yields to no one in his admiration of modern German research in physical anthropology. No country is turning out more high-grade work in the subject. The debt of physical anthropology to Rudolf Martin is unpayable, and there are many distinguished successors to that lamented scholar in Germany. One therefore regrets the more that the anthropological science of Germany should be represented in English translation by a propagandist.

E. A. HOOTON

Hair; with special reference to hypertrichosis. C. H. DANFORTH. (American Medical Association, Chicago, 1925. 152 pp.)

Professor Danforth's short study of *Hair* is a most useful book for students of physical anthropology. He begins with a critical survey of theories of the origin of hair and its homologies. He concludes that as yet the phylogeny of hair is uncertain. He then deals in a very satisfactory chapter with the classification of hair. The

characteristics of human hair, its distribution, and regional differences are discussed. Dr. Danforth is very skeptical of the supposed adaptive changes in hair slope claimed by Kidd and others. His conservatism on this subject seems to be well justified. Pigmentation of the human hair receives a rather inadequate treatment.

A good deal of original research is embodied in the chapters dealing with the factors which affect the growth of hair. Cutting or shaving the hair has no effect whatsoever upon its growth. The effect of actinic rays upon the follicle is, as yet, imperfectly known. There is also no evidence that nutritional deficiency affects the hair differentially. There are great difficulties in the way of arriving at any useful knowledge of the relation between endocrine secretions and hair growth.

The book concludes with an interesting discussion of hypertrichosis and other aberrant forms of hair growth. Professor Danforth's work is particularly valuable because of the clarity with which he summarizes the present state of knowledge of his subject and because of the impartiality which he employs in exposing the weaknesses of many theories about hair which have received too facile acceptance. He does not cover up lacunae; he demonstrates with a certain ruthlessness that, on the whole, very little is known about hair. He also indicates with precision the lines along which profitable research may be conducted.

E. A. HOOTON

The Cephalic Index and its Heredity. G. P. FRETS. (The Hague: Martinus Nijhoof, 1926. 95 pp.)

Dr. Frets has published raw material for the study of head length, head breadth, and the cephalic index, for which every anthropologist should be grateful. His mass of family data provides working material for every student of the subject. In the present monograph Dr. Frets attempts to demonstrate that separate and independent sets of factors control the inheritance of head form and head size. The factors for head form show dominance, but for those of head size the heterozygotes are probably intermediate. Both dominance and recessiveness of brachycephaly occur. Two schemes of Mendelian inheritance are offered. The first assumes nineteen "non-identical pairs of factors" for head form. According to this scheme brachycephaly is dominant with large heads and dolichocephaly with small heads. The dominance of brachycephaly is stronger in the

female and dolichocephaly in the male. The second scheme postulates three allelomorphic pairs. According to it, macrobrachycephaly is dominant over microdolichocephaly and macrodolichocephaly is dominant over microbrachycephaly.

In spite of the enormous amount of painstaking labor which has been expended upon this research, the results, in the opinion of the reviewer, are not convincing. It is hardly possible to draw satisfactory conclusions upon the length and breadth of the head without considering also the height.

E. A. HOOTON

Au Pays des Ainou. GEORGE MONTANDON. (Paris: Masson & Cie. 240 pp., 40 pls.)

This is the first of two volumes devoted to the anthropology of northeastern Asia, resulting from the employment of enforced leisure, while the author was in eastern Siberia on a political mission. The present work deals with physical anthropology. The volume to come will treat of ethnography.

The first part of the monograph is devoted to craniology. The author compares his measurements and observations upon the crania of a number of Paleasiatic peoples with the results of previous investigators. The analysis is carried out in great detail and the comparative data are gathered into useful tables. Unfortunately the number of crania available to Dr. Montandon for study is in every instance so small that he is forced to draw his conclusions rather from the assembled means of comparative data than from his own series. In western Siberia Dr. Montandon recognizes a Paleosiberian type which is dolichocephalic and a Neosiberian which is brachycephalic and Mongoloid. In the eastern part of the area the Paleo siberian stocks are the Eskimo, the Ainu, and the Giliak-Aleut, whereas groups of different origins are the Tungus, the American Indian, and the Negroid.

The pure Ainu type of skull is dolichocephalic, with a low and receding frontal region, well-developed supraorbital ridges, short face, low orbits. It is not a Mongoloid type but rather resembles the crania of long-headed whites of primitive type. Other Ainu crania show the results of Mongoloid admixture.

The second portion of the volume deals with the anthropometry of living Ainu, Japanese, and Buriats. The series measured by the author includes 110 Ainu, 64 Japanese, and 28 Buriats, almost evenly

divided as to sex. The data are presented in detail and adequately discussed. On the basis of Montandon's material the average Ainu has skin of a swarthy white color, abundant body hair, wavy black head-hair, brown eyes (often light brown or greenish in males), small stature (1.58 m. in males), thickset frame, stature span index of 103, moderate dolichocephaly (76), thick eyebrows under heavy supra-orbital ridges, no Mongoloid fold; mesorrhiny on the average (but all possibilities of the nasal index are realized), concave nose, absence of prognathism, and a generally European aspect.

The investigator recognizes occasional manifestations of a southern strain in the Ainu, but refuses to identify it as Negroid, Australoid, or what not. He considers the Ainu a remnant of the ancestral white Eurasiatic stock which in Europe diversified into several races but in Asia has become virtually extinct. The women of the Ainu have many more Mongoloid features than the men, a fact which, in the opinion of the author, may indicate a tendency on the part of the Proto-Ainu to outmarry.

Montandon has done a sound piece of work, which is worthy of commendation. It is a pity that his craniometric material is so meager, but he has done well to present it with all available data of other writers as a safeguard against the inadequacy of his own series. Many anthropologists will regret that the author, in accordance with French custom, has omitted the calculation of standard deviations and other statistical constants now generally used by physical anthropologists. Fortunately, however, the raw measurements of individuals are published so that any writer who needs this material can rework it according to his own methods.

The plates illustrating the physical types found among the Ainu are excellent.

E. A. HOOTON

The Ancient Inhabitants of the Canary Islands. EARNEST A. HOOTON. (Cambridge, Mass.: Peabody Mus. of Harv. Univ., Harv. African Stud., v. 7, xxv+401 pp.; 39 pls., 38 text figs., 1925. Bound, $16.00.)

All that is known of the ancient Canarians, racially, culturally, and linguistically, is marshalled and analyzed in this work. Naturally Dr. Hooton's chief concern is with the racial material, but the available archaeological and documentary evidence is thoroughly digested

and admirably presented. Aside from its descriptive material the importance of the work rests on a new method of racial analysis.

It is somewhat of a shock to discover that the Norman conquerors of the Canaries in 1402 found its people possessed of a culture of Neolithic grade. Not only were metals wholly unknown, but many other arts distinctive of post-Neolithic time, the wheel and draft-animals, writing, etc. Yet one might have expected later cultures to impinge on their shores, so close do they lie to the Mediterranean.

Cultivators of barley and perhaps wheat, grinding in hand-mills, possessed of goats, sheep, pigs, and dogs, fabricators of baskets and mats, potters of a sort, armed with lance, club, and sling, for dwellings, caves, and dry-masonry huts, their culture presents a distinctly Neolithic aspect. The social order so far as it is known, presents nothing more complex than that we ordinarily associate with such a rudimentary material existence. A multiplicity of tribelets were presided over by an hereditary nobility, whose mode of life was not materially different from that of the plebeians. Marriage was normally monogamous, with a variety of plural forms permissible. Wife-lending and *jus primae noctis* are recorded. We cannot expect to find their religious life fairly represented in the early accounts, but had they possessed a rich ceremonialism it would surely have been noted.

Cultural differences set off the islands: Dr. Hooton has wisely kept the accounts of them distinct. Gran Canaria, Tenerife, and Fuerteventura led in cultural richness; those farthest from the mainland, as might have been expected, were in contrast deficient, Gomera, Hierro, and La Palma. Those elements common to all the islands are viewed as the archaic culture of the earliest inhabitants, those less widely distributed as the contribution of succeeding immigrant groups (pp. 13, 295). It seems to me that this segregation of culture strata is dictated by a desire to establish correlations of culture with the several physical types. The alternative of diffusion of individual culture elements must not be waved aside.

Whatever deficiencies are to be found in this account lie wholly in the inadequacies of the early chronicles and the paucity of archaeological remains. Dr. Hooton has made the most of his materials. His interpretations of the fragmentary and often conflicting data impress me as wise. For instance, none of the early accounts mention boats, which Dr. Hooton supposes must have been used. The island life is unthinkable without them, and the extensive cultural similarity

presupposes their existence. Yet this may be another case of the Torres islanders.

On the other hand, I am doubtful of certain social interpretations. Guanche tradition describes a separate creation of nobles and peasantry; to the first were given flocks, to the others none.

> This passage implies a flock-owning aristocracy and a racially distinct peasantry. . . . . Espinosa and Galindo agree that some of the inhabitants of the island were fair and others dark and it is extremely probable that social lines followed this racial division, although it is cited by Espinosa as a topographical distinction between the people of the north and those of the south. It seems probable too that the flock-owning aristocracy was the blond element and the peasantry was gathered from the small brunet and more brachycephalic element, from the fact that the blonds were said to be on the northern side of the island, which includes Laguna and the Vale of Orotava and all the more pleasant and fertile areas of the island. Furthermore one cannot help being influenced by the fact that the tall, blond, pastoral people have invariably established themselves as military overlords of the people with whom they have come in contact throughout the Old and New Worlds (p. 20).

This is piling up suppositions with a vengeance to serve a pro-Nordic thesis which will appear in the sequel.

Again, inheritance of kingship in Tenerife was fraternal with succession passing to the eldest son of the first heir and so on.

> There is evidence here of a transitional stage between the inheritance of the kingship through the maternal line and its replacement by paternal descent (p. 21).

Clear evidence to support this is not forthcoming. Dr. Hooton cites the marriage of the king of Gran Canaria with his first cousin alone or with his brother's widow, and the marriage of a youth with the king's daughter in order to succeed his father-in-law (p. 49). In Gomera the sister's sons were heirs (p. 61). Why not take the data on their face without assuming the now generally discredited theory of matrilineal priority? Fraternal inheritance is not linked of necessity with matrilineal descent; it is quite as compatible with paternal, or with no unilinear reckoning. This is equally true of cousin marriage and the levirate, and even the avunculate, which on its face looks like excellent evidence of matrilineal descent, occurs among patrilineal and sibless tribes (Omaho, Fijians, etc.). Just why wife-lending is a "natural" concomitant of matrilineal descent in Gomera (p. 61) is not clear.

There is also evidence of considerable physical variation in the islands. Beside the local variations in pigment mentioned above,

it is noted that shorter statures prevailed in the western islands, especially Gomera, the tallest groups being those of Fuertaventura and Lanzarote (p. 84). The blond element represents the westernmost extensions of blonds in North Africa which is known to have been present prior to the Vandal invasion (p. 78). These valuable clues to racial composition could not, of course, be followed by Dr. Hooton, who was largely confined to crania for his study.

Inter-insular differences are brought out by a consideration of cranial measurements and of observations on morphological features. These give differing results. Thus, balancing all general morphological resemblances, it can be said that the crania of Gomera are most like those of Tenerife, Gran Canaria stands somewhat apart, while Hierro shows considerably greater divergence (p. 152). On the other hand, the means of cranial measurements show Tenerife most divergent from Gomera, but decidedly like Gran Canaria; Hierro is like the latter; and Gomera like Hierro (p. 122). Dr. Hooton thinks the two sets of results are best harmonized if they are held only to show that Tenerife, Gomera, and Gran Canaria differ among themselves to about the same extent, with Hierro remote with respect to all three. (Hierro is the most southwesterly island of the group.) The difficulty seems to be that the presence of mixed types is obscured by averaging methods.

The question thus arises how the several types are best discriminated in a mixed population. Dr. Hooton has propounded his method in brief elsewhere.[1] It rests on the tenet that in a relatively unmixed group the modal type will approximate the means of the several characters taken individually; where this is not the case the group is racially composite. The steps in his procedure are as follows:

(1) The metrical and morphological features of each individual are first noted.

(2) The means are compared with all available groups of known composition (where many means are similar, the groups are racially alike).

(3) The several types in the group in hand are discriminated according to the judgment of the observer.

(4) The means of these types are then compared with the means of the whole group (if many means of a type are distinct, its validity is established).

(5) These established types are then compared with "the most authentic and least mixed series of crania."

(6) The remaining mixed types may be analyzed to see what elements are comprised in them.

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[1] Methods of Racial Analysis. Science, n. s., 63: 75–81, 1926.

It seems to me that there are several weak points in this procedure. The discrimination of the several types rests on subjective impressions whose validity is to be tested statistically. I venture that various anthropologists might choose differing types in the same population, every one of which differs significantly (statistically speaking) from the group norm. Their number is perhaps limited only by the number of significant points morphologists look for. A second weakness lies in the selection of "pure" racial types for comparison. Their discrimination involves the assumption that homogeneity is an index of purity (What of the now classic case of the Bastards?); or that isolation means purity; or they are arbitrarily asserted to be representative of types historically primary according to some scheme of racial development. I can see no way around these difficulties. But they appear to me to involve a minimum of assumption at the hand of a competent morphologist. A third and more fundamental issue is the question whether two groups with essentially the same physical characters are necessarily genetically identical.

This analysis of the ancient Canarians is, I think, the first attempt by Dr. Hooton to carry out his program in full.

A comparison of the Guanche with various European and North African series shows considerable resemblance to Nordics in general, but in particular the homologies with twelfth century Londoners are many and close. Such a resemblance might be due either to identical racial elements combined in exactly the same proportion or a combination of diverse racial elements in proportions to give the same means. Dr. Hooton is convinced that the similarities are not fortuitous and are attributable to racial rather than environmental factors (p. 192).

A series of types were next differentiated among the Canarians on general morphological grounds, in which facial features received heavy weighting: Guanche, Nordic, Mediterranean, and a residuum. When these groups of skulls were rated according to their departures from the average of the whole series, there appeared appreciable differences between the averages of the ratings of the several groups. There was also considerable association between the groups and the indices of the facial skeleton. The means of the indices of the groups also showed significant differences (p. 237). Dr. Hooton interprets these results as validating his segregation of the types, that is, these cannot be construed only as random samples of the total series (pp. 224, 232).

To determine their racial derivation these types were then compared with series of relatively simple racial derivation, pure or at least relatively so. Such comparisons show that the Canarian "Nordics" resemble more closely the ancient Grave-row dolichocephals of northwestern Germany and the Spanish Basques than any other Nordic or mixed Nordic group.

> Under these circumstances I feel assured in concluding that our "Nordic" subgroup is actually predominantly Nordic in racial type with some admixture of other elements (p. 243).

Similarly the "Mediterranean" subgroup is quite close to modern Spanish crania (p. 246). A selection of all brachycephalic skulls shows that they are not a homogeneous group and therefore not so validly established as a component type as the subgroups just mentioned (p. 248). While measurements and indices show this group like the Kalmuk, on morphological points the resemblance ceases.

Dr. Hooton feels that it is not sufficient to distinguish the various racial strains, but it is in order to show the proportionate inheritance of the pure types necessary to produce the resulting mixture observed (p. 268 f.). The scheme of inheritance for Tenerife may be generally stated as follows (p. 273): the numerically dominant element consisted of large dolichocephals, the second of small dolichocephals. The latter were joined by a very small brachycephalic element. The fusion of these two small elements gradually produced an increasing number of small meso- and brachycephals at the expense of the small dolichocephals. These small-headed groups probably constituted the common people of Tenerife. (Why? Must the dominant group always be Nordics? It is not so written in the old records.) The large dolichocephals mixed with these very slowly, increasing the proportion of mesocephals including now large mesocephals.

A tentative reconstruction of the prehistory of the islands is projected on the basis of an attempted correlation of race, culture, and language. However plausible the history may be, Dr. Hooton has certainly gone astray in his correlation. If I interpret the correlation table (p. 297) correctly, Dr. Hooton wanted to show the proportion of each racial, cultural, and linguistic element in each island, with a view to showing how they correspond. Thus the most frequent culture group is Guanche, the most frequent racial type Guanche-Nordic, and the linguistic element non-Berber. It is then assumed that these three were historically associated, and each island is tested by comparison. This seems to me wholly inad-

missible. There is nothing whatever to show these associations actually existed. With respect to the history itself, differences in culture among the islands are uniformly interpreted as the result of migrations. This is unnecessary: the world is full of instances of diffusion without migration.

There are many valuable by-products tucked away in this huge volume. Among the most striking is Dr. Hooton's analysis of the Crô-Magnon race (pp. 192–207, 261 f.). Here he speaks categorically.

> The crania which have been attributed to this "race" are more heterogeneous and variable than any "pure" racial type possibly could be. The only consistency shown by this racial type is the large size of the crania, their short, broad faces, and their chamaeconch orbits. . . . . The present writer believes that the "Cro-Magnon race" is nothing but an arbitrary selection of the extra large specimens of a fairly common, hybrid cranial form. Short, broad faces associated with dolichocephalic skull vaults are common in the crania of many peoples (p. 202).

These particular hybrids are the result of independent inheritance of the dolichocephalic head of a medium-faced race (Galley Hill, Brünn, etc.) with the broad face of a brachycephalic group (e.g., Azilians of Ofnet, Neolithics of Grenelle). It may be of interest to note that Professor Boas has made precisely the same point with respect to the modern "Crô-Magnons" of the Dordogne in the course of his lectures. There is also a suggestive discussion of the origin of the Nordic, Alpine, and Dinaric races in as many hybrid groups (p. 304 f.).

LESLIE SPIER

MISCELLANEOUS

Animal Biology. J. B. S. HALDANE and JULIAN HUXLEY. (Oxford University Press, American Branch, New York City. $2.50.)

This is the latest of the Clarendon Science Series of "readers," in which the concept of energy is made the unifying principle while the evolutionary concept is developed as a second main idea in the biological volumes. The book is both decidedly readable and thoroughly scientific and is available therefore for the general reader as well as for use as correlated reading in any introductory course in the field. It is thoroughly up-to-date, including, in the chapter on "Physiology of Development," representative samples of recent significant experimental findings and, under Methods of Evolution, reference to the very recent and most significant use of X-radiations to increase muta-

tion rates in Drosophila. The sequences and articulations are particularly felicitous as brought out by the following selected chapter heads: "Development and Heredity," "Exchanges of Matter and Energy," "Transport in the Body" (under which are treated circulation, digestion, respiration, excretion, and the structures involved), "Organic Regulation," "The Internal Environment," "The Results of Evolution: The Animal Kingdom." As might have been predicted, the authors have made a contribution of distinct value to anyone aspiring to make an entry into the field of animal biology.

S. F. LIGHT

The History of Tattooing and Its Significance, with some account of other forms of corporal marking. W. D. HAMBLY. (New York: Macmillan Company, 1927.)

Mr. Hambly has devoted three hundred and fifty pages to a rambling discussion of two theoretical points: (1) that tattooing is magico-religious in origin; and (2) that the practice of puncture tattooing was diffused over the world at a fairly late date and probably from Egypt. The bulk of the discussion is devoted to the first hypothesis, illustrated uncritically with all varieties of proof. If tattooing be found at the present time associated with myths of its divine origin or inspiration, divine patrons of the craft, priestly practitioners, puberty rites, totemism, ideas of its value in the next world, marriage rites, birth rites, war ceremonials, fertility cults, use by shamans, taboos of any sort or rituals of any sort, then its magico-religious nature is said to be demonstrated in each special instance and for the practice as a whole. Mr. Hambly is so hospitable to any evidence from any area and supplements his illustrative material with such scanty knowledge of the cultural patterns of the cultures on which he draws, that the whole argument can be dismissed as worthless.

His second thesis, the late diffusion of tattooing from one center, probably Egypt, is supported by the too familiar map in which four large P's, applied at random, show the distribution of body painting on a continent, and a completely uncritical acceptance of some of the more fantastic attempts to establish a Polynesian chronology. The hypothesis which he advances is neither proved nor disproved by such comment. (The rough map is interesting, however, in revealing the very wide distribution of the practice of chin tattooing for women.)

The by-products of this compendious work are no more satisfactory. There is no discussion of variations in techniques, even within the kind of tattooing which he calls puncture tattooing. Such matters as the use of stamping devices, variations in pigments, the renewal of patterns which have been distorted by growth or dimmed by age, are hardly mentioned. There is no discussion of the localization of particular ideas associated with tattooing. In only two instances, tattoo marks as identification marks in the future life in India and Indonesia, and scarification marks as signs of membership in social groups in Africa, is the material arranged so that the reader can draw any conclusions. There is no adequate study of the distribution of designs or techniques. In the case of Polynesia, where Mr. Hambly does list the different islands, he neglects to mention the important historical point of the absence of tattooing among the Moriori and in Niue.

The bibliography is far from complete. Perhaps the most conspicuous lack is the absence of any reference to the two excellent monographs on Marquesan tattooing by Mrs. Handy (Bull. B. P. Bishop Mus., vol. 1, 1923) and Von den Steinen (Die Marquesaner und ihre Kunst, vol. 1, Berlin, 1925). Conspicuous by their absence are also the painstaking summaries of tattooing in different Polynesian islands by Ling Roth in the publications of the Royal Anthropological Institute (Journal, 4: 24; 35: 283; Man, 1906, no. 4; I.A.E., 13: 198).

The discussion of art ignores the problems inherent in body decoration and the degree to which tattooing has developed or kept a style which is distinct from the local art styles, and consists instead of a series of remarks about "geometric schools" and "naturalistic schools," the illustrations culled from widely separated areas. The main service of the book rests upon the assemblage of a large body of illustrative material about the number of diverse social and religious concepts which may become associated with such an old and widely distributed practice as tattooing and its relatives, body painting and scarification.

MARGARET MEAD

SOME NEW PUBLICATIONS

Aparicio, Francisco de. Notas para el estudio de la Arqueologia del Sur de Entre Ríos. (Anales de la Facultad de Ciencias de la Educacion, 3: 1–63, 1928.)

Aparicio, Francisco de. Los aborígenes del Tucumán. (Revista Histórica, Tomo 8: 61–85, 1925.)

Ballard, Arthur C. Some Tales of the Southern Puget Sound Salish. (Univ. Wash. Publ. Anthr., 2: 57–81, 1927.)

Boas, Franz. Materials for the Study of Inheritance in Man. (New York: Columbia Univ. Press, 1928.)

Boas, Franz. Pliny Earle Goddard. (Science, n. s., 68: 149–150, 1928.)

Burkitt, M. C. South Africa's Past in Stone and Paint. (Cambridge: The Univ. Press, 1928. 183 pp.)

Bushnell, David I. Drawings by Jacques Lemoyne de Morgues of Saturioua, A Timucua Chief in Florida, 1564. (Smith. Misc. Coll., 81: 1–9, 1928. ills.)

Byhan, Arthur. Überlebsel bei den Sarden. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 253–265, 1928.)

Capitan, L. La Madeleine. (Publications de L'Institut International d'Anthropologie, 2: 2–125, 1928. 19 pls.)

Cleland, Herdman Fitzgerald. Our Prehistoric Ancestors. (New York: Coward-McCann, Inc., 1928. 379 pp. $5.00.)

Coedes, George. Les collections archeologiques du Musée National de Bangkok. (Paris: G. Van Oest, 1928. 36 pp., 40 ills. 200 francs.)

Danzel, Theodor Wilhelm. Probleme der afrikanischen Ethnographie im Lichte völkerpsychologischer Fragestellung. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 41–74, 1928.)

Dawson, Warren R. Mummification in Australia and in America. (Journ. Roy. Anthr. Inst., 58: 115–138, 1928.)

Densmore, Frances. Some Results of the Study of American Indian Music. (Praktika de l'Académie d'Athènes, 3: 347–360, 1928.)

Garrod, D. A. E., Buxton, L. H. D., Elliot Smith, G., *and* Bate, D. M. A. Excavation of a Mousterian Rock-Shelter at Devil's Tower, Gibraltar. (Journ. Roy. Anthr. Inst., 58: 33–114, 1928.)

Giffen, J. Van. Les Pays-Bas considérés comme région intermédiaire entre les phénomènes culturaux néolithiques et énéolithiques du nord-ouest et du centre de l'Europe. (Revue anthropologique, 39: 227–238, 1928.)

Gladwin, Harold S. Excavations at Casa Grande, Arizona. (Los Angeles: Southwest Mus. Paps., 2: 1–30, 1928. Ills.)

Groves, Ernest Rutherford *and* Ogburn, William Fielding. American Marriage and Family Relationships. (New York: Henry Holt & Co., 1928.)

Gunther, Erna. A Further Analysis of the First Salmon Ceremony. (Univ. Wash. Publ. Anthr., 2: 129–173, 1928.)

Gupta, Tamonashchandra Das. Aspects of Bengali Society. (Journ. Dept. Letters [Univ. Calcutta, 1928], 17: 135–179, 1928.)

Hagen, Karl. Eine japanische Erdkarte mit Völkertypen aus der ersten Hälfte des 17. Jahrhunderts. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 143–157, 1928.)

Hall, H. R. Babylonian and Assyrian Sculpture in the British Museum. (Paris: Les Editions G. Van Oest, 55 pp., 60 pls., 1928. $15.00.)

Hambruch, Paul. Probleme einer Bio-Ethnologie. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 111–142, 1928.)

Hammond, George P. and Rey, Agapito (translated and edited by). Obregón's History of 16th Century Explorations in Western America. (Los Angeles: Wetzel Publishing Co., 1928. $10.00.)

Hankins, Frank Hamilton. An Introduction to the Study of Society. (New York: The Macmillan Company, 1928. 760 pp.)

Jedlicka, J. Johannes Jessenius de Magna Jessen. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 3–10, 1928.)

Jochelson, Waldemar. Archaeological Investigations in Kamchatka. (Carnegie Inst. Wash., Publ. 388, 1928. 88 pp., 19 pls.)

Layard, J. W. Degree-taking Rites in South West Bay, Malekula. (Journ. Roy. Anthr. Inst., 58: 139–224, 1928.)

Legrain, L. Old Sumerian Art. (The Museum Journal, 19: 221–247, 1928.)

Lehmann-Nitsche, R. Coricancha. El Templo del Sol en el Cuzco y las Imagenes de su Altar Mayor. (Revista del Museo de La Plata, 31: 1–260, 1928.)

Lévy-Bruhl, Lucien. The "Soul" of the Primitive. (New York: Macmillan & Co., 1928.)

Li, Chi. The Formation of the Chinese People. (Cambridge: Harvard Univ. Press, 1928. 285 pp. $5.00.)

Lindblom, K. G. The Use of the Hammock in Africa. (Riksmuseets, N:r 7, 1928. Stockholm.)

Lindblom, K. G. Further Notes on the Use of Stilts. (Riksmuseets, 6, Stockholm, 1928.)

Lindblom, Gerhard. Kamba Tales of Animals. (Archives d'Etudes Orientales, 20: 1–110, 1928.)

Loth, E. Sur la necessité d'un systeme pour l'anthropologie des nerfs peripheriques. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 18–22, 1928.)

Maly, J. Jean Evariste Purkyne anthropologue. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 11–17, 1928.)

Martin, Rudolf. Lehrbuch der Anthropologie in systematischer Darstellung. (Jena: Gustav Fischer, 1928. 3 vols. 266 ills.)

Mason, J. Alden. Some Unusual Spearthrowers of Ancient America. (The Museum Journal, 19: 290–323, 1928.)

Matiegka, J. La trepanation et autres operations sur la tête a l'epoque prehistorique sur le territoire de la Tchecoslovaquie. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 41–55, 1928.)

Matsumura, Akira and Miyauchi, Etsuzo. Further Notes on Anthropometric Measurements of the Aborigines of Formosa. (Proc. Imperial Acad., 4: 408–409, 1928.)

Mead, Margaret. Coming of Age in Samoa. (William Morrow Co., $3.)

Michelson, Truman. Notes on the Buffalo-Head Dance of the Thunder Gens of the Fox Indians. Bur. Amer. Ethn., Bull, 87: 1–94, 1928.)

Montandon, George. L'Ologenèse Humaine. (Paris: Librairie Félix Alcan, 1928. 478 pp., 21 figs., ills.)

Nordenskiöld, Erland. Indianerna pa Panamanaset. (Ymer, Tidskrift utgiven av Svenska Sallskapet for Antropologi och Geografi, Arg. 1928, H. 1 och 2. Pp. 86–110.)

Parvan, Vasile. Dacia. An Outline of the Early Civilizations of the Carpatho-Danubian Countries. (Cambridge: The Univ. Press, 1928. 214 pp.)

Peake, Harold J. E. Presidential Address. The Introduction of Civilization into Britain. (Journ. Roy. Anthr. Inst., 58: 19–32, 1928.)

Peake, Harold *and* Fleure, Herbert John. The Corridors of Time. New York: National Book Buyers' Service, 1928. 4 vols. 650 pp. 300 ills. $2.00 each vol.)

Plehn, Albert. Rassenpathologische Methoden. (Berlin: Urban & Schwarzenberg, 1928. 7 pp.)

Poisson, G. Les civilisations néolithiques et énéolithiques de la France. (Revue anthropologique, 39: 239–256, 1928.)

Preuss, K. Th. Monumentale vorgeschichtliche Kunstausgrabungen im Quellgebiet des Magdalena. (Göttingen: Vandenhoeck & Ruprecht. 465 ills., 1929.) [Preliminary announcement with invitation to subscribe has been received.]

Reichard, Gladys A. Social Life of the Navajo Indians. (Columbia Univ. Press [Columbia Univ. Contr. Anthr., 7: 1–162], 1928.)

Renaud, E.-B. Les origines de la céramique Indienne du Sud-Ouest Américain. (Paris: Revue Scientifique du 11 août 1928. 11 pp.)

Renaud, E.-B. L'Antiquité de L'Homme dans l'Amérique du Nord. (L'Anthropologie, 38: 23–49, 1928.)

Renaud, B. Chronologie et Evolution de la Culture Indienne du Sud-Ouest Américain. (Bull. Soc. des Amer. de Belgique, 1: 55–65, 1928.)

Riviere, Georges Henri. Les Arts Anciens de L'Amérique. (Paris: Les Editions G. Van Oest, 1928.)

Saintyves, P. Les procédés de guérison communs aux guérisseurs européens et aux sorciers chez les primitifs. (Revue anthropologique, 39: 282–290, 1928.)

Scheidt, Walter. Rassenkunde, Völkerkunde und völkerbiologische Forschungs-und Lehraufgaben. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 75–110, 1928.)

Schranil, Josef. Die Vorgeschichte Böhmens und Mährens. (Berlin: Walter de Gruyter & Co., 1928.)

Schwantes , Gustav. Nordisches Paläolithikum und Mesolithikum. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 158–252, 1928.)

Seligman, C. G. Further Note on Bird-Chariots in Europe and China. (Journ. Roy. Anthr. Inst., 58: 247–254, 1928.)

Schuller, Rodolfo R. Apuntes para una bibliografía de las lenguas indígenas de la América del Sur. (Revista Histórica, Tomo 8: 51–60, 1925.)

Simandl, J. A Contribution to the Histology of the Skin and of the Muscle of an Egyptian Mummy. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 56–60, 1928.)

Skokowski, B. et Cwirko-Godicki, M. La taille de la jeunesse des écoles de Poznan (années 1917–1922). (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 77–80, 1928.)

Smith, W. R. I. The Story of the Cherokees. (Cleveland, Tennessee: Church of God Publishing House, 1928.)

Spinden, Herbert J. Maya Inscriptions dealing with Venus and the Moon. (Bull. Buffalo Soc. Nat. Sci., 14: 1–59, 1928.)

Stolpe, Hjalmar. Collected Essays in Ornamental Art. (Stockholm: Aktiebolaget Familjeboken, 1928.)

Stolyhwo, E. L'analyse anthropologique des crânes provenant de l'époque epipaleolithique en Europe. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 71–76, 1928.)

Stolyhwo, K. La race neanderthalienne, est-elle homogene? (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 61–70, 1928.)

Suk, V. Congenital Pigment Spots in Eskimo Children. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 28–34, 1928.)

Suk, V. On Face Types in Man. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 35–40, 1928.)

Teit, James H. The Middle Columbia Salish. (Univ. Wash. Publ. Anthr., 2: 83–128, 1928.)

Thilenius, Georg. Museum und Völkerkunde. (Mitteilungen aus dem Museum für Völkerkunde in Hamburg, 13: 1–40, 1928.)

Torday, E. Dualism in Western Bantu Religion and Social Organization. (Journ. Roy. Anthr. Inst., 58: 225–246, 1928.)

Ur Excavations. Royal Inscriptions. (Philadelphia: Univ. Pennsylvania Press, 1928. 100 pp., 59 pls.)

Urteaga, Horacio. La organización judicial en el Imperio de los Incas. (Revista Histórica, Tomo 9: 1–50, 1928.)

Verneuil, M. P. Les Temples de la Periode Classique Indo-Javanaise. (Paris: G. Van Oest & Co., 1928. 90 pp., 96 pls.)

Weule, Karl. Negerpädagogik. (Jahrbuch des Städtischen Museums für Völkerkunde zu Leipzig, Band 9, pp. 56–80, 1922–1925.)

Weule, Karl. Aufgaben, Grundlagen und Einteilung der Völkerkunde. (Jahrbuch des Städtischen Museums für Völkerkunde zu Leipzig, Band 9, pp. 46–55, 1922–1925.)

White, Newman I. American Negro Folk-Songs. (Cambridge, Mass.: Harv. Univ. Press, 1928. 500 pp. $5.00.)

Willoughby, W. C. The Soul of the Bantu. A Sympathetic Study of the Magico-Religious Practices and Beliefs of the Bantu Tribes of Africa. (New York: Doubleday, Doran & Co., 1928. 476 pp. $5.10.)

Wimberly, Lowry Charles. Folklore in the English and Scottish Ballads. (Univ. Chicago Press, 1928. 466 pp. $5.00.)

Wrzosek, A. La bride mongole chez les enfants et la jeunesse des écoles de Poznan. (Anthropologie, published by the Anthr. Inst., Charles Univ. Prague, 6: 23–27, 1928.)

Wrzosek, A. L'évolution de l'anthropologie en Pologne au XIX siècle. (Revue anthropologique, 39: 217–221, 1928.)

The Twenty-Third International Congress of Americanists

(Editor's Note: The Twenty-Third International Congress of Americanists met in New York City during the week of September 17th, 1928. A report of the sessions has been published by Professor Franz Boas in *Science*, 68:361–364, 1928. For the information of members of the American Anthropological Association Mr. N. C. Nelson, the Secretary pro tem, has kindly supplied the following data.)

I. Statistical Data

1. Nations signed up as members				33
2. Governments represented by delegates				19
3. Institutions represented:	Foreign	45		
	American	33	Total	78
4. Members enrolled:	Foreign	101		
	American	351	Total	452
5. Delegates present:	Foreign	59		
	American	148	Total	207
6. Scientific papers read and discussed:	Foreign			
	American		Total	ca. 95

II. Scientific Papers

The papers read and discussed were grouped under the following general topics:

1. Physical Anthropology of the American Indians
2. Languages of the American Indians and Related Peoples
3. Archaeology and Ethnology of South America
4. Archaeology of Mexico and Central America
5. Archaeology and Ethnology of North America, with special sectional meetings devoted to the Southwest and to the Eskimo areas.
6. Spanish and French Influence on American Indian Life and Culture
7. Cultural Relations between North and South America

8. Cultural Relations between South America and the South Pacific
9. Cultural Relations between North America and Asia
10. The Antiquity of Man in America

III. Popular Lectures. Motion Pictures, etc.

1. The Excavations of the Carnegie Institution of Washington at Chichen Itza, Yucatan, Mexico, and Uaxactun, Peten, Guatemala, in 1928. By Dr. S. G. Morley, Director of the work.
2. Exploration in the Maya Area. By Frans Blom, of Tulane University.
3. The Exploration and Mapping of Brazilian Guiana with hydroplane and wireless, in two reels. By Dr. A. Hamilton Rice.
4. Ceremonial of the Navaho Mountain Chant, in six reels. By Mrs. L. A. Armer, of Berkeley, California.

IV. Special Exhibits Installed for the Congress

1. The material exhibited consisted of:
   a. Original specimens, archaeological and ethnological
   b. Models
   c. New facsimile of the Vienna Codex
   d. Drawings, tracings, maps, etc.
   e. Enlarged photographs
   f. Colored prints
   g. Publications
2. The contributing nations, listed alphabetically and not in the order of importance, were:

Argentina	Mexico
Austria	Peru
Denmark	U. S. A.
Germany	U. S. S. R. (Russia)

3. The amount of space occupied by the exhibits totaled slightly more than 100 square meters.

V. Literature Presented to the Congress for Free Distribution

1. Character of publications presented ranged from duplicate copies of various serial publications on different phases of anthropology to monographic pamphlets and large, expensive, bound volumes.
2. The quantity of material received filled more than a half dozen shipping cases and totaled fully one ton, the greater bulk of it being the gift of the Mexican government.

3. The contributing nations were:

Argentina,	3 titles	Mexico, ca.	20 titles, 50–70 duplicates of each
Austria,	6 titles	Sweden,	2 titles
Denmark,	15 titles; 6 duplicates	U. S. A.,	3 titles
Ecuador,	1 title; 50 duplicates	U.S.S.R., ca.	15 titles
Guatemala,	9 titles; duplicates	Venezuela,	1 title; 100 duplicates

4. The distribution of the publications was as follows:
Complete sets of the titles presented were, as far as possible, given to the four New York and Brooklyn institutions under whose auspices the session was held. The remainder was left for interested members of the Congress to take away.

VI.

The Closing Session of the XXIII International Congress of Americanists was held in Education Hall, School Service Building, American Museum of Natural History, at twelve o'clock noon, Saturday, September 22nd, 1928.

President Franz Boas presided.

About two hundred delegates and visitors were present.

Order of Program

1. Greetings were extended to the belated Mexican delegates by the Chairman.
2. The Secretary read the Resolutions voted by the Council as follows:
   (a) An Amendment to the Statutes, requiring the Publication Committee to insert in the published Proceedings a statement announcing the institution or library in which the archives have been deposited.
   Reaffirmed by unanimous vote.
   (b) An Amendment to the Statutes requiring that one hundred copies of the Proceedings be placed in the hands of a bookseller as the agent authorized by the Publication Committee.
   Reaffirmed by unanimous vote.
   (c) Resolution presented by C. Tagliavini that the XXIII International Congress of Americanists, in view of the importance of the linguistic and ethnographical materials

preserved in the Italian libraries, and in view of the absence of any bibliography of this kind, considers it desirable that an inquiry be conducted in all Italian libraries by means of questionnaires. The Congress entrusts Mr. Tagliavini with this task and asks that he present the results of his inquiry at the next Congress.

Reaffirmed by unanimous vote.

(d) Resolution presented by Dr. J. T. Medina of Chile that the XXIII International Congress of Americanists recommend to the governments of Mexico, Central America, and South America, the establishment of professorships of American Archaeology and Ethnology.

Reaffirmed by unanimous vote.

(e) Resolution presented by Professor A. Penck expressing the desire to see the Loubat Professorships of American Archaeology and Ethnology re-established at both Berlin and Paris.

Unanimously reaffirmed.

(f) Resolution in reply to a proposal from the Royal Anthropological Institute of Great Britain and Ireland asking for cooperation between the International Congress for Anthropological Studies and the Congress of Americanists leading towards synchronization of future meetings in Europe.

Be it resolved:

(1) That it is the sense of the Americanists assembled that the organization of a truly International Congress for Anthropology, embracing all nations, be instituted in Europe.

(2) That it is further the sense of this Congress that it would be desirable to hold the General Anthropological Congress and the Congress of Americanists at such times and places as to make cooperation possible.

(3) That the next Congress of Americanists will be held in Europe in 1930 and we shall be glad if the General Anthropological Congress, to be organized, could meet at the same time and place.

The adoption of the Resolution was reaffirmed by unanimous vote.

3. The Secretary read the recommendation of the Council that

greeting be cabled to the following absent members: Mrs. Cecilia Seler, Mr. Alfred P. Maudslay, Professor L.Capitan, Professor Paul Rivet, Hofrat Professor Franz Heger, Professor Von den Steinen, Professor Amedeo Giannini, Curator W. H. Holmes.

Adoption of the proposal was moved, seconded, and unanimously carried.

4. Dr. A. C. Simoens da Silva of Brazil proposed a vote of regret and respect on the occasion of the decease of Dr. Manuelde Oliveira Lima, who died recently at Washington, D. C., and who at the Vienna session of the Congress introduced the use of the Portuguese language.
5. The Secretary read the Council's recommendation that the formal invitation extended by the Senate of Hamburg be accepted and that the XXIV International Congress of Americanists be held in Hamburg in 1930.

   The adoption of the recommendation was moved, seconded, and voted unanimously.
6. The Chairman announced the Hamburg Committee of Organization as follows: Professor Georg Thilenius, Professor Dr. Küchler, Professor A. Warburg.
7. Congratulatory remarks on the success of the XXIII Congress, the facilities and entertainments furnished by the various Institutions concerned, were made by several of the foreign delegates, including Professor Albrecht Penck, who chose the occasion to present a diploma of the Geographische Gesellschaft of Berlin to President Franz Boas, and the Karl Ritter medal to Vilhjalmur Stefansson.
8. Final announcements by the General Secretary giving among other things the available statistical data relating to the membership, attendance, and activities of the Congress. (See p. 182f.)
9. Session adjourned sine die at 12:50 P.M.

Publications Committee:

Clark Wissler, *chairman* — Franz Boas
F. W. Hodge — N. C. Nelson
S. K. Lothrop

N. C. NELSON,
Secretary pro tem.

ANTHROPOLOGICAL NOTES AND NEWS

The American School of Prehistoric Research

Dr. George Grant MacCurdy returned to Yale University on October 5 after three months in Europe conducting the eighth summer session of the American School of Prehistoric Research, of which he is director. The season's work was confined to England, France, and Spain.

Dr. MacCurdy announces that the school is to carry on field work during the late autumn and spring. This is being done through joint cooperation with two British institutions: (1) the Percy Sladen Fund; and, (2) the British School of Archaeology at Jerusalem. The autumn expedition to Iraq is already in the field, the American School's representatives being Robert A. Franks, Jr., and Francis Turville-Petre. The representatives of the Percy Sladen Fund are Miss Dorothy A. E. Garrod and Mrs. Neil Baynes, O. B. E. All four have had experience in field work. Turville-Petre was the discoverer of the Neanderthal skull from Galilee; and it was Miss Garrod who discovered the remains of a Neanderthal child at Gibraltar in 1926. The district to be covered is Sulaimanieh, lying to the northeast of Bagdad.

The second cooperative project will be with the British School of Archaeology at Jerusalem, the site being the cave of Shukbah on Mt. Ephraim, some seventeen miles northwest of Jerusalem. Miss Garrod, with the help of two former students of the American School of Prehistoric Research, has already dug one season at Shukbah, which turns out to be a station exceedingly rich in remains of both the Paleolithic and the Mesolithic Period.

Dr. MacCurdy brought back with him two tools of rock crystal that were fashioned by Neanderthal artisans perhaps a hundred thousand years ago, and dug from the "Abri des Merveilles" in the Dordogne by two of the students.

Ethnological and Archaeological Cooperative Investigation Under the Smithsonian Institution

In response to a recent inquiry the Smithsonian Institution has requested the Comptroller General of the United States for an opinion as to the geographic limits included under the special appropriation for cooperative ethnological and archaeological researches under the

Bureau of American Ethnology. Under date of August 31 reply has been received that expenditures under this appropriation under the wording of the act may be made only within the geographic limits of the United States proper, and may not be extended to the territories of Alaska or Hawaii, or to any other areas which may be under the jurisdiction of the United States but outside of its geographic limits.

C. G. ABBOT,
Secretary, Smithsonian Institution

THE PACIFIC SCIENCE ASSOCIATION has issued the first announcement by the Netherlands Indies Pacific Research Committee concerning the Fourth Pacific Science Congress at Batavia and Bandoeng, Java, from Thursday, May 16, to Saturday, May 25, 1929. Abstracts of papers to be presented must be in the hands of the general secretaries, Dr. H. J. Lam, Buitenzorg, and Dr. H. J. T. Bijlmer, Batavia, before January 1, 1929, and if possible papers should be sent at the same time, and in no case later than the final general meeting of the Congress. The anthropological meetings will be devoted to a discussion of Negritos and Oceanic pygmies, blood-groups in the Pacific, the distribution of Veddaic and Dravido-Australoid elements in the Pacific, as well as other subjects in physical anthropology and ethnography. English is to be the language employed at all meetings, and those who intend to make addresses in other languages are requested to send in the substance of their remarks, typewritten in English, French, or German, before noon of the preceding day.

IT IS PROPOSED to publish a work on Rock-Paintings of North-West Córdoba, by G. A. Gardner. This work is to be published in a superroyal 4to volume of about 192 pages, and embodies the results of over six years' investigation and study of the rock-paintings in the Argentine province of Córdoba, a region very little known archaeologically. Subscription price, £3 3s.

UNDER THE AUSPICES of the New York University, College of Fine Arts, Dr. H. J. Spinden, of Harvard University, is giving a course on Arts and Industries of the American Indian in North, Central, and South America, as well as a seminar in Primitive American Art. The museums of New York City will be utilized in these courses.

IN A STATEMENT by Dr. Chi Li, in regard to the work of the Chinese National Research Institute, he says: "The expedition [to

go to the Province of Kwang Si, to study the geology, paleontology, zoology, and botany of the province] hopes also to include eventually anthropology and archaeology in its scope. The cost will be shared by the national government and the provincial government of Kwang Si. The institute hopes in this way to develop systematic scientific exploration of every province in China.

"The membership of the institute includes thirty well-known scientific men. Dr. Li represents archaeology and was the first member of the new organization. He will continue as field representative of the Smithsonian Institution and the Freer Gallery."

STEPHEN C. SIMMS, who has been a member of the scientific staff of the Field Museum of Natural History, Chicago, since it was founded in 1893, has been elected director of the museum, to take the place made vacant by the death of David C. Davies.—*Science.*

MATTHEW W. STIRLING, the new chief of the Bureau of American Ethnology, Smithsonian Institution, took up his duties on August 1, being introduced to the staff by Assistant Secretary Alexander Wetmore.—*Museum News.*

THE UNIVERSITY OF AMSTERDAM celebrated recently the seventieth birthday of Professor E. Dubois. The speakers recalled the services to paleontology of Professor Dubois, and more particularly his discovery and reconstruction of *Pithecanthropus erectus.*—*Science.*

DR. FREDERICK L. HOFFMAN addressed the students of aeronautics of the New York University, under the auspices of the Guggenheim Foundation, on August 15, on the results of his recent transcontinental air journey, during which he traveled approximately seven thousand air miles. On his return from the West Coast, he made a stop-over in the Navajo country to assist the Bureau of Indian Affairs in connection with the Navajo census. He also addressed the International Congress of Americanists in September on "Navajo Population Problems."—*Science.*

IN 1921 PROFESSOR A. J. HEYMANOVICH founded the Ukrainia Psychological Institute in the city of Harkov. In the following year a department of anthropology was organized, with Professor Nikolayev at its head. Studies have been made of the influence of starvation on physical traits, but "the fundamental and largest theme of the department was the study of the anthropology of Ukrainia."

DR. MARGARET MEAD, ethnologist in charge of the South Sea Island Hall of the American Museum of Natural History in New York, recently lectured before the faculty and graduate students of the department of anthropology of the University of California. Dr. Mead is on her way to the Admiralty Islands to make a psychological study of young children.—*Science.*

VILHJALMUR STEFANSSON has been awarded the Carl Ritter medal of the Geographical Society of Berlin. As Mr. Stefansson was unable to visit Berlin to receive the medal, the presentation was made at the recent meeting of the Congress of Americanists in New York by Professor Albrecht Penck, president of the society.—*Science.*

PROFESSOR RAYMOND PEARL, of the Johns Hopkins University, was elected president of the International Union for the Study of Demographic Problems recently organized in Paris. The work will have its headquarters in Paris and will hold its first international meeting in Rome in 1931.—*Science.*

DR. E. B. RENAUD, professor of Anthropology, University of Denver, spent three months in Europe this summer.

1. Studying early pottery in the museums of Liège and Brussels, and has given a lecture on American Archaeology of the Southwest, at the Royal Museum.
2. With the American School for Prehistoric Research nearly two weeks were spent in England studying the prehistoric collections of the British Museum, South Kensington Museum, History of Medicine Museum, and Royal College of Surgeons of London, and also at Cambridge University and museums of Ipswich and Norwich; on the field at Stonehenge, and all around East Anglia ending at Cromer on the North Sea.
3. In France, the gravel pits of the Somme were visited and digging in a Mousterian site of the Southwest was done with Dr. MacCurdy. The megalithic monuments of Carnac, Brittany, were studied. With Abbé Breuil work was done in the Pyrenées at Mas d'Azil and Trois Frères; Tue d'Audoubert was also visited. Two papers were given at the Congress of the French Association for the Advancement of Science, on American anthropology and archaeology. He was official representative of the Archaeological Institute of America.
4. He conducted the students of the American School to visit the caves of Altamira and Castillo in northern Spain.

WALDEMAR G. BOGORAS-TAN, head of the Department of Ethnography of the University of Leningrad, was one of the participants in the Congress of Americanists held in New York City, September 17–22. He was formerly connected with the American Museum of Natural History, in New York, and has for the past 30 years been in close contact with American anthropologists engaged in studying the peoples of the Arctic circle both in North America and in Asia.

DR. WILLIAM M. MCGOVERN resigned from his position as Assistant Curator of South American Ethnology at Field Museum of Natural History on October 1 of this year.

UNDER THE EDITORSHIP of Professor Raymond Pearl, a new quarterly will be issued in January, 1929. It is to serve as a medium "for the publication of the results of original research in any field of human biology, including physical and general anthropology, anthropometry, vital statistics, human heredity and eugenics, prehistory, human anatomy, sociology, constitutional pathology, and psychobiology." The articles must have general biological interest and are to embody original contributions. There will be no reviews, and all papers will appear in English. Each issue is to contain about 150 pages. The publisher is Charles C. Thomas, Springfield, Illinois. The regular subscription price will be $5.50 in the United States and Canada, $6.00 elsewhere. The introductory price, however, is announced as $4.50 and $5.00, respectively. The advisory board includes: C. B. Davenport, E. M. East, Eugen Fischer, Ales Hrdlicka, H. Lundborg, Bronislaw Malinowski, Adolph Schultz, Clark Wissler.

DR. T. WINGATE TODD, professor of anatomy in Western Reserve University, has been appointed a member of the board of managers of the Brush Foundation, recently established in the interests of race betterment by a gift of $500,000 from Charles F. Brush as a memorial to his son.—*Science.*

BARON ANATOLE VON HÜGEL, formerly curator of the University Museum of Archaeology and Ethnology at Cambridge, died on August 15, at the age of seventy-three years.—*Science.*

PROFESSOR GEORGE GRANT MACCURDY is the author of the booklet entitled "Prehistoric Man," which appeared last August as number 43 of the American Library Association's "Reading with a Purpose Series."

DR. C. DARYLL FORDE, of the University of London, awarded a Commonwealth Fund Fellowship for 1928–30, is working in the Department of Anthropology in the University of California, and will devote himself mainly to field studies in the Southwest. His previous work has lain mainly in European prehistory and the Editors hope shortly to publish a paper on "The Early Civilizations of Atlantic Europe," which will summarize the results of his study of the megalithic culture of western Europe. It is only too rarely that European anthropologists are able to familiarize themselves in the field with the results and problems of American ethnology. We are the happier, therefore, to welcome a British worker in this country.

DR. LESLIE A. WHITE of the Buffalo Museum of Science left on October 1st for a four months' field trip to New Mexico, where he will continue his studies of the Keresan Pueblos. He has completed an ethnological survey of Acoma, and plans to conclude similar studies of San Felipe and Santo Domingo on the present trip.

ON NOVEMBER 5th Dr. Ales Hrdlicka gave a talk on "The Where, When and Why of Human Evolution," to The New York Academy of Sciences.

EARLY IN 1929 the firm of Vandenhoeck & Ruprecht in Göttingen, Germany, plans publishing "Monumentale Vorgeschichtliche Kunst," by Dr. K. Th. Preuss. The book is based on excavations near the sources of the Magdalena in Colombia. The subscription price before publication is cited at 35 R. M. ($8.55), in cloth 42 R. M. ($10.00).

THE ROCHESTER MUNICIPAL MUSEUM, of Rochester, New York (Arthur C. Parker, Director), has begun a series of *Research Records*. The first issue, dated December 9th, 1928, consists in a paper by William A. Ritchie, on *An Algonkian Village Site near Levanna, New York*.

AMERICAN ANTHROPOLOGICAL ASSOCIATION
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PROBLEMS ARISING FROM THE CULTURAL POSITION OF THE HAVASUPAI

BY LESLIE SPIER

I

THE observation has often been made that culture areas are geographically and culturally continuous. As Wissler remarks in his study of the *Material Cultures of the North American Indians* (p. 468),[1] there commonly are no sharp breaks in cultural distribution. Transitions are gradual from one culture center to another of different type, the intervening groups presenting in sequence the whole range of traits combined variously. This is so much a commonplace that the field ethnologist acts on it, interpolating between known cultures to forecast what he might expect in a tribe lying between them.

In 1918–21 I visited the Havasupai Indians of northern Arizona for the American Museum of Natural History and the Southwest Society of New York. A description of their culture has recently been published, in which I have included a series of distribution studies, taking my departure from the traits of Havasupai life.[2]

The Havasupai are a small and little-known tribe living in the vicinity of the Grand Canyon of the Colorado. They are western neighbors, at some remove, of the Hopi and Zuñi, and as such it was expected that they would share the Pueblo culture of these peoples to considerable degree. This is not the case; the cultural step-down is surprising. Pueblo elements are only scantily repre-

[1] AMERICAN ANTHROPOLOGIST, n.s., 16: 447–505, 1914.

[2] Havasupai Ethnography. Anthr. Pap. Am. Mus. Nat. Hist., 29, pt. 3, 1928.

sented in their life, which on the whole is like that of the semi-nomadic, rude tribes of the Great Basin of Nevada and Utah. This is true not only of the Havasupai but also of the remaining groups of the western Arizonan plateau, the linguistically related Walapai and Yavapai.

In order to bring out the cultural position of the Havasupai I have drawn up a table (table 1) of the elements characterizing the several sub-areas of this region. I have leaned heavily on Kroeber's characterizations in his *Handbook of the Indians of California*,[3] and earlier papers. I have also built on the basis of Wissler's summaries of the material cultures, realizing however that the description of the Plateau area[4] hardly applies to its southern or Basin half. There is a very unequal weighting of the items of the table, the rich ritualism of the Pueblo, e.g., being dismissed with a few catch-words that level it to the order of the dances of the Basin tribes. And on the contrary I have enlarged on some minutiae because they offered an opportunity to show comparisons with the Havasupai. Like any tabular statement it suffers from abridgment but shows the situation at a glance. It must be understood that the Havasupai, being geographically one of the Western Rancheria peoples, have been drawn on in framing the culture of that group.[5] Those items that Havasupai traits most closely resemble are marked by an asterisk.

A simple count of the traits in which the Havasupai resemble these groups shows half again as many correspondences with the Western Rancheria and Basin peoples as with the others. No importance can be attached to a count of this sort but the result does coincide with my judgment derived by less mechanical procedure. I will present this in the following summary.

Material culture and economic life place the Havasupai clearly with the Basin group. To be sure they are primarily agricultural-

[3] Bureau of American Ethnology, Bulletin 78, 1925.

[4] Op. cit., 451.

[5] The composition of this Western Rancheria group may not be obvious. It includes the tribes lying between the western Pueblos and the Colorado river i.e., Navaho, Western Apache, Pima, Papago, Tonto, Havasupai, Yavapai, Walapai, and others.

	Central California	Southern California	Lower Colorado River	Basin	Western Rancheria	Pueblo
Food	wild seeds and small game	wild seeds and small game	*agriculture mostly women	wild seeds and small game	some agriculture with irrigation	*main dependence on agriculture
					wild seeds and game of equal importance	*men and women till *irrigation
			*planting stick		*planting stick	*planting stick
			*side-scraper hoe		*side-scraper hoe	*side-scraper hoe
	fish		fish	fish	*fish taboo	fish
		rabbit net		*rabbit drives		*rabbit drives
		curved club	curved club	rabbit net		curved club
	*mortar	*mortar	wooden mortar	*seed beater		domestic turkey
		*grinding slab	*grinding slab	*grinding slab	*pit roasting	*grinding slab
	*seed parching	*seed parching	*seed parching	*seed parching	*seed parching	*wafer bread
Houses	earth lodge	*gable-roofed or	square; gambrel-roofed	*conical	*sub-conical or	communal; rectangular
	*gable or *conical	*conical			*gable roofed	
	mat covered	*brush and dirt	wood, brush and dirt	*brush and dirt	*brush and dirt	masonry
Sweathouse	sweat club-house contains fire	*sweathouse fire	no sweathouse	*sweathouse *stones, steam	*sweathouse *stones, steam	kiva fire
Basketry	*much		scarce	*much	*much	scanty
	*twine	little twine	some twine	*twine	coil	splint
	*coil	coil		*coil	twine	wicker
	some jugs	some jugs		*jugs pitched	splint	coil
	*conical burden	*conical	carrying frame	*conical		
Weaving		*rabbitskin blankets	string bags	*rabbitskin blankets	some	much; men
					loom, spindle, belt loom	loom, spindle, belt loom
					*some cotton grown	cotton grown
Pottery		rough, brown steatite pots	unslipped painted	(some rough ware?)	*rough, brown	highly developed slipped and painted
skinworking				smoke tan	*men	(men?)
Dress	♂- apron hairnet	♂-apron	♂-apron or *breecholout	scanty; *♂breecholout	*♂-breecholout	*♂-poncho kilt
	*♀- two aprons	*♀-two aprons basket hat	♀-two aprons	♀-skin dress? *two aprons basket hat	*♀ apron or skirt skin dress	♀-square of cloth
	*rabbitskin robe		*bead jewelry	*rabbitskin robe	*bead jewelry	bead jewelry
	*moccasins	fiber sandals	barefoot?	*moccasins and sandals	*moccasins and sandals	*moccasins and sandals
	*tattooing	*tattooing	*tattooing			*women barefoot at home
War and Weapons	*peaceful	*peaceful	warlike	*peaceful	predatory	*peaceful
	*self bow	*self bow	*self bow	*backed bow	*self bow	*self bow
	*backed	*reed arrows	*reed and *wood arrows	*wood arrows	*wood and reed arrows	*wood arrows
			club			curved club
					*tunic armor	blade-studded club
					shield	shield
	no scalping	*scalping	*scalping	*scalping	*scalping	*scalping

Table 1. The elements characterizing the several sub-areas of the Havasupai area.

	Central California	Southern California	Lower Colorado River	Basin	Western Rancheria	Pueblo
Boats	balsa	canoe	balsa	some balsas	*none	*none
Cradle	trapezoidal basketry sex indicated	U-frame *horizontal ribs	*U-frame *horizontal ribs	*elliptical vertical ribs for transport	*elliptical *horizontal ribs for transport also cloth swing	rectangular? wood *for sleeping
Birth Customs	*limited couvade *meat taboo	*limited couvade *meat taboo	*meat taboo	*limited couvade *meat taboo *scratcher		
Names	meaningful for ancestors	(for relatives?)	reticent *nicknames	*readily used *nicknames and meaningless	*esoteric	esoteric refers to sib changed at initiation
Social Organization	*some patrilineal moieties	patrilineal sibs ceremonial phratries	patrilineal inheritance of group names for women	*sibless	sibs; some patrilineal moieties	matrilineal sibs; some patrilineal moieties
Marriage	*polygamous purchase *temporary matrilocal levirate sororate	*polygamous *agreement patrilocal levirate sororate	*polygamous *agreement patrilocal	*polygamous bride service *temporary matrilocal levirate sororate	*polygamous *agreement patrilocal, some temporary matrilocal some levirate and sororate some mother-in-law taboo	monogamous *agreement matrilocal and patrilocal *-- *--
Kinship System	Omaha type	*Yuman type	*Yuman type	*Yuman and Mackenzie types		Acoma and Crow types
Political Organization	rich chiefs *hereditary herald	*chiefs *hereditary titles for chiefs ceremonial leaders	*tribal cohesion generous chiefs *hereditary war leaders dance leaders	*chiefs; advisory hunt chief *speaker	*chiefs; some hereditary some councils crier dance leader	dual chieftainship priestly councils crier war priest as dance leader
Money	shell money					
Shamanism	*important quest or *dream *some inheritance bear, snake, and rain doctors *disease agent pathogenic	*important by birth or *dream bear, snake, and rain *pathogenic	*dream *shaman killed soul loss	*important men and women *dream *shaman killed *pathogenic	*important men and women *inheritance weather shamans	curing fraternities *vision quest absent *pathogenic
Religious Concepts	guardian spirits	*- mystic, inward view	*- myth-dreams	(guardian spirits?)	*-	*-- *rain fertilization color and direction symbolism
Rituals and Dances	Kuksu cult spirit impersonation initiation foot drum in winter	Toloache rites myth references initiation ground paintings song cycles	absent song-myth cycles *Mohave dance *circle dance	*scanty *Bear dance *circle dance *reluctance to dance	moderate curing dance *harvest dance ground paintings some tablets	numerous; calendric ceremonial fraternities initiation *masks tablets

Table 1 (Cont'd)

	Central California	Southern California	Lower Colorado River	Basin	Western Rancheria	Pueblo
Rituals and Dances(cont.)	Rattlesnake rite shamanistic displays clown dance house magpie headdress cleft rattle	fire dance stick swallowing circular enclosure turtle and *gourd rattle feather skirt	basket drum	*dance directors *shamanistic displays (circular enclosure?) notched rasp	*masks *clowns *brush enclosure	altars ground paintings *prayer offerings fetiches images ceremonial chambers *clowns dance directors *gourd rattle *drum
Puberty Rites	some boys' toloache rites *girls' rites scanty *meat taboo *scratcher	boys' toloache rites girls' rites dance *heating *meat taboo *scratcher	*(drink toloache) *scanty girls' rites *heating	*scanty girls' rites seclusion *meat taboo *scratcher	girls' adolescence ceremony/seclusion *scratcher	*(drink toloache) ceremonial washing
Death Customs	*cremation some burial some mourning anniversary pitch on widows	*cremation some burial mourning anniversary	*cremation *house burned mourning for notables structure burned	burial some cremation	*cremation burial *house burned	burial
Pattern Number	*4,6	various	*4	5		*4, *7
Folktales	animal tales personifications origins for traits	sky father and earth mother *birth and wandering of men *dying god god of ritual	wandering heroes transformed *antagonistic heroes *dying god *flood sky-rattlesnake *tribes located war tales	*animal stories	*emergence and deluge *water-and sun-conceived heroes *monsters destroyed gods sibs located *coyote tales	*emergence and deluge gods
Games	hand game	hand game	*hoop and pole *hidden ball *cup and pin	hand game	*stick dice *hidden ball *hoop and pole *shinny	ritual significance stick racing *hidden ball *stick dice *hoop and pole
Language	Yokuts Miwok Wintun Maidu etc.	Shoshonean *Yuman Chumash	*Yuman	Shoshonean Washo	Athapaskan *Yuman Piman	Tanoan Keresan Zuñi Shoshonean

Table 1 (Cont'd)

ists like the Pueblos and conduct cultivation in the same fashion, more so than the lower Colorado tribes. There is however an alternation with fall-to-spring seed- and root-gathering activities of the Basin type. The house construction of the Basin and Western Rancheria areas is similar, with the Havasupai showing something of lower Colorado and southern California forms as well. Their sweatlodge and its uses are of the type widespread in the western non-Pueblo area, the Basin, the Northwest, and the Plains. Domestic utensils are large numbers of baskets as in the Basin and in twine technique. Seed-beaters, parching trays, narrow-necked jugs, and conical burden baskets have Basin and central Californian affiliations on the whole. Pottery is specifically the Western Rancheria type, which has analogues in the southern Basin. Dress for women is the two-apron affair of California and the Basin in contrast to the Pueblo garment. Men's costumes resemble the Plains, hence may have no claim to antiquity.

Social customs and organization are of the excessively simple Basin type. Every vestige of sibs is lacking; the family is the sole unit, with some further nucleating because of common patrilocal residence, which in turn is based on patrilineal inheritance of land. Marriage is permissibly polygamous (in contrast to strict Pueblo monogamy) and contracted by agreement. Post-nuptial residence is temporarily matrilocal as in the Basin and central California, in contrast on the one side to the matrilocal western Pueblos and on the other to patrilocal southern California. Kinship terminology is characteristically Yuman. In the readiness with which personal names are used they are unlike the generality of Southwestern and Californian peoples. In their meaningless character, or as nicknames, these resemble the Basin. The slight political structure is also of Basin type: chiefs have advisory function alone and at meetings are provided with speakers. There is none of the pluralistic leadership (hunt bosses, etc.) of Basin type, however, and their bias toward hereditary succession aligns them rather with the Californians. Tribal solidarity of the lower Colorado pattern exists, but we must not overlook that the Havasupai form but a single local group in contrast to the large tribal aggregations of that region. On the other hand

they have emphatically the peaceful disposition of the Pueblos, the Basin peoples, and California at large.

Crisis ceremonialism is absent. At birth, there is a limited couvade which connects with the Basin especially and California. Cremation aligns them with the tribes to the west rather than the Pueblos, but commemorative rites of the western region are lacking. Of adolescent rites, those for boys are lacking, as in the Basin; girls' rites and in fact menstrual customs at large are of the Californian type and the Basin, except that there is no seclusion, in which they are one with Pueblos and the Plains tribes.

The relative prominence of the shaman and the absence of organized religious rites is again an expression of an outlook basically of Basin type. Specifically, familiar spirits are possessed by shamans alone, whose power is acquired in dreams. Specialization is minimal; weather shamans, e.g., hardly form a separate class. The absence of the vision-quest is Californian, Basin, and Southwestern; the dream source, Basin and Californian. Disease is due to a pathogenic agent, as in all neighboring areas except the lower Colorado. Pueblo religious concepts appear only in some prayer plume planting, rain producing as an indefinite aim of social dancing, and Pueblo ritualism only in some slight masked dancing.

Dances are secular and specifically of Basin type, the round (squaw) dance and the Bear dance. Ritual dances of the Pueblos are as such absent; nor is the absorption of the lower Colorado tribes in ritual without dancing duplicated here. Masks, altars, ground paintings, god impersonation, ritual chambers, organized bodies, a priesthood, are all absent; on the other hand, song cycles are also.

Their mythology is a neat blend of Western Rancheria types, those of the Colorado and southern California, with a large ingredient of Basin tales. The dying god, the emergence and deluge, the wanderings of peoples, sun- and water-conceived heroes in the forms known to Pueblos and southern Californians are compounded. Familiar Coyote tales of the Basin reappear. There is no color-direction symbolism. The pattern number is four and sometimes seven, but it figures in the tales alone. In the Basin

and northwestward the number is five, in the Southwest and Plains, four and seven, on the lower Colorado, four, in California at large, quite variable.

All in all, Havasupai culture is of the Basin type with some affiliations elsewhere in intangible culture; a few ritualistic elements link with the Pueblos, mythologic elements perhaps more with southern California. That the Havasupai link with other Western Rancheria peoples occasions no surprise since they are geographically one of them, but the striking observation is that in culture they conform equally to Great Basin characteristics. In fact, in the general simplicity of their culture and in the specific details of its elements, they are more clearly participants in Basin culture than in that of the western neighbors of the Pueblos.

In this the Walapai and Yavapai resemble them, so far as we know. Nor is this inexplicable, since all these are located peripherally to the Pueblo focus and at some distance, yet are relatively unaffected by the life of the lower Colorado. We must look upon the culture of these three tribes as representing an extension of the Basin area southward across the plateau of western Arizona.

It is not certain that such specific Pueblo elements as appear among the Havasupai were directly derived. Their attenuation suggests rather that they were derived from some intervening group, who in the light of known contacts, must have been the Navaho. The difficulty is that they may not have had contact with the Navaho before the middle of the last century, but it may also be that the traits are no older than that in Havasupai life. I have in mind here the few masked dancers and clowns, prayer plumes placed at springs, and the rather weak sentiment that dances are prayers for rain.

Agriculture among the Havasupai presents a somewhat different situation. This was their mainstay and as such makes them one with the Pueblos. Yet I am not certain that their concern and pride in their crops means that they have derived this attitude directly from the Pueblos. On the whole I am of the opinion that the intensity of a trait development is affected by neighbors'

attitudes, but in this case there seems to be environmental determination. The home of the Havasupai is the one rich oasis in all western Arizona. If we picture them as originally like the Walapai with but a moderate interest in cultivation, once they were settled in Cataract canyon the extension of agriculture was well-nigh thrust upon them.

II

It appears to me that there are two primary trains of thought flowing from the consideration of a tribe's cultural position, one culture-historical, the other relating to the conditions of culture growth. What I mean by the latter will, I trust, become clearer as I proceed.

One inquiry is as valuable as the other: I should not be inclined to eschew culture history reconstructions on principle as A. R. Radcliffe-Brown seems to do. But for an understanding of the nature of culture and the processes by which its forms come into being, it seems unnecessary to indulge in historical reconstructions of grand scope. Some of the recent attempts in this direction, noticeably those dealing with American cultures, impress a moderately conservative individual as being highly tenuous or even downright careless and frivolous. Furthermore, this type of reconstruction is unnecessary.

A specific example, which is by no means extreme, is Kroeber's placing of girls' adolescence rites in California in an ancient cultural substratum.[6] His argument rests on the universality of the rites in that area despite its cleavage into several distinct culture provinces. Other traits having a much narrower distribution, such as the boys' initiations in the south and the Kuksu cult in central California, are in his opinion much more recent institutions. One might reaffirm Kroeber's opinion concerning girls' rites by pointing out that they are universal not only in California but throughout the Pacific coast from Alaska to the Southwest, whereas they are lacking to the east. We may at least assent that

[6] The History of Native Culture in California. Univ. Calif. Publ. Am. Arch. Ethn., 20: 123–142, 1923.

the practice has diffused throughout this wide continuous area without stating anything whatever as to its antiquity. We have then answered the historical question how the several Pacific tribes came by their girls' rites. As a matter of fact, the problem is not so simple as Kroeber depicts it, for there are at least four types of girls' rites in the Pacific area, as I will demonstrate in another place. What I am insisting is that we can answer a purely historical question without defining the precise antiquity of the custom.

It is perhaps inevitable that many of us will want to go further in delineating the general history of a culture. This may take the form of suggesting tentatively the basic culture from which it has specialized. But it seems to me unjustifiable in the present state of our knowledge to extend such interpretations beyond reasonably restricted limits.

If I may be permitted to indulge in such interpretation, I would suggest that Havasupai culture was once part of an undifferentiated Basin culture which extended southward across western Arizona to include as well Walapai, Yavapai, and Tonto. This proposition is based on the observation that Havasupai life is even now primarily of Basin type; Walapai, and perhaps Yavapai and Tonto, even more so. These four groups are linguistically close, Walapai and Havasupai practically identical, and all are set apart as peripheral in the distribution of the Yuman stock on its eastern margin. Further, the Havasupai and Walapai are in intimate cultural relations and have intermarried more than with others. Both groups look on the Havasupai somewhat as a division of the Walapai, despite a Havasupai tale purporting to describe their severance from the Yavapai. The most plausible explanation is, then, that the Havasupai are a group of Walapai who became distinct and somewhat specialized. Their specialization in agriculture I ascribe to their happy environment; their slight specialization in ritual to Navaho or perhaps Hopi contacts since the day of their separation.

Such a suggestion contains a minimum of hypothesis. But what does such culture history tell of the processes by which their culture took form? For this it seems better to turn to inquiries of another sort.

The published account of Havasupai ethnography contains a large number of distribution studies covering as many items as comparative material made possible. These distributions spread in all directions from our center. The significance of this is contained in our often repeated assertion that a group are in all probability not the originators of more than a fraction of their culture. In the case of the Havasupai we may go so far as to deny them any originality, for there is perhaps not a single trait for which analogues may not be found somewhere in the vicinity. Yet Havasupai culture is no more identical with that of their neighbors than the physiognomy of two individuals in a closely inbred group. Its individuality lies in the final form and combination with which they have stamped the common traits.

A specific example of this is to be found in women's dress. This is comprised of two aprons; the one in front long, from breast to ankles, and hung about the neck like a butcher's apron, that behind hanging from waist to ankles. The front apron is a deer hide retaining its natural contours, with the neck skin turned down in front to form a yoke. With these a brief apron is worn under the long front piece. The peculiar form of this front apron becomes intelligible only when we consider the distribution of other types of garments in adjoining areas. To the east we have, apart from Pueblo women's dress, the long dress of the Plains tribes comprised of two skins forming a straight line at the shoulders and with the upper part (here the tail skin) turned down to form decorative flaps or yokes front and back. This dress in orthodox form is distributed as far west as Navaho, Jicarilla, Mimbreños Apache, and Kaibab Paiute. To the west and north women wear a short apron or two of skin or cords pendent from the belt. This fashion prevails as far east as Apache-Yuma, Maricopa, Pima, and possibly the Western Apache and Mescalero. It appears to me that the ancient western style known to Havasupai, two short aprons, has been influenced by the Plains form. The front apron has in effect been lengthened and the upper part turned down to form a decorative yoke. It is immaterial that this is hung by a band around the neck, for unless the back apron had been similarly lengthened some such device was necessary. This,

then, is the special form which the Havasupai have given to the combined Plains and apron dresses. Even this is not peculiar to them alone, for the Yavapai have an identical costume. Other tribes on the border of mingled distributions have made the combination in other ways; the Kaibab have added a short front apron over the Plains dress, the Navaho linked two squares of cloth in the manner of the Plains dress, while quite another combination is the use of aprons and long dress alternately, as among the Klamath. Here we have illustrations of two kinds of cultural composition, namely combination and duplication.

We may observe another process, the transfer of a technique, in the sex division of labor. All work in skins is in the hands of Havasupai men from the butchery of a deer to the manufacture of a woman's dress. Skin dressing by men was also the custom among the Navaho, Yavapai, and Cocopa. Skin dressing and working in the Plains, on the other hand, is a womanly task, which suggests that in the Southwest the Pueblo idea of men as garment workers has been transferred to another material among their Rancheria neighbors.

Quite another analysis may be made in the case of games. It is possible to show that the moccasin game of the upper Mississippi drainage and the Southwestern hidden ball game, while superficially alike, are so because of convergent development.

To turn to quite another sphere, we find here ownership of fruit trees independent of the ground on which they stand, a feature strongly reminiscent of parts of Melanesia and the west coast of Africa. The factors in this development are obvious. Havasupai ownership of land is really ownership of the produce of the land, which is looked upon as so much personal property. Like other personal belongings, the standing crops are ordinarily cut down and burned on the death of their owner. Fruits (peaches, ultimately derived from Spanish sources, and nuts) were seemingly brought in as personal possessions and maintained as such. It is, then, quite in harmony with Havasupai sentiment toward land produce that the few fruit trees should be looked on as personal belongings to be disposed of by testament or sale regardless of the site they occupy.

If we are concerned with the manner in which traits are borrowed we have a simple, rather mechanical procedure at hand in the introduction of a superior variety of devil's claw which is used in basket ornamentation. This was introduced by a Walapai wife who procured it from a sister, who in turn got it from the Paiute. In such an instance we observe the ready adoption of an article of obvious superiority. More complex is the manner in which certain mourning rites and songs have been taken over from the Walapai. The Havasupai are accustomed to participate in the Walapai mourning ceremony, a rite known to them as of Mohave origin. It has, however, not taken root among the Havasupai with the exception of the songs and dance which are indulged in by younger individuals as a pastime. Yet this meets with resistance on the part of their elders because of the sentiment of the songs, references to the dead.

A host of similar observations may be made, which in my opinion tell us more of the manner of culture growth than a bald recital of generalized culture history. I wish to repeat that such historical reconstructions are misleading and unnecessary. In an earlier discussion of the Plains sun dance I attempted an historical reconstruction and an analysis of the conditions of diffusion and assimilation of its elements.[7] I would now candidly admit that the historical reconstruction of the development of this complex is perhaps unnecessary for understanding the nature of the processes of culture growth and perhaps misleading. It would seem that a more fertile view is rather to be had from a consideration of the conditions under which that growth takes place.

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[7] The Sun Dance of the Plains Indians: Its Development and Diffusion. Anthr. Pap., Am. Mus. Nat. Hist., 16, pt 7., 1921.

MAYA CHRONOLOGY: GLYPH G OF THE LUNAR SERIES

By J. ERIC THOMPSON

FOLLOWING the Initial Series of the vast majority of Maya inscriptions on stone is a group of glyphs, usually some eight in number, known as the Supplementary or Lunar Series. All but two of these glyphs have been deciphered within the last decade through the efforts of Dr. S. G. Morley[1] and more particularly Dr. John E. Teeple[2]. The two glyphs that so far have

[1] Sylvanus G. Morley, The Supplementary Series in the Maya Inscriptions Holmes Anniversary Volume, Washington 1916. The Inscriptions at Copan. Appendix 6, Carnegie Institution of Washington, No. 219, Washington, 1920.

[2] John E. Teeple, Maya Inscriptions: Glyphs C, D, and E of the Supplementary Series. Am. Anthr., n.s., 27: 108–115, 1925. Maya Inscriptions IV. Am. Anthr., n.s., 29: 278–282, 1927. Maya Inscriptions VI. Am. Anthr., n.s., 30: 391–407, 1928.

The dates supplied by Dr. Morley were as follows:

Piedras Negras	Stele 1 (left side)	9.13.15.0. 0.
" "	" 3 " "	9.14. 0.0. 0.
" "	" 4 " "	9.13.10.0. 0.
" "	" 5 " "	9.14. 5.0. 0.
" "	" 6 " "	9.12.15.0. 0.
" "	" 8 " "	9.11.12.7. 2.
" "	" 9 " "	9.15. 5.0. 0.
" "	" 10 " "	9.15.10.0. 0.
" "	" 11 " "	9.15. 0.0. 0.
" "	" 39 " "	9.12. 5.0. 0.
" "	" 40 " "	9.15.14.9.13.
Pusilha	Stele H (2nd Initial Series)	9. 7.12.6. 7.
" "	D	9.10.15.0. 0.
" "	I (2nd Initial Series)	9.10.15.0. 0.
" "	K	9.12. 0.0. 0.
Tikal "	6	9. 4. 0.0. 0.
Uaxactun "	18	8.16. 0.0. 0.
Naachtun "	1 (right side)	9. 9.10.0. 0.
" "	2 (left side)	9.10.10.0. 0.
Macanxoc "	1(2nd Initial Series)	13. 0. 0.0. 0.

The further dates added by the writer were:

Tila	Stele A	10. 0. 0.0. 0.
" "	B	9.12.13.0. 0.

Hermann Beyer, Las Dos Estelas Mayas de Tila Chis. Memorias de la Sociedad Alzate, vol. 47.

Copan	West Altar of Stele 5	9. 7.19.17.11.
	Hieroglyphic Stairway Date 10	9.13.18.17. 9.

eluded decipherment are the first two of the series, glyphs G and F. The component elements of glyph F vary but slightly, and there seems every reason to believe that its meaning, as Dr. Morley suggests, is only general. Either something like "Here begins the Lunar count" or possibly it represents some deity connected with the night or moon.

Glyph G, on the other hand, is variable. Sometimes there is a numerical coefficient, sometimes the glyph stands alone. Unfortunately this glyph is not a constant component of the Lunar Series. Only about 70% of them contain glyph G. This naturally makes the task of elucidating its meaning more difficult.

The writer believes Glyph G represents the deity who ruled over the night preceding the day of the Initial Series to which it was attached. In Mexico the nine lords of the night were of very great importance. For the Maya area we have, unfortunately, little information. Nevertheless a passage in the Chilan Balam of Chumayel, translated by Martinez, would seem to point to the conclusion that among the Maya, too, they played a part of ritual significance. The passage in question, which describes the creation, relates the doings of nine gods. They appear to have behaved more or less as they wished before the dawn and when the world was still in darkness. Possibly these nine gods did not correspond to the nine of Mexico, but the mythological concepts of the two areas are so closely interwoven that one may hazard

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	Temple 11	9.14.15. 0. 0.
Los Higos	Stele 1	9.17.10. 7. 0.

S. G. Morley, The Inscriptions at Copan. Washington, 1916.

Pusilha	Lintel 1	9. 7. 0. 0. 0.

J. Eric Thompson, Man, 70, 1928.

Tonina	Stele 7	9.16.10. 0. 0.
Tonina	Stele 8	9.12.10. 0. 0.
Comitan	Stele 1	10. 2. 5. 0. 0.

Frans Blom and Oliver La Farge, Tribes and Temples. Tulane, New Orleans, 1927.

Copan	Stele D	9.15. 5. 0. 0.

A. P. Maudslay, Biologia Centrali-Americana. London, 1899–1902.

Naranjo	Hieroglyphic Stairs Block 5	9.10.10. 0. 0.

T. A. Joyce, The Hieroglyphic Stairway at Naranjo, Guatemala. International Congress of Americanists, Göteborg, 1924.

	The Leyden Plate	8.14. 3. 1.12.

that there was probably a connection. If glyph G does in fact represent the lords of the night, we should find at least nine variants, which only occur at intervals of nine days or multiples of nine days. As there were 360 days in a Tun (Maya year) each variant would occupy the same position in every Tun (360 divided by 9 leaves no remainder). In other words, the variant that occupied, for example, 9.15.0.0.0. would recur at 9.15.0.0.9., 9.15.0.0.18., 9.15.0.1.7., etc., all through the Tun, occupying, of course, the Tun position 9.15.1.0.0. The material at the disposal of the writer was composed of the group of 80 Lunar Series, published

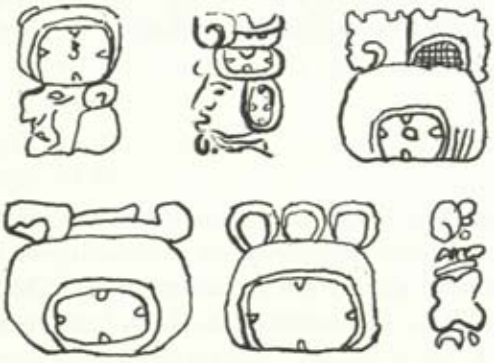

Fig. 1.

by Dr. Morley in the *Holmes Anniversary Volume*, twenty further unpublished drawings kindly supplied by Dr. Morley, and thirteen more dates gathered by the writer from various publications. These yield eighty-one examples of glyph G. Unfortunately no less than fifty of these record Tun endings.

Presuming that the series of nine lords of the night began on the first day of the Tun, the god of the ninth day, or rather the eighth night, would be associated with the last day of a Tun. Of the forty-nine Tun endings forty-seven have the Kin-maize form of glyph G, either face variants or normal forms (fig. 1). The connection between the maize deity and the number eight has been known for a long while, and one is not surprised to find the Kin-maize deity associated with the eighth night. The two Tun-ending dates that appear not to agree are:

62*	Copan	Stele 2	9.10.15.0.0.
24	Yaxchilan	Stele 11	9.16. 1.0.0.

The first of these is a doubtful reading. Both the Tun and Uinal dates are effaced and the month is suppressed. There is a choice of twenty-seven dates in the Katun ending on 6 Ahau, any one of which might be the date in question. The second may represent a variant of the Kin-maize glyph. The black and white halves, sometimes met with in this glyph, are present, as also is the maize superfix.

In addition to these Tun-ending dates there are four further dates, which occur at intervals of nine days from a Tun-ending, and therefore were ruled over by the Kin-maize deity. They are:

Copan, West Altar of Stele 5	9. 7.19.17.11.
22	9.15. 6.13. 1.
31	9.12. 6. 5. 8.
8	9.16. 6.14. 9.

All four of these dates have the Kin-maize variant as required. A word of explanation is due as to the reading of no. 8. This is the Initial Series date from Holactun, which Morley reads as 10.8.15.4.9. This interpretation, in view of the recent discoveries of ninth cycle Initial Series in Yucatan and Campeche, is obviously wrong. Furthermore, the style of the glyphs is that current in the middle of the ninth cycle. The presence of the small beetle glyph also points to a cycle nine date. The only Tun 13 ending on 2 Ahau, that is at all possible, is 9.16.13.0.0. The Initial Series date day sign is surely 7 Muluc. The Uinal coefficient is either four or fourteen. Finally, the date is two days after a new moon. The only date that fulfills all these conditions and is not too far removed from the terminal date of the inscription is 9.16.6.14.9. 7 Muluc 12 Cumhu. The new moon two days earlier, as indicated by glyph D, is exactly twenty-seven moons from the famous new moon date 9.16.4.10.8.

Dates associated with the first day of the group of nine lords of the night are four in number. The corresponding Initial Series are:

* The numbers before Initial Series are those used by Morley in his list of eighty Lunar Series.

71	9.11.15.14. 0.
72	9.12. 3.14. 0.
9	9. 8.10. 6.16.
11	9.10. 6. 5. 9.

As these are the first days of the group of nine, the preceding night, over which the deity rules, is the ninth and last. Therefore

Fig. 2.

we find a hand signifying ending (fig. 2). Stele H at Pusilha yields the date 9.7.12.6.7. This requires the variant for one, although the Kin-maize variant is given. Dr. Teeple informed the writer that the lunar series of this date was also incorrect. It would appear, then, that an error was made by the astronomer who made the calculation, or Dr. Morley read the Initial Series wrongly.

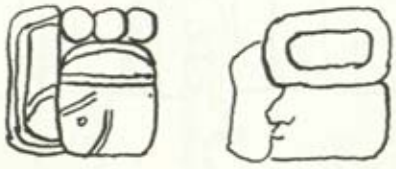

Fig. 3.

There are only two examples of a date that has a glyph G, and corresponds to the second day of the group of nine (fig. 3).

7	10. 2.9.1. 9.
16	9.16.0.2.16.

Glyph G in the second of these two dates is almost obliterated. The headdress would seem to indicate, at first glance, the Kin-maize variant. However, there is an oval object in front that never occurs with the Kin-maize variant, but resembles to a certain extent the bracket-like object in front of no. 7.

There are three examples of a date that has a glyph G occupying the third position in the group of nine. The glyph seems to have as its main element dots or small circles similar to those found in the month sign Mol. No. 78 of Morley's series, too, belongs to this group. Unfortunately the Initial Series is not surely known. Morley himself queries the reading and as the

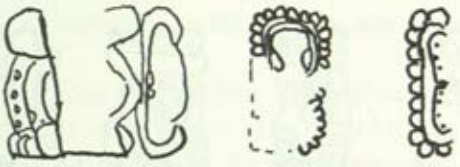

Fig. 4.

lunar series is not stated in full one can presume that Morley's reading is incorrect. Setting aside this date the three are:

23	9.15.14. 8.14.
28	1.18. 5. 4. 0.
66	9.10.19.15. 0.

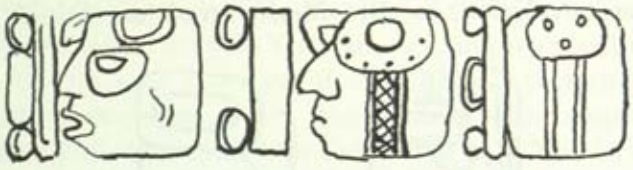

Fig. 5.

Dates that occupy the fourth position in the group of nine yield four examples of glyph G.

33	9.12.10.5.12.
34	9.12.10.5.12.
5	9.17. 9.0.13.
Piedras Negras	
Stele 40	9.15.14. 9.13.

With these dates glyph G has the form of a god that resembles god D. The tassel on the forehead seems to be a constant element, and with the exception of the last date all are associated with the

number seven. (Morley pointed out to the writer that he had incorrectly drawn no. 34 with a coefficient of thirteen instead of seven as shown in Maler's photograph.) The Piedras Negras date might be the Kin-maize variant, but the headdress is not oval shape, as it should be if this was indeed this variant. One must remember, too, that the tendency of a copier of glyphs would be

Fig. 6.

to draw a partially obliterated glyph in a form resembling the Kin-maize glyph, which form such an overwhelming number of the examples of glyph G.

Of a date occupying the fifth position in the group of nine there are three examples (fig. 6).

Leyden Plate	8.14. 3.1. 12.
Los Higos Stele 1	9.17.10.7. 0.
12	9.11. 6.2. 1.

Fig. 7.

In all three cases there is a coefficient of five, cross-hatchings and a series of dots. The Leyden plate example is interesting as a demonstration of the great antiquity of the conception of the nine lords of the night. The earliest date at Uaxactun (8.16.0.0.0.) is also correctly assigned to the Kin-maize deity.

The sixth position yields but two dates (fig. 7).

73	9.12.8. 3.9.
21	9.14.8.12.0.

The distinguishing features would appear to be the ear-flap and the circle below.

The seventh position is occupied by five examples of glyph G (fig. 8).

Copan Hier. Stairs, date 10	9.13.18.17. 9.
Piedras Negras Stele 3	9.11.12. 7. 2.
14	9.12. 2. 0.16.
46	9.16.13. 4.17.
77	9.14.19. 8. 0.

The constant element seems to be a sacred flame, either to the left of, or above the glyph. No. 77 in some respects bears more

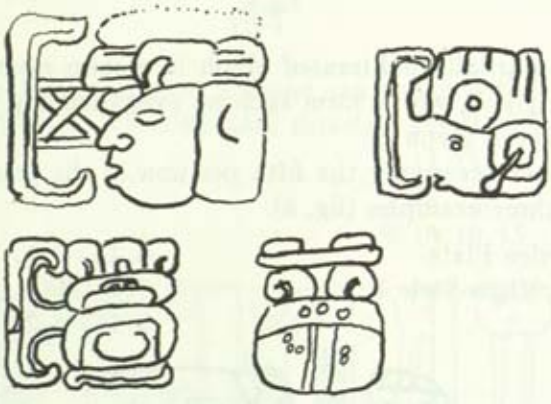

Fig. 8.

resemblance to the normal variant for four, although it also resembles the required seven. Possibly it is incorrectly placed here. There is no case of a glyph G occupying the eighth position. Of the eighty-one examples of glyph G seventy-six fit into the scheme put forward in this paper. Two are doubtful, and three are probably incorrect owing to wrong readings of the Initial Series or an error on the part of the original sculptor or the astronomer priest who gave him his instructions. Dates 62 and 78 can almost certainly be attributed to wrong readings. Stele H at Pusilha is almost certainly an error of the sculptor, as the lunar series is also in disagreement. Besides establishing the cult of the nine lords of the night among the Maya, glyph G will

now serve as a check on doubtful readings, and in combination with glyphs D and E and glyph C, during the period of uniformity, should supply the dates of partially obliterated Initial Series. In fact with these four glyphs during the period of uniformity a totally obliterated Initial Series could be restored with certainty, provided the monument could be dated stylistically within five Katuns.

FIELD MUSEUM,
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POSTSCRIPT

Note: After the above was forwarded for publication the writer had an opportunity of going over with Dr. Morley a large amount of unpublished material in the latter's possession. The following dates with glyph G were recovered:

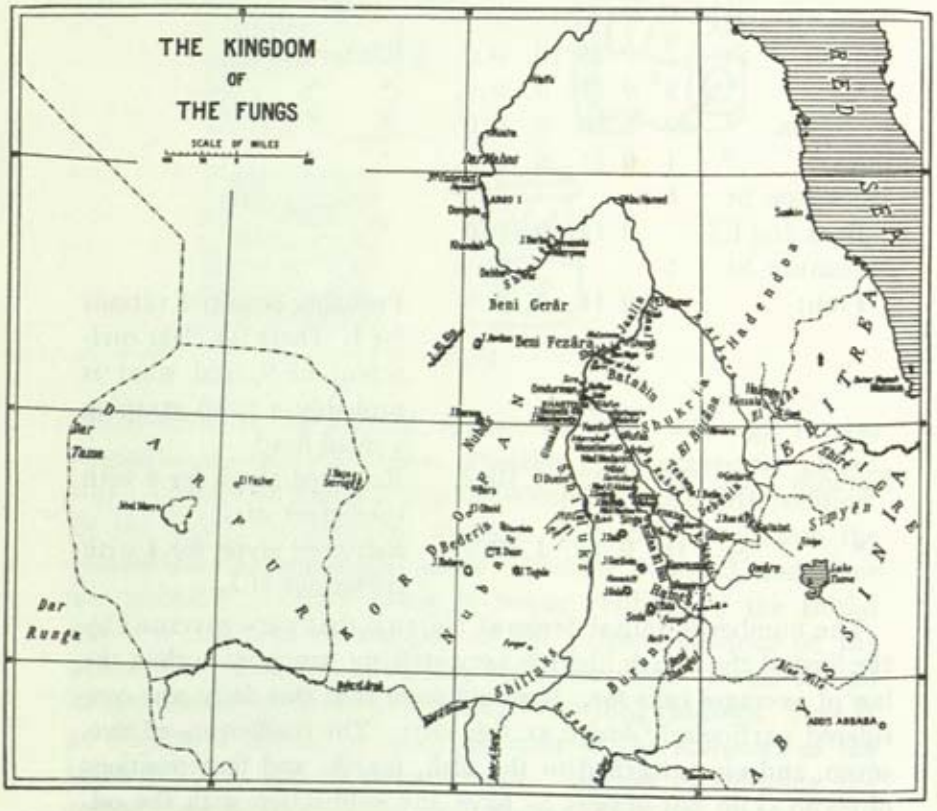
Itsimte	St.	2	9.15.10. 0.0.	Kin form
"	"	5	9.15. 0. 0.0.	" "
Uaxactun	"	19	8.16. 0. 0.0.	" "
Jaina	"	1	9.11. 0. 0.0.	" "
Macanxoc	St.	1		
Back 2nd I.S.			9.12. 0. 0.0	" "
Macanxoc	St.	1		
Front			9.11. 0. 5.9.	Probably required variant for 1. There is a clear coefficient of 9, and what is probably a hand grasping a small head.
Naranjo	St.	28	9.12. 4.10.2.	Required glyph for 4 with coefficient of 7.
"	St.	31	9.14. 4.12.7.	Required glyph for 4 with coefficient of 7.

The number of Initial Series at Naranjo that were governed by the lord of the fourth night is very striking, much more than the law of averages calls for. It would seem that this deity was considered particularly lucky at this city. The coefficients of five, seven, and nine attached to the fifth, fourth, and first positions of glyph G do not appear to have any connection with the calendar. Presumably they are part of the names of the respective ruling deities.

"ABU EL KAYLIK," THE KINGMAKER OF THE FUNG OF SENNAR

By ARTHUR E. ROBINSON

ALTHOUGH history affords many remarkable examples of ambitious or public-spirited men who have wrested the crown from vicious or feeble rulers, the number of national kingmakers as compared with that of usurpers is very small. In Africa, however, notable kingmakers are not infrequent, but none known to history equal in their exploits the Hameg viziers of the Fung Sultans of Sennar during the eighteenth century of our era.



The general belief held originally by the majority of African races in the semi-divine origin of their founders and rulers was similar to that held by the Aztec, Inca, and other civilized American peoples. This belief was potent in preserving a long line of kings whose descent from the original semi-divine founder of the nation could be (and is today by survivors) claimed by many rulers of diverse peoples spread far apart over the African continent.

This semi-divine descent was not infrequently matrilinear and one of the titles of the Christian king of Abyssinia today is "Lion of Judah," a title based on descent from the "Lord's anointed, King Solomon," through Maqada, the Queen of Sheba (Saba). Several tribes in the Sudan today recognize matrilinear descent, among these the Midobi of Jebel Midob, probably of Meroitic strain.

Often these tribes trace the descent of their semi-divine founders from a male animal, snake, fish, or similar creature. It follows generally that this creature is totemistic and most of the stories of the original creation closely follow the Biblical story, inasmuch as the earth was first peopled by gods. The legend of the pagan Nuer of today is almost identical with the first five verses of the sixth chapter of Genesis.

The Shilluk, considered by some to be the descendants of the Automoli, are probably the parent stock of many of the equatorial races of Africa. The tribal headquarters were much further north in the fifteenth century than today. They have a record of twenty-eight elected kings, selected from thirteen generations since their divine ancestor died. His tomb can be seen today and is a place of peculiar sanctity. The Shilluk greatly respect their women, who have much to say both before marriage and afterwards in the policy of both the family and the nation. The women are virtuous and exercise a free choice in marriage, subject to payment to their fathers of their marriage value. By a peculiar practice the daughters of the king are secluded in special villages. These women are not allowed to marry, but they may have illegitimate children without dishonor to themselves or their offspring by any married man of their tribe whom they may select.

The king is polygamous and takes over all his predecessor's wives as soon as the council have elected him.

In most African countries the ruler had a prime minister similar to the Turkish Vizier and in Islamicised kingdoms the chief minister of the court (El Gindi) was called El Wazir. In Dar Fur and other countries the Wazir was of necessity a eunuch and had access to the royal harem. This physical disability was necessary lest he have issue by a woman of royal blood or a slave and thus father a pretender.

The foregoing remarks are necessary to explain how the belief in their ruler's divine origin exercised on pagan Africans a much greater influence than the doctrine of "divine right" did on Christian and civilized nations, whose kings were crowned by princes of the Church.

The extraordinary powers wielded by Ras Michael Suhul in Abyssinia and Muhamad Abu el Kaylik in Sennar (simultaneously) were the results of centuries of belief by the people in the sanctity of the kingly office. This is most remarkable, as Abyssinia was Christian and the Fung Moslem, but the countries were contiguous. Neither of these men was a vizier in the true sense of being appointed by the monarch, nor were they eunuchs, nor of the same race as the royal family. In both countries the royal succession was elective and restricted to members of families who had a right to the throne by religious tradition, not by conquest or mere hereditary succession.

The Fung were originally heathen or pagan, the latter more probably. They adapted themselves to circumstances when they were threatened by a Moslem invasion and then claimed descent from the Prophet Muhamad. The ingenious manufacturer of their Islamic genealogical tree was made the first Qadi and leading religious personality.

The Fung ruler was elected in a similar manner to the Abyssinian Negus (Emperor) from among the sons of his predecessor or, failing sons, from among his brothers, by a council consisting of the vizier, the leading religious personality (Qadi in Sennar, Abuna in Abyssinia), the commander of the royal army, and the leading men of royal blood other than princes. In Abyssinia the

unsuccessful candidates were secluded, as in Dar Fur, but in Sennar they were executed by one of their relatives, who held the office of court executioner and was called "El Sid el Qom." In Wadai these unfortunate men were blinded.

The Fung Sultan was veiled to his subjects and as a sign that all land was vested in the ruler, he cultivated a piece of ground at an annual festival. His post was not a sinecure, as he could be deposed at any time by a decision of his council if they considered him unsuitable or unworthy of his office. In such a case the deposed ruler, like the Galla kings, suffered death by his own hand or the executioner.

A note on the Fung will be found as an appendix, and at the time this narrative commences they were a debased semi-Negroid people who had commingled with Negroes from all parts of their territories to such an extent that all traces of their non-Negroid or alleged Arab origin had disappeared physically as far as the royal family was concerned. They did not marry Arab women as their forebears had done, but women of so-called royal Fung blood were given to Arab chiefs as wives. The court consisted of slaves, ex-slaves, and other base-born persons and was popular among Negro Moslems from Morocco and west of the Nile.

The Negroes were called Nuba, Tekruri, and Moghrebi to differentiate them from the autochthonous Hameg population in the Gezireh.

Muhamad Abu el Kaylik (Calec, see Bruce; and Ab-li-Calik, see Browne) was a Hameg and founded the great family of viziers who controlled the destinies of the Fung for nearly sixty years, causing the ruin of this great Empire, which had lasted three hundred years. At one time its schools were renowned throughout the Moslem world, being second only to El Azhar at Cairo. He was born ca. 1127 A.H. (A.D. 1716) or about ten years after the sack of Shendy by the Shaigia Mek, Hamid es Samik of the Adlanab and the death of Mek (? Hamid wad Nail) of the Gamuia while defending the town. Muhamad was a contemporary of Hamid wad Nail's son, Mek Nail (d. 1757), but his paternity is uncertain and there is no record that either he or any of his sons ever married an Arab woman. Marriages with the Fung and Abdellab are

recorded, however. It is believed that he was of slave origin, as the Gamuia tribe of today state. Their account is that his father was a Sheikh Nasr wad Ibrim, one of the celebrated warriors of their tribe and a contemporary of the second Nailab Mek, Hamid wad Nail, who had a slave, Om Nagwar. This woman was the Mother of Muhamad. She was a Hameg (autochthonous Negress) and the reputed daughter of Mek Muhamad el Kayli of Jebel Dali, a hill southwest of Singa.

The title "El Kayli," now borne by the autochthonous Mek of Jebel Tagali (Kordofan) is believed to be the same word that occurs in the Midob and Birged dialects spoken today (see Macmichael's vocabulary) and means "red." This term "red," Ahmar (Arabic) or Kayli (Midobi), is applied to some of the natural physical features in the local geography and also to the offspring of Arabs by black women in consequence of the lighter color of these children.

The warrior missionaries of Islam commonly married women from the royal family of the pagan race they conquered. They slew the males in battle or as idolaters and then carried on the rule of the country by virtue of matrilinear descent through their native wife, whose semi-Arab native children carried on the old dynasty and line when they succeeded their father. Tagali, Jebel Rashad Jebel Moya, Jebel Dali and numerous other places in the Sudan afford instances of this Islamicisation of pagans and the continuation of an ancient dynasty. The Tungur seem to have been an exception, but their predecessors have left their name to the country, i.e., Kordofan (Kura-fan, i.e., the country of Kura).[1]

The present-day Moslem is so obsessed with the respectability and aristocracy of Sherifian descent that people of Negro blood

[1] Since this article was written, the writer has spent much time in research and now considers that the word Kordofan is derived from two Nuba words, Kordj (i.e., a gorge or divide) and Fan (i.e., the land or people). Kordofan is the country or people divided by the Nile from the inhabitants (?Semitic) of Eastern Africa.

Arabic writers described the non-Negroids as Anag (see also Books of Numbers XIII, v. 22, etc., Joshua XI v. 21, 22, etc., and Judges 1, v. 20, etc.) and applied this eneric term to the Semitic Bega and inhabitants of Alwa (Aloa) as distinct from the Habesh (Abyssinians) of Dar Maqada (Abyssinia).

The term Hameg was only applied by the Arabs to autochthonous Negroids and seems to have included the Nubas and allied races in the sixteenth century of our era.

without any trace of Arab or Hamitic strain produce genealogical trees that are neither correct historically nor by consanguinity, in the hope that some compiler or writer will reproduce this tree in a book. The book is then quoted to all and sundry as the authority for the family's alleged descent from Muhamad the prophet. The writer has examined a number of these genealogical trees and almost invariably the color of the present-day descendant of the alleged Moslem ancestor is explained by matrilinear origins.

There are other explanations of the term "Abu el Kaylik," i.e., the "Red One" or literally "The father of Red," and the phrase is found alliterated to Abu-likaylik or Abu'l-i-kaylik, etc., according to the system of orthography or dialect used. The present Nazir (head sheikh) of the Berber Merifab (a people descended from Meroites, Sabaeans, and Arabs) bears this name. He is a very dark-complexioned (almost black) man but claims pure Arab descent. History affords us some light on the matter, Mek Nasr ed Din (acceded ca. 1810) had a son of this name, who succeeded his father under the Turkish governor at Berber, and the present Abu el Kaylik is his lineal descendant. The Ingeriab, whose town was Ankeyre, are a kindred people to the Merifab and the family name "Timsah" (crocodile) was the same. The writer considers that Mek Nasr ed Din had a daughter of Abu el Kaylik as a wife, and in accordance with native custom her son would take his mother's family name as it was more powerful in view of his non-Arab color. Such a son would be an honored scion of the Abu el Kayliks, but would have been an illegitimate Arab, as his mother was not Arab.

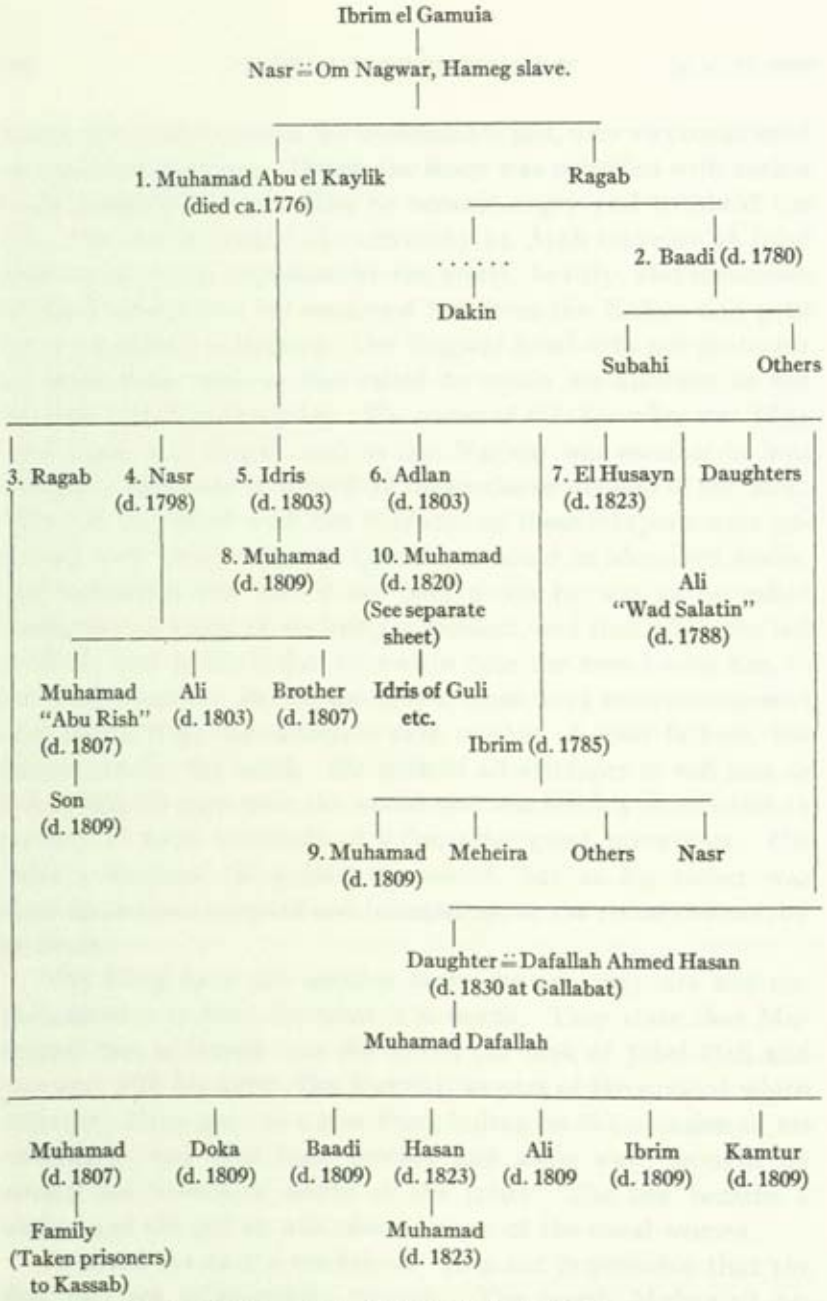
The present-day Hameg tradition concerning Abu el Kaylik is a romantic one. His descendants state that Om Nagwar was the daughter of a king (Mek) but in consequence of a very severe drought she was selected for the victim at the annual sacrifice held at Jebel Dali in honor of the "god of the waters," i.e., rain-god, a deity propitiated at the present day and whose priests (kukur) are the leading personalities among the pagan Nuba and other peoples. It was the local practice at that time to cast a virgin into one of the khors (perennial streams) caused by the

heavy rains and so drown the unfortunate girl, who was considered as a bride to the deity. Unless the deity was provided with such a bride annually by each tribe he became angry and withheld the rain. On the day before the ceremony an Arab traveller at Jebel Dali was so much impressed by the youth, beauty, and innocence of Om Nagwar that he ransomed her from the Kukur and paid for or provided a substitute. Om Nagwar lived with her protector for some time until he was called to rejoin his kinsmen in the Bayuda (south of Dongola). The name of this traveller was Idris wad Baadi wad Ragab, and as Om Nagwar was *enceinte* he was obliged to leave her at Jebel Dali under the protection of the Mek. Idris left his sword with Om Nagwar, as these weapons were engraved with verses from the Qoran and could be identified easily, and instructed her that if she bore a son he was to be called Muhamad as a sign of his being a Moslem, and that when the lad could be sent to his father he was to take the sword with him to prove his identity. At the age of ten, when boys were circumcised and passed from the maternal care to that of their fathers, the lad set out for the north. He resisted all attempts to rob him or induce him to part with the sword and reached his destination, a journey of some hundreds of miles, after great privations. His father's kinsmen recognized the sword, but as his father was dead the lad was adopted and brought up, in the tribal custom, by an uncle.

The Fung have yet another story, but as they are not unprejudiced it is given for what it is worth. They state that Muhamad Abu el Kaylik was the son of the Mek of Jebel Dali and was sent with his sister, Om Nagwar, as part of the present which tributary Meks gave to a new Fung Sultan on the occasion of his coronation, and that both brother and sister were brought up among the household slaves of the court. The boy became a soldier and the girl an attendant on one of the royal women.

So much for native traditions. It is not improbable that the first two are substantially correct. The youth Muhamad accompanied the Gamuia Sheikh, Nasr, in an attack on Kordofan ca. 1730. After Sheikh Nasr's death, Muhamad entered the service of Baadi Abu Sheluk (1135–1178 A.H.), the Fung Sultan whom

The Abu el Kaylik Viziers of Sennar



Note. Idris, the son of Muhamad Adlan fled to Jebel Guli, with all his slaves, retainers, and family, soon after the murder of Ismail Pasha by Mek Nimr at Shendy. He was joined by thousands of fugitives and founded an independent Hameg kingdom. In 1826, when he had some fifteen thousand people under his rule, he was given the alternative by Khurshid Pasha of submission and payment of tribute or enslavement by the Turks. Accompanied by Sheikh Abd el Qader el Yacubabi he went to Shendy, and after taking an oath of allegiance and agreeing to pay an annual tribute of six hundred and fifty ounces of gold, he was invested with a red robe and given a sword.

In 1861 Mek Ragab, son of Idris. traveled to Cairo and saw the Vali H. E. Said Pasha Muhamad in consequence of threats against his people by the Governor General of the Sudan. A Turkish tax collector and his escort had insulted some of the women and their men folk murdered the party. Some of the females had been outraged but the government insisted upon all suspected persons being executed and a heavy fine paid by the Mek. Said Pasha granted a free pardon to all.

Mek Ibrim was removed by the dervishes who appointed Serum as an Emir and Mek. Lord Kitchener removed the dervish Emir and with the consent of all the people approved of their election of Mek Idris, the direct heir of the first Hameg king, who is there now.

he subsequently deposed. Muhamad rose to command the royal bodyguard which was composed of Negro slave cavalry. These troops were mounted on black horses known as "Dongolawi," which were bred from a mixed strain of Syrian, European, and Arabs. The men were natives of Kordofan, Dar Fur, and various mountains from which slaves were raided. They were clad in metal armor similar to the suit purchased by H. R. H. the Prince of Wales when recently at Omdurman. This suit was authenticated and dates back to at least the sixteenth century. Recent writers have endeavored to weave an atmosphere of romance around these old weapons because they are similar in pattern to those of the Crusaders, but it is most improbable that any existing now were made during such an early period. The swords are modern and during the last century the blades, which are long and straight, were made at Solingen and imported via Suakim or Aswan to the Sudan, Dar Fur, etc. Most of the armor and helmets are of iron or copper, those of steel are of Mameluke origin. The chain-coats (hauberks) were worn over leather or quilted cotton surtouts, and were made of small iron rings. The writer has not seen any of welded steel or of such fine workmanship as the specimens shown at the Tower of London or Windsor Castle. So many reproductions of these old weapons and accoutrements have been made since 1880 at Aswan and Cairo that it is almost impossible to detect the genuine from the spurious articles. The shields carried by the cavalry were of iron, but very few of the men possessed them. The Abyssinian chiefs appear to have obtained theirs from Cairo during the Mameluke period. The horses of the Fung bodyguard (like the Darfurian cavalry) were all trained to kneel in a manner similar to that of a camel, so that the rider could mount in full armor. The stirrups consisted of a ring for the big toe and the saddles had such high peaks and protecting flaps of wood that a leap into the saddle from the ground to a standing horse was almost impracticable. The animals were protected by metal bosses, plates, and coats of quilted cotton. It should be noted that most of the horses had iron plate shoes on the forefeet only, and it was not the practice to use any animals except stallions as war horses.

In 1744, Socinios Yasus 11 (1729–1753), the King of Abyssinia, invaded Fung territory. He had sent two copper drums ornamented with gold and silver to the Fung Sultan as a present when the latter was crowned. The present was regarded as a reminder that Sennar was tributary and was part of the Christian kingdom of Abyssinia, as it had been when conquered by the King of Axum, who destroyed Meroe, and later when Alwa was probably a protectorate, if not feudatory. The Fung Sultan sent a prompt reply in the form of some halt and blind old horses instead of the pure-blooded Arab mares sent to previous Abyssinian rulers. The war was the result of this interchange of royal compliments.

The army of Socinios was joined by a certain Nail wad Ajib, a renegade and Arab traitor, and a force of a hundred thousand men with innumerable camp followers of both sexes swept the entire country by three columns which marched along the banks of the Atbara, Dinder, and Rahad rivers, slaughtering the inhabitants and burning villages. Socinios arrived at Badjboj on the eastern bank of the Blue Nile, but was unable to cross the river as it was in flood. He camped there, and the wails of the panic-stricken women of Sennar could be heard by his men. The Fung Sultan fled but Muhamad Abu el Kaylik with Qamis (one of the Darfurian princes) and the Abdellab sheikh Amin Musmar wad Ajib led a picked force of four thousand men by a ford across to the eastern bank. The Abyssinians were taken by surprise and a terrible slaughter occurred at Zekyat (April, 1744) Safar el Kheir 1157 A.H. The Abyssinians lost eighteen thousand men and all their sacred relics and insignia, but these latter were ransomed later for 8000 ounces of gold. The Portuguese cannon discovered in 1821 by Mr. English, the American officer commanding the artillery of Muhamad Ali Pasha, were part of the loot taken by the Fung. They were muzzle-loading naval guns of late sixteenth century manufacture.

Bruce gave the date of this battle as 1736 but Abyssinian chronology differs from our present system by six years. As far as practicable this chronology is taken from Arabic narratives and converted into our present system.

In 1747 (1160 A.H.) an army was sent from Sennar to Kordofan to eject the Musaabaat who had occupied the country and raided the Arabs tributary to the Fung. This army was defeated at Kahif and the survivors fled to Shamkata, where they were rallied by Muhamad Abu el Kaylik. He repulsed his pursuers and reached Sennar, but two of the Abdellab sheikhs were killed. The losses sustained in Kordofan were so serious that it was not until 1753 that another army was sent from Sennar. The force was led by a local sheikh and was betrayed to the Musaabaat, who massacred all the men in an ambush. Two years later Muhamad Abu el Kaylik was sent with a picked force and he re-occupied El Obeid with the assistance of the local Arabs. He was appointed Fung governor of Kordofan and remained at El Obeid until 1760.

Meantime, Sultan Baadi had developed a rapacious and tyrannical disposition and became known as "Er Gahman," i.e., the "snatcher." His officials became afraid of their lives and those of their families, so sent a message to Muhamad to bring his forces to Sennar and depose the Sultan. Muhamad left his brother Ragab (? Wadi, son of Baadi) as acting governor and marched eastwards. The Gamuia tribe joined him near Jebel Heneik and the whole force crossed the Nile near El Ais, whence they marched to Farah (near Messellemia) and were joined there by the Beni Khaled (Khawalda) and Baadi's son, Nasr. The council appointed Nasr to succeed his father, and the army marched to Sennar, where Baadi at once surrendered. As a recognition of his long reign the deposed Sultan was permitted to be exiled and not executed. He was sent to Suakim, then a Turkish port, and from there fled to Ras Michael of Tigré, who as a recognition for Baadi's efforts in making a customs treaty between Abyssinia and Sennar (some years previously), by which all receipts were shared by each country, appointed him Shum (governor) of Ras el Feel and the Abyssinian resident at Chelga.

Baadi was decoyed eventually from Chelga, after most of his Fung followers had been slain by a robber, and murdered at Teawa by the Hameg Mangil there, Wad Hasan, who had been ordered to remove Baadi by Sheikh Adlan wad Subahi (ca. 1764).

After the deposition of Baadi, Muhamad Abu el Kaylik re-

tired to his estate for a time but later assumed the post of vizier, becoming the ruler *de facto* of Sennar. He was obliged to return to Kordofan and left his friend (akh, i.e., brother) Adlan wad Subahi, Sheikh of Khashm el Bahr, as acting vizier. It was Sheikh Adlan who described the Sultan Ismail (successor to Nasr) as

> a king at Sennar that neither knows how to govern nor will suffer others to teach him; who knows not how to make war and yet will not sit in peace.

About 1182 A.H. (A.D. 1768) the Sultan Nasr attempted to free himself from tutelage and made a plot to remove Adlan and his brother Kitto (governor of Sennar) and appoint Fungs. The Sultan was arrested and exiled to the village of El Bugara, but he again made intrigues and attempted to raise the Fung against his enemies. The Sultan was arrested by Baadi wad Ragab, nephew of Muhamad Abu el Kaylik, and executed by Ahmed, Sid el Qom at Sennar with two infant sons.

Although exiled, Nasr was not replaced until after his death. His brother, Ismail, was appointed Sultan by Muhamad Abu el Kaylik, and he was the ruler seen by James Bruce.

At that time there was a great struggle between the Gamuia and the Abdellab (Wad Ajib) as to supremacy and the right of collecting the tribute from Arabs north of Ras Khartoum or on the western banks of the Nile. The Gamuia refused to pay tribute except to the nominees of Muhamad Abu el Kaylik and forced the Hasania, Kababish, Muhamadia, and other tribes to pay the tribute to them. The Abdellab, who had the hereditary right of collecting all tribute from the Arabs, refused to accept such an arrangement and, although numerically inferior to the Gamuia, attacked them. The Abdellab chief, Nasr wad Amin, was killed in single combat by Mek Khojali, who thrust himself between the tribal chief, Mek Sulimam wad Nail, and the Abdellab sheikh. From that period (1769) the Abdellab ceased to be supreme among the Arab families and many tribes refused to pay any taxes at all. It should be noted that the taxes paid to the Fung were in kind and the animals and grain were entirely consumed by the army of slaves and innumerable servants of the Sultan.

Both Sheikh Adlan and Muhamad Abu el Kaylik died ca. 1190 A.H. (1776), after the return of Bruce to England. The Sultan Ismail was induced to form a plot with the Arabs and certain Sennarian religious teachers, who had been supplanted by Hameg and Moroccan or Negroid religious sheikhs from Mecca, against the Abu el Kaylik control over the throne.

Baadi wad Ragab, the nephew of Muhamad Abu el Kaylik, marched from El Obeid to Sennar with black troops and seized the Sultan, who was exiled to Suakim with his family. Kordofan was left temporarily in charge of Dakin, a nephew of Baadi wad Ragab, but he was ejected by the Musaabaat.

Sheikh Adlan wad Subahi left a son, Subahi, who succeeded his father for a time. Muhamad Abu el Kaylik had numerous children, the sons whose names are recorded being Ragab, Nasr, Idris, Adlan, Ibrim, El Husayn, and Ali. With the exception of Ali, all these sons ruled Sennar over a puppet Sultan. The names of Muhamad Abu el Kaylik's daughters are unknown but they were apparently of Negroid type, not that of the Arab women represented by Sittina bint Ajib, who married the heir to the throne of Shendy.

It is said that Abu el Kaylik's sons were jealous of one another and Baadi wad Ragab assumed the viziership in consequence of their mutual distrust. He elected as the new Sultan, Adlan "Abu Guederi," a reputed son of the late Sultan Nasr. Sultan Adlan gathered around him most of the Fung and Arab leading men, and soon after his coronation commenced to plot against the Abu el Kayliks. The vizier, Baadi wad Ragab, made numerous administrative changes and no tributary Mek (king) or tribal sheikh could be appointed or succeed without his authority. Muhamad el Amin had succeeded his brother Nasr after the latter's death and had moved to Arbagi from Halfaya el Muluk. Baadi removed Muhamad and replaced him by Omar wad Abdallah and divided the power and ancient privileges of the Abdellab with their rivals, the Gamuia. He appointed Mek Saad wad Idris as Mek of the Saadab Jaalin and thus excluded Idris wad Idris' son, "El Fahl," from the rightful succession because he was a nephew of Muhamad el Amin. Muhamad wad Ali, a son of

Sheikh Adlan's brother Ali, was removed from the sheikhship of Khashm el Bahr (a large district between the Blue Nile and Rahad rivers) and replaced by his cousin Subahi wad Adlan. Later Nasr wad Muhamad Abu el Kaylik was flogged by the orders of the vizier, an incident that united the brothers against him. A plot was formed to kill the vizier, and whilst Sheikh Shanbul (Shanabla of Wad Medani, a family of royal Fung descent) and Subahi wad Adlan were collecting tribute they were ambushed by a large force, who killed their escort and took their arms. The vizier heard of this incident and assembled his followers in 1780. He crossed the river to the eastern bank with his son Subahi, who fled when he saw the superior numbers of his father's enemies. Baadi wad Ragab knew that the real leader of the revolt against him was Muhamad wad Amin and he advanced against the hostile force calling out the name of his enemy. The two met in single combat; Baadi was unhorsed and mortally wounded by a sword blow, which clove through his armor. As he knew that he was dying he asked for leave to speak with his relatives who were with the force hostile to him. The deposed sheikh, Muhamad wad Ali, heard his request and shouting, "Do you speak still?" killed the dying man by a sword blow on the mouth. This cowardly action almost caused a fight between the Abu el Kayliks and the other conspirators and made a feud that eventually caused the annihilation of the Kamatir (family of Muhamad Kamtur).

Ragab wad Abu el Kaylik, who had been present at the death of the late vizier, assumed his post but the Sultan Adlan wished none of the family near him. He raised a large army and ordered Ragab wad Abu el Kaylik to proceed with it and re-occupy Kordofan. Ragab left his brother Ibrim to represent him at Sennar and with his brother Nasr left for Kordofan in 1194 A.H. (A.D. 1782). Nasr was known as "Abu Rish" or the "Father of the Feather" from the long plume which he wore in his helmet and he was in command of the cavalry.

The Abu el Kayliks retained all the cavalry under their own hands and by this kept all military power as the Sultan's forces were, like the Arabs, armed only with swords, knives or spears, and

the camels of the Arabs were no match for the armored horses of the Abu el Kayliks.

Ragab remained at El Obeid as Fung governor of Kordofan for some time.

In 1196 A.H. (A.D. 1782) a Fung army was defeated by the Shaigia, who ejected the Fung resident from Dongola, and the Shaigia became independent of Sennar. They became the terror of traders and the riverain population from Abu Hamed to Omdurman, as they attacked caravans and raided villages for women.

About the year 1784, Ragab sent his brother, Nasr and Rahma wad Fadl-allah (a Mahassi of Eilafun) with seven hundred horsemen to attack Muhamad el Amin, who had re-assumed the Abdellab sheikhship. Muhamad fled and was replaced by Baadi wad Musmar el Amin. The latter was appointed by the influence of the religious community at Arbagi and in revenge Muhamad el Amin made an alliance with the Shukria, who attacked the town. This ancient seat of Moslem learning and the centre of the great pilgrim route from and to Mecca, Central Africa, and Nigeria, was sacked and razed to the ground. The survivors fled to Messellemia, and the ruins are now considered as haunted by the spirits of the slaughtered Moslem saints.

Soon after these events, Muhamad Nimr of the Jaalin, Muhamad el Amin, and other malcontents persuaded Adlan, the Sultan, to attack the Abu el Kayliks. The acting vizier, Ibrim, was seized and with many of his relatives and friends publicly executed in the market square at Sennar. The daughters and granddaughters of Muhamad Abu el Kaylik were given to Arab or Fung chiefs as concubines and slaves. News was sent to El Obeid, and Ragab wad Muhamad left there, accompanied by Mek Saad of Shendy and Haji Makmud el Magdub, a renowned religious sheikh of Damer. El Obeid was reoccupied by the Musaabat, but Sultan Tirab drove them east and the Darfurian army occupied Omdurman (founded ca. 1680).

Ragab crossed the Nile, and Sultan Adlan sent his army to attack him. The opposing forces met at Et Taras (near Sennar), and Ragab with most of his supporters was slain. Mek Saad escaped and the survivors were rallied at Abud (the headquarters

of the Arakiin, a religious family) by Fiki Hejazi wad Abu el Zaid, a native of Zalata and descendant of the great religious sheikh of Eilafun, Idris wad Arbab.

Ragab's brother, Nasr, was elected as leader of the Abu el Kayliks but he fled to Tomat (on the Setit), then the headquarters of the Dabaina Arabs (1201 A.H. or A.D. 1787).

Sultan Adlan then appointed his own vizier, but he was not permitted to enjoy his independence for long. Nasr moved to Hillet Tayiba Qandilawi ca. 1202 A.H., and in 1788 (1203 A.H.) the Sultan sent an army to attack him. This force was commanded by El Amin Rahmat el Kitfawi, Muhamad wad Qamis Abu Rida (commander of four hundred black slave cavalry) and some Arab chiefs. A battle took place at Interrahna, in which Nasr's brother, Ali, was killed. Most of the Sultan's troops were forced into the Nile and drowned as the river was in flood. Nasr marched to Sennar and after a short siege, during which the Sultan Adlan died of a broken heart, the capital surrendered. The Sultan's troops dispersed, and the black horse became bandits and a terror to all between Shendy and Rufaa. They killed Sheikh Abd Allah wad Musmar of the Abdellab in 1789.

Nasr assumed the viziership in 1788 and appointed Awkil wad Unsa as Adlan's successor. It may be of interest to note that Adlan's nickname, "Abu Guederi" means "Father of smallpox," and it is probable that his face was very pock-marked.

The new Sultan's reign was a very short one, as he had to flee for his life from his vizier-master. Nasr's confidant was Haji Suliman wad Ahmed, one of the Saadab Jaalin who displaced Fiki Hejazi.

Awakil was replaced by Tabl 11 wad Nawwar but in 1204 A.H. (year commenced September 21, 1789) Muhamad el Amin and Muhamad wad Qamis on behalf of the Fung nominated a certain Rubat as the Sultan. Nasr raised a force and marched to attack Rubat's supporters, but was defeated at a place between Shendy and Halfaya el Muluk. Another battle soon afterwards resulted in the death of both Rubat and Tabl's successor, Baadi v wad Dakin. As both Tabl and Baadi had been killed, Nasr appointed Husayn Rubat as Sultan in 1205 A.H., but he died soon after his

coronation and was followed as Sultan by Nawwar. Nawwar was deposed and executed by Nasr within a year of his election and was followed by Baadi VI wad Tabl, an amiable and complacent young man of about twenty years of age.

These civil wars plunged the country into a most lawless and disorganized state. There was no attempt to continue the quarantine posts at Jebel Gerri and elsewhere. Smallpox became almost endemic in consequence, and famine stalked the land. Murder and robbery were common occurrences, personal or tribal feuds numerous and bloody. Muhamad el Amin was murdered by Muhamad el Qamis and Abdallah wad Agib who stoned him to death in his own house, ca. 1206 A.H. (A.D. 1791). Muhamad Nimr seized Shendy with the help of Muhamad el Qamis and usurped the Jaalin Mekship from the Saadab (see "Nimr, the last King of Shendi," by the author). A great fight took place in 1795 at Shambat between the Shukria and Batahin, in which the latter were almost exterminated. The Shukria chief, Awad el Qerim "Abu Sin" (Father of the Teeth), from his prominent large teeth, was murdered after the battle by a Batahi prisoner. "Abu Sin" was the surviving son of Sheikh Abu Alì, who was murdered (with his sons) at Abu Haraz ca. 1779, by the Vizier Baadi wad Ragab. The circumstances were briefly as follows.

The Shukria, a pastoral tribe of non-Arab origin and supposed by some to be fugitives from Merõé, had a blood feud with the Rikabia and Batahin. The Rikabia, a very wealthy and almost pure-blooded Arab tribe, suggested to Baadi that the Shukria should be made to pay tribute (and incidentally of course the Rikabia would get back a bit of their own). Ragab sent a Hameg force, commanded by Krenka, Kitto, and several sons of Ibrim wad Muhamad Abu el Kaylik. Although the Shukria only had seven horses and three suits of armor, they routed the Hamegs and captured over two hundred war horses with the accoutrements of their riders. The Rikabia tribe was exterminated, the males all being killed and the females absorbed into the Shukria. It is from these Rikabi Arabs that the present day lighter-colored Shukria are descended. When Ragab heard of the defeat of the force and the death of most of its leaders he was furious. Krenko

had been so sure of victory that he had married the wife of one of the Shukria chiefs by proxy, but her husband had avenged this outrage in single combat when he clove Krenka in half with a two-handed sword. The Sultan Adlan however sent messages to the Shukria and promised them the royal "Aman" (pardon) if they came and swore fealty to him personally. The Shukria chiefs did so and were given swords of honour, red robes, and other gifts as a sign of royal favor. Baadi invited them to Abu Haraz and travelled from Rufaa to meet them. They were treacherously murdered by members of the Abu el Kaylik family whose relatives had fallen in the battle and who were incited to do so by the daughters of Ibrim, whose sons had been killed by Shukria.

It may be of interest to note that the Shukria in 1882 placed over two thousand mail-clad horsemen in the field.

To resume our narrative, Kordofan was lost entirely to the Fung and became a province of Dar Fur; Taka (Kassala), Northern Dongola, the Shaigia, Merifab, Jaalin, and Abu Rof became practically independent and waged war among themselves or on their neighbors. All trade and communication with Egypt was stopped, and in November, 1796, Murad Bey (the Mameluke) sent a large expedition from Cairo to Dar Fur under the command of Ahmed Agha el Zantioti with the object of conquering that country (vide *The Mamelukes in the Sudan*, by the author).

In 1211 A.H. (1796) Nasr attacked Muhamad wad Qamis, who had settled with his brigand bands of ex-slave cavalry at El Turayfa, and killed him. The villages in which his followers had been permitted to live were destroyed, and a considerable tract of country on the eastern bank of the Blue Nile was ravaged. The great fight between the Gamuia and the Kababish (vide *The Gamuia Tribe*, by the author) against the Fezara and Sultan Hashim took place at Heneik about that time. After the defeat of Sultan Hashim, Nasr rode to Omdurman and bribed the Beni Fezara to return to their own territory and desert Hashim, who then became a fugitive.

Nasr returned to Sennar in 1797 and assumed royal state. He did not depose Baadi, who was the nominal Sultan, but assumed

the title of Mek, i.e., King. He appointed as his vizier Er Arbab Dafallah.

Nasr became pompous and overbearing, developing a very tyrannical and rapacious character. He imprisoned numbers of his relatives and their daughters or sisters and refused audience to any one, including his brothers, except through his vizier, Abdallah. In 1798 a meeting was held at Abud and his brothers decided to depose Nasr from the viziership to the Sultan on the ground that he had exceeded the prerogatives of his office. Nasr sent some of the religious sheikhs to interview his brothers and had all his prisoners released, and then proceeded to Sebil, where he was informed that all his efforts to assuage his brothers had failed. He returned to Sennar and collected his treasure. He fled thence to Bugara, accompanied by his vizier, Dafallah, and later to Deberki, the headquarters of the Abu Gin (Father of the devil) Arabs, a wicked unruly people. From there they fled to Jebel Gerri and thence to Abud, where they sought sanctuary with the Arakiin. A force under Adlan wad Muhamad Abu Kaylik was sent to arrest them, and the vizier, Dafallah, met it with his helmet in his hand as a sign of submission. Nasr was taken a prisoner and then handed over to Subahi wad Baadi wad Ragab, who killed him at Abu Haraz in 1213 A.H. (A.D. 1798) in revenge for his father's (Baadi, the vizier) death in 1780. From that period "dog ate dog" in the Abu el Kaylik family.

Idris wad Muhamad Abu el Kaylik, a wise and just man, succeeded Nasr. He resided near Sennar and deputed his powers to four wazirat (viziers), Er Arbab el Qurashi, Sheikh Zein el Abdin, Fiki el Amin, and his own brother Adlan, who commanded the troops. Idris ruthlessly hunted down all the robber bands and soon had the country in a normal state of security. Trade began to pass freely and the Cairo-Sennar caravan was resumed.

Idris sent an army against Abdalla wad Agib, who had sheltered Nasr at Jebel Gerri, and defeated him.

Soon afterward, Idris quarreled with the reigning Sultan, Baadi VI, and in order to depose him patched up the feud with the Kamatir. Baadi was deposed and retired to his estate at Abgeili, and Ranfi (1799–1804) was then crowned in his stead. Sultan

Ranfi made numerous grants of the royal lands to religious and civil sheikhs so as to consolidate his power. These title deeds are among the few written documents of the period extant today.

The Abu Kayliks did not forget the action taken by Muhamad Nimr when Ibrim was murdered. He was attacked, captured, and killed with a number of his sons and leading men.

In 1216 A.H. (1801) Sultan Hashim sent his son, Isawi, into Kordofan to raise up a revolt against the Darfurian governor. Isawi was driven eastwards and captured by a force commanded by Adlan wad Muhamad Abu el Kaylik, who took him to Sennar, where he died. Another story states that the Gamuia revolted under a Sheikh Isawi and that he was killed by Adlan.

In 1803 the Batahin and Beni Khaled (Khawalda) were attacked by the Shukria and Hadendoa. Sheikh Zayn of the Khawalda was killed and his tribe driven out of the Butana.

The vizier, Idris, died at Gemad al Akhir 1218 (October, 1804) and his brother Adlan took his place. He adopted a lavish mode of living, which excited the envy of his relatives and the Sultan Ranfi. A plot was formed in which Muhamad wad Ragab and Muhamad wad Nasr (two nephews of Adlan) were the ringleaders. The former was actuated by envy, and the latter by revenge, his brother Ali having been poisoned by Adlan's orders. On the occasion of Adlan's marriage to Bint wad Gumaa (one of the Abdellab) the house of the bride's father was surrounded. Adlan broke a hole through the mud wall of the house and escaped to his horse, but was pursued and mortally wounded. He reached Sennar with his son, Muhamad, and died there of his wounds on Ramadan XVIth 1218.

Muhamad wad Ragab succeeded Adlan as the vizier, and a quarrel soon broke out between the relatives of the late vizier and their allies, the Kamatir. Adlan had gone to his wedding sumptuously dressed and mounted on his war horse. The breast-plate of the armor was inlaid with some hundred okias of gold (ca. 160 oz.) and the head-plate, bosses, etc., were all heavily ornamented with the precious metals. The Kamatir seized these and all Adlan's treasure with what they could find in Ranfi's palace also. They were ordered to give up the heirlooms and share the loot

but sent a reply that the Abu el Kaylik's property was now theirs by right of conquest. A force of the Abu el Kayliks attacked the Kamatir but Muhamad wad Nasr was wounded and Muhamad wad Ragab was taken prisoner. Sennar was looted and the Kamatir were temporarily masters of the capital, where they established themselves. As soon as Muhamad wad Nasr's hand was healed he went to Hillet Tayiba el Qandilawi and gathered a force with which he attacked the Kamatir and drove them out of Sennar to the eastern bank. The local proverb, "When my hand is healed I will finish you," is taken from this incident.

The Abu Gin (Hamada) tribe was ordered to attack the Kamatir and they chivalrously agreed to settle matters by a combat between eleven of their picked warriors and Sheikh Kamtur with ten of his sons. A desperate fight took place in which all the Abu Gin warriors were killed, and Sheikh Kamtur sent the arms and accoutrements of the dead men to Muhamad wad Nasr as signs of his family's prowess. Sheikh Rahma (Er Arbab) Fadl-allah Karash of Eilafun repulsed a raid by the Kamatir, and soon afterwards a peace was made by the mediation of the religious sheikhs of Tayiba, Abud, and Eilafun.

The Kamatir agreed to release their prisoners and return all loot, and a marriage was arranged between one of Kamtur's daughters and Muhamad wad Nasr. Muhamad Ragab was released, and the prospective bride was sent with her brother, Abd el Qader, to Sennar. When Muhamad wad Nasr found that all the gold ornamentation had been removed from the armor, he stopped his slaves slaughtering the camels for "karama" or the marriage sacrifice (for detailed explanation, see *Sudan Notes and Records*, 2:26). The Fung state that the gold from the royal "nahas" was missing from that date. A description of this drum will be found in a note by the writer (op. cit., 4: 212).

A force was taken secretly by Muhamad wad Nasr, who attacked the Kamatir in April, 1804. Sheikh Saleh was killed by Sheikh Kamtur, who fell surrounded by several of his sons' bodies. The current proverb, "Beware lest there happen to thee that which befell the Kamatir at Suweibna," is taken from this fight, which completely broke the power of the Kamatir. Derrar succeeded

and endeavored to rally his kinsmen, but although one or two survivors were found at Karkoj in 1860, their well-armed and mounted force of kinsmen warriors was practically annihilated.

The Sultan Ranfi, who had evacuated Sennar before the death of Adlan, returned to his capital. He was attacked and killed by Muhamad wad Nasr, who was jealous of his popularity and influence. The exiled Sultan Baadi VI was reinstated and remained the nominal ruler until 1821, when he surrendered to Ismail Pasha (vide *The conquest of the Sudan by Muhamad Ali Pasha*, by the author).

The Fiki Amin wad el Asha, one of the agents of the late vizier, Idris, was publicly executed by order of Muhamad Nasr, who retired to Kassab (near Jebel Guli), and Muhamad wad Ragab resided at Wad Medani. Derrar Kamtur went to Omdurman and became reconciled to Muhamad Nasr, but the latter quarreled with Muhamad Ragab, who was joined by the Shenabla, Derrar Kamtur, and Suliman es Saadab. In 1221 A.H. (A.D. 1807) they proclaimed a certain Agban, one of the surviving Fungs, as Sultan, at Abu Haraz. They were attacked and defeated by Muhamad Nasr, who appointed his uncle, El Husayn wad Muhamad el Kaylik, as the vizier to Sultan Baadi VI. The deposed vizier, Muhamad wad Ragab, fled to Eilafun and was given sanctuary there by the Mahassi religious sheikh. Of Agban we hear no more, but it is presumed he did not live long after the defeat of his nominees.

Muhamad Nasr and his surviving brother both died suddenly during September, 1807. Each successive vizier had taken over the slaves of his predecessor, and the slaves of the late Adlan wad Muhamad Abu el Kaylik fought with those of Muhamad wad Nasr in order to determine their ownership by the supremacy of their respective masters. Adlan's slaves were defeated but fled and were rallied by Muhamad wad Ragab and the Kamatir. Muhamad wad Ibrim wad Muhamad Abu el Kaylik assumed command of Muhamad Nasr's slaves and attacked the others at Hillet Et Tayiba el Qandilawi, where he killed Fiki Haji Suliman wad Ahmed (Saadab) and routed the faction of Muhamad Ragab. Muhamad wad Ibrim assumed the viziership, and the slaves of the late Muhamad Nasr marched to Kassala. (This must be an

error for the town of Kassa*b*, to which Muhamad Nasr had retired ca. 1805, as the slaves probably had left their families there.) When they arrived at Kassab (?Kassala) the slaves founded an independent petty state and elected a certain Tayfara as their Mek or king.

Husayn Muhamad Abu el Kaylik joined Muhamad Ragab in retirement. The new vizier, Muhamad Ibrim, raised a force of slaves, with which he raided the Baggara (cattle-owning) Arabs and sent the loot to Kassab. He next raised the Beni Fezara Arabs and raided the village of Ras Khartoum, where Fiki Ibrim Muhamad Ali was killed.

Muhamad Ibrim then settled at Abud and made plans to attack Kassab. His plot was divulged and the ex-slaves marched to Sennar and sacked the city. The family of Muhamad wad Ragab was carried off by the slaves in chains to Kassab. The vizier raised a large force and marched to Kassab, which he attacked. The ex-slaves were given no quarter, and of some hundreds their Mek Tayfara alone was spared. The vizier occupied Tayiba el Qandilawi and thence moved to Deraysa.

The whole country was in a state of utter lawlessness, and the raids of the Shaigia from Dongola had destroyed the riverain villages on the western bank of the Nile. They sacked the Merifab capital and carried off many of the women.

Muhamad Ragab raised a force at Eilafun and with the Arakiin raided the Fadnia Arabs. A quarrel took place over the division of the loot; the Arakiin and the place are famous now in story and song, which relate how the spoilers fell into their own matamores (underground grain stores, on a system introduced from Morocco) and were unable to get out. Muhamad Ragab then went to Turfaya and made an alliance with Derrar Kamtur against the vizier (Muhamad Ibrim), but he was betrayed by the Kamatir to Muhamad wad Adlan, who killed him in 1807 in revenge for his father's death at Sennar.

Muhamad wad Adlan (known now as Mek Adlan of the Hameg) then made a plot to depose the vizier, Muhamad Ibrim, and seize his office. He was joined by Er Arbab Dafallah wad Ahmed, Fiki Medani Wad Abbas, and some others. The plot was divulged to the vizier, and Fiki Medani was executed. In

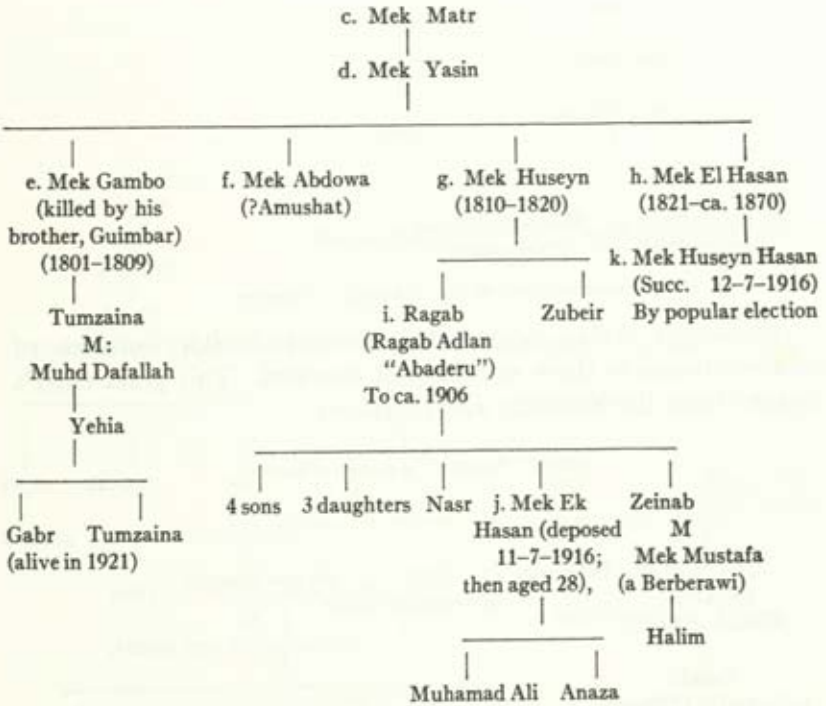
1223 A.H. (A.D. 1808) the vizier, Muhamad Ibrim, and his principal agent Er Arbab er Qurashi went to Hillet (village) Wad Bahadin and ordered Muhamad Adlan, who was at the slave village of Hillet Borku, to come to them. When Muhamad Adlan arrived he was reviled by Qurashi, and the vizier ordered his brother Nasr Ibrim to "cut off his head without more ado." Some of Muhamad Adlan's slaves outside the room heard the altercation. They commenced to throw dirt on the reviler of their master and when they heard the order to kill him, rushed into the room. Muhamad Adlan escaped in the confusion and leapt into the saddle of the vizier's horse, which was hitched to the door post. He rallied his followers and captured the vizier and Qurashi. The latter was executed, and Muhamad Ibrim was deposed and imprisoned in the house of his sister, Meheira, at Sennar (1224 A.H.).

Muhamad Adlan assumed the viziership and instituted a series of murders among his relatives, removing all rivals from his path. All the sons of Ragab wad Muhamad Abu el Kaylik (with the exception of Hasan, who escaped) were put to death. Muhamad wad Idris, a son of the vizier, Idris, was executed. The deposed vizier, Muhamad Ibrim, was sent to Managil and murdered there. Muhamad Wad Nasr's young son was attacked and killed with all his slaves on the White Nile. Muhamad Adlan assumed royal state and the Sultan Baadi was prudent not to remonstrate or plot against this ruler *de facto*.

Adlan had a great reputation for generosity and gallantry. His slaves, mistresses, and all women were devoted to him. He murdered (in 1819) Er Arbab Muhamad Dafallah Suliman in order to obtain his wife, a reputed beauty. Despite his crimes, however, his personality enabled him to rule the country for over ten years.

About the year 1810 Muhamad Adlan sent a force to Fazogli, and Mek Amushat who had usurped the throne was killed, and Huseyn succeeded. The following is the line of descent claimed by the present Mek:

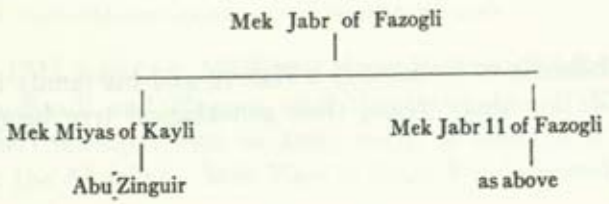
Muhamad Jelal ed Din (also called Jelaj ed Din Muhamad)
|
a. Et Tungur (Azinnguir or Zungur)
|
b. Gabr el Mek
|

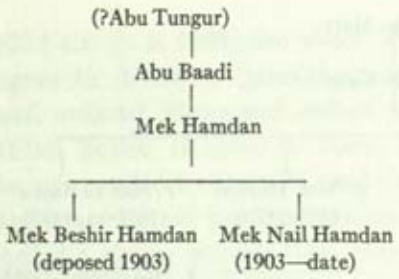


Note. In 1905 Mek Bakurig wad Bugul, the descendant of the last autochthonic Ghormaz Mek of Gazzan, lived at Fazogli.

As the royal family of Fazogli are Hameg the claim from a Moslem ancestor is merely the common one. The Tungur are a now almost extinct group who ruled Kordofan and perhaps Dongola. As they were Moslems it is not improbable that Muhamad Jelal was a fugitive from Kordofan. The genealogical tree given is not the same as Monsieur Cailliaud's list, which shows sixteen kings between 1615 and 1820.

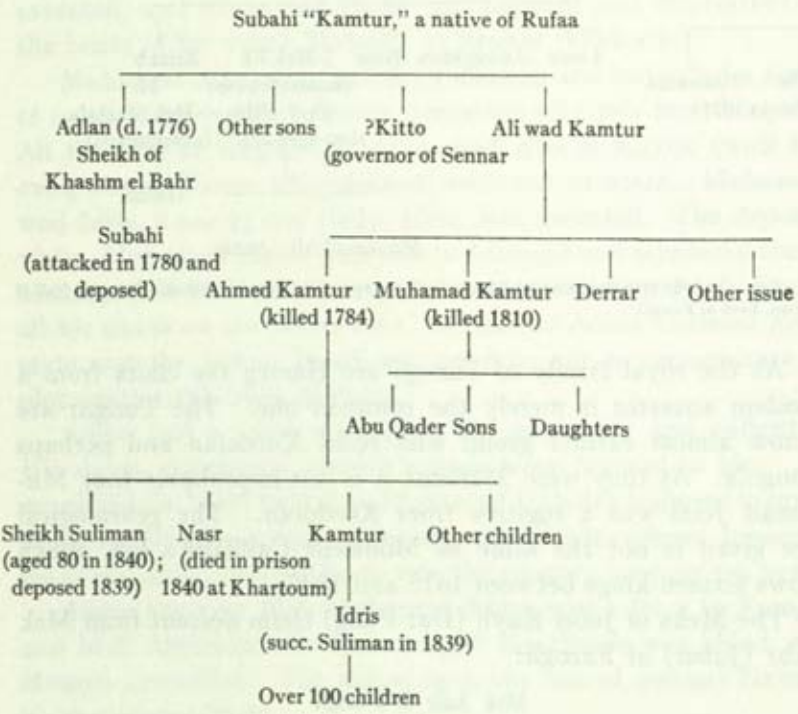
The Meks of Jebel Kayli (Dar Fung) claim descent from Mek Gabr (Jaber) of Fazogli:



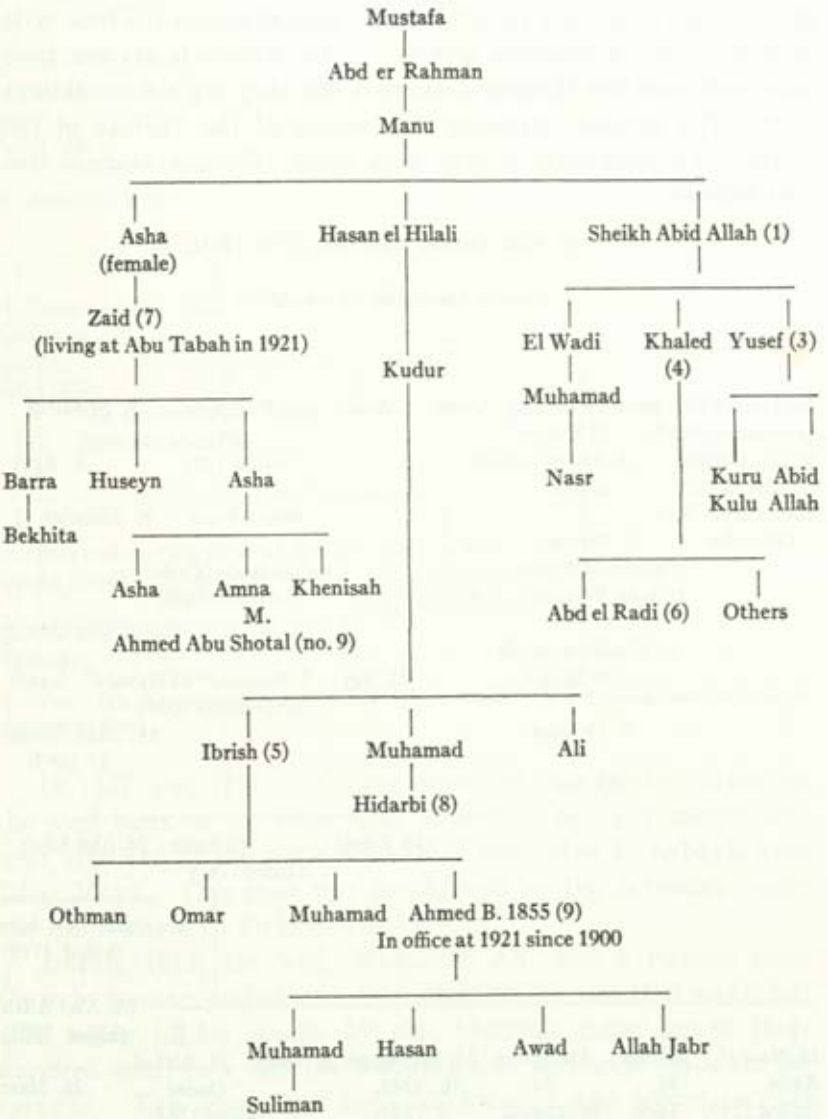


Note. In 1837 Russegger described the Mek of Fazogli as "Manufari."

Muhamad Adlan apparently allowed Sheikh Suliman of Roseires to reside there as a kind of overlord. This great chief's descent from the Kamatir was as follows:



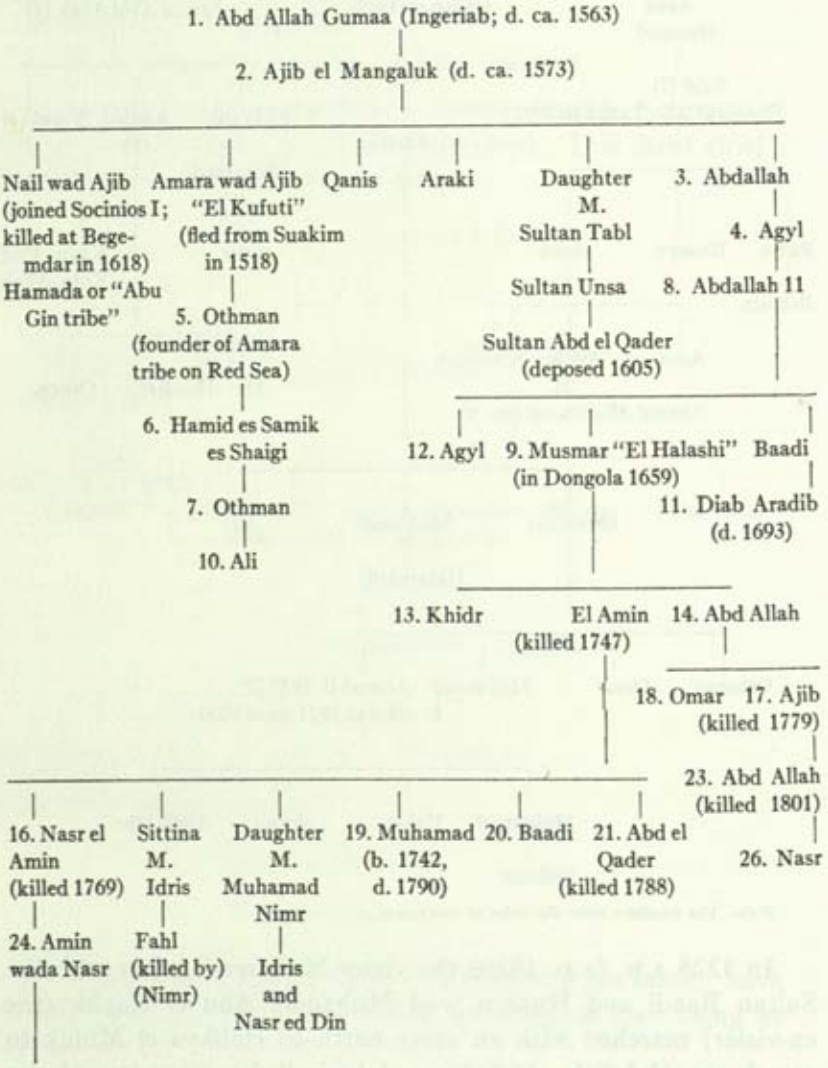
The local sheikh of Roseires is a Hameg and his family have held the office for many years, their genealogical tree being as follows:



Note. The numbers show the order of succession.

In 1225 A.H. (A.D. 1810) the vizier Muhamad Adlan with the Sultan Baadi and Huseyn wad Muhamad Abu el Kaylik (the ex-vizier) marched with an army north to Halfaya el Muluk to attack the Abdellab. Mek Nasr el Amin fled to Shendy and was

given protection there by Mek Nimr wad Muhamad, whose wife Shamma, was a Shukria woman. The Abdellab at one time mustered over five thousand warriors but they are almost extinct now. The present surviving descendant of the "prince of the Arabs" is a poor man of very dark color. His genealogical tree is as follows:



25. Nasr (deposed by Ismail Pasha 1821)
29. Omar Ibrim
28. Amin wad Nasr
31. Gumaa el Mek (Sanjak of Gordon; killed 1882)
Ajib
30. Omar el Mek (killed in Mahdia)
Khidr
32. Amin wad Gumaa (dead)
34. Muhamad Gumaa (alive 1921)
Nasr el Mek (killed with most of his people at Gallabat, 1889)
33. Nasr wad Amin (dead)

Note. This does not agree with any list published previously. The figures represent the order of succession as Mek.

In 1227 A.H. (1812 A.D.) the Rufaa el Hoi (Rufaa Arabs on the west bank of the Blue Nile) refused to pay any tribute and were attacked by the vizier, who killed their Mek El Labayh, near Jebal Moya. This tribe was annihilated by the dervishes under the Emir Yunis ed Dekheim in 1887.

During 1812, the Vali, Muhamad Ali, sent a mission from Cairo to Sennar, and on its return Mek Naym Abu Higl was killed with many of his people by the Ababdeh camel guard (four hundred men) in a raid the Robotab and Bicharins made on the caravan. The envoy had been blackmailed and forced to part with all his personal belongings under circumstances for which Shendy and Berber were infamous for many years. Soon afterwards Berber was raided and sacked by the Shaigia, who killed the son of Mek Nasr ed Din and carried off the women. They appointed Ali wad Timsah as the Mek, and he paid tribute.

In 1230 A.H. (A.D. 1815) the Sultan Baadi and Sheikh Derrar attacked Muhamad Adlan at Abud, but peace was made soon afterwards. The next year Muhamad Adlan replaced Nasr wad Amin by Nasr wad Abdallah as Mek of the Abdellab. This change was only a temporary one, as the deposed Mek resumed his post later.

In 1817, the Nimrab sheltered a Batahin who had murdered a Shukria, and Shendy was threatened with a similar fate to Arbagi, as the whole tribe marched from the Butana to Shendy with their families, etc.,—the custom in war and not in mere raids. The Shukria withdrew as the murderer fled and they ravaged and massacred all the Batahin they found.

In 1820 Sennar was divided between three parties, the vizier, his cousin, Hasan wad Ragab, and the Fung Sultan Baadi. Muhamad Adlan was then at Mouna. He was murdered under circumstances related in the present writer's *The Conquest of the Sudan by Muhamad Ali Pasha*, and from that date the Abu el Kayliks and Fung ceased to be of any importance.

Prior to 1880 many of the old families of the Sudan could be found in the villages built originally by their ancestors. The deportations carried out by the dervishes and the epidemics of smallpox, however, completely changed the population in the Gezireh. During the fifteen years of Mahdism there was probably more commingling of Arab and Negro than at any previous time during the modern history of the Sudan.

A genealogical tree of the Abu el Kayliks is attached as a prefix and a short note on the Fung is appended hereto.

Note on the Fung and the Empire of Sennar

The Fung Empire was founded in 1504 by Omara Dunkas. This name or title "Dunkas" may be akin to "Donqid," the title of the last Tungur ruler of Darfur. There is a word "Donga" which means "hand" in the Fur language, but I cannot trace any Arabic word.

The origin of the Fung is a matter of controversy now, as the Shilluk disclaim any racial affinity. James Bruce is, however, clear on this matter, and it is certain that both Lool and El Ais (both

of which were Shilluk towns) were intimately connected with the Fung during the seventeenth century. It is remarkable that the Fungi are shown on Pigafetta's map of Africa as living in the place now known as Dar Fung, as this map was published in 1591, and it was not until 1699 that the first recorded European traveller, Dr. Poncet, visited Sennar.

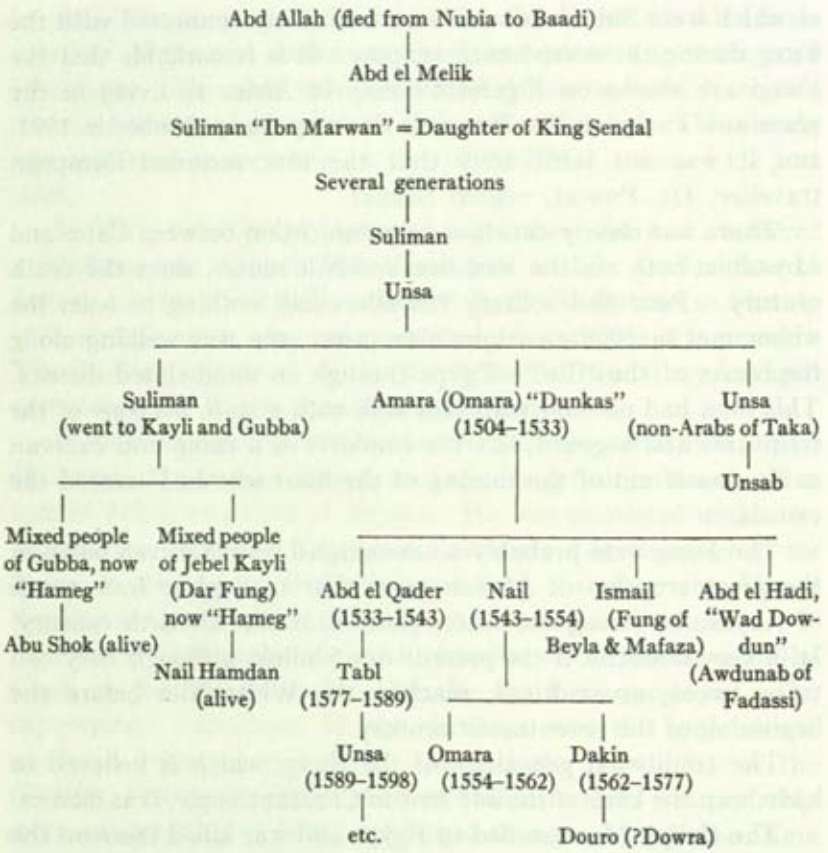
There was clearly constant communication between Cairo and Abyssinia, both via the Red Sea and Nile routes, since the tenth century. Poor and solitary travellers had nothing to fear; the writer met in 1908 an Abyssinian priest who was walking along the banks of the Nile to Egypt through an uninhabited district. This man had no food with him and, with a staff, his copy of the scriptures and a gourd, left the comforts of a camp and caravan as he was afraid of the roaring of the lions who had scented the camels.

The Fung were probably a commingled people driven north in the great eruption of African races that took place from south of Abyssinia during the latter portion of the fifteenth century. It is very doubtful if the present day Shilluk, although they can trace twenty-seven kings, reached the White Nile before the beginning of the seventeenth century.

The traditional genealogy of the Fung, which is believed to have been the basis of the one sent to Constantinople, is as follows:

The Caliph Marwan fled to Egypt and was killed there on the banks of the Nile on February 10, 750. His followers dispersed and fled. A son, Abd Allah, reached Baadi (near Suakim, believed to be the modern Agik) and thence he went to Axum. His son Abd el Melik was ordered to leave Axum as the Caliph of Egypt threatened to attack Abyssinia. The Moslems fled and were received by the pagan Galla with whom they lived and whom they converted partially to Islam. This is the explanation of the Moslem Galla. Suliman, a son of Abd el Melik, married a daughter of King Sendal of the Agow Galla and his descendants with the Moslem converts left the pagan stock.

The Caliph Marwan ben Muhamad ben Marwan el Ommaya
(killed in Egypt, Feb. 19, A.D. 750)



Note. Dowra is the Fur word for iron. A Fur Sultan who murdered most of his family was of this name. Dates are periods of rule as Sultans of Sennar.

It is impossible to trace any genealogies on the Abyssinian frontier now, as the Turks raided all the hills and the district was a refuge for escaped slaves from all parts of the Sudan. Moreover, it has been colonized several times by parties of pilgrims from West Africa (see *The Tekruris of Gallabat*, by the author), escaped Nuba slaves, and Nuer or Shilluk soldiers.

About the year 1480 Omara Dunkas commenced to gather his followers at Jebel Moya and a few years later attacked the sedentary Arabs on the Blue Nile. The Arabs were defeated and agreed to pay the tribute, collected by the Christian king of Alwa, to Omara.

In 1504 Abd Allah Gumaa, one of the Ingeriab of Ankeyre, made an alliance with Omara Dunkas and they attacked Soba, the capital of Alwa. The city was destroyed and the churches razed to the ground. The sedentary Negroes of the Gezireh were called Hamegs, i.e., wanderers, by the Arabs who drove them out of their towns and grazed their animals on the cultivated lands. These people were the Kuroma (or people of Kura) of a previous generation.

The black slave cavalry of the King of Alwa fled to Qwarra, where they founded a petty state under Abyssinian protection. The inhabitants of the Christian villages on the Blue Nile and the survivors from Alwa who had escaped enslavement fled to Fazogli (then a large district southwest of Roseires) and became absorbed in the local population.

Omara Dunkas established his capital at Sennar, one of the most unhealthy places in the Sudan, and Abd Allah Gumaa attacked Mek Hassaballa of Jebel Gerri and ejected him from his stone-built town, which became the headquarters of the Abdellab.

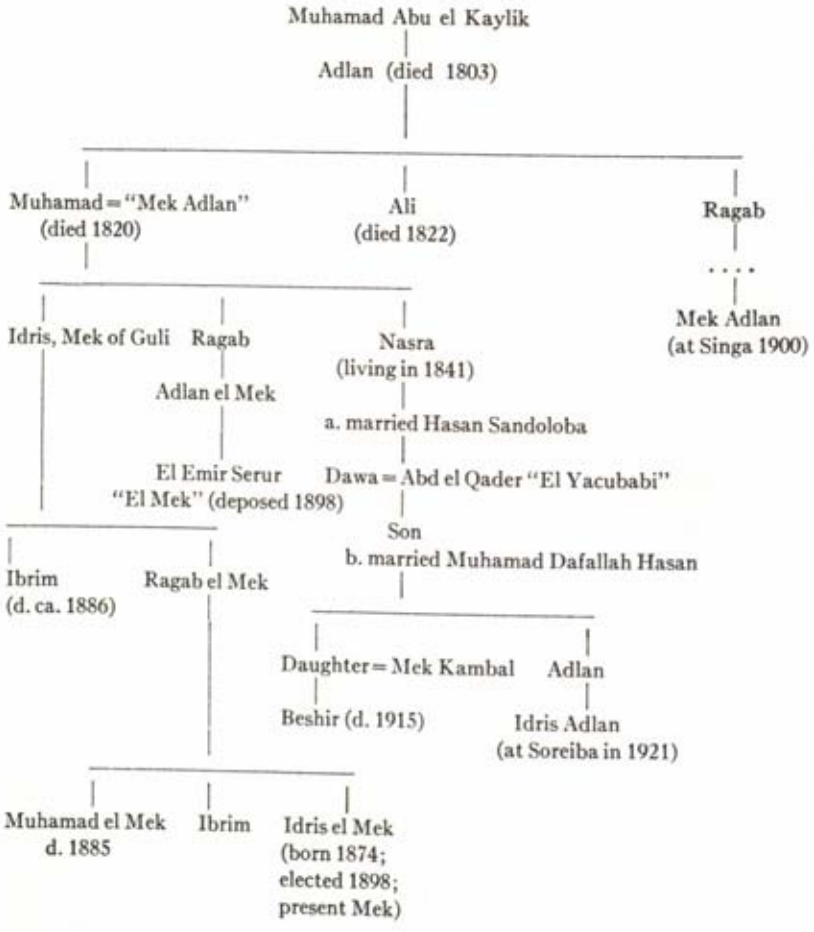
Omara Dunkas appointed Abd Allah the Collector of Taxes from the Arabs, which office was held by his family until the Abu el Kayliks rose to power. The taxes were very heavy and were taken from the nomads by force of arms. Many of the tribes crossed into Kordofan and did not return, but the Abdellab pursued them there. Some paid, but large numbers went to the west.

Kordofan and Taka (Kassala) were occupied and governors stationed at the old capitals with more or less continuity until the Turkish occupation in 1820.

Dongola was occupied, and here the Fung came into collision with the Bosnian guards placed at the Egyptian frontier by the Sultan Selim I. A deputation from Sennar was sent to Stambul and a genealogical tree (similar to the one reproduced) was lodged in the archives, where it was seen during the nineteenth century. The Fung Sultan agreed to recognize the spiritual and territorial sovereignty of the Caliph and Sultan, to defend his territories against all pagans or unbelievers, and to protect all Moslem travellers throughout the Fung dominions.

THE HAMEG OF TODAY IN THE SUDAN

The term "Hameg" is applied now to descendants of the Abu el Kayliks or their followers. At Singa there is a man known as Mek Adlan, but from a genealogical tree sent to the writer he claims descent from Yusef wad Baadi VI. The most direct survivors of the great Muhamad Abu el Kaylik would appear to be the descendants of the vizier Adlan who live at Jebel Guli:



ST. ALBANS,
HERTS, ENGLAND

A NEW RELIGIOUS MOVEMENT IN NORTH-CENTRAL CALIFORNIA

By JAIME DE ANGULO AND L. S. FREELAND

THE Indians of the several rancherías around Clear lake (a hundred miles north of San Francisco), are now in the throes of a new religious movement, which bids fair to spread soon to the rest of the Pomo culture area. This is not the first time that a new religion has appeared among Indians. We only have to think of the Peyote cult of the Southwest, the Ghost Dance of the '70s and '90s in California, the Shaker religion of Oregon, and others. In fact, new religions seem to appear as frequently among modern Indians as they do among modern whites. Whether this has always been so or is a result of the upsetting conditions of modern civilization, is a debatable question. Very little is known positively about the beginnings of most of the modern Indian religions. Since it has been our opportunity to witness the beginning of the present movement, the principal personages of which we have known for several years, it seems worth while to make a record of it.

It is necessary first of all to have in mind the religious-cultural background of this area of California. It is a sub-area of what may perhaps be called the "Dance for the Dead of the Year-Initiation of Boys into the Kuksu Secret Society" complex. This complex forms a wide band, which cuts across the state from west to east, regardless of tribal affinities. It is a highly ritualized system, with all mystical and religious emotions canalized into prescribed channels, numerous traditional taboos. As against this complex one may set up the religious background of the north of the state (with the exception of the northwest Hupa-Yurok-Karok nucleus): no ceremonies, no ritualizations of any kind, no secret societies, very few taboos; but the individual search for "spiritual power" carried to an extreme, merging by insensible degrees into shamanism (among the Pit River people, at least one man in twenty is a medicine-man). The shamanism of the north

is true shamanism: every medicine-man has his own medicine, his own private formula, and holds his degree from no one but his own revelation. The shamanism of the area which now occupies us, was a dried, museum form of the latter: the "madu," or true shaman, was not very popular, not as popular as the "outfit-doctor" with his kit of paraphernalia, his many formulas in jargon, his prescribed mode of performing.[1]

This is the region where there suddenly appear new doctors. They are inspired. They have nothing to do with the old methods. Their method is entirely new, and strange for Indians (although the basis of the *mise-en-scène* is unmistakably Indian, just as the most modern of houses, if it belongs to an Indian, is always unmistakably Indian in some undefinable way): they smoke innumerable packages of Chesterfield cigarettes (no other brand will do) in order to acquire power; then they walk around the patient with slow steps, singing a song alone with eyes half-shut, making passes with their hands in the air, tying a handkerchief over the patient's eyes, making passes over his head, blowing on his head,—everything with a certain air of trance and mystery. All this is in sharp contrast to the raucous appeals of the Pit River medicine-man to his "power" out there in the brush to come and help him, to the taking up by all the attendants of the song the doctor is singing, to the violent dialogues between the doctor and his power when he has finally succeeded in dragging him out of the woods onto the scene. Our new doctors do not act that way at all, their demeanor is one of inspired *recueillement.*

But they are not merely doctors healing the sick. They hold a new dispensation, they preach a new morale, they are reformers. The new tenets are: no drinking, no gambling, no swearing, no lying to other Indians, no stealing from other Indians, no quarreling with other Indians. The rule against gambling, however, does not apply to the time-honored Indian guessing-game, but to poker, dice, and the like. Non-stealing is probably meant to put a stop to the old-time way of considering

[1] L. S. Freeland, Pomo Doctors and Poisoners. Univ. Calif. Publ. Am. Arch. Ethn., 20: 57–73, 1923.

your relatives' property as your own. Quarreling is of course one of the worst curses of Indian life, but no amount of religious fervor will ever stop it, any more than lying. But it is on the drinking proposition that the new doctors are most fanatical, and there is no question but that drinking has absolutely stopped in all the rancherías affected.

Now, who are the dramatis personae? The first one to be possessed of the new spirit was Maggie Johnson, herself a Western Miwok from the Middletown ranchería, but married to Henry Johnson, a Southeastern Pomo from the Sulphur Bank ranchería. She got her revelations about two years ago, but did not come out in the open with them until last year, when she cured a Thomas from the Sulphur Bank ranchería, and also a woman from the same place. These two now started to smoke Chesterfield cigarettes like her, and got power, and began to cure other people around. The next to be cured and converted (for it seems that they all are on the point of death, from which they recover into a new and pure life) seems to have been Henry Knight from the Middletown ranchería. He also became a doctor. Then came the turn of George Patch, an old man from Sulphur Bank. Clifford Salvador (from Sulphur Bank) told us how the old man was sick, and the new doctors gathered in his house and started to smoke their Chesterfield cigarettes (they smoke as many as twenty in one hour): "You ought to have been there. You ought to have seen the power. You couldn't help feeling it. It was like electricity through the house. Pretty soon he got well. He began to feel the power. The power was all going into him. The doctors were smoking, but they were not getting any power themselves. It was all getting into George Patch. Then he wanted to be a doctor himself. We told him, 'You had better not. You are too old. You can't sit up all night and smoke. You need to sleep. You can't do that any more.' But he tried it anyhow, and he doesn't seem to mind it at all." This very Clifford Salvador is now in a good way to become a doctor himself. We saw him being "treated" at the meeting held at Sulphur Bank the other day. All the Indians at Middletown are converted, even old Salvador Chapo; but his daughter and her Mexican husband were noticeably

away. All the Indians of Lower Lake ranchería and Sulphur Bank ranchería are converted. Upper Lake and Lakeport (on the western shore of Clear lake) are half converted.

Henry Johnson, the husband of Maggie, has always been an atypical Indian. He could not stand the communal life of the ranchería. He found a piece of government land, and homesteaded it. It was miserable soil, but he worked on it hard. He was proud of his isolation. The other Indians did not like him and called him "stuck-up" and said he bootlicked the whites. Johnson paid them back by saying that they were all thieves and drunkards at the ranchería. He boasted to us (that was some four years ago) that the whites all liked him and called him "a good Indian." "I am respectable. I am not a low-down Indian like those people at the ranchería. The white people in town give me their work." Then he would rant against drinking, and laid all the troubles of the Indian race to this evil. Henry Johnson has not become a doctor. But he was there at the Sulphur Bank celebration with the others. He did not sit on the bench with the other doctors. He sat on a chair a little apart, but he made his long-winded speech too. For one of the characteristics of the new dispensation is the making of long speeches of a moral nature. The remark of Henry Knight to me is tell-taling: "Now what do they call that house? They call it a sweat-house, or a dance-house, don't they? They never had doctoring in there before. It was only for the dancing like you have just seen. Well, now we are using it for doctoring and for praying, just like the whites have their churches. And some day it's going to be called a church too! That's going to be the Indian church, yessir!"

Is the whole new movement, then, nothing but an aping of the whites, a rebellion against the contempt of race discrimination, a desire to be "as good as the whites"? Partly, but not entirely. It is like all "slaves' religions," an expression of inferiority complex through the building of a rigid moral code that makes one feel superior to the others. Insofar, it is a universal expression of a certain social-economic situation. But it is thoroughly Indian, and Californian at that, insofar as it taps the powerful reservoir of the mystical sense so strong in Indian nature,

the resort to an individual revelation, and individual search for "mana." As a matter of fact, the whole movement is traceable to a Pit River medicine-man of the name of Albert Thomas (although he is back in his home on the Pit River, and probably blissfully unaware of the new business). This Thomas has been living with the Pomo for the last few years for some reason or other (being a doctor at home he may have had to take a little vacation for his health). While he was living with the Pomo, especially around Ukiah, he practiced his medicine à la Pit River. The Pomo had never seen that and were quite impressed. It is not unlikely that he mixed in a lot of legerdemain with his real medicine. We have heard plenty of tales about his finding lost objects, and marvelous feats that have nothing to do with shamanism as we have seen it practiced in the north. It is not unlikely that he could not resist the temptation. But that he was possessed of the real feeling of shamanism there is no doubt. One remark of his shows it: "Everybody can get power! Everybody has got power if he knows how to use it!" All the new doctors speak of him with great admiration, almost as if he were the founder of their order. But they sigh and add: "But he drank too much! That's how he lost his power. A doctor can't drink and keep his power!" There is no doubt from the tales one hears that he was a jolly character. They say he used his power on several occasions to locate the caches of bootleggers. So he certainly is not responsible for the new moral code.

An important thing to be noted in connection with this new religious movement is the absence of any animosity towards it on the part of other doctors of the old-time persuasion. Also it is to be noted that the new religion does not conflict with the old-time religion. The old-time religion in this area is of course not the old Kuksu, but what is called nowadays "maru," and is a survival of the Ghost-Dance movement which supplanted the old ceremonial fifty years ago. For our purposes we may consider this as thoroughly old-time Indian in spirit, except perhaps for the introduction of a certain amount of talk about "the father of us all," and going "above, if you are good," and going "below, if you are bad." But except for those evident bits of

Catholic influence from the days of the missions, everything else is thoroughly Indian. While Indian dances have almost completely disappeared in most other regions of California, they have persisted in a very curious manner in this little backwater of civilization, in spite of its nearness to San Francisco. While in other regions they put up an occasional old-time dance at which a few of the old ceremonial dances are performed half-heartedly by middle-aged men while the younger boys and girls stay outside and organize a jazz of their own; here the whole Indian community joins in several times during the year to perform these dances. The young men and boys are present. They all dance with great spirit. They danced from sunset to sunset the other day. The dances occur at intervals of about an hour, and one catches naps in between as well as one may. Some of the costumes were quite new. Everything pointed to the persistence of the old-time Indian spirit in full strength, even among the younger generation. The doctoring in the new style occurred during two intermissions. The same people participated in both. There was evidently not the least feeling that there was any incompatibility or even rivalry between the two.

How far the new dispensation will travel to the east, that is, over the mountains of the Coast Range, is doubtful. There were some visiting Wintun present. They were very contemptuous of the new doctoring business. But it is likely to reach the ocean in the other direction, where there is a more unbroken contact between rancherías.

2851 Buena Vista,
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WHAT INTERVALS DO INDIANS SING?

By FRANCES DENSMORE

THE study of Indian music is inseparable from a study of Indian customs and culture. If we were to base conclusions upon the phonograph record of an Indian song without taking these into consideration we should become involved in a maze of speculation. In taking this attitude toward Indian music we are following the custom prevailing in our own race. A musical performance by one of our own musicians is judged by our knowledge of the performer. A professional violinist is allowed to play a trifle sharp in order to add to the brilliance of his work, but when an amateur plays off the key he is condemned.

Everyone who hears Indians singing will admit that they produce sounds with gradations of pitch smaller than those of our musical system, and the most important decision to be made by a student of Indian music is concerning the importance to be attached to these small gradations of pitch. If they are based upon intelligence, the study becomes one of determining and classifying what are commonly called fractional tones, and, from that classification, finding out and formulating the musical system of which they are a part. If, however, these small gradations of pitch are merely the chance happenings of an individual's peculiarity or pitch uncertainty the student is free to devote his attention to other features of the performance. Important to this decision is a recognition of the primitive manner of tone production used by the Indians. This is entirely different from the tone production used by singers of our own race.

Let us assume, as a working hypothesis, that the small gradations of pitch in Indian singing are part of a musical system more complex than our own. We should then expect that the Indians would be able to explain this system as the ancient Greeks demonstrated the divisions of the monochord. But the Indians, so far as known, cannot give any explanation for the melodic form of their songs. They say that the old songs were

"received in dreams," and that songs "come to them" at the present time, or are composed by two or more persons working together, patching together pleasing phrases and experimenting until all are satisfied.

It is impossible for us to imagine an intelligent musical system without a graphic record or representation but the Indians had no way of recording their songs. Out of the air, in some mysterious manner, the Indian believed that he received his personal song and he kept it locked in his own mind in order to use it for his personal benefit in some hour of need or danger. Music was not a social accomplishment, neither was it an art in our use of that term. Indians did not sing for approval. The test of a song was its power to bring rain, locate the enemy, heal the sick, or enable a man to win a game. A song was like a magic arrow, not a triumph of the intellect.

If the Indian has an ability to produce at will and with ease such small intervals of pitch that our musical system does not use them—such as eighths, sixteenths, or still smaller fractions of a tone—is it not reasonable to suppose that he will recognize such intervals when he hears them? In order to test the pitch discrimination of Indians the writer took with her, to Indian reservations, a set of 11 standardized tuning forks, one of which gave the fundamental tone of a series (a′ 435 vibrations, international pitch) while the other forks produced respectively 1/2, 2, 3, 4, 5, 8, 12, 17, 23, and 30 vibrations above the fundamental. These forks were kindly lent for the experiment by Dr. C. E. Seashore, Dean of the Graduate College, State University of Iowa, who also examined the tabulated result of the test. He expressed the opinion that:

> The abilities here shown are about as good as one would find among the average American whites under similar conditions.

The ear of the Indian is trained to hear sounds which we do not notice but this test does not indicate that he has a superior perception of difference in the pitch of tones. The method of the test was to sound two forks consecutively, ask which was the higher, and record the reply.

Further, a complex musical system, including very small fractions of tones, would naturally arise from men of logical minds, whose reasoning was highly developed along other material lines. The Indians living in North America did not share the high development of those living in Central America and certain parts of South America. These Indians were chiefly a nomadic people among whom the difficulty of securing food and safety from enemies was the paramount interest. A man's reasoning led to the securing of supernatural help rather than toward the making of accurate deductions from material facts. The following incident shows the manner of reasoning of a Sioux Indian who was highly respected by his people. He found a globular stone on top of a hill, similar to stones that were abundant in a river not far distant. On being asked how he explained the shape of the stone he said it had become globular by looking at the sun, since "things that look at each other for a long time will come to have a resemblance." He carried this stone on his person and attributed the good health of himself and his family to its presence. In order to stimulate the supposedly magic power of the stone he sang a song, according to the custom of the Indians when seeking results by supernatural means.

The extreme individuality of the Indian should be taken into consideration. There was no common knowledge shared by all members of a tribe except the proper remedies for minor ills. The remedies for major illnesses were the property of medicine men who received them in dreams and kept the identity of a medicinal plant so secret that they would not give the plant a name. A man taught his pupil by showing him the plant, and both disguised it in preparation so that no one would guess their secret. Songs were not a matter of common knowledge, except the songs of social dances. How then could every singer be trained to accuracy in the production of intervals so small that our cultivated singers would hesitate to undertake them? If there was a custom with no foundation in logic, it must have been based upon arbitrary use, each man singing these minute intervals because he was trained to do so. In that event the Indians would have been obliged to practise the art of singing, and no explorer or

ethnologist has claimed that he found Indians practising small intervals as a matter of technical skill. It is true that Indians who visit a strange locality or tribe are anxious to bring back new songs and teach them to their friends, and a leader of the singing may teach songs to his assistants, but this learning of new songs is different from the practising that would be necessary to produce, consciously and accurately, the small intervals that are heard in the singing of Indians.

Miss Alice C. Fletcher left the following remarkably clear observation on this subject:

> During the earlier years of my studies, I was, with other observers, inclined to believe in the theory of a musical scale, in which the interval of a tone was divided into many parts: but, for many years now past, having become more familiar with the Indian's mode of thought and feeling concerning music, and as the result of careful investigation of hundreds of songs which I have transcribed, I have been led to account for his peculiar intonations in other ways than in the use of a minutely divided scale. . . . . To convey Indian mannerism would be impossible, and any attempt to do so by a fanciful notation would end in caricature. These mannerisms do not form an integral part of the Indian's music, he is unconscious of them. It is easy to be caught in the meshes of these external peculiarities of a strange people, but if one would hear Indian music and understand it, one must ignore as he does his manner of singing.[1]

During the first year of the writer's work with a recording phonograph for the Bureau of American Ethnology an experiment was made which has an important bearing on this subject. Two phonographs were placed opposite each other in such a position that the ends of the recording horns were together. A typical record of a Sioux song was played on one phonograph and recorded on the other, this in turn being recorded until the sixth duplication of the original record was obtained. This was much softer than the original record but the tones were those of the diatonic scale sung with reasonable accuracy. The duplication had eliminated the by-tones, leaving a kernel of tone which had been obscured by the Indian's peculiar manner of rendition.

In the transcription of about 1700 songs the writer has found the intonation reasonably accurate on the upper partials of a

[1] Appendix to A Study of Omaha Indian Music. Peabody Mus. Am. Arch. Ethn., 1893.

fundamental, these tones forming the framework of a large majority of Indian songs. Hundreds of songs with the same characteristics were heard but not recorded. The term "accuracy" is here used to indicate correspondence with the diatonic scale, not conformity to a standard which is present in the mind of the Indian. The ordinary musical notation is used by the writer in transcribing Indian songs, not with a claim that the Indians have a knowledge of our musical system but because this notation is familiar and therefore can present a large amount of material for observation. It represents the intonation on the upper partials of a fundamental tone with as much accuracy as in the performance of a large majority of our own singers. The intonation on other intervals varies, the major second (whole tone) being sung with reasonable accuracy more frequently than the minor third and the minor second (semitone). If the Indian has a consciousness of very small intervals it is reasonable to suppose that he would use them in his songs, but the semitone rarely occurs and is sung with great variability. An Indian finds it difficult to sing a succession of tones on the same pitch, such a series showing upward and downward variations in pitch. It is the writer's custom to indicate slight deviations from pitch by a plus or minus sign above a note, provided these deviations are persistent in all renditions of the song. One singer among the hundreds whose songs have been studied, was heard to split a descending semitone into two intervals of practically the same size. This was done a few times in the group of almost 30 songs recorded by this singer and might be regarded as "singing quarter-tones" except that the peculiarity did not appear elsewhere in his work. The number of these occurrences was negligible in comparison with the number of intervals which corresponded with diatonic pitch in a reasonable degree of accuracy. The observation stands as an interesting peculiarity of one man's singing of a descending semitone, not as an indication of a musical system containing quarter-tones.

Three queries will be offered in conclusion:

(1) Why is the interval of a tone offered as a basis for the measurement of pitch in Indian singing by those who claim that the Indian has a scale composed of small intervals? The tone is an artificial standard in whatever

manner it is used. If a new basis of measurement is to be introduced it should have, as its unit, the smallest interval present in Indian singing, the larger intervals being designated as multiples of this unit, similar to the fifth, octave and twelfth in our own musical system. For this it would be necessary to determine the number of vibrations in the smallest interval present in the Indian's vocal performances. This would be a stupendous task and almost as difficult as to analyze the sound produced by a wild animal.

(2) What would be the result if a stranger came among us and tried to construct our musical system by making phonograph records of the performances of our singers, without the accompaniment to which they are accustomed?

(3) Is there not an element of physiology in the production of exact pitch, especially on repeated tones? In transcribing a Winnebago song the writer recently found the syllables *mah-nee-no* sung slowly, each with the same length, on a tone that was rather low in the compass of the singer's voice. The first syllable was the lowest, the second was the highest, and the third was between the two, yet the differences in pitch were very slight. Apparently these differences were due to the "placing" of the vowels. Repeat the syllables yourself, singing them in slow, even tones on a pitch that is rather low for your voice and see if you give them with absolutely uniform pitch. In the Winnebago song these syllables occurred 12 times in a song with 25 measures.

The Indian usually sings with an accompaniment of a drum or rattle, never with a tuned instrument. The white musician seldom sings without the support of a tuned instrument, yet our singers are far from absolute in their intonation. We ought to allow the Indian a little liberty in the pitch of his tones, without assuming that he has a musical system of intervals so small that they are beyond our ken and so intricate that even the Indian himself has no knowledge of it. The Indian was a master of rhythm but a majority of his old, native melodies are simple in their progressions.

RED WING, MINNESOTA

CROSS-COUSIN MARRIAGE AND THE CULTURE OF THE NORTHEASTERN ALGONKIAN

By WILLIAM DUNCAN STRONG

SOME time ago W. H. R. Rivers, on the basis of Morgan's recorded kinship systems, pointed out the possibility that certain northern Athabaskan and Algonkian tribes may once have practiced cross-cousin marriage.[1] The lack of well authenticated cases of its occurrence among the known groups, coupled with the apparent rarity of the institution in native North America generally, made this seem largely hypothetical. Recently, as the result of detailed study of kinship systems recorded in seventeenth and eighteenth century manuscripts and other sources, Hallowell has come to the conclusion that certain northern Algonkian tribes did practice this form of marriage until white, particularly missionary, influences led to its decline and to correlated changes in kinship usage.[2] Against both these claims it could be urged that there were no clear cases on record of any of these tribes having the institution to the present time.

It is unusually interesting, therefore, to find that among the Barren Ground, White Whale River, and Ungava bands of the Naskapi, the most northeasterly of Algonkian groups, the custom is retained to the present day. The data bearing on this point were secured by the author while a member of the Rawson-MacMillan Sub-Arctic Expedition of Field Museum, and are published with the permission of the latter institution. During our stay in northern Labrador (July 1927 to August 1928) I was able to make brief contacts with members of these three bands, and later to spend three months during the winter travelling alone with the Davis Inlet band in the interior. This band contained members of all the aforementioned groups, although its

[1] Kinship and Social Organization, 49–55, London, 1914.

[2] A. I. Hallowell, Was Cross-Cousin Marriage Formerly Practiced by the North-Central Algonkian? Paper read before the XXIII International Congress of Americanists, New York, 1928.

earlier affiliations were with the Northwest River people to the south. For the study of kinship usages this was a fortunate amalgamation since it was found that cross-cousin marriage and the kinship terminology associated with it were largely confined to the three northerly bands. The Davis Inlet people therefore mark the division point between northern and southern systems in this and other cultural peculiarities.

The Barren Ground band of Naskapi[3] are at present composed of about fifty-six persons, all that are left of the group that formerly occupied the Indian House Lake district in the interior. At present they spend much of their time on the coast, mainly at Voisey's bay, going into the distant interior on hunting trips or for the summer season. The Davis Inlet band is composed of some thirty-six members living alternately in the interior or on the coast, with Davis Inlet as their trading post. There is much intercourse between the two bands and formerly, when the caribou were more abundant there, they often lived together on Indian House lake. As previously stated, the nucleus of the Davis Inlet band was originally from Northwest river and preserves in part its old dialectic and cultural differences. Intermarriage and shifts of residence tend to keep all these bands well mixed, and the Davis Inlet people have been much influenced by the Barren Ground band with whom they have intermarried and associated for several generations.

The Barren Ground band likewise includes a number of outsiders who live with them and hunt over the same districts. Since the territory of the Barren Ground and Davis Inlet bands consists of some 30,000 square miles, or 300 square miles per person, this communism as concerns hunting territories is not remarkable. Furthermore this area could be easily doubled if the extremities of their recorded wanderings be taken as indication of their territorial limits. That their isolation and comparatively scanty numbers played some part in maintaining the custom of the cross-cousin marriage seems highly probable.

[3] The designation Naskapi is used rather than Naskapi-Montagnais since the three northern bands seem to recognize this name as applying to themselves. The southerners regard themselves as "Mountaineers," insofar as they recognize white nomenclature. The subject will be treated more in detail at a later time.

In all, fourteen marriages were recorded among the people now composing the Barren Ground band, and of these five were between cross-cousins. One other case stated to be of this type could not be established with certainty. One Ungava man living with the group had married the daughter of his father's sister, while his brother and sister had married the sister and brother of his wife. One Barren Ground man had married the daughter of his mother's brother and another the daughter of his father's sister. Informants stated that among the Barren Ground, White Whale River, and Ungava bands this form of marriage was considered most correct and was urged on the younger people by their elders. Its vogue is said to have been greater in former days, although the above cases demonstrate that it is still a factor to be reckoned with. Among the Davis Inlet people eight marriages were recorded none of which seemed to be between cross-cousins. This band does not practice the custom, which is in accord with all their southern neighbors, although informants said that cross-cousins were occasionally married if there were no other available mates. For a short period in the last generation the Northwest River band, due to a great shortage of women, are said to have married parallel cousins, but they were so ridiculed by their neighbors that they gave it up. This, however, is mere hearsay information. While none of the southern bands are known regularly to practice cross-cousin marriage at present, their kinship terminologies seem to show some evidence of its former presence.

As would be expected where such a form of marriage was in vogue, the northern bands clearly distinguish between cross- and parallel cousins. Since the three northern systems are said to be identical, the Barren Ground terminology will be compared with that of the Davis Inlet group, who have the more southern system. For a man the cousin terms (older than speaker) are as follows:

	Barren Ground Band	*Davis Inlet Band*
Father's sister's daughter	—nītâmâc[4]	nimis (sibling term)
Mother's brother's "	—nītâmâc	nimis " "

[4] â as in English *father*, å as *u* in *but*, a as in *hat*, ē as *a* in *fate*, ĭ as in *pique*, i as in *pin*, ō as in *note*, û as in *rule*, au as *ow* in *how*, c as *sh*.

	Barren Ground Band	*Davis Inlet Band*
Father's sister's son	—tcīstau	nistic " "
Mother's brother's son	—tcīstau	nistic " "
Father's brother's daughter	—nimis (sibling term)	nimis " "
Mother's sister's "	—nimis " "	nimis " "
Father's brother's son	—nistic " "	nistic " "
Mother's sister's "	—nistic " "	nistic " "

For a woman the same terms are:

	Barren Ground Band	*Davis Inlet Band*
Father's sister's daughter	—nūwitciwāgin	nimis (sibling term)
M. b. d.	—nūwitciwāgin	nūwitciwāgin
F. s. s.	—nītâmâc	nistic (sibling term)
M. b. s.	—nītâmâc	nistic " "
F. b. d.	—nimis (sibling term)	nimis " "
M. s. d.[5]	—nimis " "	nimis " "
F. b. s.	—nistic " "	nistic " "
M. s. s.	—nistic " "	nistic " "

It can be seen that while the Barren Ground people clearly distinguish the two types of cousins, the Davis Inlet band class all cousins as siblings—with one striking exception. The mother's brother's daughter is called by the same term, *nūwitciwāgin*, that the Barren Ground people use for female cross-cousin (woman speaking), and sister-in-law (woman speaking). Whether this is a reflection of earlier cross-cousin marriage among them or a recent adaptation from their northern neighbors may be left in abeyance for the moment. Certainly the following identities in kinship designations indicate that cross-cousin marriage has deeply influenced the terminology of the Barren Ground band.

	Barren Ground Band	*Davis Inlet Band*
father's sister's husband	—nis	nōhōmic
mother's brother	—nis	nōhōmic
wife's father	—nis	nis
husband's father	—nis	nâmâcūm (sometimes nis)
mother's brother's wife	—nisōkwis	entūc
father's sister	—nisōkwis	entūc

[5] Women of both bands also use the term nuwitciwagin for m.s.d. This occurrence was not noted at the time the above was written, and will be discussed in a later publication.

	Barren Ground Band	*Davis Inlet Band*
wife's mother	—nisōkwis	nisōkwis
husband's mother	—nisōkwis	nōhâm (or nisōkwis)
man's sister's son	—entiwhitim	entūcim
woman's brother's son	—entiwhitim	entūcim
son-in-law	—entiwhitim	entiwhitim
male cross-cousin	—tcīstau (m. s.)	nistic (m. s.)
wife's brother	—tcīstau (m. s.)	tcīstau (m. s.)
female cross-cousin	—nūwitciwāgin (w. s.)	nimis (w. s.)
husband's sister	—nūwitciwāgin (w. s.)	nūwitciwāgin (w. s.)
male cross-cousin	—nītâmâc (w. s.)	nistic (w. s.)
husband's brother	—nītâmâc (w. s.)	nītâmâc (w. s.)
female cross-cousin	—nītâmâc (m. s.)	nistic (m. s.)
wife's sister	—nītâmâc (m. s.)	nītâmâc (m. s.)

The fact that one term is used for father's sister's husband, mother's brother, wife's father, and husband's father; a related term for mother's brother's wife, father's sister, wife's mother, and husband's mother; and corresponding terms for cross-cousins and brothers- and sisters-in-law, forcibly demonstrates that cross-cousin marriage has been of long standing and great social importance among these northeastern Algonkians that have the Barren Ground system. Beside the instance of cousin differentiation already pointed out, the Davis Inlet band show certain other identities which would seem to be due to cross-cousin marriage at some earlier time. The father's sister's husband and the mother's brother are designated by one term. This is also the case among the Penobscot, St. Francis Abenaki, Malecite, Passamaquody, and Micmac.[5] Possibly this is true for the Escoumains band of Montagnais[6] and the Timiskaming band of Algonkians,[7] but adequate data are lacking. The same correlation holds in regard to identical terms for father's sister and mother's brother's wife among all the above-mentioned bands,[5] save the last two cases cited, where the data are inadequate.

[5] Frank G. Speck, Kinship Terms and the Family Band among the Northeastern Algonkians. AMER. ANTHROP., n.s., 20; 156–161, 1918.

[6] See note 5.

[7] Speck, Family Hunting Territories and Social Life of Various Algonkian Bands of the Ottawa Valley. Canada Department of Mines Mem. 70, no. 8, Anthrop. Series, 24–25, 1915.

It might be possible to show further extensions of this usage as well as further traces of earlier cross-cousin marriage among the southern and westerly Algonkians, but this is a problem beyond our present scope. The work of Hallowell, previously cited,[8] will deal with this subject in more detail. Likewise the levirate, which is here present in both forms, is another factor influencing kinship terminology that must await full presentation of the data. In passing, however, it may be well to refer to Rivers' discussion of Cree terminology. Speaking of evidence for cross-cousin marriage in North America, he says,

> A stronger case is presented by the terminology of three branches of the Cree tribe, also recorded by Morgan. In all three systems, one term, *ne-sis* or *nee-sis*, is used for the mother's brother, the father's sister's husband, the wife's father, and the husband's father; while the term *nis-si-goos* applies to the father's sister, the mother's brother's wife, and the two kinds of mother-in-law. These usages are exactly such as would follow from the cross-cousin marriage. The terms for the sister's son of a man and the brother's son of a woman, however, differ from those used for the son-in-law, and there is also no correspondence between the terms for cross-cousin and any kind of brother- or sister-in-law. The case points more definitely to the cross-cousin marriage than in the case of the Red Knives, but yet lacks the completeness which would allow us to make the inference with confidence.[9]

The kinship terms used by the three northeastern Algonkian bands seem to be cognate with the above (compare *nis* with *ne-sis* or *nee-sis*, and *nisōkwis* with *nis-si-goos*) and the correlation of terms identical. Furthermore, the correlations not found among the Cree, which Rivers regards as necessary for complete evidence of cross-cousin marriage, are all found among the Barren Ground kinship terms. The implications are twofold, first that cross-cousin marriage at an earlier time had a wide spread in the northeast, and secondly that there is suggested a close relationship between the Cree and the northeastern bands of Naskapi. Both subjects call for further work of a cultural and linguistic nature.

Certain secondary kinship usages among the Barren Ground people and their neighbors seem to have a definite bearing on

[8] Fn. 2. To appear in published form shortly.

[9] Op. cit.

cross-cousin marriage, and while the data are not yet entirely clear or complete they will be presented here in a tentative form.[10] Among the Barren Ground people there exists a special joking relationship with sexual privileges between all men who reciprocally designate each other by the term *tcīstau*, and between all women who call each other *nūwitciwāgin*. For a man, this class includes all male cross-cousins, the sister's husband, the wife's brothers, and all her cousins except her father's sister's son; for a woman: her female cross-cousins, brother's wife, husband's sisters, and all his cousins with no exceptions. Such men are supposed to use obscene language with each other, accompanied by much horseplay often aimed at exposure of each other's genitals. In every case observed it was the visiting party that was the aggressor. They have, moreover, the privilege of cohabiting with the other's sisters and cousins (probably only parallel cousins, but this distinction is not certain). A formal request is necessary for this privilege. The visitor says, "Tcīstau, matsikimīn tcimis" (translated "Brother-in-law, give me your sister"). The host replies, "Tcīstau, mīskwit mīne tcīm" (Brother-in-law, give me yours, I give you mine). If the aggressor accepts, he must ask the father of the girl designated, "Nis, matsikimīn stānic" (Father-in-law, give me your daughter). Should the latter be agreeable the union takes place, perhaps for one night, perhaps permanently if both parties are unattached. Apparently this savors as much of brother and sister exchange as it does of socially controlled license.

Among the women the custom is limited to joking, though they go through much the same form of asking for the other's "brothers." The Indians say that among the women this is only talk, whereas it actually occurs among the men. The Davis Inlet band use the same form between brothers- and sisters-in-law, and state that such exchanges do occur. As a result the terms *tcīstau* and *nūwitciwāgin* have a decidedly erotic association

[10] Only one man among all the Indians encountered spoke any English. The terms were secured by using a patois of English and Algonkian. The securing of ethnological data is a slow and arduous matter when it must be done, as in this case in temporary hunting camps during the Labrador winter.

which at present makes them the center of much amusement. The term *nītâmâc* applied by a woman to her male cross-cousins, and by them to her, is in the same category. Such exchanges as do occur are always of sisters, never of wives as in the case of the Eskimo. Quite possibly it is the above custom which has led white observers to attribute gross immorality to the northern Algonkians.[11] So far as I was able to observe, the subject at present is one mainly of erotic joking, although it is probable that among the northern bands actual exchanges do take place. Certainly the impression I gained during the three months I lived, close packed, in the lodges of the Davis Inlet band, was very different from Turner's.[12] Not only was general license entirely lacking, but their personal modesty with me and among themselves was striking. Considering that during this period they had several protracted celebrations with molasses beer that prostrated a large part of the camp, it is hard to believe that they were merely on their good behavior. At an earlier date when there was more action and less joking in this connection it would, however, have been very easy for an observer unaware of this strictly controlled exchange with its preliminary erotic joking, to conclude that general promiscuity was the rule.

Since it will be some time before a complete report can be finished and published, a few remarks on the general culture of the Davis Inlet and Barren Ground bands may be in order here. Their primary dependence for food is on the migratory caribou and around these animals center the majority of their ritualistic practices. Some fifteen years ago the main herd of caribou stopped coming to Indian House lake, due, the Indians believe, to their ancestors' neglect of the caribou rites.[13] As a result the Indians have been forced to the coast where they can supplement their hunting trips with trade and beggary. These people have never hunted sea mammals, and prior to their forced move to the

[11] See for example, Lucien Turner, Ethnology of the Ungava District Hudson Bay Territory. 11th Ann. Rept., Bur. Am. Ethn., 270, 1894.

[12] Op. cit.

[13] All travelers in the Indian House Lake country have noted great piles of caribou bones. The Indians say the caribou smelled these bones and turned back to the "Caribou House," a mountain into which the "Caribou God" took them.

coast, lived entirely in the interior. Their recorded summer trips to the coast have been solely for purposes of trade with the whites and no seasonal migrations seem to have occurred in earlier times. Their main deity is the Caribou God, whom they believe to be angry with them. As a result the Davis Inlet people are very careful concerning the taboos affecting the caribou. They are especially concerned with preventing the dogs from touching head, horns, or long bones of the deer. On this account the sacred grease prepared on ceremonial occasions may only be eaten in the lodge, and the plate cleaned at once.[14] These, and a variety of other rites connected with success in hunting, are too detailed for inclusion here.

Their mythology forms an interesting link between that gathered by Turner in the north,[15] and by Speck in the south.[16] The many references to southern animals, mere names to these people, and the contents of the myths which refer to such things as palisaded villages, suggest a rather recent northerly movement. The fact that Indian place names, especially toward the coast, seem to be comparatively scarce, while they use Eskimoan or white names for rivers, etc., furthers this suggestion. A mythical people, called the *kātcimēdgīzū*, are greatly feared by the Naskapi. They are said to come into the far interior in magical, high-bowed canoes, where they steal the Naskapi children. While their whistling may be heard they are invisible to all but the Naskapi conjurors, whose familiar spirits drive them away. This would seem to be a northern version of the tales inspired by Iroquois raids in early times.

The concept of definite hunting territories for each band is largely lacking from all these groups. Each band has a huge general area where it hunts and fishes, but should one band be markedly successful in the hunt they are visited by the less fortunate. Food seems to be generally shared among the members of the group. Should three men be hunting together and one man

[14] This explains the difficulty encountered by Turner when he attempted to leave the lodge with such food. Op. cit., 323.

[15] Op. cit.

[16] F. G. Speck, Montagnais and Naskapi Tales from the Labrador Peninsula. Jour. Am. Folk-Lore, 38: 1–32, 1925.

kill an animal, the other two race for it, and the first to touch it owns the game. This actually occurred while I was with them, one man killing a valuable silver fox, while his companion who first touched it acquired ownership. Symbolism is very poorly developed. And so far as could be established by exhaustive inquiry and experiment, art is almost entirely for purposes of decoration, not for religious or magical purposes. Guardian spirits are largely confined to conjurors who have a plurality of such beings. Fasting, or definite seeking for guardian spirits, is limited to potential conjurors. Dreams are regarded as personal communications from the Caribou God and control the activities, especially that of hunting, for all persons. The *nimaban*, or sacred carrying-strap concept, is present but seems less important than to the south. Such straps do not seem to be decorated in the north. Rites for the caribou are most important, but those for the black bear are also practiced.

Chieftainship is of little importance and is usually vested in the oldest or wisest elderly man in the group. Bands are composed largely of kinsfolk, most often a man's sons with their families. As post-marital residence may be either patrilocal or matrilocal, a man's daughters- and sons-in-law may live in the same group as the father. A constant shifting of families from group to group within the band, or from band to band, makes any generalization impossible. Names are given by elderly maternal or paternal relatives and are believed to have much influence on a person's life. The permanent name is usually given by the paternal grandfather but exceptions to this occur. Should a person be very sick his name may be changed to bring good luck and recovery. All people seem to have several names of a purely personal nature. Family names are unknown, although one Davis Inlet band family are called Rich, due to white influence. There are no traces of any sib or definite lineage organization. Hunting gear passes down in the paternal line; lacking a concept of definite hunting or trapping territories, there is little else to inherit. Shamanistic powers are entirely the result of personal predisposition and are not inherited, though they may be passed from one living man to another.

The material culture of these groups differs very little from that described by Turner.[17] It is quite simple and depends to a great extent on the presence of wood. This inability to live in woodless regions apparently prevents the Indians from following the main caribou herds that now seem to be in the barren grounds to the north and east. At present the Davis Inlet and Barren Ground people use a few Eskimo dogs, which are harnessed to the sled in fan-shaped formation, but this art, like the *komatik* with runners,was only acquired from the coastal Eskimo some fifty-odd years ago. Prior to that the men pulled their own toboggans and the small white Indian dog was only used for hunting small game. These dogs are almost extinct at the present time.

An unusually interesting snow house is made by the Indians when caught out in a storm or on the barren grounds where an open top camp cannot be made. A heap of snow is piled up and allowed to freeze for half an hour; it is then hollowed out with a snowshoe and deeply bedded with spruce boughs if such are available. When all are in, the door is sealed shut. I have slept in a large snow house of this type with six Indians, and been very warm. Unfortunately, however, in this case the builder had neglected to make an air hole and we nearly suffocated. The relation of this type of snow house to the block-built Eskimo structure is uncertain. I am inclined to credit the Indians' statements that their immediate ancestors used to burrow in a snow bank in such an emergency, but that lately they had evolved the more elaborate hollowed-out structure. That observation of the Eskimo snow house may have inspired this last development seems possible. At any rate we have here a unique type of snow house built and used by Indians.

Considering their lack of symbolism, their simple material culture, and their unique religion based on the Caribou God, it would appear that the northeastern Naskapi represent a very simple and presumably old type of Algonkian culture. Pushed into this barren region where they now live, they have clung to the old customs and have been influenced only slightly by the coastal Eskimo in recent times. Whether their earlier affiliations are

[17] Op. cit.

with the eastern or north central Algonkian must await more detailed comparison. The presence of cross-cousin marriage among these people, coupled with the recorded traces of the institution to the south and west, seems to indicate that it was an early ingredient of the Algonkian culture which has been able to persist only in the far north where other cultural contacts and white missionary influences have been relatively slight. The occurrence of cross-cousin marriage in both the extreme northwest[18] and northeast makes Rivers' belief that it will be found in the intermediate Athabaskan region seem quite probable. Certainly among the most northeastern Algonkians it is still an important social factor.

FIELD MUSEUM OF NATURAL HISTORY,
CHICAGO, ILLINOIS

[18] J. R. Swanton, The Haida of Queen Charlotte Islands. Vol. V, part 1, Jesup North Pacific Expedition, 62, 1905. Also P. E. Goddard on the Tsimshian Indians of the Northwest Coast. Am. Mus. Nat. Hist., Handbook Series, 10: 103, 1924.

AN EIGHTEENTH CENTURY COMANCHE DOCUMENT[1]

By ALFRED B. THOMAS

THE Tally Sheet, the photostatic document reproduced as plate 2, is the report of a campaign conducted by the Comanche allies of the New Mexican Spaniards against the Apache in the year 1786. Considerable interest attaches to this report. Historically, it contributes a detail in Spanish Indian policy on the northern frontier of New Spain in the late eighteenth century; anthropologically, it reveals possibly the earliest known arrangement of Comanche military societies in a war party. It may be viewed as the earliest Plains pictographic record known; at least this Spanish document indicates that it is a copy of such a record.

The historical background briefly is this. Throughout the seventeenth and eighteenth centuries the Spaniards and Pueblos of New Mexico suffered from incessant Ute, Comanche, and Apache attack. In defense Spain supported one tribe against the other: early in the eighteenth century Spaniard and Apache fought Ute and Comanche, the latter just then appearing on the northern horizon of the Southwest. The turn of the half-century saw this situation reversed; the Comanche now occupying Apache lands northeast of the province forced the Spaniards to seek Comanche friendship and at the same time arrange to turn their united energies on the displaced Apache, who pillaged New Mexico from the east and south.[2]

The Tally Sheet is a direct result of an action arising, under these conditions, from a treaty with the Comanche, signed February 28, 1786, according to the fourth article of which inces-

[1] The original of this document, the Tally Sheet reproduced here, is in Audiencia de Guadalajara 103–5–6 No. 43 (Archivo General de Indias, Seville). Another copy is located in Archivo General y Publico, Provincias Internas, Tomo 65 (Mexico City). (See footnote 4.) This article presents an aspect of the writer's study of the northern and northeastern frontiers of Spanish New Mexico, 1593–1821.

[2] A. B. Thomas, Spanish Expeditions into Colorado 1540–1779. The Colorado Magazine of the Colorado State Hist. Soc., November 1924. Also, Spanish Exploration of Oklahoma 1599–1792. Chronicles of Oklahoma, June 1928.

sant war was to be made on the Apache.[3] The Comanche conducted their campaign between May 13 and July 5, possibly the first under the above treaty. The scene of the engagement appears from various details to have been in the Sandia Mountain region south of Santa Fé. The name of the Apache band attacked is unknown.

In the *Noticia*, translated below, are found the names of most of the Comanche chiefs who took part in the peace celebration and in the campaign, the meanings of each of their names in Spanish, a statement of the number of tents under the command of each and of the then three divisions of the Comanche about New Mexico, namely, Yupe, Yamparica, and Cuchanec, or Cuchantica.[4] Elsewhere in his reports[5] Governor Anza indicates that the Yupe occupied the region north of the Rio Napestle (the Arkansas river) as far as the southern part of present Wyoming; that the Yamparica extended across the northern part of Colorado[6] of today, and southward among the Yupe to the Rio Napestle; and that between the Napestle and the present Red river ranged the Cuchanec, whom Anza briefly described from information just furnished him by Francisco Xavier Ortiz, an emissary to these Comanche. Between the Pecos and the Red rivers, Ortiz found eight Cuchanec rancherias located in a quadrangle roughly forty leagues square, that is, about one hundred miles square. Therein he estimated that the smallest rancheria had thirty tents,

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[3] Relacion de los Sucesos ocurridos en la Provincia del Nuevo-Mexico con motivo de la Paz concedida a la Nacion Comanche y su reconciliacion de la Yuta, desde 17 de Noviembre de 1785" hasta 15" de Julio de 86" (Provincias Internas, Tomo 65, Archivo General y Publico, Mexico City). This Relacion, divided into fifty numbered paragraphs, is a summary of the reports of Governor Anza of New Mexico over the above months. Hereafter citation will be simply Relacion with paragraph number. The writer is indebted to the American Council of Learned Societies for assistance in securing copies of this Relacion and related material in the archives of Mexico City.

[4] This Noticia is an enclosure accompanying the above Relacion in Tomo 65 of the Provincias Internas. With this Noticia there is also another copy of the Tally Sheet reproduced here. (See footnote 1.).

[5] Relacion, paragraphs 2 and 3.

[6] The Yamparica were also noted in this area eight years previously by Dominguez and Escalante, two padres who made an expedition in 1779 northwest of New Mexico (Diario y derrotero de los RR PP Fr. Francisco Atanasio Dominguez y F. Silvestre Velez de Escalante in Documentos para la Historia de Mexico, segunda serie, tomo I, 392–420).

all eight about seven hundred, and that there were three to four warriors in each tent, i.e., between six and seven thousand souls. He noted, too, that these Comanche owned about nine hundred beasts of burden, including five herds of mares. More specifically he mentioned that Chief Canaquaipe ruled over one hundred and fifty-five tents, and Chief Malla (Equeracapa), one hundred and fifty-seven. Eastward beyond these Cuchanec Ortiz reported others who ranged as far as the Jumano and Taguayace,[7] then settled on lands in southern present Oklahoma and northern Texas, near the town of Ringgold, Texas, of today.[8] The accuracy of this information was shortly established by Spanish explorers who between 1787–1789 visited the Taguayace and Comanche along the Red river in that area.[9]

From an anthropological point of view, the photostatic record of the Comanche report adds further interesting details to the small fund of Comanche information.[10] It will be noted that this Tally Sheet reveals the Comanche organized into five groups with the leaders of each, accompanied by a lance, standing in a very definite position with regard to each group. The *Noticia* also has the Comanche chiefs' names arranged in five groups. Possibly this organization is characteristic of the later eighteenth century Comanche arrangement in a war party. Lowie refers to a similar organization of Comanche bands.

[7] Ynforme de Franco Xavier Ortiz. This Informe also accompanies the above Relacion in Tomo 65 of the Provincias Internas. Ortiz was among the Comanche from April to May, 1786, to see how they were observing the peace treaty of the past February. Ortiz was accompanied by Josef Manuel Roxo who claimed and was supported by testimonials from twenty-one prominent citizens of New Mexico, that he had voluntarily made a journey east of Pecos in the preceding January (1786) and had persuaded some Comanche to visit Anza for the purpose of making the peace finally entered into. See these testimonials in El Consejo al Comandante Interino de provincias Internas. Madrid, abril 8 de 1787 (104–6–23 Archivo General de Indias, Seville).

[8] For an account of the Comanche and Taovaya in this area between 1759 and 1789 see H. E. Bolton, Athanase de Mezieres and the Louisiana-Texas Frontier 1768–1780, 1: 79–122; Texas in the Middle Eighteenth Century, 89–90, 121–133; The Jumano Indians in Texas 1650–1771 (Quarterly of the Texas State Hist. Assoc., vol. 15, No. 1).

[9] H. E. Bolton, Texas in the Middle Eighteenth Century, 129–133. The present writer is preparing the diaries of these expeditions for publication.

[10] The writer is indebted to Dr. Leslie Spier for the information and suggestions concerning the anthropological aspects of this document.

"The only earlier account of Comanche dances known to me is by Clark. After listing the Swift Fox, Gourd, Raven, Buffalo Bull, and Afraid-of-Nothing societies, he states:

> The Comanche had five bands, and claimed that the difference is in the dances prior to getting up a war-party.

In another place he adds:

> The Comanches have the Raven, Buffalo Bull, Swift-Fox,-all-war dances and Dance of Fear, with shields and lances, when they expect an attack . . . . ."[11]

It is perhaps significant that the bands number five, since five, as is well known, is the pattern number of some of the Basin Shoshoneans.

With regard to the "f" shaped figures in the reproduction here, it has been suggested[12] to the writer that possibly these are crooked lances which are badges of office common to the various military societies found among the Plains Indians generally.[13] Hooked lances as noted by Lowie were among the Comanche typical elements in their military societies:

> A number of questions were asked to determine traces of typical elements of military societies as found among the Plains tribes. In reply to one of these queries I was told that some warriors had hooked sticks with a long spear point at the bottom, the bent part being decorated with two pairs of eagle feathers. I could not ascertain that these regalia were correlated with a special tribal division or dance.[14]

In the case of the Wind River Shoshoni, the hooked sticks, Lowie learned, were used to catch fleeing enemies:

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[11] R. H. Lowie, Dances and Societies of the Plains Shoshone. Anthr. Pap. Am. Mus. Nat. Hist., 11: 809.

[12] The suggestion is Dr. Spier's.

[13] Lowie, Dances and Societies of the Plains Shoshone, (Comanche), 811; (Kiowa), 847 *f*; (Cheyenne) Kit Fox Society, 896. J. R. Murie, Pawnee Indian Societies. Anthr. Pap. Am. Mus. Nat. Hist., v. 11 (Pawnee; Two Lance Society, 561; Red Lance Society, 567; Thunderbird Lance, 570; Crow Lance, 571; Brave Raven Society, 574; Fighting Lance, 576; Wolf Lance, 576; Blackhead Lance, 576; Knife Lance, 578). A. L. Kroeber, The Arapaho. Am. Mus. Nat. Hist. Bull., 18: 159, 1904.

[14] Lowie, Dances and Societies of the Plains Shoshone, 809–811.

Petrograph of a figure carrying two lances, points downward (from Kenton, Okla.)

According to one informant the chief (any chief) long ago carried an otter-wrapped hooked stick . . . . with the crook of which he would catch a fleeing enemy and pull him from his horse.[15]

Kroeber, describing an Arapaho ceremonial organization of five degrees, also notes the presence of hooked sticks. In the ceremony he states all the participants carry lances; the two dancers of the second degree hooked ones; the dancers of the third degree straight lances.[16] The excellent plate of an Arapaho warrior with a hooked lance shown in Kroeber's *The Arapaho* reveals a detail that may be significant here. It will be noted in that plate that the turned down tip is held in position by a string or cord tied to the perpendicular part of the lance itself.[17] The Spanish copyist of the original Comanche report intended to indicate, possibly, a similar connection by the straight line drawn across the perpendicular of the "f" shaped figure, which gives those figures in the present reproduction their distinctive "f" character.

It is significant to note here, also, that the straight lances are indicated with point downward.[18] (See pl. 17.) This was the common method of carrying both straight and hooked lances. These lances were commonly thrust into the ground by the bearer, who must fight beside them no matter what the outcome until his standard was plucked out by one of his fellows and he was thereby released. The "f" shaped figures, placed at intervals in the line are also suggestive inasmuch as it was characteristic of Indian leaders to take position, not in front of their fellows, but within the line, which incidentally was a skirmish line.[19]

The lance was not only a standard carried in battle but was likewise a characteristic sign of office carried by the leaders.[20] The

[15] Lowie, Notes on Shoshonean Ethnography. Am. Mus. Nat. Hist. Anthr. Pap., 20: 283, 1924.

[16] A. L. Kroeber, The Arapaho. Am. Mus. Nat. Hist., Bull. 18: 159.

[17] Kroeber, The Arapaho, facing p. 175.

[18] The photographic reproduction here of the figure holding two lances, points downward, is from the original inscribed on a ledge of rocks eleven miles east and six miles north of Kenton, Oklahoma, in what is known as North Canyon. This was in general Comanche territory. The writer is indebted to Mr. W. C. Baker and Mr. C. A. Esmay, photographer, of Boise City, Oklahoma, for the photograph.

[19] Murie, Pawnee Indian Societies, 569, 578.

[20] Lowie, Dances and Societies of the Plains Shoshone, 847, 896; Murie, Pawnee Indian Societies, 560.

Spaniards' guess in the *Note*, accordingly, that the "f" figures represent individuals who without being chiefs won some distinction, was at least half right.

It is perhaps significant that of the number of leaders' lances shown here there are only two kinds, for it is usual in the Plains societies to have only two ranks or degrees of leaders. Further, the limited number of each kind shown suggest that they are emblems of rank. But as to the question whether leaders of the first rank among the Comanche would carry straight lances, those of the second rank hooked ones, there seems to be no certain answer. It is quite possible that this is the meaning of the straight and hooked lances in their positions here. Both types of lances were in general use throughout the Plains. But it cannot be determined that the straight lance is consistently that of a first rank leader and the hooked lance that of a second rank leader. However, this is a distinct possibility among the Comanche. Both types occur as first and second rank emblems among the Plains tribes; the order, and in fact their use or non-use, is quite variable.

TARJA[21]

Tally Sheet (*Tarja*) which Governor Don Juan Bautista de Anza sent in blank on the 19th of May, 1786, to the Comanche Captain General Ecueracapa so that there might be indicated on it by means of lines and signs the chiefs who might set out on the campaign, in the expedition under his command, against the Apaches, the number of men which each detachment may be composed, and the successes that might be achieved. (See pl. 18.)

Explanation of the lines and signs, according to what Oxamaguea, son of the above-mentioned captain, gave to the Governor by word of mouth:

A Chief Quetaniaveni, with his lance by his side, commanding the reconnaissance party of thirty-one men;

a five horses he encountered and recaptured

B CaptainGeneral Ecueracapa with his sword[22]

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[21] As indicated in footnote 1 above the original of this Tally Sheet is in the Archivo General de Indias, Seville. A copy of this Tally Sheet, the Informe of Ortiz, the Noticia, and the document here entitled Fourth Enclosure, are the four enclosures accompanying the Relacion. See footnotes 3, 4, and 7 above.

[22] The Spanish word given here, *sable*, for sword, technically signifying a weapon in Spanish military orders, appears to indicate the New Mexican Spaniards' recognition of the formal organization of the Comanche in military societies. So far as the writer knows no description of Comanche tribal life written by Spaniards has been

Tally Sheet of Governor Anza, showing a Comanche military formation in 1786.

C and detachment of one hundred and fourteen men
D Apache whom he killed by his own hand
E two wounds which he received
F[23] Two other Apache killed in the battle
G two prisoners
H Forty horses and twenty she-mules which he took from them
K Chief Salambipu with his lance and detachment of eighty-eight men
L Two dead Apache[24]
l twenty riding beasts recaptured[25]
M Six wounded Comanche,[26] one of whom died
N Chief Encajive with his lance and party of fifty men
o A dead Apache
P a wounded Comanche
Q Chief Piaquegipe with his lance commanding sixty-four men, whose party, farthest west, produced no result, as it was seen by the enemy.

NOTE

Neither the report of the Governor nor the explanation which Oxamaguea gave him explained this sign f. It is believed that it indicates the individuals who without being chiefs won some distinction.

NOTICIA

Information (Noticia) concerning the Comanche chiefs present in the Villa of Santa Fé and Pueblo of Pecos in the year of 86 until the 14th of July, to treat for the purpose of adjusting the peace celebrated with Governor Don Juan Bautista de Anza with a statement of the number of tents, which each one has under his command, in which there may be computed about three men of arms and from seven to eight women and children.

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found. It is not impossible, in fact it is quite likely, that such an account exists in Spanish archives. On the use of *sable*, see *Diccionario de la Langua Castellana extracto del Diccionario Enciclopedico* compuesto por E. Zerolo, M. de Toro y Gomez, E. Isaza. The example given by the authors there is: "Usaran de las espadas o *sables* los oficiales. (Orden Mil.)."

[23] The Spanish copyist wrote a sequence of EF for two F's, as may be seen in the copy of this Tally Sheet accompanying the Relacion (see footnote 4 above).

[24] Garrick Mallery, Picture Writing of the American Indians, illustration opposite page 574, shows dead Sioux on their heads, whereas these are shown here heads up in D, F, L, and o. Prisoners, on the other hand, are indicated with heads down in G.

[25] The reproduction here has the familiar horseshoes marks in H, l, by which horses are commonly indicated in Plains pictographic art. Inasmuch as horses and mules are definitely indicated in H, the animals indicated in I, referred to as *cavallerias*, and drawn much smaller, might be donkey pack animals. The word *cavallerias* (eighteenth century Spanish for *caballerias*) means riding beasts, though the word in eighteenth century documents is frequently used to refer to the whole horse herd.

[26] The wounded Comanche are indicated by what appears to be broken lances.

Names of the chiefs with their meaning in Spanish.[27]			Number of Tents.
First with Equeracapa of the division of Cuchanec,[28] or Cuchantica: Buffalo-eaters.			
Equeracapa:	El huerfano, the orphan, and because most notable in war contatanacapara:[29] Grulla en Cruz, Crane on the Cross, known in New Mexico and Texas by the name Cota de Malla, Coat of Mail, the most trusted and universally esteemed chief of the nation, which named him their attorney general for the adjustment of peace in the council of chiefs held for this purpose with the greatest solemnity in their own country, and newly instituted as chief of all of it		100
Tosacondata:	Grulla Blanca	White Crane	10
Tosapoy:	Camino Blanco	White Road	80
Hichapat:	Ardiloso	The Crafty One	10
Paraginanchi:	Orejas de Venado Alasan	Ears of a Sorrel Deer	30
Cuetaninabeni:	El Maltratado	The Maltreated One	20
Quinaneantime:	El Roe a su Amo	He gnaws his Master	11
Sonacat:	Muchos Pimientos	Many Peppers	20
Canaguaipe:	Amugerado flaco	The Feeble Effeminate One	40
Pisimanpat:	Zapato podrido	The Decayed Shoe	10
Toyamancare:	Sentado en la Sierra	Seated on the Mountain Range	15
Tichinalla:	Juega Feo	Ugly Game	20
	Second		
Queremilla:	El Chamá de la parcialidad Yupe: El que hace prodigios, Sacerdote, o Ministro entre ellos:	Exchange[30] of the group Yupe He who makes miracles, Priest, or Minister among them	50 6
	Third led by Tosacondata		
Huanecoruco:	Zorra de Paño, Cuchanec:	Fox of Cloth, Buffalo Eater	10

[27] The writer is indebted to Professor Stephan Scatori, Professor of Romance Languages, in the University of Oklahoma, for assistance in the interpretation of the Spanish equivalents of the Comanche names in this Noticia.

[28] Buffalo Eaters is the meaning given to the word Cuchanec or Cuchantica by the Spaniards (Relacion, paragraph 2).

[29] In another place Anza says that this word means: *El sin igual en hazanas militares*: the one without equal in military achievements (Relacion, paragraph 5). The chief's name, Equeracapa, in Spanish means Leather Cape. That hide armor is indicated by this name is apparent here from Cota de Malla, Coat of Mail, the title given him by the Spaniards of New Mexico and Texas.

[30] El Chama may also be translated The Boy. The text here states that this man was entrusted with a letter for the Governor of Texas.

Tosaporua:	Oso blanco, de la Rama Yamparica:[31]	White Bear, of the Yamparica branch	8
Pasahuoques:	Ladra Ronco, Idm:	Hoarse Bark, Idm.	20
	Fourth led by Tosapoy		
Ysaquebera:	Lobo Largo, Yupe:	Long Wolf, Yupe[32]	80
Tuchubarua:	Hozo Paxarito, Idm:	Bear Bird, Idm.	9
Encantime:	Savandija, Idm:	Beetle, Idm.	11
	Fifth led by Paraginachi		
Pagabipo:	Vasija de Panza, Yamparica:	Basin Pauch, Yamparica	15
Cunabunit:	El que vió Fuego, Ydm:	He who saw Fire, Idm.	10
Quahuahacante:	Cuero matado:	Dead Hide	8
		Total	593

NOTE

The number of individuals whom they have at their command exceeds at least by a third part that computed by this statement.[33]

. . . . . .[34]

It is a certified copy. Janos 13 of March 1788 in accordance with the order of the Senor Commandante General.

Juan Gasiot y Miralles (Rubric)

FOURTH ENCLOSURE[35]

Names of twenty-two other Comanche despatched by Equeracapa to Governor Don Juan Bautista de Anza in place of eight whom he asked for

[31] Yamparica, Anza stated, comes from the word Yampa, a species of sweet root which abounds in the country of these Indians (Relacion, paragraph 2).

[32] The word Yupe is also written by the Spaniards, Yupinis and Gente de Palo. The latter may be translated as Stick People or Timber People. In this connection it is interesting to note that the Council, mentioned in this Noticia, which selected Equeracapa as chief of all the Comanche, met on the Arkansas river in a spot called La Casa de Palo or the House of Timber or Stick (Relacion, paragraph 2).

[33] It will be observed that this note is apparently a restatement of the last phrase of the opening paragraph of this Noticia that each tent has about three men of arms. The total number of warriors would accordingly be between seventeen hundred and eighteen hundred.

[34] A list of five chiefs' names, all appearing on the Tally Sheet is omitted here since the Spanish equivalents are not given. Of these five names, three, Salambipu, Encajive, and Piaquegipe, do not appear in the lists of the Noticia or the Fourth Enclosure so that their meanings are unknown.

[35] This list of twenty-two names is a fourth enclosure accompanying the Relacion. The other three enclosures as already noted are a copy of the Tally Sheet, the Noticia, and the Ynforme of Ortiz. (See footnotes 4, 7, and 21 above.)

to accompany the detachment of the campaign of the month of July for the purpose of informing themselves of the lands and situation of the enemies in the sierras of the Rio Grande del Norte in order to be able to guide the parties of their nation, which in effect, they did. They conducted themselves with the greatest valor and fidelity in two encounters which they had, having succeeded in the first in taking fourteen prisoners, and in the second, killing three men from a large rancheria of Apache which they attacked themselves alone, because they were ahead of the detachment and came upon a trail along which they went and arrived at it (the rancheria) before the troops.

Capitan Oxamaquea:	Manos Amarillas, hixo mayor del expresado Gral: Yellow Hands, eldest son of the above mentioned Chief.	
Tomanaguene:	Alzo las manos, hijo Segundo: He raises his hands; second son	
Tahuichimpia:	El Suegro, hijo tercero: Father-in-law, third son: This one was with the Governor, sent previously by his father.	
Tosaporua:	Oso blanco:	White Bear
Camquencavite:	Casa Colorada:	Red House
Quemanacare:	El que esta lejos:	He who was far away
Quetampunigue:	El que no han Visto tirado:	He whom they have not seen shot
Nomasonasallo:	El que hizo su saco:	He who made his sack.
Huillome:	El Alezna:	The Awl
Ancachouate:	Hasta sinpunta:	Even without purpose
Tampiallanenque:	Risa grande:	Great Laugh
Sucaque:	Que cosa és:	What is it
Tanansimu:	El Sarsillo:	Small Rake
Amabate:	El sin Caveza:	The One without a head
Tanticanque:	El que come	He who eats
Ybienca:	Muger Colorado	Red Woman
Ecopisura:	Cuchara Arrastrada	Scraping Spoon
Parnaquibitiste:	Oso muy pequeño:	Very small bear
Taoinan:	El Flauta	The Flute
Humavaenvite:	El Gavilan Roxo	The Red Sparrow-Hawk
Tamavencaniguay:	El preguntado por el Anillo:	The One questioned because of the Ring.[36]
Cageneiqueuate:	El Sin Faja	The One without a Sash.[37]

It is a copy which I certify. Janos 13 of March, 1788. By virtue of an order of the Senor Commandante General.

Juan Gasiot y Miralles (Rubric)

UNIVERSITY OF OKLAHOMA,
NORMAN, OKLAHOMA

[36] The Spanish here admits of another translation: "The one asked for the Ring" might be equally correct. This statement applies to several other of the above names so that the correct meaning must necessarily await comparison with the Comanche language itself.

[37] Another word may be added to this list: Encatabebo: Vermejo: The Bright Red One. This name was that of the Comanche chief who returned with Ortiz. (See footnote 7 above.)

CAVES OF THE UPPER GILA RIVER, NEW MEXICO

By EDITHA L. WATSON

THE Gila river has its source in southwestern New Mexico. Three branches, known as East, Middle, and West forks, unite to form the main river. The greater part of these branches lies in Catron county, but the West fork flows into the river slightly below the county line, in Grant county.

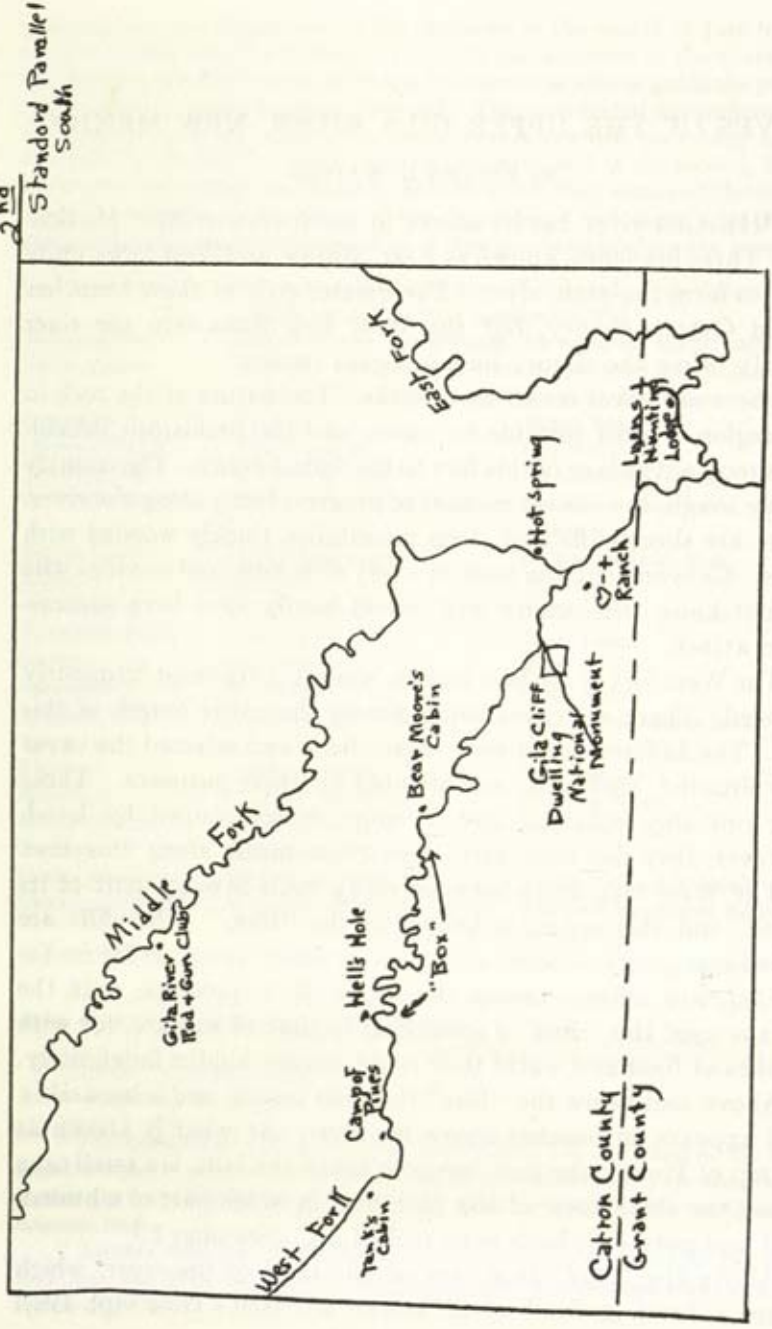
There are caves on all three forks. The nature of the rock in this region is most suitable for caves, and the prehistoric inhabitants took advantage of this fact to the fullest extent. The country is very rough, the easiest manner of progress being along the river. There are sheer cliffs and steep mountains, thickly wooded with pines. Canyons cut the land in every direction, and enemies who did not know the locality well, could hardly have been successful in attack.

The West fork is the best known, since it is the most frequently traveled. There are caves along almost the entire length of this fork. The Indians had a wide choice here, and selected the caves best situated, sheltered, and oriented for their purposes. These they probably enlarged and in some degree shaped by hand. However, they did not exert themselves much along this line.

The West fork flows between rocky walls through part of its length, and this region is known as the "Box." The cliffs are eroded into pinnacle form, and possibly many caves, so far undiscovered, are hidden among the rocks. It is probable that the Indians used this "Box" a great deal in time of warfare, for with supplies of food and water they could remain hidden indefinitely.

Above and below the "Box" the cliffs recede, and some arable land appears on benches above the river. At what is known as "Camp of Pines," the first campsite below the falls, is a small cave among the shale back of the pine flat, in which part of a human skull and potsherds have been picked up. (See map 1.)

Above the "Box" is a cave at the level of the river, which makes a bend in front of it, known as "Hell's Hole" (pl. 19*a*).



Map 1. The three forks of the upper Gila river, New Mexico.

No traces of occupation have been found in the cave, since the river fills the cavity at times of flood. A layer of fine sand covers the floor. The roof is smoked from the fires of modern campers. However, close to this cave, which is mentioned as a prominent landmark, are many others of interest, as well as pueblo ruins.

About one mile upstream from Hell's Hole, on the rim above the river, are two caves which have had pickets placed around the entrances. Those in front of one have been burned to the ground, but those in front of the other are about three feet high.

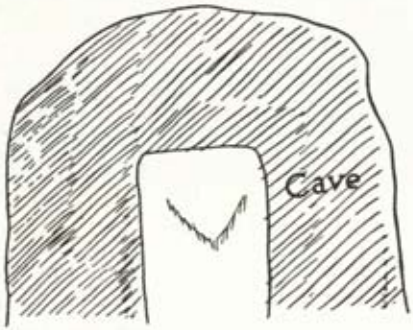


Figure 1. Incised rock in cave near Hell's Hole.

Neither cave is very large. They may possibly have been used as corrals.

From a high ridge across the river from Hell's Hole may be seen a cave at the top of a mountain. A rock inscribed with a V-shaped figure may be seen in the mouth of the cave,with the help of field glasses. This rock appears to be a sort of altar (fig. 1).

At Hell's Hole, along the river bottom, is a shallow cave in which are a metate and a mano, while potsherds were found in front of it.

Between Bear Moore's cabin and the Gila Cliff Dwelling National Monument, reference to which will be made below, there is a small cliff-dwelling of two rooms. The entire front of the cave is walled up, the inside being divided by a wall with a door into two rooms of about equal size. The room to the right has a door opening to the outside; the room to the left, a window. The doors and window are larger than the usual cliff-dweller type,

but may have been enlarged by vandalistic visitors. This dwelling was originally sealed with a large rock. A small decorated vase, shaped like a globe with a half-globe above it, was the only artifact found in it when opened. To the right of this dwelling is a large, very high cave. This is probably the site referred to by Dr. Walter Hough as "No 3," in Bulletin 35, Bureau of American Ethnology.

The Gila Cliff Dwelling National Monument is the largest known group of caves in this region, and has many points of great interest (pl. 19*b*). This site is shown in Bulletin 35, above referred to, as figures 1 and 2, and is the one described by Bandelier in his Final Report, quoted in this Bulletin, under "No. 3."

There are nine caves in the group. The first two are small and low and show no traces of use. The next contains a T-shaped window in perfect preservation (pl. 20). The next entrance leads to an enormous cave opening to the outside in three places. The walls do not reach to the roof of the caves, with one exception—a two-story room against the front wall of the cave (pl. 21). This is the only two-story room in the dwelling. One or two walls at the back meet the slope of the roof, but generally the walls do not touch the roof at any point. In some places the rock is used as the back wall of a room, and in others a wall is built in front of the rock, dust and rubbish being accumulated in the narrow space between the artificial wall and the rock. A large rock that has fallen from the roof of the cave has been incorporated in the plan, and the adobe walls attached to it. The two-story room has no loopholes or windows, but the door extends through both stories. This, however, may have been broken thus after the dwellings were deserted by their builders. The holes where the beams went through to form the floor of the upper story are clearly seen. The beams themselves have disappeared, though in other parts of the dwellings the original beams still protrude from the walls. The walls are made of adobe with rock spalls, and were plastered on the inside. Some of the plaster still remains, showing the marks of the hands which applied it.

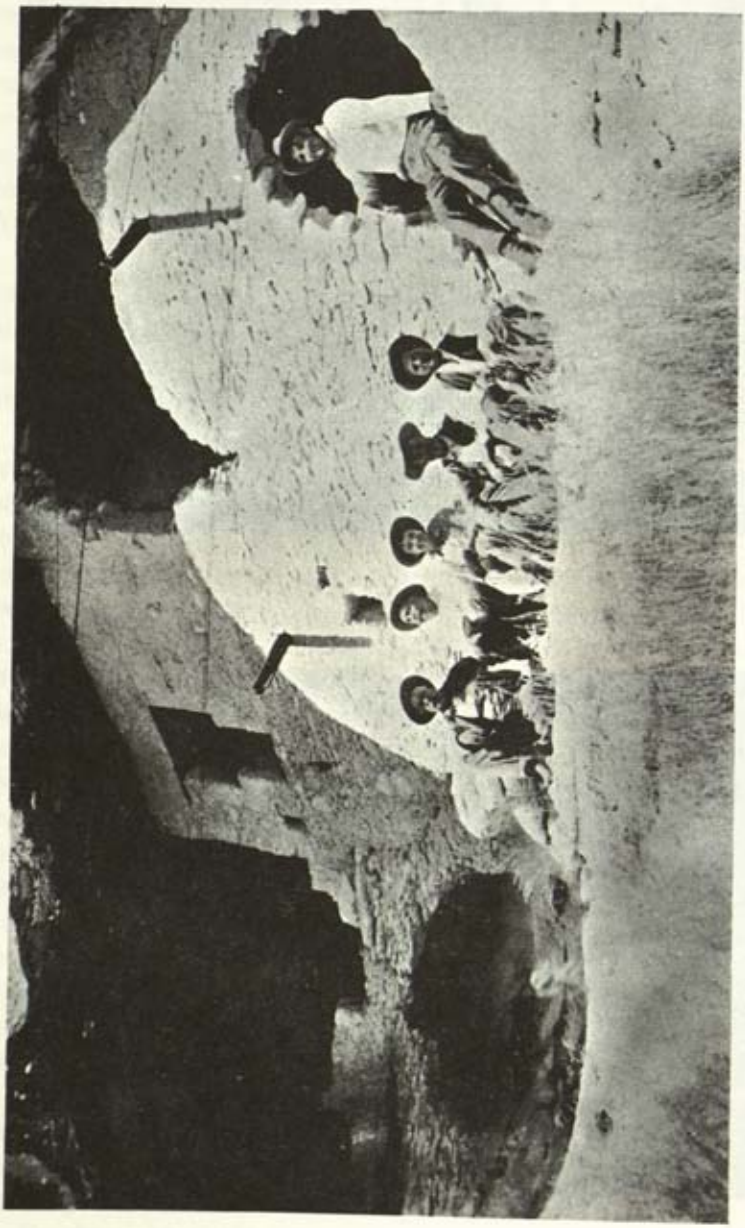
To the right of the cave with the three divisions is another smaller cave, in which there are many pictographs, badly de-

a

"Hell's Hole."

b

Gila Cliff Dwelling National Monument.



T-Shaped Window

Interior view, cliff dwellings.

faced, painted in red. They are supposed to be the work of later tribes (pl. 22*a*). To the right of this is a vertical slit, containing walls. Still farther on the same side is a cave inaccessible from any point.

In the face of the bluff where the canyon meets the river is a cave, which appears to be shallow and is also inaccessible.

Corncobs are plentiful in this ruin. They are very small, and the dry atmosphere has preserved them so beautifully that they may be indented with the fingernail. Black-and-white pottery and corrugated ware blackened on the inside are the only sorts noticed among the sherds. Turquoise beads have been found here. As this is a national monument, excavation is forbidden, but vandals have torn up the floor in search of treasure.

A desiccated body of an infant was found in one of the rubbish heaps behind the walls. With it was a "doll" made of wool cord, wound on a stick, and a hank of yucca fibre, presumably the doll's bed. The body was clothed in a sleeveless jacket of rabbit fur, and a waistband made of feathers. The finding of this "mummy" has given rise to the idea that the cliff-dwellers were a pigmy race.

Such parts of this ruin as are in preservation are worthy of study. The architecture and use of materials differs from that of ruins farther north.

There are said to be caves containing walls farther up the canyon.

Entrance to this group may be obtained only by following the bed of the little stream which flows down the canyon, until one is past the caves, when the trail begins to turn and rise, and doubles back on itself at a higher level. Thus the caves are approached from the upper part of the canyon. The slope before them is steep and suddenly ends in a sheer bluff of some twenty feet in height. The dwellings thus were not easy to approach, but owing to the nearness of the opposite canyon wall, and the fact that the water supply is in the bottom of the canyon, it would be easy to cut the inhabitants off from water, thus forcing a surrender.

The Middle fork has not been explored by archaeologists, and such caves as are mentioned here have been noticed by cow-

boys and hunters. There are, without doubt, numerous caves that would repay careful exploration.

Above the Gila River Rod and Gun Club cabin, there is a group of cliff-dwellings, two of which were sealed at the time the writer obtained this information. It is in this neighborhood that the writer feels sure the archaeologist would find much of interest. It is not easily accessible, and has not been overrun by vandals.

About three miles above the junction of the Middle fork with

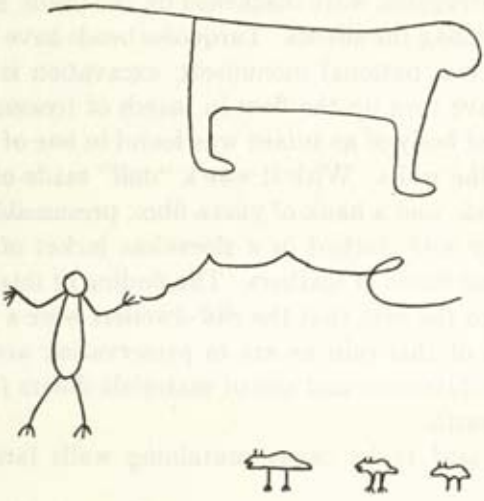


Figure 2. Pictographs from Middle fork.

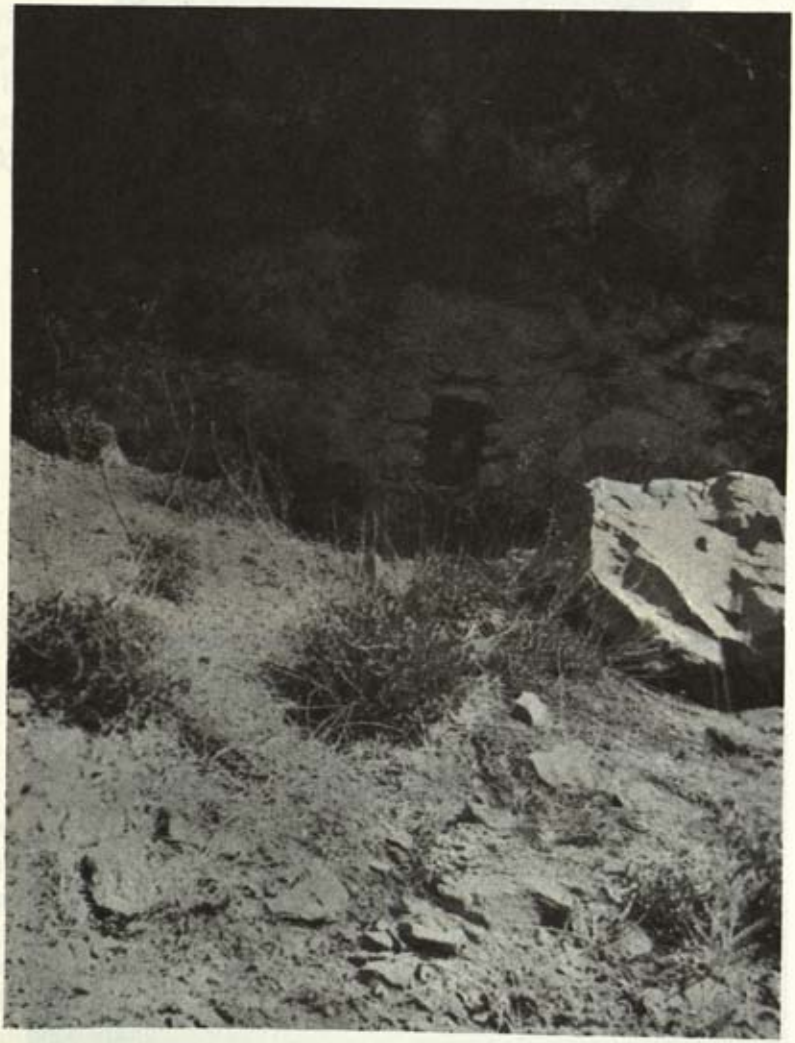
the West fork, are caves in a bluff, high above the river. The roofs show marks of smoke, but have sloughed off so that the floors are covered with fallen rocks of considerable size. It is probable that the roofs were smoked by Indians, as there is no reason why a hunter or trapper should climb so high, over steep cliffs, for shelter. The caves are shallow, and were possibly used only temporarily. There are fine pictographs on the walls—one of a fish (pl. 22*b*), another a heart shape with round features suggesting a face, and various other markings. Near these caves a rocky pillar has become detached from the face of the bluff. At its top is a formation suggesting a human head. The writer

a

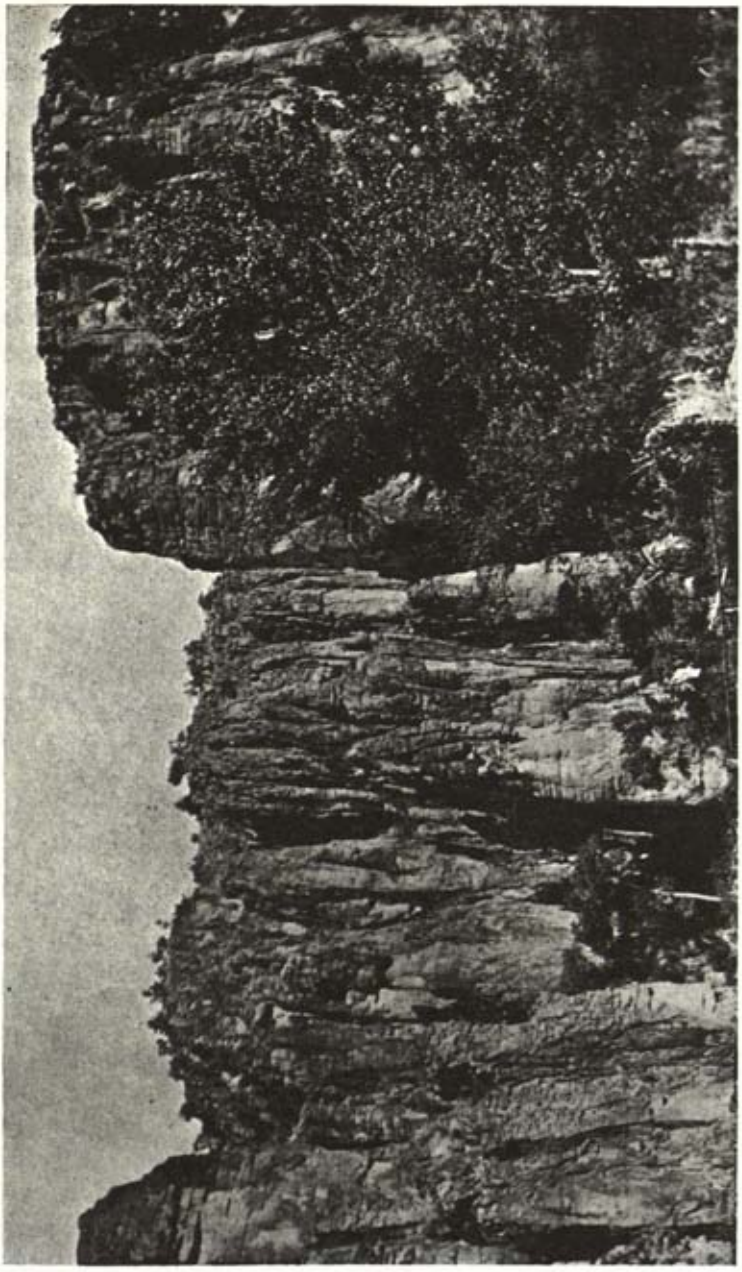
Pictograph from Gila cliff dwellings.

b

Pictograph from Middle fork.



Walled cave in Middle fork.



Entrance to "Little Grand canyon of Gila."

surmises that this pillar may have been given the ceremonial care which so many rock formations have had, and that the caves may have been used at times when the ceremonies were held. This region would repay investigation, though the cliffs are very steep and progress is toilsome.

About one-half mile downstream from the above is a cave containing many pictographs. Among these are a man throwing a rope, two four-legged animals, one large, the other small, and several horned animals with but two legs, which nevertheless resemble deer. There is also a mountain lion, about eight feet long and two feet high. These pictographs are all painted in black (fig. 2).

About a mile up the Middle fork from its end, a hot spring issues close to the river bed. Traces of a wall here indicate that the Indians made a small reservoir for the conservation of the hot water. Just above it, to the right, is a small cave with a wall dividing it in two. An abrading stone, black and polished, is set in the base of the wall.

Across the river from this site, far up on the hillside, is a cave in which may be seen walls, but it is not accessible. Slightly downstream from there is a small cave entirely walled except for a small oblong opening. This is probably a storeroom. The walls and door in this cave are in perfect preservation, in spite of the fact that it is at the river level, and is on the trail up the river (pl. 23).

There are three small walled rooms on the edge of the field below the Heart-Bar-Cross ranch house. These are probably granaries.

On the East fork, in what is called the Little Grand canyon of the Gila (pl. 24), just above the Lyons hunting lodge, is a small cliff-dwelling in a rather inaccessible place. This little canyon has hot and cold springs, many flowers, and is a beautiful spot for such a dwelling, though its size would preclude many people from living there. It is the writer's idea that at the time when these dwellings were inhabited, the country was in a peaceful state; and that various families built themselves small dwellings at some distance from the group known as the Gila Cliff Dwelling

National Monument, though probably belonging to it in clan relations. The many small dwellings sprinkled about the regions would seem to bear out this interpretation. Later, possibly when enemies came into the country, these smaller homes were sealed with rock slabs, and the inhabitants moved to the larger caves, where they remained until overcome by the forces of nature or of other tribes, or at last won a peace which permitted them to build pueblos, and thus abandon the older type of dwellings.

Not much has been learned about the caves of the East fork, though without doubt there are as many as on either of the other forks.

Owing to the inaccessible situation of many of the caves of this region, and also because archaeologists have not penetrated so far into this wild country, the caves of the upper Gila remain in much the same condition as when they were abandoned. Access may be had only by long weeks of camping, all supplies being brought in by pack-train. The nearest railroad is Silver City, the nearest towns Mogollon and Pinos Altos. This region is in the Gila National Forest, and the character of the country has been preserved in as nearly as possible its primitive state. Government trails cross the Forest, but most of these caves are in places where no trail penetrates, and on rocky cliffs where none but an archaeological enthusiast would feel any urge to go. Those ruins which are in the paths of campers and hunters have suffered more or less from the thoughtless vandalism of these people, who have little or no interest in their value to others. However, the proportion of ruins thus despoiled is small compared to the vast number which exist in this region, and which wait the student of Indian lore.[1]

711 17th Street,
Denver, Colorado

[1] The map which accompanies this article was checked by Mr. Henry Woodrow, ranger of the Gila National Forest.

A HOPEWELL TYPE OF CULTURE IN WISCONSIN

By W. C. MCKERN

THE Wisconsin archaeological field, if one may so arbitrarily limit it, is geographically situated very much on the borderland of the accepted Middle Western area of intense archaeological interest. Moreover, the application of modern excavation and study methods is of very recent adoption here, due largely to a previous lack of funds available for such research. Consequently, the district and its problems are little known to the American student.

However, the importance of a field depends not so much upon its popularity as upon the nature of its problems and their bearing upon the problems of adjacent fields, and in this respect the Wisconsin field, as disclosed by relatively recent finds, demands the interest of those seriously concerned with the prehistory of the entire Mississippi district, whether it be Lower or Middle Mississippi, Ohio, or Northwestern.

A very brief exposition of the local archaeological situation seems necessary in order to render intelligible the following account of data obtained as the result of investigations this year. The features most productive of data in Wisconsin are artificial mounds. There is no valid evidence to support current contentions that any specific Indian tribe historically encountered in Wisconsin was the author of any of the mounds. The occasional Indian informant who attempts to explain the purpose of these structures, and who claims them as the works of his people, is patently rationalizing. In all probability the mounds are locally prehistoric, since no evidence of European contact has ever been found inclusively present in the hundreds of mounds of various types which have been carefully excavated during the last eleven years.

There are three distinct types of mounds in Wisconsin, classified according to external shape: (1) hemispherical mounds, generally called conical, ranging from one to twelve feet in height

and from ten to ninety feet in diameter, but predominantly small; (2) irregularly shaped mounds, including linears and effigies or animal-like shapes; (3) platform or truncated mounds. The first two types are basically burial tumuli; the platform mounds, of rare occurrence, are of problematical purpose.

The markers for four distinct cultures have been found respectively dominant in mound groups, and it is not improbable that other mound cultures remain to be defined and geographically located. (1) The Effigy Mound culture seems to be responsible for practically all the irregularly shaped mounds and for most of the small conicals. It is basically Northwestern Woodland in type and the pottery suggests Algonkin affinities. (2) The Grand River culture has only been found dominant in a single group of small and medium-sized conical mounds, but at several campsites. It, too, is basically Northwestern Woodland in type, but the pottery suggests Siouan affinities. (3) The Cahokia culture was found by S. A. Barrett to be richly represented at Aztalan, Jefferson county. The additional presence here of a more typically Arkansas type of pottery suggests a complex of Cahokia and more southern traits. (4) The fourth culture actually was first found dominant at several sites, in Crawford and Vernon counties, by Cyrus Thomas,[1] whose knowledge of the local field was not sufficient to render the peculiar nature of his finds readily apparent to him. Thomas made no attempt to define Wisconsin cultures based upon his early archaeological investigations in this state. After his brief report, nothing appears to have been done to check up on his finds, or to place them culturally, until the summer of 1928. In fact, insofar as being put to any use, these early finds seem to have been entirely forgotten. This fourth culture, generally suggesting Ohio in character and for the most part specifically Hopewell, is the somewhat delayed subject of this article.

In the summer of 1928, an archaeological field expedition of the Milwaukee Public Museum, in charge of the author, was directed to examine mounds in Trempealeau county, on the

[1] Cyrus Thomas, Report on the Mound Explorations of the Bureau of American Ethnology. 12th Ann. Rept., B. A. E., 67–83, 1894.

shores of the Mississippi river. Towards the end of the season, excavation of an unusually large mound was undertaken. This, locally known as the Nicholls mound, is a structure, somewhat oval in shape but of conical type, twelve feet in height and ninety feet in maximum diameter. It is the outstanding one of a group of smaller conicals, all characterized by bold contours unusual for Wisconsin. We were not permitted to employ the removal method in excavating, since the owner wished the mound restored after the completion of our work. We therefore made the most of the trenching method, cutting a trench twenty-three feet in width through the center of the mound.

The mottled materials, of which the mound was constructed, were characterized by very distinct pocket-lensing, clearly showing in cross-section on the trench walls the individual loads of earth as dumped by the builders. The base of the mound was marked throughout by a thin, black line of humus, the remains of the original turf upon which the tumulus had been erected.

Excavation disclosed a centrally placed pit burial. The angular pit, nine feet in length, seven feet in width, and two feet in depth, was entirely lined with bark, including that of hemlock, basswood, and the coffee tree. In the pit were the skeletal remains of seven individuals, in the last stages of decay and of a bright yellow color probably derived from some element such as tannic acid in the adjacent bark. Four adults and one infant were disposed in the flesh, prone on the back. The other two individuals were represented by reburials of bundled bones.

Associated with the bones were six copper celts, the largest weighing two pounds eleven ounces, a large chalcedony blank or scraper, two copper gorgets of the Ohio breastplate type, about forty pearl beads and four ear ornaments, primarily fashioned of balls of wood, covered with thin sheet silver, and perforated for purposes of suspension. The latter were situated two on either side of one of the skulls. Two of the copper celts and both of the copper gorgets had served to preserve attached pieces of cloth. These textiles are of two kinds: one is of coarsely woven twined technique, the warp laterally in contact and the weft placed at quarter-inch intervals; the other is of finely woven twined tech-

nique, with either crossed warp or dual warp divided at each wrap of the twining elements, and reinforced at half-inch intervals with heavy ribbing. All elements are two-strand twists of nettle (*Urtica dioica*) fiber.

The earth from the pit had been thrown up on the four sides to form banks. These banks were used to support a roof or covering, fashioned of light poles and heavy strips of bark. At least some of the poles were of red oak. Many varieties of bark were used, including that of shellbark hickory, hemlock, butternut, black ash, basswood, and a variety of willow. The roots of ferns, probably the common brake, were found with the bark. The structure formed of these materials had been roughly square, in conformity with the shape of the pit which it was intended to cover, and twenty-five feet in consistent diameter. As the earth had accumulated over this lightly built covering, it had caved in centrally, probably settling gradually under the growing weight.

Above the bark shelter, scattered centrally throughout the mound from top to just above the grave, were a series of chipped stone artifacts of a type and size not reported from Wisconsin mounds since the investigations completed by Thomas in 1891. These included three lance-points of gray quartzite, respectively eleven, twelve, and thirteen inches in length, a knife of yellow chert, fourteen and one-half inches in length, and several other remarkable knives and spearpoints chipped from quartzite, chalcedony, and obsidian. Included with these implements were a disc-shaped fragment of thin sheet copper, a fire-clay pipe bowl of concave-based platform type, and about one hundred tubular beads rolled from thin copper sheeting.

In a smaller, adjacent mound were found, associated with extended flesh and bundled-bone burials, a large chert lance-point, part of a broken stone pipe bowl of concave-based platform type, and a pottery vessel of Hopewell type.

Amateur excavations in a third mound of this culture produced copper beads and chalcedony projectile points identical with those found by ourpa rty, andinad dition, fragments of a Hopewell type of pottery vessel, two copper ear spools and three

bear teeth with biconical perforations on one side for purposes of ornamental attachment.

With the possible exception of pit burials under mounds, no single trait of previously defined Mound Builders' cultures is evidenced in these finds. Copper ear spools, while not unknown to Cahokia culture, have not been found at the Cahokia site in Wisconsin. The thin, tubular bead of copper has previously been found in the state, as has the Ohio type of copper celt, but neither is characteristic of any site of recent mound investigation. Traits foreign to previously known Wisconsin mound cultures include: (1) peculiar type of uniquely large, notched-based lance points and square-based knives of chipped stone; (2) tubular beads of thin copper sheeting; (3) Ohio type of copper celts; (4) large copper gorgets or breast-plates; (5) pearl beads; (6) ornaments consisting of wooden balls covered with sheet silver and perforated for suspension; (7) Hopewell type of pottery; (8) both open twined and closely woven cloth; (9) concave-based platform pipes, although one such pipe bowl in the museum collections is reported to have come from a Wisconsin mound; (10) disposal with the dead of relatively large quantities of implements and other articles of an imperishable nature; (11) burial in a single pit of several individuals extended in the flesh, the bodies placed on bark flooring and covered with a bark shelter; (12) copper ear spools; (13) perforated bear teeth.

Of these traits, all but the first two are compatible with the Hopewell culture of Ohio, and items 4 to 7, inclusive, are positive Hopewell markers. Burials in sub-floor pits are known to Hopewell culture, but are much more commonly found in Wisconsin mounds. However, the specific type of pit burials encountered in the mounds under discussion differ from previously known Wisconsin types in the following respects. They were angular and flat-bottomed, while the Wisconsin type is round or oval and generally bowl-shaped; at least one pit was lined with bark and covered with a bark shelter, a peculiarity not previously reported in Wisconsin; they contained compound, extended flesh burials, not encountered in the mounds of any previously known culture.

Traits 1 and 2 above are foreign to both Wisconsin and

Ohio Hopewell mounds, and suggest a more southern, Middle Mississippi influence. There are several important Hopewell markers that were not encountered in these mounds, such as crematory basins and mica objects. However, these omissions seem relatively unimportant when it is remembered that only three mounds were excavated, one by untrained investigators, and that rarely does an Ohio mound produce all the markers for the culture.

A comparison of the above data with the report of Thomas' investigations in Crawford and Vernon counties shows that the culture extended at least as far south as the mouth of the Wisconsin river.

The only immediate conclusion to be advanced is that a group or groups of mound-building Indians, living in locally prehistoric Wisconsin, possessed a culture which shows dominant Ohio influence of the Hopewell type. Prior to a much hoped for discovery of culture stratification, nothing can be said relative to even the comparative ages of the several divergent cultures comprising the Wisconsin archaeological complex.

The occurrence of another of the relatively advanced prehistoric cultures of eastern North America in Wisconsin places new emphasis upon the problem of what caused southern and eastern culture influences to penetrate so far into the northwestern region. Although there is a probability of compound causes, it is suggested here that a more thorough investigation of primitive copper mining along the southern shores of Lake Superior may produce evidence pertinent to this problem.

PUBLIC MUSEUM,
MILWAUKEE, WISCONSIN

AMERICAN ANTHROPOLOGICAL ASSOCIATION

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR THE YEAR ENDING DECEMBER, 1928

The American Anthropological Association held its twenty-seventh annual meeting at the American Museum of Natural History, New York City, on December 27, 28, and 29, 1928, in conjunction with the American Association for the Advancement of Science. Joint sessions were held with the American Folk-Lore Society, the Linguistic Society of America, and with Sections H and L of the American Association for the Advancement of Science.

Two Council meetings were held, with President Saville in the chair.

COUNCIL MEETING, DECEMBER 27, 12:00 M.

Secretary A. I. Hallowell being absent on account of illness, J. Alden Mason was elected secretary *pro tem.*

The minutes of the Andover meeting as printed in the AMERICAN ANTHROPOLOGIST were approved.

REPORT OF THE TREASURER

REGULAR FUND

Receipts

Balance on hand, December 9, 1927			$2911.86
American Ethnological Society		$ 710.50	
Anthropological Society of Washington		165.00	
Central States Branch		270.00	
Annual membership dues of A. A. A.			
1926	$ 18.00		
1927	98.25		
1928	3373.20		
1929	190.80		
		3680.25	
Sale of publications		843.00	
Reimbursements		814.94	
Interest		100.00	
Royalty Memoir Fund		31.50	
			6615.19
			$9527.05

Disbursements

George Banta Publishing Company:			
Printing	$3410.18		
Postage	171.82		
Storage	60.00		
		3642.00	
Editor's expenses		532.75	
Treasurer's expenses		669.67	
Secretary's expenses		141.99	
Reprints		285.14	
Memoirs		735.11	
Purchase of back numbers		92.27	
			6098.93
Cash on hand, December 8, 1928			3428.12
			$9527.05

Resources

Cash on hand, December 8, 1928			$3428.12
Due from sales:			
1927	50.00		
1928	71.20		
		121.20	
Due from dues:			
1927	132.00		
1928	447.00		
		579.00	
			700.20
			$4128.32

Liabilities

Membership dues for 1929 already paid	174.60	
Net excess resources over liabilities	3953.72	
		$4128.32

Cost of Publications

AMERICAN ANTHROPOLOGIST, vol. 30, no. 1		
Printing	$ 733.73	
Distribution	26.47	
Reprints	100.35	
		$ 860.55

AMERICAN ANTHROPOLOGIST, vol. 30, no. 2			
Printing	905.00		
Distribution	40.82		
Reprints	96.87		
		1042.69	
AMERICAN ANTHROPOLOGIST, vol. 30, no. 3			
Printing	794.37		
Distribution	34.55		
Reprints	106.26		
		935.18	
AMERICAN ANTHROPOLOGIST, vol. 30, no. 4			
Printing	759.88		
Distribution	40.34		
Reprints (Charge not yet received)			
		800.22	
MEMOIRS, Number 35			
Printing	245.07		
Distribution	16.78		
		261.85	
Total			$3900.49
Reimbursements, AMERICAN ANTHROPOLOGIST		331.63	
Reimbursements, Memoirs		473.26	
			804.89
Net cost			$3095.60

PERMANENT FUND

Receipts

Balance, December 8, 1927		$1737.92
Interest on Savings Account, Jan. 1, 1928	25.74	
Interest on three Liberty Bonds, April, 1928	6.36	
Interest on Savings Account, July 1, 1928	28.10	
Interest on three Liberty Bonds, Nov., 1928	6.39	
		66.59
		$1804.51

Investments

Liberty Bonds (three)	291.09	
Treasury Saving Certificates (three)	60.00	
		351.09
Cash in Savings Account		1453.42
		$1804.51

EXPENDITURES AGAINST 1928 BUDGET

Appropriation			$6600.00
Secretary's expenses		141.99	
Editor's expenses			
Editor's assistant	445.00		
Office expenses	87.75		
		532.75	
Treasurer's expenses			
Treasurer's assistant	445.00		
Office expenses	224.67		
		669.67	
AMERICAN ANTHROPOLOGIST			
Printing	2854.38		
Illustrations	397.73		
Reprints	178.99		
Postage	171.82		
		3602.92	
Reprinting (purchase) of back numbers		90.67	
Emergency Memoir expense		61.85	
Total expenditures against 1928 budget			$5099.85

Note: To cover deficits, $41.99 has been transferred from the Editor's budget allowance to the Secretary's budget allowance. $4.67 has been transferred from the Editor's budget allowance to the Treasurer's budget allowance.

The financial situation of the Association continued to improve during 1928, the various funds being increased by the following amounts:

Permanent fund	$ 66.59
Regular fund	536.73
Royalty Memoirs fund	31.50

The AMERICAN ANTHROPOLOGIST for 1928 cost the Association $3307 as against $3527 for the 1927 volume.

As the average annual increase of the regular fund during 1926, 1927, and 1928 has been over $500, it would appear a safe procedure to resume on a small scale the financing of the Memoirs. The Treasurer suggests that the balance remaining from 1928 Memoir funds be reappropriated for use during 1929, together with an additional $300. This will make a total of $441.62 available during 1929.

The expenditure of funds for Memoirs will mean that each of our 900 members benefits through the receipt of the publications, while the expenditure of funds for reprinting rare back numbers of the AMERICAN ANTHROPOLOGIST will mean that only about a half dozen members, mostly libraries, benefit. The photostating of out-of-print numbers and supplying them at slightly less than cost seems to be an economical way of handling the occasional demand for an out-of-print number. The cost of the photostat negatives (8 cents a page) could be borne by the Association and the negatives preserved for the printing of additional positives as ordered. The positives could be sold at cost (9 cents a page). This would mean that to supply a single number of 200 pages the loss to the Association would be sixteen dollars—the cost of the photostat negative. The purchaser would pay the cost of the positive, which would be $18.

Three years' experience in selling sets of the AMERICAN ANTHROPOLOGIST makes it evident that a complete set is not a prerequisite to a sale. In not a single instance has a prospective sale been lost because of the sets being incomplete. Purchasers take the incomplete sets and trust to picking up missing numbers elsewhere. During 1926, 1927, and 1928, sales of back numbers of the AMERICAN ANTHROPOLOGIST and Memoirs have totaled $2025.

Again, the Treasurer requests authorization by the Council to transfer $1000 from the regular fund to the permanent fund of the Association.

Respectfully submitted,
E. W. GIFFORD, *Treasurer*

The Treasurer's report was approved. It was moved and carried that the recommendations of the Treasurer be approved, *viz:* to reappropriate the balance remaining from the 1928 Memoir funds for use during 1929, together with an additional $300, and to transfer $1000 from the regular fund to the permanent fund.

Report of the Budget Committee

Secretary's expenses		$ 100.00
Editor's expenses		580.00
Editor's assistant	$ 480.00	
Office expenses	100.00	
Treasurer's expenses		720.00
Treasurer's assistant	480.00	
Office expenses	240.00	
American Anthropologist		4060.00
Printing	2950.00	
Illustrations	500.00	
Reprints	350.00	
Storage of back numbers	60.00	
Postage	200.00	
Out-of-print publications		200.00
Purchase	100.00	
Photostat negatives	100.00	
Memoirs		441.62
1928 balance	58.15	
Royalty Memoir Fund	83.47	
1929 appropriation	300.00	
		$6101.62

On the basis of past experience, actual expenditures under items in the fourth and fifth groups above tend to run somewhat below appropriations, so that the total recommended should fall well within expectable net income and leave a gain in surplus, as this year.

Respectfully submitted,

R. H. Lowie

E. W. Gifford

Report of the Editor

Volume 30, New Series, of the American Anthropologist, with 747 pages, approached very closely last year's figure and fell within the limits fixed by the Budget Committee (American Anthropologist, n.s., 30: 538, 1928). The publication of certain articles designed for earlier appearance had to be deferred in favor of others in order not to exceed the amount allowed for illustrations.

At the time of writing the last issue of the 1928 volume had been distributed several weeks ago. No. 1 of the 1929 volume has been

corrected in galley and ought to be paged before the December meeting of the Association, so that distribution in the near future may be reasonably expected.

Miss Charlotte D. Gower's Memoir (No. 35) on "The Northern and Southern Affiliations of Antillean Culture" was issued in 1928. A large and amply illustrated Memoir (No. 36) on "The Social Organization of the Tewa of New Mexico" by Dr. E. C. Parsons has been proofread and will presumably appear early in 1929. The costs are borne by the author. In a joint communication to the Budget Committee the Treasurer and the Editor are advocating the allocation of funds for resuming the issuance of Memoirs at the expense of the Association, though necessarily on a small scale. The amount suggested would provide for a paper considerably larger than Miss Charlotte Gower's. As previously explained, it is sometimes the Editor's sad duty to decline otherwise highly acceptable papers because their length renders them unfit for the pages of the ANTHROPOLOGIST. At present this means that they remain unprinted unless some kind patron arises to finance publication,—an evidently unsatisfactory condition of affairs.

It is sometimes suggested that our journal ought to be virtually restricted to Americanist topics. The Editor does not believe in that policy, but would like to point out that our articles are predominantly of this type, as they are bound to be. Of 39 contributions printed in 1928, 23 deal with North American archaeology and ethnography; 4 with Latin America; 1 with Asia; 1 with Africa; 4 with Australia, Oceania, and Indonesia; 6 are theoretical or miscellaneous in character. The danger of encroaching on the legitimate domain of foreign journals is thus non-existent. In addition we must consider the increasing number of foreign members. On December 8, 1928, our mailing list included 695 names from the United States, 15 from Canada, 44 from Latin America and the West Indies, 180 from outside of America.

Respectfully submitted,
ROBERT H. LOWIE, *Editor*

F. W. Hodge reported for the committee appointed to consider the report of the Editor for 1927. He recommended that this report be accepted and published. Mr. Hodge expressed his hope that a permanent publication fund will soon be established, the income from which would be used for publishing the Memoirs.

Report of the Photostat Committee

The committee appointed to arrange for the photostat reproduction of out-of-print issues of the American Anthropologist obtained bids from various firms. The most satisfactory bid was eight cents a page for negative and nine cents a page for positive. The committee thought that the outlay for negatives should be wholly assumed by the Association, while the cost of positives only should be borne by purchasers. In the second issue of the American Anthropologist for 1928 an advertisement of photostat copies was inserted. From this advertisement only one order was received; Vassar College Library ordered a photostat copy of one number. Meanwhile a copy of this number was purchased. This was supplied to Vassar College Library instead of a photostat copy.

Hence, no money has been expended for photostat copies of rare numbers of the American Anthropologist. A considerable quantity of these rare numbers has, however, been purchased at not to exceed $1.50 per copy, and charged to the budget allowance of $1000.00 for photostating back numbers.

Robert H. Lowie
Edward W. Gifford

This report, like the preceding ones, was approved, and the Photostat Committee continued.

Report on the Social Science Research Council

As retiring representative of the American Anthropological Association in the Social Science Research Council I beg to submit the following report of the activities of the Council for the past year as they affect Anthropology.

The Council held one-day meetings in January and April, and an eleven-day conference at Hanover in August. From the point of view of administration, the feature which most probably interests the members of this association is the appointment by the Council of a Permanent Fellowship Secretary, Mr. John V. Van Sickle. This will mean more efficient work in developing young research personnel and furthering the researches of mature scholars. In its annual report the Council defined its attitude toward research projects as follows:

> It is interested primarily in encouraging greater diversity and fertility of scientific attack, including more carefully controlled experimentation, upon any clearly-defined problem of human behavior. . . . . Available funds are

limited, narrowly limited in comparison with work clamoring to be done, but within these limitations the Council is seeking by research, by conference, and by publication to promote the application of science to the solving of social problems.

Of research projects of interest to anthropologists, which have been brought to conclusion during the year, that on the "Antecedents of Mexican Immigrants into the United States," by Dr. Manuel Gamio may be mentioned. Two new projects were approved, and grants made to carry them out:

(1) Preparation of a series of maps of the distribution of the principal culture traits among the Indians of eastern North America, under the direction of Professor J. M. Cooper of the Catholic University of Washington, with a supervising committee consisting of R. B. Dixon, F. G. Speck, and J. R. Swanton.

(2) A joint conference on Cultural Areas with the Division of Anthropology and Psychology of the National Research Council.

An additional grant of funds was made to Dr. E. A. Hooton for the anthropometric, psychiatric, and social study of criminals in Massachusetts and other states, and a grant made for a study of the mental ability of rural Negroes. Two research Fellowships were awarded for anthropological studies, one to Miss Margaret Mead for investigations of the mental development of young children and the behavior of adolescent girls in Melanesia, the other to Miss Ruth L. Bunzel for studies of social and individual adjustments in Zuñi.

Anthropologists will further be interested to know that the publication of *Social Science Abstracts* is now assured and that beginning in March, 1929, abstracts of all articles on Cultural Anthropology appearing in some three thousand different publications, will be available. One aspect of anthropology will thus at last be provided with adequate bibliographic and abstract aids.

It should also be noted that;

An informal standing committee on cooperation between the Council and the National Research Council was set up by the two Research Councils during the past year, and a similar arrangement was entered into between the Social Science Research Council and the American Council of Learned Societies.

Lastly, the Social Science Research Council wishes to make the following announcement:

The Social Science Research Council and the Division of Anthropology and Psychology of the National Research Council are endeavoring to maintain an interchange of calendar dates of conferences of all kinds touching the inter-

ests of the Social Science Research Council and this particular division of the National Research Council. The office of the Social Science Research Council will welcome the receipt of advance information from any of your members of committee meetings or conferences which will bring together groups of your members. Both councils have a lively sense of their responsibility for making as few inroads as possible upon the time of busy research personnel. It is hoped that through this interchange of calendar dates unnecessary duplication of travelling for committee meetings or other purposes can be avoided and conflicting dates minimized.

Respectfully submitted,
ROLAND B. DIXON,
Representative of the Association in the Social Science Research Council

It was moved and carried that, when the American Anthropological Association holds its meetings in conjunction with Section H of the American Association for the Advancement of Science, the program be arranged so that the sessions of the two groups do not conflict, but that papers dealing primarily with physical anthropology be given under Section H and those dealing primarily with ethnology, archaeology, and other topics, under the American Anthropological Association.

COUNCIL MEETING, DECEMBER 27, 3.00 P.M.

A letter from the Editor-in-Chief, Edwin R. Seligman, with report of progress on the *Encyclopaedia of the Social Sciences* was read. Among other things it called attention to the change in the number of volumes to fifteen instead of the ten originally planned. It was voted that the report be spread on the minutes.

Dr. Franz Boas, on behalf of the Advisory Committee to the Foundations, reported that no advice had been requested of him.

Dr. R. B. Dixon, representative of the A. A. A. on the Social Science Research Council, reported that at the meeting of the S. S. R. C., Dr. E. A. Hooton reported on the relation of race and nationality to crime in the United States, and Dr. J. M. Cooper on the distribution of cultural traits in eastern North America.

Dr. Leslie Spier, on behalf of the Comittee on *The American Year Book*, reported that the Book is a legitimate commercial enterprise with which scientific organizations might officially cooperate, but no other such organizations are doing so.

Dr. Clark Wissler reported for the Committee on Financial Aid for Field-work for Graduate Students in Anthropology. The consensus of the Committee was that such grants should be sought from the respective universities of the students. Dr. Boas stated that the question would be brought up again before the Social Science Research Council.

A request from the International Institute of African Languages and Cultures that the American Anthropological Association become a member of that Institute was read. Drs. M. J. Herskovits, Clark Wissler, Franz Boas, and R. B. Dixon discussed the topic and it was carried that the invitation be called to the attention of the members but that no official action be taken.

An invitation was received from the Royal Netherland Legation through the National Research Council to the Association to participate in the Fourth Pan-Pacific Science Congress to be held at Batavia and Bandoeng, Java, May 16 to 25, 1929. Dr. Clark Wissler and F. W. Hodge discussed the matter and it was passed to leave the question with the President and Secretary with power to act. President Saville later appointed Dr. G. A. Dorsey as representative of the Association.

A letter was read from the Secretary of the American Association for the Advancement of Science, Burton E. Livingston, requesting that the American Anthropological Association recommend several papers presented at this meeting as entries for the A. A. A. S. Prize Award. It was voted that the Chair appoint a committee of two to make such nominations.

A communication from George Eastman, Chairman of the National Committee on Calendar Simplification, was received. An official expression of opinion by the Association on the question of simplification of the calendar was requested. It was decided to lay the question on the table.

Dr. Franz Boas inquired whether anything had been done by the joint committee of the National Research Council and the Social Science Research Council.

A report on a meeting of the National Research Council which considered the condition of scientific periodicals was made by Dr. Boas. At this meeting he reported upon the AMERICAN ANTHROPOLOGIST. Scientific periodicals, he said, are in something of a dilemma concerning the merits of popular and scientific form of presentation. This condition could be improved by outside aids, a sug-

gestion which applies to the Journal of American Folklore and the American Journal of Physical Anthropology as well as to the AMERICAN ANTHROPOLOGIST. An appeal for a grant of funds for this purpose has been made.

Dr. Franz Boas spoke upon the question of reprinting out-of-print numbers of the AMERICAN ANTHROPOLOGIST, suggesting that cheaper estimates could be secured than those already received. He moved that the Editor be empowered to ask new estimates and to make arrangements for reprinting if the cost of 100 copies of any issue does not exceed $100. It was voted to refer this to the Photostat Committee with power to act.

ANNUAL BUSINESS MEETING, FRIDAY, DECEMBER 28, 9:30 A. M.

The following list of officers and representatives of the A. A. A. was presented by the Nominating Committee (C. E. Guthe, J. A. Mason, Truman Michelson, N. C. Nelson, and H. N. Wardle) and duly elected:

President: A. M. Tozzer.

First Vice-President: A. V. Kidder.

Second Vice-President: Diamond Jenness.

Secretary: A. I. Hallowell.

Treasurer: E. W. Gifford.

Editor: R. H. Lowie.

Associate Editors: E. W. Gifford, F. G. Speck.

Executive Committee: R. F. Benedict, S. K. Lothrop, J. R. Swanton.

Council (new members): Margaret Ashley, Fannie Bandelier, C. W. Bishop, Carl Coon, V. J. Fewkes, E. F. Greenman, W. D. Hambly, F. W. Hodge, B. Laufer, V. M. Petrullo, Paul Radin, H. H. Roberts, M. W. Stirling, W. D. Strong, J. G. Steward, J. E. Thompson (1932).

Council: S. A. Barrett, M. W. Beckwith, R. F. Benedict, F. Blom, D. Cadzow, C. B. Davenport, E. S. Goldfrank, G. B. Grinnell, E. Gunther, A. I. Hallowell, M. J. Herskovits, A. E. Jenks, N. M. Judd, F. La Flesche, R. Linton, J. H. MacGregor, B. Oetteking, A. C. Parker, G. Reichard, R. J. Terry (1932); R. T. Aitken, C. M. Barbeau, R. B. Bean, S. B. Collins, B. Cummings, S. Hagar, G. G. Heye, E. A. Hooton, B. T. B. Hyde, A. B. Lewis, S. K. Lothrop, S. G. Morley, J. E. Pearce, F. G. Speck, L. Spier, H. J. Spinden, F. Starr, W. D. Wallis, H. N. Wardle, H. H. Wilder, H. Shapiro,

H. W. Krieger, O. Ricketson, G. A. Dorsey, D. J. Morton (1929); G. Engerrand, W. Gates, S. J. Guernsey, C. E. Guthe, H. U. Hall, E. S. Handy, C. L. Hay, J. P. Harrington, M. R. Harrington, L. W. Jenkins, A. V. Kidder, T. Michelson, W. F. Ogburn, B. F. Chapelle, J. B. Stetson, A. M. Tozzer, S. Trotter, E. P. Wilkins, W. Bradfield, E. H. Morris, T. W. Todd, F. H. H. Roberts, Jr., J. M. Cooper, W. K. Gregory, H. C. Shetrone (1930); T. Adamson, H. Bingham, L. Bloomfield, R. L. Bunzel, B. Cosgrove, D. S. Davidson, H. Field, E. W. Gifford, C. H. Hawes, M. Jacobs, D. Jenness, W. Jochelson, R. W. Lothrop, T. F. McIlwraith, G. G. MacCurdy, J. A. Mason, M. Mead, C. B. Moore, W. K. Moorehead, N. C. Nelson, E. C. Parsons, C. Peabody, E. K. Putnam, Mrs. O. Ricketson, E. Sapir, F. H. Saville, M. H. Saville, H. I. Smith, G. Vaillant, A. E. White, H. Webster, L. A. White, C. C. Willoughby (1931).

Honorary Member: Dr. Erland Nordenskiöld.

Representatives to Social Science Research Council: E. Sapir (April 1, 1928 to April 1, 1931, replacing P. E. Goddard); R. Linton (April 1, 1929 to April 1, 1932).

Representatives to National Research Council: A. C. Parker, G. A. Dorsey (July 1, 1929 to July 1, 1932).

Representatives to Section H., A. A. A. S.: B. Oetteking, H. C. Shetrone.

It was voted that the action of the Council with regard to the recommendations of the Treasurer be approved.

Retiring President Marshall H. Saville expressed his appreciation of the honor accorded him.

A vote of thanks was tendered to the American Museum of Natural History for the hospitality extended to the Association.

Program

Six sessions were held, three of them being joint meetings with other organizations.

Thursday Morning, December 27

The Negro in the New World; the Statement of a Problem. M. J. Herskovits.

Parallels in Pueblo and Plains Cultures. E. C. Parsons.

Diffusion vs. Independent Invention; a Problem of Logic. J. H. Steward.

Thursday Afternoon, December 27

Motion Picture: Ethnography of the Jibaros of Alto Amazonas, Ecuador. Prof. D. Carlos Crespi.

Friday Morning, December 28

Explorations in Central Texas Kitchen-Middens. J. E. Pearce.

Clay Figurines of the Sub-gravel Type and Others from the Valley of Mexico. Zelia Nuttall.

Symposium: The Formal Interpretation of Art Styles.

Introduction Stating the Problem. Franz Boas.

The Approach of the European Historian of Art to the Study of an Art Style. Renate Baillou.

A Study of the Art Style on Chihuahua Pottery. H. A. Carey.

The Art Style of the Eastern Algonquin and Iroquois. V. M. Petrullo.

Prehistoric American Basketry Techniques and Modern Distributions. Gene Weltfish.

Art Analysis and Specific Problems of Art and Industry. G. A. Reichard.

Aboriginal Uses of Gems in North and South America. G. F. Kunz.

Friday Afternoon, December 28: Joint Session with The Linguistic Society of America.

Syncope and Kindred Phenomena in the Roman World, as they Bear on the Development of the Romance Languages. Ephraim Cross.

Etymological Miscellanies. F. R. Preveden.

Some Algonquian Phonetic Shifts. Truman Michelson.

The Zapotec Language of Oaxaca. Paul Radin.

Some Remarks on Siberian Shamanism. Waldemar Bogoras.

A Detail of Linguistic Method. R. G. Kent.

The Status of Linguistics as a Science. Edward Sapir.

Saturday Morning, December 29: Joint Session with The American Folk-Lore Society.

Present Folk-Lore Projects of European Scholars. Stith Thompson.

Religious Conversion Experiences among the American Negroes. A. P. Watson.

The Coto-Missies of Suriname; a Study in Acculturation. M. J. Herskovits.

Zapotec Mythology. Paul Radin.

Mound versus Cliff-Dwelling Culture in Northern Chihuahua. H. A. Carey.

Musical Theory of the Pima Indians. George Herzog.

Kinship Origins in the Light of Some Distributions. Alexander Lesser.

Saturday Afternoon, December 29: Joint Session with Section H, A. A. A. S.

Symposium: European Prehistory

The Past, Present and Probable Future of European Prehistory. G. G. MacCurdy.

Fossil Man in Europe. Ales Hrdlicka.

Relations between Europe and Asia. N. C. Nelson.

Quaternary Climatic Conditions and their Relations to the Peopling of America. Ernst Antevs.

The Palaeolithic of Central Europe. V. J. Fewkes.

The Neolithic of Bohemia and its Relations to the Rest of Europe. R. W. Ehrich.

The following papers were read by title:

Notes on the Copan Sun Dial. Stansbury Hagar.

The Ottawa and Ojibwa of Michigan; a Critique of the Culture-area Concept. Paul Radin.

A Reinterpretation of Animism. R. F. Benedict.

Some Comments on the Problem of Diffusion. W. C. MacLeod.

The Birth and Infancy Customs of the Modern Aymara. Fannie Bandelier.

A Newly Discovered Dialect in the Gulf Area. J. R. Swanton.

The Phallic Element. J. P. H. Marker.

The Archaeological Survey of the Pueblo Plateau; a Plan Prepared by Reginald Fisher. E. F. Hewett.

Preferential Marriage in Tropical South America and its Bearing on the General Problem of Cross-Cousin Marriage. Paul Kirchhoff.

On Saturday evening a joint dinner was held with Section H, A. A. A. S., at which the retiring Vice-President of Section H, R. J. Terry, gave an address upon "The American Negro."

A. Irving Hallowell, *Secretary*
J. Alden Mason, *Secretary* pro tem

ANTHROPOLOGICAL SOCIETY OF WASHINGTON, 1928

On February 21, 1928, Mr. O. F. Cook, of the United States Department of Agriculture, addressed the Society on the subject: Peru as a Primitive Center of Agriculture. The ancient Peruvians may be said to have attained the highest development of the art of agriculture in their system of terracing and artificial placement of the soil. The cost in labor was enormous, but the improvements were permanent. The fertility of the soil was not lost by erosion, and may even have increased with the lapse of time. The terraced lands of the valleys of the eastern Andes undoubtedly have been cultivated continuously for many centuries and still are highly productive. The very specialized forms of agriculture and attendant arts in Peru indicate a very long period of development, and the indigenous character of the development is shown by facts of domestication.

The agriculture of the tablelands certainly was indigenous, since it was based entirely on the domestication of endemic high-altitude plants and animals, but there is nothing to indicate that the agriculture of the tropical valleys was derived from other regions. Primitive people who took refuge in these narrow, shut-in valleys of the eastern slopes of the Andes were under the greatest pressure to adopt a settled existence and to make every possible use of any local plants that could furnish food. The textile arts were carried to high degrees of perfection with cotton and other plant fibers, and with the wool of llamas, alpacas, and vicuñas. As the higher elevations were attained, accurate knowledge of the motions of the sun became necessary, to determine the season for planting crops. The series of plant and animal domestications covered the entire range of habitable conditions, from the tropical lowlands, through the temperate valleys, to the arctic climate of the high plateaus, where agriculture was carried above 14,000 feet.

The number of species of plants and animals that were domesticated and used in Peru was much greater than in Mexico or other parts of America. A list of 91 native Peruvian plant names was published in the *Journal of Heredity* for March, 1925, including all of the more prominent cultivated species. Most of the plants that were cultivated in other regions were also known in Peru, and may have been domesticated originally in the eastern valleys of the Andes. The ancient Peruvians had every plant that was of first-rank importance in other parts of tropical America. Many degrees of agricul-

tural specialization are still represented in Peru among very primitive people, and may afford the best surviving pictures of early stages of human progress. Having recognized that Peru was a center of domestication, this fact may enable us to follow and interpret the development of agriculture and civilization in other parts of America.

On October 16, 1928, Dr. John M. Cooper, of the Catholic University, addressed the Society on the subject: Field Notes on the Ojibwa of Northern Ontario. He gave a short account of the results of visits made in September, 1928, to the Ojibwa bands living around Lake of the Woods and Rainy Lake in Ontario. The purpose of the trip was to trace the western distribution of a number of traits previously determined as existing in Quebec, James Bay, and Albany River areas. He found that the culture traits characteristic of the eastern Algonkian region extend to the Rainy River and Lake of the Woods district. Following are some of the features of the Rainy River and Lake of the Woods culture. The typical family hunting-ground complex obtains. There were formerly no chiefs. Pagak, Memegwecio, and the northern "fairies" are well known. Among the types of divination common are scapulimancy, scrying, and the beaver haunch and bear kneecap methods. Among the common types of magic are the use of the bezoar, of the foetal inclusion, and of singing and drumming to bring luck in hunting; the use of the buzzer, the bullroarer, the singed rabbit skin and feather plucking, to bring cold and wind; the use of caribou teeth, duck head feathers, bit of the navel string, miniature nets, and the shoulder blade of the mud-turtle, as cradle charms.

At least six different types of medicine-men are distinguished. The Midewiwin is still in fairly full force as well as the cylindrical tent conjuring. Disease is cured by the herbalists and by medicine-men, the latter sucking out the disease by the use of hollow goose bones.

At death the soul crosses a river on a pole to the village of the dead. Infants are carried over by a swan. Kijé Manitu appears to be very much more clearly envisioned by the Rainy Lake and Lake of the Woods pagans than by the Cree and Montagnais tribes farther north and east. He is supposed to be good and benevolent, and to be, as one Indian expressed it, "boss of the whole thing."

On Tuesday, November 20, 1928, Dr. Matthew W. Stirling, Chief of the Bureau of American Ethnology, spoke to the Society on: The Acoma Origin and Migration Legend. This legend tells the story of two girls, children of the Sun, who were nurtured in the

darkness within the earth. They were given, by their father, two baskets containing miniature images by means of which they were to create all living things on earth. On their emergence into the light they began this work, creating also the gods which were to be of use to the people. One of the sisters gave birth to twins, sons of the Rainbow. Eventually the two sisters quarreled and separated, one, Nautciti, going away to become mother of the white people. The other, Iatiku, married Tiamûni, one of the sons of her sister, and remained to become mother of the Acoma people. Each of her daughters when born was given a clan name. After helping her children for many years Iatiku finally left them to their own devices, after having given them full instructions as to their proper religious observances. They were told that they must travel southward until they reached a place called Hako, which was to be their permanent home. Seven times they stopped and built their pueblo only to have catastrophe overtake them, when they would move on. During these periods many of their medicine altars, ceremonies, and societies had their origin. Their mythological heroes were born and had their adventures. Other gods were added to their pantheon. Finally Hako was located and the present Acoma built on the rock where it now stands.

At the meeting of the Society on January 15, 1929, Dr. John R. Swanton discussed: A Newly Discovered Southeastern Indian Dialect. Dr. Swanton stated that in 1908 Mr. David I. Bushnell, Jr. had published in the AMERICAN ANTHROPOLOGIST under the title "The Account of Lamhatty" the story of a Tawasa Indian who had been carried off captive by a foreign tribe in 1707 and had escaped to the frontier settlements of Virginia. As much of his history as this refugee had been able to communicate, for none of the neighboring Indians understood his language, was taken down by the Virginia historian, Robert Beverley, and it was this narrative, preserved among the Ludwell Papers by the Virginia Historical Society, which Mr. Bushnell placed in print for the first time. More interesting still was the copy of a map by the same man found on the opposite side of the manuscript. Mr. Bushnell also reproduced this and attempted an identification of the place names entered upon it.

During the past summer Mr. Bushnell learned of a letter referring to Lamhatty in the archives department of the Virginia State Library. It had already been published but he also obtained a photostat copy of the original from Dr. McIlwaine, custodian of the archives. While

doing this work Dr. McIlwaine discovered an English-Indian vocabulary of 60 words on the back of the document with the heading "Sum words of his language explained," and he furnished a photostat copy of this along with the letter. Both letter and vocabulary were by Col. James Walker, into whose hands Lamhatty had first fallen. The letter covers much the same ground as Beverley's narrative; it is the vocabulary which is of especial interest. This, along with the rest of the material, was turned over to Dr. Swanton for examination. During most of their later history the Tawasa formed a constituent portion of the Alabama and it was naturally supposed that their language was close to, if not identical with, Alabama, a supposition rather increased by a study of the place names on Lamhatty's map. Yet the vocabulary developed the surprising fact that if it is representative of the speech of the Tawasa tribe, old Tawasa was a Timuquanan dialect, related to the now extinct tongues of central Florida. It was, however, intermediate between the tongues of the Muskhogean group—Creek, Choctaw, Apalachee, etc.,—and the dialects of Timuquanan hitherto known to us. Dr. Swanton illustrated these resemblances by means of slides. He believes that this material adds the final argument to an already formidable amount of proof that the Timuquanan and Muskhogean languages are genetically related and should be combined.

JOHN M. COOPER, *Secretary*

ARCHAEOLOGICAL FIELD WORK IN NORTH AMERICA DURING 1928

The Committee on State Archaeological Surveys of the National Research Council is an advisory body of ten archaeologists which seeks, by acting as a clearing-house for the science, to stimulate and coordinate the scientific attack made by a large number of organizations upon the archaeological problems of North America. In order that the Committee might be properly equipped to render such a service, data upon the past, present, and future of the work, including such subjects as personnel, organization, budget, methods, and actual results, have been collected, over a period of years, in the Committee files.

In accordance with this policy, each fall a request for a short report of the season's work is sent out to all organizations known to the Committee, which have presumably undertaken archaeological field investigations on this continent during the year. For several years, the reports received in reply to this request have been compiled and submitted to the AMERICAN ANTHROPOLOGIST for publication. This summary for 1928 is the seventh of the series.

The Committee desires to express its appreciation of the cooperative assistance of the many organizations represented in this report, and to invite communications from any group which has been inadvertently overlooked.

Canada. Dr. Harlan I. Smith spent the field season of 1928 in British Columbia; incidentally to collecting ethnological specimens and making motion picture records in the Shuswap, Okanagan, Coast Salish, and Tsimshian Indian areas he carried on an archaeological reconnaissance, photographing pictographs and petroglyphs, as well as specimens in local museums and collections. Petroglyphs were found overlooking the sea on two points immediately west of Aldridge point, some twenty miles west of Victoria. It is rather remarkable that these should have escaped the attention of archaeologists who have worked in this region for many years. In the Coast Salish Indian area pictographs were visited about two miles south of Britannia Beach, Howe Sound, near Vancouver. The pictographs on the rock bluff on the west side of Mara lake about six miles south of Sicamous in the Shuswap Indian area were visited, and those of

two localities in the Okanagan Indian area; one on the west side of Okanagan lake near Kelowna, and another on the right side of the Penticton-Keremeos road.

Mr. W. J. Wintemberg spent the field season of 1928 in making an archaeological reconnaissance in three areas; the Richelieu river valley in southwestern Quebec; the Canadian Labrador; and New Brunswick. He discovered a few widely scattered evidences of Algonkian and Iroquoian occupation in the Richelieu valley. Along the north coast of the gulf of St. Lawrence extensive workshop sites, where scrapers, celts, knives, and projectile points were manufactured, were discovered near Blanc Sablon and Bradore, near the Newfoundland-Canadian boundary. Near the latter place, a few fragments of pottery were found, one of them bearing an Algonkian type of decoration apparently produced with a rocking stamp. This is the northernmost recorded occurrence of aboriginal pottery in eastern North America. A few human bones obtained from a grave under an overhanging rock near Blanc Sablon were covered with red paint and are probably remains of Beothuk Indians. Cylindrical beads made from the columella of large ocean shells were found in the same grave. A few evidences of the former presence of Eskimo were discovered, consisting of a number of post-European walled stone graves on an island near St. Augustine, and a rubbed slate point for a man's knife from the mainland near Harrington harbor. Most interesting was the discovery of some Iroquois pottery in two small shell-heaps near Kegashka, about two hundred miles west of Blanc Sablon, and about one hundred and fifty miles east of the Gaspe coast where Cartier met Iroquois in 1534. A few small workshop sites were found near Natashquan, and a small camp and workshop site was examined near Seven Islands; all probably Algonkian. The work in New Brunswick was confined to visiting a site near Fredericton and an extensive camp and workshop site at Redbank on a branch of the Mirimichi river, where the site of a grave, in which the artifacts were covered with red paint, was examined.

Harlan I. Smith,
National Museum of Canada

The archaeological work carried on by Dr. William Duncan Strong, when he accompanied the Rawson-Macmillan Subartic Expedition under the auspices of the Field Museum of Natural History, as anthropologist, included the two summer seasons of

1927 and 1928 spent along the coast and interior of northeastern Labrador, and a brief reconnaissance trip around Frobisher bay in Baffinland during the former season. In July, 1927, a visit was paid to the reputed Norse site on Sculpin island near Nain. On a rocky shallow bay with a northern exposure are located about a dozen round and rectangular stone enclosures with various stone walls or windbreaks. Most of these enclosures had central stone squares or circles within which the soil was very black and greasy. These appeared to be depositories for blubber and occur in the many old tupik rings encountered here and elsewhere along the coast. None of those examined had any traces of charcoal, nor did they seem to have been used as fireplaces. This opinion differs from that expressed by Cadzow (*Indian Notes, Heye Foundation*, 100, January, 1928), who had examined the site shortly before. The stonework is crude and uneven and rather inferior to that of the Eskimo cairn burials in the vicinity. Near the stone enclosures were two characteristic old tupik rings of unevenly distributed stones. As in the case of several of the stone enclosures, their doorways were indicated rather by an absence of stones than any attempt at stone masonry. The fact that this stonework does not resemble that to be seen in photographs of Norse ruins in Greenland, that no typical Norse implements have been reported from the site, that similar circular stone enclosures occur in association with Eskimo cairn burials and summer camp sites at Black island near Hopedale, and that almost identical house types of Eskimo origin were found in Frobisher bay, leads one to conclude that the Sculpin island site represents an Eskimo spring or autumn whaling camp, possibly of the Thule culture, as Mathiassen suggests (AMER. ANTHROP., n. s., 3.: 578).

A hasty reconnaissance of Frobisher bay (August 9-25, 1927) revealed several interesting Eskimo sites. On Fletcher's island occur eight beacons five feet high, two with horizontal slabs suggesting a cross, and associated with them two empty cairns of a burial type. At Koojesse inlet are many stone meat caches, circular tupik rings, and four stone enclosures with two- to three-foot walls similar to those on Sculpin island. On Bishop's island are three well made stone slab houses, meat caches, kayak rests, and a few tupik rings. Digging in the shallow soil of the houses revealed a harpoon point of Thule type and a few other Eskimo artifacts. On Kodlunarn island in Countess of Warwick sound the remains of Sir Martin Frobisher's old settlement of 1577 were examined. The considerable

traces of houses, ship's pits, and Caucasian artifacts encountered left no doubt as to the correctness of Hall's conclusions in 1865. At Brewster's point nine old stone and sod iglus of large size were superficially examined. This place, which at present supports a small Hudson's Bay Company post and a village of Nugumiut Eskimo, is a very promising archaeological site.

During the summer of 1928 a canoe trip was made some fifty miles into the interior of Labrador to examine an old camp site discovered by the Naskapi Indians on a lake at the head of Hunt's river (Jack Lane's bay). This camp seems to be that of Stone Age Eskimo and if so carries their occupation of this region back a considerable period. The only other interior site where stone tools had been found by the Indians is a day's trip by canoe up the Adlatuk river (head of Hopedale bay), but this was not visited. Since the Indians knew of no Stone Age sites in the Indian House Lake region, although they manifest considerable interest in such things, and as the known interior sites seem to be Eskimoan, it can be safely stated that the Barren Ground and Davis Inlet Naskapi Indian bands are late-comers to a region long occupied by the Eskimo. The ethnological results of the winter's work with these Indians strongly confirm this opinion first expressed by Lucien Turner in 1894.

The cultural remains revealed by the summer's excavation on the coast during 1928 indicate two main periods of Eskimo occupation of the region between Port Manvers and Hopedale. The first is a Stone Age culture found in small exposed camp sites marked by well chipped chalcedony, quartz, or flint points and blades; heavy ground stone pot fragments, adze blades, gouges, stone ulus, and a marked absence of bone or ivory artifacts. Some small fragments of fossilized bone were found at these sites, but no worked implements. An old native quarry of colorless chalcedony, its lower exposures covered by two feet of moss and soil, was discovered at the head of Jack Lane's bay. Hammerstones and characteristic stone implements were found in the bare wind-eroded exposures near-by. This quarry marks the only occurrence of the mineral known in the region and the site shows evidence of extensive work. The character of the stone ulus, adze blades, and of one steatite charm indicates that these people were Eskimoan, though there still remains a faint possibility that this old coastal culture antedates both Eskimo and Naskapi in the region. Since most of the camp sites had been exposed by wind action and were unassociated with later remains, their antiquity is largely assumed from the character of the artifacts themselves.

The second culture is much later and may be distinguished as that of the Early Mission Period. It is characterized by large rectangular stone, sod, and whalebone iglus (similar to those at Brewster point), well made stone grave and gift cairns on the high ridges behind the villages, and equally well made stone box traps with sliding stone-slab doors associated with the graves. The articles from the iglus and gift caches show much greater use of bone and ivory as well as advanced work in steatite. Practically all of the village sites examined at Hopedale, Spirit island, September harbor, and Nukasujuktok island, revealed considerable evidence of early Caucasian contact. A superficial examination of the Eskimoan artifacts from these sites suggests many Thule culture characteristics, but this must await more detailed comparison.

In conclusion it may be stated that a long Eskimoan occupation of northeastern Labrador is indicated by the old stone culture which contrasts strongly with the bone and ivory working cultures of later times. Between the former and the Early Mission Period there was probably a long interval of which we as yet know nothing. The linking up of these two cultures and the determination of their relation to the old Indian cultures of Newfoundland and the adjacent mainland rests with the future

Berthold Laufer,
Field Museum of Natural History

Alabama. Archaeological researches in Alabama during the past year have been conducted by the members of the Alabama Anthropological Society in Walker, Lawrence, Blount, Montgomery, Elmore, Lowndes, Jackson, Lee, Russell, and Autauga counties. Further finds of urn burials have been made as far north as 32° 28′. This is the most northern reported occurrence of this trait. Natural weathering of the soil has exposed interesting burials at the Thirty Acre Field Mound in Montgomery county, in the territory investigated by Moore in 1899.

Peter A. Brannon,
Alabama Anthropological Society

Alaska. Mr. Henry B. Collins, Jr., conducted archaeological field work on the St. Lawrence and Punuk islands, and on the Seward peninsula in northwestern Alaska. Skeletal material was collected at Golofnin bay and on Sledge island, in Norton sound. The work on the St. Lawrence and Punuk islands revealed extensive pre-Russian

Eskimo sites of considerable antiquity. Frozen refuse piles as high as twenty feet were found. Old houses at the bottom of one sixteen-foot midden were from two to six feet below the level of storm tide, indicating a sinking of the land. The material found shows that these early Eskimo possessed a distinctive, more elaborate art, and a culture in general more highly developed than that of the modern Eskimo. Present evidence indicates that the origin of this old Eskimo culture was in northeastern Siberia, a region occupied by the present Siberian Eskimo and their ancestors. Excavations at Metlatavik, north of Cape Prince of Wales, showed a later and historic phase of the Bering Sea culture, after it had lost certain of its most characteristic features.

Walter Hough,
U. S. National Museum

In cooperation with the Stoll-McCracken Alaskan Expedition of the American Museum, Mr. Edward M. Weyer, Jr., of Yale University received a temporary appointment to care for its archaeological work. Mr. Weyer had the opportunity of making some excavations on the Alaskan peninsula, which, it appears, will furnish important information on the early population of Alaska. In addition, an interesting Aleutian burial was discovered on one of the small islands of the Aleutian chain. The tomb was constructed of carefully fitted logs and enclosed three well-preserved bodies.

Clark Wissler,
American Museum of Natural History

Arizona. This past summer the Arizona State Museum investigated the site of an ancient pueblo on a pine-covered mesa a little northeast of Turkey Hill, seven and a half miles east of Flagstaff. In the time at our disposal we studied a burial mound and debris to the east of the ruin. Though the mound has been badly honeycombed by pothunters, and often a part of a skeleton removed, we encountered thirty-three burials in the undisturbed sections and secured sufficient pottery and bone and stone implements to give us a fair means of interpreting the cultural development of these people. The portion of the ruin we uncovered discloses a late pueblo two-story structure with outlying groups of one-story buildings surrounding a central plaza of irregular form. The village extends from northeast to southwest, with the northwestern building two stories in height. The walls are rock, laid in clay adobe, with plastered

interior walls. The burials were at full length on the back, similar to those found by Dr. Fewkes at the Elden Pueblo some two and a half miles west of this Turkey Hill site. Two small ollas containing the remains of human bones mixed with ashes indicated cremation. The burials contained, among other things, two painted baskets, and a woven arm band painted with a thick pigment similar to that covering the baskets. The colors were bright red, green, orange, and blue. The State Museum expects to continue its work in the Turkey Hill ruin as soon as it is possible to take the field next summer.

Byron Cummings,
Arizona State Museum

Mr. L. C. Boies, associate in archaeology of the Arizona Museum, has been working on a survey of the regions around Phoenix, gathering surface material and data, and mapping ruins. The result will be an archaeological map showing the centers and distributions of typical culture traits, which will be used as a guide in choosing sites for further investigations. So far about 150 ruins have been recorded in the Verde drainage area; 50 in the Globe district; and work is now in process in the central Gila region. Mr. Malcolm J. Rogers, associate in archaeology, has been investigating sites along the Gila west of Phoenix to the Colorado river. Laboratory study of the mixed pottery types in this region has shown that although the surface features of the Lower Gila pottery are similar to those of the Colorado Desert ware, there are essential differences in temper and firing results. Mr. Rogers is now trying to establish the western extent of the Pueblo cultures, and has already obtained some evidence of their presence in California.

Odd S. Halseth,
The Arizona Museum

The Museum of Northern Arizona has taken over the archaeological survey of the Flagstaff area begun several years ago by its Director, and is extending it to include the northern third of Arizona. Base maps are being prepared, using the township plot as a unit in regions where ruins are abundant, and a smaller scale for regions sparsely covered. A duplicate card file of sites is maintained, filed numerically, and geographically. Mr. L. L. Hargrave, of the University of Arizona, Mr. L. F. Brady, Curator of Archaeology, and the Director, added a large number of sites to the survey, particularly in the Hopi country. Potsherds from each locality were added to

the potsherd collection. Under permit from the Department of Agriculture the Museum excavated a dry cave north of the San Francisco peaks and brought to light a number of unique artifacts which seem to belong to the period called Pueblo I by the Pecos conference.

Harold S. Colton,
The Museum of Northern Arizona

The archaeological field work of the University of Colorado Museum during 1928 was done at the Hopi ruin described by Mindeleff as Mishiptonga, but now locally known as Kawaikuh. It is the largest of the Jeddito group of ruins, a group which appears to have been the central ganglion of Hopi culture before the rise of the historic villages. Limited excavations were conducted in certain areas within the building, and in the refuse-burial tali. The house digging was done primarily to secure timber samples for Dr. A. E. Douglass' study of the chronology of Southwestern ruins as revealed by the beams which entered into their construction. A good many specimens were secured, from which several positive dates in the history of Kawaikuh have been determined. The refuse slopes flanking the promontory on which the ruin stands had been extensively dug in years past. Dr. Hough, in his report on the Museum-Gates Expedition of work done in them in 1901, states that they had been previously rifled by the Navaho. Inquiry among the old men revealed that the pottery exhumed by the Indians went into the Keams collection. Despite the rummaging to which they had been subjected, the fractional part of the refuse deposits turned to bottom in 1928, yielded more than 200 vessels. The individual graves were quite prolific, one containing a total of 20 bowls. The skeletons were decomposed to an astonishing degree. Often the former presence of a body was indicated, aside from the pottery, only by a horizontal streak of brown mold the thickness of a finger. The bones had suffered more from decay than the vegetable accompaniments. It was possible to detect several varieties of textiles and basketry, and to determine that ear corn had been placed with practically every body. The original nucleus of Kawaikuh was built late in black-on-white times, and occupation of the site was apparently continuous until after 1500. The major steps in the ceramic sequence as revealed by the work done there in 1928 may be briefly outlined as follows: At the first settlement, the parent black-on-white had

become considerably diluted with black-on-red and a red polychrome. This complex gave way to an orange yellow ware of great hardness and fine texture decorated in black predominantly with geometric patterns derived from the earlier wares. From the orange yellow developed Kidder's "Jeddito Yellow." This is a thicker heavier pottery decorated in black or brown pigment with broad-line patterns usually geometric, but sometimes realistic. From this in turn arose the complex dominated by the Sityatki polychrome, which was in full flower as early as 1350 and continued until after 1500.

Earl H. Morris,
University of Colorado Museum

Mr. S. J. Guernsey, Assistant Director of the Peabody Museum, spent six weeks in Segi canyon, in northeastern Arizona. No excavations were undertaken, but a number of surface sites were examined. The greater part of the time was spent at Batatakin, obtaining data from which to construct a model of the ruin.

Edward Reynolds,
Peabody Museum, Cambridge

Excavations at the ruin called La Ciudad, in Phoenix, have revealed several stages in architectural development. The earliest rooms were of the pit-house type. Later, surface rooms were constructed of adobe walls reinforced by upright posts. Some of these walls were very thick. The burials associated with the ruin were both inhumations and cremations. A large number of artifacts of stone, shell, and clay were found. The pottery is principally of the red-on-buff type, although some polychrome ware does occur.

Frank Mitalsky,
The Heard Museum

California. The archaeological field work of the University of California during the year has been concentrated on exploration in the Santa Barbara region. We had a party of five in the field for three months. About half of this period was spent on the mainland at various sites, the remainder was spent on Santa Cruz island. The Southwest Museum participated in the first half of the work. Special attention was given to the differentiation of types, both regional and chronological. Until the material has been more thoroughly studied it would be premature to announce any findings.

This work was in the charge of Ronald L. Olson and continued a beginning made in the summer before.

A. L. Kroeber,
University of California

The Southwest Museum placed no independent expeditions in the field during 1928. For six weeks in June and July, Mr. Charles Amsden joined the University of California's expedition work in the Santa Barbara region. An attempt has been made to keep in touch with local archaeological discoveries. During the year, Mr. Amsden made frequent short trips to near-by places to investigate casual finds, among them one to the Colorado desert in the vicinity of Twenty-Nine Palms, and another to the Coachella valley to visit the Fish Traps and pictographs of Travertine point.

M. R. Harrington,
The Southwest Museum

About the first of October the San Diego Museum began an archaeological survey in the Mohave Sink region which was carried over into November. The extensive aboriginal turquoise mines of this area were found to have been worked by a Pueblo people of a cultural period which is as yet undetermined. Small but permanent settlements containing plain grey and black-on-grey pottery were found. These sites were so badly eroded that next to nothing could be determined as to architecture, except that the houses were of a surface type without true masonry. The same sites had been subsequently occupied by Mohave and the two cultures hopelessly scrambled by the vicissitudes of nature. This region also produced a great variety of Pueblo sherds in limited amounts which reflect close affiliations with Nevada, and northern and western Arizona. The survey of this region will be continued during the ensuing winter months.

Malcom J. Rogers,
The San Diego Museum

Colorado. Dr. F. H. H. Roberts, Jr. spent the months of June, July, and August excavating a number of Pueblo I sites along the Piedra river. The sites were discovered by him in the summer of 1923 when he was conducting an archaeological reconnaissance for the State Historical and Natural History Society of Colorado, but no intensive investigation was possible until last summer. In ad-

dition to securing detailed information regarding the house types, a large collection of specimens, including more than 250 pieces of pottery, was obtained. The sites proved to be unusually important because of the light which their excavation throws on the problem of the development of the prehistoric Pueblo cultures in their earlier phases and of the relationship shown to exist between the early Pueblo horizons and the preceding Basket Maker cultures.

M. W. Stirling,
Bureau of American Ethnology

A field party of seven men, directed by Paul S. Martin, conducted a reconnaissance and excavations for the State Historical Society of Colorado, over a period of eight weeks during the past summer, in the region to the north and west of Cortez, Colorado. During the reconnaissance work a ruin was found, to which no reference in literature can be secured. It has been called "Cut Throat Castle." The building is as large as Hovenweep Castle and in some ways more interesting. The walls still standing measure over thirty feet in height, and many floor beams are still in situ. Round towers abound and are always located near circular depressions which appear to be kivas. The whole group is situated in the canyon bottom proper, which prevents assigning defensive measures for the choice of location. The towers would also not serve as watch towers under these conditions. Excavation was confined entirely to unit type ruins located on the top of mesas. A total of thirty rooms, four kivas, seven small towers, one large tower, and over twelve refuse heaps were studied. A strange, and apparently new, feature in Pueblo architecture was found to exist in every unit excavated. The round towers are always located to the southeast of the pueblo proper and are connected to an adjacent kiva by an underground passage. This round tower kiva association was found to hold for the largest tower investigated, one which measured twenty-eight feet in diameter with two outside doorways, as well as an underground passage leading to a kiva. On the southern side a cemetery existed, containing at least twenty-three burials and twelve pieces of pottery. The refuse heaps for the most part yielded generously. The expedition returned to the Museum with seventy-two pieces of Proto-Mesa Verde pottery, sixty-six of which are whole.

Paul S. Martin,
State Historical Society of Colorado

Florida. During March Dr. F. H. H. Roberts, Jr., Archaeologist of the Bureau of American Ethnology, spent a week at Melbourne inspecting the fossil pits where Dr. J. G. Gidley was uncovering the remains of extinct mammalian life and where he had found human implements in association with the bones. In addition to a careful study of the bone beds at Melbourne, similar deposits near New Smyrna were closely examined and additional objects obtained. Several days were spent in visiting shell heaps at various points on the coast in the vicinity of Melbourne and in making careful observations of the ceramic characteristics evidenced in the potsherds from many former village sites.

M. W. Stirling,
Bureau of American Ethnology

Georgia. Last February Mr. Moorehead, of Phillips Academy, returned to the exploration of the Etowah site owned by Mrs. Georgia Tumlin. Mr. Gerald Towle of Andover and Miss Margaret Ashley of Atlanta acted as field assistants. Extensive work was done on the village site, resulting in the discovery of about one hundred burials and quite a number of engraved shells, portraying the plumed serpent motif and other designs. Thirty-five miles north of the Etowah site another site of the same culture was found on the Coosawatee river. A large force was employed at this place for some time. Many pottery vessles, a dozen engraved shell discs, and other objects were recovered from the mound and the village site. Miss Ashley is studying the pottery of the Etowah culture for Phillips Academy, and some time next year a full report embodying both the explorations and her studies will be published.

W. K. Moorehead,
Phillips Academy, Andover

Through the interest and generosity of Mr. Tom Huston of Columbus, Georgia, a thorough archaeological survey was conducted during the latter part of the year in southwestern Georgia under the direction of Miss Margaret E. Ashley. Muscogee, Harris, Chattahoochee, and Taylor counties were surveyed and twenty-six sites located, investigated, and recorded. The most extensive work was that done in Taylor county. A large mound and village site on the Flint river, about eight miles north of Reynolds, was excavated, and though the mound proved to be domiciliary in character the village produced excellent finds, of which the most outstanding were the

painted pottery and shell work. The site has been subjected to frequent floods and much surface material has been collected at different times. Fortunately, many of the burials were found to be undisturbed and it was from these that the greater part of the specimens was obtained. A report of the work is now being prepared and will be published at an early date.

Margaret E. Ashley,
Columbia University

Illinois. During 1928 the University of Illinois continued the explorations of the central portion of the state begun several years ago under the direction of Mr. W. K. Moorehead. From the last of March until the end of October, Mr. Jay L. B. Taylor, Engineer, mapped the mounds along the Illinois river, from Havana downstream to Kampsville, using a large houseboat as headquarters. Many of these mounds were tested, and several carefully explored. The main purpose of the survey was to discover an example of the log tombs such as have been found by pot-hunters near Liverpool, below Peoria, and concerning which we have no accurate account, but none were encountered. Three large burned basins, one of them 15 ft. in length, were found in a mound near Naples. On a high bluff at Kampsville were large stone graves somewhat different from the types prevailing to the south. The survey on the Illinois river obtained evidence indicating three cultures. A detailed report will be published next year.

W. K. Moorehead,
University of Illinois

The University of Chicago had two parties in the field this summer for eighty days. Two men surveyed two very rich counties and tapped the edges of others. All sites—mounds, village sites, trails, etc.—which now exist, or the former site of which could be definitely located, were charted. The party studied and photographed all collections in the hands of local collectors, and in general gathered material which will be useful in studying the distribution of cultural types. Another party of six men excavated a large mound at Joliet and took from it 100 skeletons and some cultural material which made it possible to date the mound in relation to Langford's finds. About 40% of the mound was left undisturbed for future archaeologists. Blue-prints were made every five feet so that all material

taken out could be accurately located. Several small mounds were opened near Quincy preliminary to an aggressive campaign there next season. The results of this work are now being studied and put in form for publication.

Fay-Cooper Cole,
University of Chicago

Indiana. Under the chairmanship of Mr. William R. Teel, the archaeological committee of the Indiana Historical Society and Historical Bureau, approved a plan for a three months' archaeological survey of the White Water river valley during the summer of 1928. Following a review of the literature, field work in this area, which lies in the southeastern part of Indiana, near the Ohio border, was begun on June 15th. Fayette county, the first of the two studied, yielded six mounds, twenty-one camp sites, one Indian trail, and many private collections which were photographed and classified. Franklin county just to the south had a very different record. With the cooperation of two interested collectors, one hundred and one earth mounds, eleven stone mounds, and a number of camp sites along the banks of the river were located. The stone mounds, which are unusual, consist of a large number of heaped lime-stones, usually located on a prominent point of a high hill overlooking a wide expanse of the river. Just beneath the top layer of these stones we found evidence of human bones and teeth, and in one case of cremated bones. One of these mounds was trenched, but nothing was revealed beneath the top layer. The mounds are very low, and from fifteen to twenty feet in diameter. The earth mounds are of the low circular type. Over seventy-five percent of the mounds located showed signs of digging by pot-hunters. After the survey proper was completed, three of the most typical mounds were entirely excavated. The first of these had a hard burnt clay floor, upon which slate gorgets, margrinella shell beads, ochre, graphite, incised pottery, and a clay tubular pipe were found, as well as the bones of two disarticulated skeletons. The second contained a slate and flint cache, consisting of gorgets, one laurel-leaf flint, and several arrowheads, but no human bones. The third mound contained another burnt clay floor, over which were found many crude quartz tempered potsherds, and four complete skeletons extended on their backs, one of which was a few feet above the floor. Near the center remains of human bones disturbed by pot-hunters were encountered. All of these artifacts,

and the construction of the mounds, resemble similar traits of a culture in Ohio. Plans are now being made to continue the survey during the summer of 1929.

Frank Setzler,
Indiana Historical Society

The Division of Geology of the Indiana Department of Conservation made two field investigations during the year. A shell refuse deposit near the White river in Orange county was examined, in which some beads, ornaments, fragments of pottery, charcoal, and flints were found. Some of the shells had been prepared for scrapers and knife blades. A small mound on the flood plain of the Wabash river near Fairbanks was examined at the request of the owner of the land. It was a natural one which may have been used for burial purposes since some badly disintegrated human bone fragments were found. A few celts, arrowpoints, drills, and some ironstone concretions which had been drilled, were also secured.

W. N. Logan,
State Geologist

Iowa. Work in 1928 has involved quite extensive correspondence; several field trips to points requiring special attention in the valleys of the Cedar, Iowa, Des Moines, and Wapsipinicon rivers; and some weeks of work in organizing the notes and materials of the survey. The field work brought to light some previously unknown village sites and rock shelters, as well as an extensive series of linear mounds. These last are of particular interest on account of their location so far west of the Mississippi, in the valley of the Des Moines river between Boone and Fort Dodge. After seven seasons of desk and field work, which have produced a bibliography, established contacts with more than five hundred collectors and other helpers, provided at least one personal visit to each of the ninety-nine counties, and brought together a considerable collection of illustrative material in the way of maps, photographs, and artifacts, it is the opinion of the writer and others familiar with the work of the Iowa survey that the preliminary phase of the undertaking, except for matters having to do with publication, may be regarded as accomplished.

Charles R. Keyes,
The State Historical Society of Iowa

Kansas. For the past eighteen months members of the Rice County (Kansas) Historical Society have been studying the remains of over a dozen Indian villages located in the county. From all appearances they represent a single culture, and occur beside streams or on high points within a few rods of streams. The villages average probably 100 lodge sites each. A 100 foot circle formed by deep ditches still exists near the center of each of two of them that are still in sod. Dwelling sites average 30 feet across. These circular lodge rings or low mounds have given rise to the opinion they were of Wichita or Pawnee occupancy, since these tribes built circular, dome-shaped, grass or mud covered dwellings. Flint arrowheads are practically all of the small, triangular type, both the plain and notched, and seldom more than one inch long. The pipes are of a dense, red stone resembling catlinite but of some unidentified material. Double-bitted chert hoes and large sandstone metates and granite manos indicate agricultural activity. Hundreds of flint flesh scrapers, dozens of flint knives, and a vast quantity of buffalo bone prove the occupants were buffalo hunters on a large scale. Flint drills and awls and bone scrapers and needles are frequently found. The presence of the pipe material, granite, obsidian, agate, and occasional Pueblo potsherds indicate much bartering. Both sand and shell-tempered pottery are abundant. These wares are drab and without decoration except for pinched or gouged ornamentation on rims and handles. No burials have been found as yet.

Horace Jones,
Rice County Historical Society

Kentucky. In June Mr. Neil M. Judd, Curator of American Archaeology, U. S. National Museum, proceeded to Russell county, Kentucky, to examine certain objects previously recovered from a rock shelter on Wolf creek, a branch of the Cumberland river. The artifacts included a rectangular basket with cover, portions of other baskets, fragments of a buckskin headband, and an olivella shell necklace; also, one small red bean, corncobs, squash seeds, and potsherds. The material, which appears to be of Cherokee origin, was not acquired for the Museum.

Walter Hough,
U. S. National Museum

During part of August and September, the University of Kentucky conducted excavations in the western part of the state under the

direction of W. S. Webb and W. D. Funkhauser. A mound about one hundred feet in diameter and ten feet high was completely investigated by slicing it in ten foot sections. It proved to be a domiciliary mound showing three distinct periods of occupation, each of which was readily recognized by the presence of a series of closely set moulds of posts averaging five inches in diameter, and by prolific layers of camp debris, containing large deposits of ashes and charcoal. Each of the three structures had apparently had its floor rebuilt several times, so that when the building was destroyed by fire, some of the posts were buried three or four feet deep. The mound was originally built upon a camp site, for the lowest level contained four to six inches of ash and camp debris. Near the end of the season a cemetery of stone graves was found about 200 feet from the mound. These graves, which were fairly rich in artifacts, indicate a different culture from similar graves examined several years ago within three miles of this site. Some distance from the excavations the expedition located a very promising site, covering some four hundred acres. It contains one hundred to one hundred and fifty mounds, on some of which stone graves are partially exposed.

W. S. Webb,
University of Kentucky

Maine. The Trustees of the Lafayette National Park Museum of Stone Age Antiquities authorized Mr. W. K. Moorehead to make an examination of shell heaps in the vicinity of Mount Desert island. At Gouldsboro we were able to find an undisturbed heap, which yielded some eight hundred interesting objects such as harpoon points, awls, projectile points, knives, hammerstones, celts, some bone ornaments, two engraved stones, and very little pottery. The Indians living at the Gouldsboro site employed seven or eight different forms of harpoons, points of which seemed unusually abundant. Among the animal bones secured, Dr. Glover Allen, of Harvard, found evidence of extinct species of mink and seal.

W. K. Moorehead,
Phillips Academy, Andover

Michigan. The main objective of the year has been the perfecting of the county archaeological maps to which reference was made in last year's report. There are two methods of securing information, one is by studying early maps and records, the other and laborious way is by field surveys. After the records are placed on

plain uniform maps, they are transferred to such topographical maps of the state as have been published by the U. S. Geological Survey. This brings out very graphically the intimate relation of the sites to the topography of the country. The examination of the group of eight mounds in Montmorency county, seventy miles south of Mackinaw, was completed. Pottery, pipes, arrowheads, several barbed harpoon points, implements of antler with beavers' teeth inserted at right angles to the antler handles, flexed skeletons, and secondary burials in the upper layers were encountered. This material is apparently Algonkin. In Newaygo county, about the center of the Lower Peninsula, in the valley of the Muskegon river, a group of fourteen mounds situated upon a single acre of ground was discovered. This group, prior to mutilation by pot-hunters, was one of the finest sites in the state. This summer the Museum excavated two of the mounds. Pottery and pipes similar to those of the Hopewell culture were obtained. In the past evidences of this culture have been found in the Grand River valley in the neighborhood of Grand Rapids. Now we know it extended more than fifty miles north of that locality. Some very interesting camp sites and rubbish heaps upon the banks of the Muskegon yielded Indian potsherds, a huntsman's knife, hundreds of animal bones, clam shells, and a few iron and silver trinkets. Many groups of rifled mounds in the southwestern part of the state were surveyed and accurately charted.

W. B. Hinsdale,
University of Michigan

Mississippi. During the summer months of 1928, the Mississippi Department of Archives and History conducted a survey and made excavations in four mounds, in Hinds and Madison counties. Fifteen burials were located. In addition to well preserved skeletal material they contained about one hundred articles consisting of pottery, celts, discoidal stones, beads, paint, and copper-plated specimens. This is the third year of the work. It is the policy of the Department of Archives and History to continue these surveys and excavations until the entire state is surveyed.

Dunbar Rowland,
Mississippi Department of Archives and History

Missouri. During the past summer the Archaeological Survey of Missouri was continued by means of several small field trips in the eastern part of the state. A small village site was located in

Franklin county, on a tributary of Big Tavern creek, north of the village of St. Albans. A number of flint artifacts and accompanying notes were secured at this site, which apparently has not been greatly disturbed. The large flint workshop at Crescent in St. Louis county has been revisited several times, and additional notes and collections of implements have been made. Efforts will be made next spring to actively push the work in St. Louis county, which is still rich in its evidences of Indian occupation.

R. J. Terry,
Archaeological Survey of Missouri

New Mexico. Dr. F. H. H. Roberts, Jr. made a reconnaissance trip through the La Jara, Frances, and Gobernador canyons visiting the ruins of pueblos built during the period immediately following the revolt and subsequent reconquest, 1680–1696, by fugitives from the Rio Grande pueblos. Many earlier sites were also visited and a large number were found which corresponded to those excavated along the Piedra some 50 miles to the north. During the first week in August, Dr. Roberts visited the Folsom fossil quarries where Mr. Barnum Brown of the American Museum of Natural History was carrying on further excavations in an effort to establish more completely the association of man with the extinct species of bison found there. That the work was highly successful was shown in the finding of several more projectile points, similar to those found by the men from the Colorado Museum of Natural History the preceding summer, in direct association with the animal bones.

M. W. Stirling,
Bureau of American Ethnology

Mr. Barnum Brown, directing excavations near Folsom, New Mexico, for the American Museum of Natural History, invited the Smithsonian Institution to send a representative to view additional projectile points found there in association with the remains of extinct bison, presumably late Pleistocence. Responding to this invitation, the Smithsonian Institution delegated Mr. Neil M. Judd, Curator of American Archaeology, to make the examination. In Mr. Judd's opinion there is no longer any doubt as to the contemporaneity of the bison whose remains have been exhumed at the Folsom quarry and the primitive men who chipped the dozen or more rather sophisticated blades recovered from the same quarry.

From Folsom, Mr. Judd proceeded with Dr. Frank H. H. Roberts, Jr. to the scene of his explorations in southwestern Colorado.

Walter Hough,
U. S. National Museum

In connection with the palaeontological work at the so-called "bison quarry" at Folsom, New Mexico, Dr. Clark Wissler, assisted by Mr. G. K. Laves of the University of Chicago, made a survey of Johnsons mesa, to discover, if possible, any evidence of human occupation other than the peculiarly shaped stone points found in association with the bison bones. The implements so associated are of a type not previously observed in the United States except as random finds, and their association with the bison suggests a new early hunting culture. The survey of the mesa indicated that the region was not permanently inhabited, so that the search must be carried farther afield.

Clark Wissler,
American Museum of Natural History

In 1927, Mr. C. B. Cosgrove, in charge of the Peabody Museum Expedition, found Basket-Maker remains in a cave near Las Cruces, New Mexico, and in another one northeast of El Paso, Texas, in the Hueco mountains. It was therefore decided to do more extensive work during the season of 1928 near El Paso and from there make a reconnaissance of the Gila National Forest north of Silver city, New Mexico, in the hope of getting evidence of the movements of these people in this section of the country. The results obtained by Mr. Cosgrove were very satisfactory. He found that the Basket-Makers had occupied a number of caves and rock shelters for a distance of forty miles up into the headwaters of the Gila river above Silver City; he also encountered implements used by them in some of the canyons of the San Francisco river, fifty-two miles northwest of that place. During the season in the El Paso district, forty-two caves were investigated, fourteen of which showed occupation or use. North of Silver City twenty-two caves were located, eighteen of which showed occupation. In this latter section twenty-six cliff and store-house ruins were looked into and eight open sight ruins mapped. In the San Francisco River drainage fourteen caves were investigated, nine of which had been used in one way or another by the Indians. There were no cliff houses here. The only masonry found was a defensive

wall built in one of the caves. This was equally true of the region explored near El Paso.

Edward Reynolds,
Peabody Museum, Cambridge

The Minneapolis Institute of Arts and the Museum of New Mexico cooperated last summer in a six weeks excavation in the Mimbres valley. Mr. Wesley Bradfield of the Museum of New Mexico, and Dr. Albert Ernest Jenks of the University of Minnesota directed the work. The expedition worked for the first two weeks at Warm Springs, a site fourteen miles from the headquarters at Hurley, which had been much disturbed by pot-hunters. During the last four weeks excavations were continued at the Cameron Creek site, three miles from Hurley, where careful and controlled digging had been done by Mr. Bradfield during four earlier seasons. A good collection of bowls and artifacts was secured for the Minneapolis Institute of Arts. Sixty-five bowls have been restored and are now on exhibition. Twenty-five hundred pounds of sherds from known levels and household positions were also sent to Minneapolis as a basis for comparative studies. A quantity of human skeletal material in good condition was sent to the Department of Anthropology of the University of Minnesota. Mr. Bradfield obtained additional information for use in his chronological studies of the dwellings and ceramics of the Mimbres culture. Valuable data on early pit-house forms were obtained, corroborating finds made earlier in the spring of 1928 at the Three Circles site. Some of the unusual finds were: bone ash in a typical Mimbres bowl-burial, probably a cremation; a copper bell in a child burial; a carved Jade pendant in the form of a short-winged desert grasshopper, found immediately above a bowl placed over a skull; and skeletons of two parrots of a species different from that realistically painted on bowls. One of these parrots was buried beneath a pottery plaque—the second pottery plaque so far found in the Mimbres area.

A. E. Jenks,
University of Minnesota

New York. The year 1928 has been an especially successful one for the Rochester Municipal Museum, especially in archaeology, which is only one of its five divisions. The Lamoka Lake station has yielded a rather unusual lot of early implements, all from a preceramic culture. Over ten thousand specimens of bone, antler, and stone have been brought in. During the winter months I shall en-

deavor to make a study of the material and write a paper for our publication series. Charts of the floor, surface, and cross-sections were taken at frequent intervals, an important detail of method when cultures are mixed. We also noted the implement depths for every foot of the layers, some of which were six feet in depth. We kept careful watch of local commercial excavations, especially in sand-banks, and were rewarded by several pipes and one splendid pot, typically Algonkin in form. Of course we found a number of skeletons. We have supervised excavations in Pennsylvania, and in the Chautauqua Lake region where a site covering 45 acres was opened by Mr. Ross P. Wright, He recovered eleven most interesting pots of all sizes from two to eleven inches high. These are early transitional Erian pottery, and earlier than that which I recovered at Ripley in 1906.

Three chapters of the New York State Archaeological Association have been active, among them the chapter on Long Island. Mr. C. F. Goddard of Mattituck, New York, has found and restored about a dozen fine typical coastal Algonkin pots. He is the leading spirit of his chapter, but all of its members have been active in excavating shell heaps. In the northern end of the state, Mr. Garry S. Jones, President of the Franklin B. Hough chapter, has conducted excavations back from the St. Lawrence. One of his friends, John Nichols, wrote a recent monograph for the New York State Archaeological Association, on Rock Crevice Burials. Up-state New York men have kept a sustained interest in field work and I am gratified with the results. By hammering away at methods we have succeeded in inducing some of our amateurs to keep better note books.

Arthur C. Parker,
Rochester Municipal Museum

During the current year the Long Island chapter of the New York State Archaeological Association has continued and finished the excavation begun last year at South Harbor, Southold, from which much interesting material was obtained. The summer was given to exploration and incidental collecting. Excavating has now been started on an extensive camp site near Sag Harbor, which is proving rich in materials.

Charles F. Goddard,
Long Island Chapter, New York
State Archaeological Association

North Dakota. The State Historical Society of North Dakota has carried on a survey among the early Hidatsa and Mandan village sites, and recorded a number that have heretofore escaped observation. We have definitely located two reservoirs for water on two widely separated Hidatsa village sites situated one north and the other south of the Little Missouri river. These Indians were subject to siege from their enemies. The reservoirs were carefully built to contain water to carry the Hidatsa through such sieges. So far as I know, this is the only example of artificial reservoirs for water being constructed by any Indians of the upper Mississippi valley. The Department of American History at the State University has secured possession of an inscribed rock with a view to making a cast of the inscription for later study and research. This class of inscribed rocks is quite generally scattered throughout the state, and no study has so far been made of the inscriptions, which consist of a number of deep and smooth grooves sunk in the hard face of the rock.

O. G. Libby,
University of North Dakota

Ohio. Intensive work began June 6th on the so-called Eagle mound in the Fairground Circle at Newark. This mound, with the circle around it, is a part of the most extensive and spectacular group of geometric earthworks in Ohio. It was found to have a typical Hopewell floor, consisting of firmly packed black muck from one to three inches in thickness, overlaid by a deposit of fine sand not more than two inches thick. No burials were found, and the only artifacts recovered were a small copper crescent and an animal effigy, probably of a beaver, of the same material. Some fifty post-molds were scattered about the floor, extending to a depth of two to three feet. In the center of the "body" of the mound a shallow depression ten feet in diameter showed evidence of a fire of considerable size and duration. On July 11th work was begun on the remaining fourth of the Seip mound in Ross county. The most interesting finds were a crudely made effigy platform pipe, burials arched over or surrounded with slabs of stone, and a delta made of material washed down from one of the "primary" or interior mounds. Excavation was completed September 10th, and restoration work begun at once. With the help of a gasoline shovel and a Russel Drag Line Scraper loaned by the State Highway Department, about one-half of the mound was put back to its original position by the end of October. Since that time the field staff has been engaged in clearing and restoring a small mound of the

Adena type, 125 feet in diameter and 23 feet high, just beyond the western limits of the city of Columbus. The site of this mound is to be made a state park, which will be a memorial to the late James E. Campbell, former Governor of Ohio and President of the Ohio State Archaeological and Historical Society.

E. F. Greenman,
Ohio State Archaeological
and Historical Society

Pennsylvania. In January the general work of the Pennsylvania Indian Survey was put under a special Committee and an Advisory Board of the Pennsylvania Federation of Historical Societies, since the State Historical Commission could not administer funds of which the principal would be spent. A prospectus has been prepared to be used in securing these funds. The Commission has devoted its resources and interest to completing the Preliminary Survey of the State, and to developing ethnological research among the living descendants of the Pennsylvania Indians. In November, more than five thousand letters enclosing questionnaires and posters were mailed to individuals and organizations in the western counties, included in the earlier survey made by the Wyoming Historical and Geological Society. Within a month more than seven hundred replies have been received, evincing great general interest in this subject. The Survey investigated a very early Iroquoian Fort at Kane, Pennsylvania, which brought most interesting returns.

Frances Dorrance,
Pennsylvania Indian Survey

Texas. The archaeological survey of the state of Texas is being continued by means of interviews, correspondence, and reconnaissance trips to various parts of the state. Considerable data on the archaeology of this large area have already been secured. During the past summer an extensive reconnaissance trip was taken over many parts of central and western Texas and eastern New Mexico, with worthwhile results. A small research fund has made possible the excavation of kitchen-middens at various times. Work is now being done on a midden which is six feet six inches deep in the center and about 300 feet by 150 feet in size. Three different cultural levels have been identified with certainty, and have raised some interesting problems.

J. E. Pearce,
University of Texas

The general archaeological survey of the Big Bend territory has been continued. Eleven sites were added to the available records, bringing the total number to 146. Four of these were open camps, four rock shelters, and three combinations of the two. The general field of exploration has been extended as far west as the Hueco Tanks, near El Paso, where sherds were found in much greater abundance than in the Big Bend proper. The T. and P. Railroad roughly defines the pottery area to the west of Alpine, except for that portion of the Rio Grande valley immediately below El Paso. In the course of the field work a satisfactory number of specimens, photographs, and drawings were secured and added to the museum collections. Owing to the absence of several interested members of the Society, not as much intensive study has been made of the dry rock shelters as was indicated at the time of our last report. Mr. M. R. Harrington, however, has done some interesting research in this field. The third major activity of the Society has been the collection of exact copies of pictographs. During the year many of the field notes and colored drawings on this subject have been revised for publication.

Victor J. Smith,
West Texas Historical
and Scientific Society

During the months of January, February, March, and part of April the Mrs. Thea Heye Expedition, in the charge of Mr. M. R. Harrington, carried on investigations in southwestern Texas. A few days were spent in reconnaissance near El Paso, the remainder of the time in reconnaissance and excavations of sites in Brewster county, especially several small caves in the Chisos mountains, and a large rock shelter and a small cave in Eagle canyon on Chalk Draw south of Santiago peak. The work about El Paso revealed numerous open-air sites, some entirely without pottery, some with plain dark ware, some with this same ware plus painted Pueblo pottery of several types, including Mimbres. In Brewster county the cave work remained unfinished, but at least two cultures or periods are represented in our collections. Pottery is found on few sites only and in these only near the surface. For the most part it is undecorated, but two baked clay figurines appeared bearing crude painted designs. Sandals are very crude; basketry is for the most part in checker and twill techniques, but there are several types of coiled and some examples of twined weaves. The pottery-making people raised maize in abundance, and a few cobs

occasionally appear in some of the older deposits where no pottery is found. In these older deposits were fragments of spear-thrower darts and of carved clubs suggesting a type of culture related to the Basket-Maker.

George G. Heye,
Museum of the American Indian,
Heye Foundation

Utah. The University of Utah continued its survey of the ruins on Mustang mesa. Most of the localities studied proved to have been disturbed by amateurs. However the expedition was able to return with a large number of pieces of pottery obtained from several private sources.

A. A. Kerr,
University of Utah

Mr. Noel Morss, in charge of the Peabody Museum Expedition in southern Utah under the Claflin-Emerson Fund, spent July and August in the drainage of the Fremont river, a western tributary of the Colorado. This region proved to be the seat of a new culture, characterized by undecorated gray or black pottery, and moccasins instead of sandals, but resembling the Post Basket-Maker or Pre-Pueblo cultures in its use of slab cists and granaries and in the general character of its artifacts. No burials were found but considerable material was obtained in cave rubbish deposits, some of which were of considerable depth. In the upper levels contact with the early Pueblo Beaver-Paragonah culture was indicated. A unique wicker-work roof of this period was unearthed. The most interesting finds were fragments of some sixty clay figurines of a more elaborate type than those previously known from Post Basket-Maker sites, which show slight but definite similarities to the early Archaic figurines of Mexico. The pictographs of this region are also original and very fine, depicting masked dancers with Falstaffian deer horn headdresses.

Edward Reynolds,
Peabody Museum, Cambridge

Wisconsin. In furthering the work of the Wisconsin archaeological survey many members of the State Archaeological Society have turned in to the records office a large number of new records of the location and character of village sites, burial places, mounds, and other archaeological features. Additional mounds and burial places have

been excavated. Secretary Charles E. Brown has himself conducted field work in certain sections of Dane, Rock, Columbia, and LaFayette counties. During the months of August to November he and Theodore T. Brown were engaged in locating and investigating camp and village sites and other archaeological features along the entire course of the Rock river from the Wisconsin-Illinois border to the foot of Lake Koshkonong. Many local collections were examined during the course of this undertaking, which was made possible through funds generously provided by Dr. Frank G. Logan. They also made a trip down the Mississippi River region in Illinois to study local collections. On September 20th the Society held a field meeting at Aztalan Mound Park, when a boulder marker bearing a descriptive bronze tablet was unveiled under the direction of Mr. Robert P. Ferry, park chairman. Important archaeological collections have been added to the State Historical Museum. A new municipal museum has been opened at Neenah, and a new museum building is to be built at Lawrence College. Both of these will contain local archaeological collections. Mr. Brown has published two booklets, "Scenic and Historic Wisconsin," and "Scenic and Historic Illinois," in which all the important Indian landmarks in the two states are listed. These have done much to create an intelligent popular interest in the archaeological history of the two states.

Charles E. Brown,
Wisconsin Archeological Society

Trempealeau county, on the Mississippi margin of Wisconsin, was the point of archaeological attack selected this year by the Milwaukee Public Museum. A primitive camp site and twenty mounds, for the most part small conicals, were excavated. The camp site produced markers for a pure primitive culture of the Grand River type. All but two of the mounds occurred at one site and showed interior traits typical of the Effigy Mound culture. The remaining two mounds were relatively large conicals belonging to a separate group of tumuli, and produced burials, implements, and artifacts typical of the Hopewell culture of Ohio. A pit burial, centrally placed in the floor of one mound, was found to contain extended skeletons associated with six copper celts, four ear ornaments consisting of wooden beads covered with sheet silver, about forty pearl beads, a copper plaque, a large chalcedony artifact, and a copper "breastplate." Two of the copper

celts and the breast ornament had served to preserve associated fragments of cloth, representing both open and closely woven techniques; both warp and weft are of nettle fiber. The burial pit was lined with bark and covered with a structure of light poles and bark slabs over an area twenty-five feet in diameter. Above the burial were found: a platform pipe of Ohio pipestone; a number of large chipped stone artifacts, fashioned of jasper, obsidian, chalcedony, and quartzite, four of them ranging in length from eleven to fourteen and five-eighths inches; and about one hundred tubular beads rolled from sheet copper. All of these specimens and traits are culturally akin to similar finds in mounds of the Hopewell culture in Ohio, and most of them are typical markers for that culture. All are foreign to other known mound-building cultures in Wisconsin. The second mound produced, among other Ohio-like materials, the major portion of a pottery vessel of Hopewell type. It is hoped that excavations in this group of Wisconsin Hopewell mounds may be continued next year.

W. C. McKern,
Milwaukee Public Museum

Alabama Anthropological Society	Alabama
American Museum of Natural History	Alaska, New Mexico
Archaeological Survey of Missouri	Missouri
Arizona Museum	Arizona
Arizona State Museum	Arizona
Bureau of American Ethnology	Colorado, Florida, New Mexico
Columbia University	Georgia
Field Museum of Natural History	Canada
Heard Museum	Arizona
Indiana Department of Conservation	Indiana
Indiana Historical Society	Indiana
Milwaukee Public Museum	Wisconsin
Minneapolis Institute of Arts	New Mexico
Mississippi Department of Archives and History	Mississippi
Museum of Northern Arizona	Arizona
Museum of the American Indian, Heye Foundation	Texas
National Museum of Canada	Canada
New York State Archeological Association	New York

Ohio State Archaeological and Historical Society	Ohio
Peabody Museum, Cambridge	Arizona, New Mexico, Utah
Pennsylvania Indian Survey	Pennsylvania
Phillips Academy, Andover, Mass.	Georgia, Maine
Rice County Historical Society	Kansas
Rochester Municipal Museum	New York
San Diego Museum	California
Southwest Museum	California
State Historical Society of Colorado	Colorado
State Historical Society of Iowa	Iowa
United States National Museum	Alaska, Kentucky, New Mexico
University of California	California
University of Chicago	Illinois
University of Colorado Museum	Arizona
University of Illinois	Illinois
University of Kentucky	Kentucky
University of Michigan	Michigan
University of North Dakota	North Dakota
University of Texas	Texas
University of Utah	Utah
West Texas Historical and Scientific Society	Texas
Wisconsin Archeological Society	Wisconsin

CARL E. GUTHE, *Chairman*

ANTHROPOLOGICAL NOTES AND NEWS

A Committee on the Promotion of Chinese Studies

The American Council of Learned Societies announces that it has created and will maintain for a limited time a Standing Committee on the Promotion of Chinese Studies, upon which the scholars whose names are appended have consented to serve. The Committee will hold its first meeting February 16–17, 1929 in Washington. Further information can be had from the Secretary of the Committee, Mortimer Graves, 907 Fifteenth St., Washngton, D. C.

Berthold Laufer, chairman
Carl W. Bishop
L. C. Goodrich
Louis Hodous
Arthur W. Hummel
K. S. Latourette
Lucius C. Porter
James T. Shotwell
Walter T. Swingle
Walter F. Willcox

C. H. Danforth, professor of anatomy, Stanford University, was elected secretary of Section H, at the annual meeting of the American Association for the Advancement of Science, held December, 1928.

Among the Activities reported by the Bureau of American Ethnology for the year were the studies made by Mr. J. P. Harrington among the Santa Barbara Indians of California. For the first time the history of Alta, California, from the Indian viewpoint, was studied, throwing much light on hitherto dark chapters. Among other things these studies proved that Cabrillo was the discoverer of Monterey.

According to the *Archiv für Rassen- u. Gesellschafts-Biologie*, reported in *Eugenical News*, the investigation of the problem of the origin of the Mongoloid racial elements is being studied by the expedition in Further India and to this end it has worked in Upper Burma and the Shan states. The leader of the expedition, Dr. Freiherr

von Eickstedt, and his wife have made their headquarters in the town of Namhson at an elevation of 2,000 meters. Extensive material is being collected; ethnographic articles, 500 photographs and measurements on 230 men and women. The Chinese in the adjacent territory will also be studied.

DR. GEORGE VAILLANT, of the American Museum of Natural History, has returned from a preliminary archaeological survey of Middle America, supported by Mr. Clarence L. Hay. He has obtained a permit from the Mexican government for excavations in the Valley of Mexico for next winter, political conditions permitting. At the invitation of the Carnegie Institution, Dr. Vaillant carried out a small excavation at their site of Uaxactun, Petan, Guatemala, that yielded important information on the early history of the Maya. He was enabled, through the courtesy of the Mexican government, to bring back a small synoptic collection of the "Archaic" cultures of the Valley of Mexico. He also visited a number of sites on the highlands of Mexico and Guatemala, as well as in British Honduras and the Petan district of Guatemala.

DR. MILTON METFESSEL, for three years National Research fellow in psychology, has been appointed associate professor of psychology and phonetics in the State University of Iowa.

THE POPULAR ETHNOGRAPHIC monthly, Der Erdball, published in Berlin by Hugo Bermühler and edited by Dr. H. Kunike, continues to appear. A recent issue (issue 12 of volume 2) contains a number of short articles dealing with such subjects as the Origin of the American Deluge Myths, Berber Folk-Tales, and the Ice Age. The magazine is attractively printed and provided with good illustrations.

AN International Congress of Museum Directors was recently held in Budapest. Sixty foreign guests were present, among them from England Mr. Robert Hobson, keeper of the department of ceramics and ethnography in the British Museum, and Mr. Eric Maclagan, director and secretary of the Victoria and Albert Museum.

THE DISCOVERY in Beisan of the foundations of a great Canaanite migdol, or fort tower, has resulted in some of the most important finds thus far recorded by the University of Pennsylvania Museum's archaeological field expedition to Palestine, the Museum has announced, following the receipt of a report from Alan Rowe, director of the expedition.

AN INDIAN GARDEN, in which were grown many of the plants used by the aborigines, was laid out last summer by the Alleghany School of Natural History in the Alleghany State Park, New York. The work was done by William P. Alexander, assistant curator of education of the Buffalo Museum of Science, and his summer class.

THE MUSEUM of the University of Pennsylvania and the British Museum have resumed their joint explorations at Ur of the Chaldees, the expedition reporting the finding of numerous objects of gold and silver, as well as pottery, beads and rings.

WE REGRET to note the death of Dr. Eduard Hahn, professor at the Agricultural College in Berlin. It occurred on February 24, 1928. Dr. Hahn was a geographer and student of economics rather than of anthropology, but his chief works—*Die Haustiere* (1896); *Das Alter der wirtschaftlichen Kultur der Menschheit* (1905); *Die Entstehung der wirtschaftlichen Arbeit* (1908)—exercised a great influence on ethnological thought both in Europe and the United States. Dr. Hahn was foremost in combating the antiquated theory of three economic stages; in defining the difference between hoe-tillage and plough-tillage; and in stressing the importance of irrational factors in the history of civilization.

THE LAFAYETTE NATIONAL PARK MUSEUM of Stone Age Antiquities, on Mount Desert Island, Maine, was opened recently. The museum is frequently referred to as the Abbe Memorial Museum, in honor of its founder, Dr. Abbe, who died last spring, before the museum was ready for formal opening. The museum is situated in the National Park, and is just outside the town of Bar Harbor.

RESIGNATION of Samuel K. Lothrop from the directorship of the Peabody Museum of American Archaeology and Ethnology is announced. Dr. Lothrop was to have taken office September 1, but never assumed the duties of his position. The functions of the office are temporarily being discharged by Dr. Edward Reynolds, associate curator. Dr. Lothrop was preceded in the Peabody Museum by C. C. Willoughby, who, after serving as director since 1915, resigned last January.

AN ENGLISH EDITION, limited to 300 numbered copies, of the late Professor Hjalmar Stolpe's *Collected Essays in Ornamental Art* has been prepared in two volumes. The price is £5 (90 Swedish crowns), carriage free, and orders may be placed with the firm of

Aktiebolaget Familjeboken, Stockholm. Volume 1 contains Stolpe's treatise "On Evolution in the Ornamental Art of Savage Peoples" (originally printed in *Ymer*, 1890–91, and Englished in the Transactions of the Rochdale Literary and Scientific Society, 1891–92) and his *Studies in American Ornamentation*, which appeared in Swedish in 1896 and for which the author received the Loubat prize. The Introduction is by Henry Balfour. Volume 2 contains 20 large plates and about 300 beautifully executed reproductions with explanatory text. Both volumes are printed on paper of the finest and most desirable quality.

DR. ROBERT RANULPH MARETT has been elected rector of Exeter College, Oxford, in succession to Dr. L. R. Farnell. Dr. Marett is known for his contributions to anthropology and has been president of the anthropological section of the British Association.

MRS. ZELIA NUTTALL has been elected a corresponding member of the Geographical Society of Lima, Peru, in recognition, a correspondent writes, "of her having demonstrated that the inhabitants of tropical America dated the beginning of their solar year from the moment when the sun passed the zenith—which has led to the revival of the observation of this phenomenon as a school festival throughout Mexico and, under the patronage of the Geographical Society of Lima, is also to be instituted as a national festival for children throughout Peru."

THE DEPARTMENT OF MIDDLE AMERICAN RESEARCH, of the Tulane University of Louisiana, has published a pamphlet on its activities and aims (September, 1928, New Orleans). It summarizes the expeditions undertaken by the Department, and gives a brief statement as to the collections secured.

THE INSTITUT D'ETHNOLOGIE, of the University of Paris, announces that a sixth volume of its Memoirs (*Travaux et Mémoires*) is in press. It is by L. Homburger and deals with the nominal prefixes of several African languages.

DR. BRUNO OETTEKING, curator of physical anthropology, who has lectured on this subject in Columbia University since 1921, has received a definite appointment therein as a lecturer. An institute of physical anthropology of the University, in Dr. Oetteking's charge, is in process of organization. Dr. Oetteking will retain his curatorship in the Museum of the American Indian, Heye Foundation.

DR. WALDEMAR BOGORAS, of the Museum of the Academy of Science at Leningrad, has been studying the collections in the Museum of the American Indian, Heye Foundation, with a view of preparing a memoir on the sledge as depicted in the art of the Eskimo and of adjacent peoples for publication by the latter Museum.

THE PUBLISHING FIRM, Konkordia A.-G., Bühl (Baden), is issuing a special magazine of folklore, entitled *Oberdeutsche Zeitschrift für Volkskunde*. The editor is Professor Eugen Fehrle. The journal appears semi-annually.

THE SOCIOLOGICAL PRESS, under the editorship of Drs. McQuilkin DeGrange, of Dartmouth College, and Malcolm M. Willey, of the University of Minnesota, are printing and reprinting material of interest to students of the social sciences. According to their statement the aim is to rescue from periodicals otherwise inaccessible articles. In addition there will be occasional original treatises that would not be normally published by commercial firms. Special rates are furnished for large orders for class use. Among the papers already issued may be mentioned: The Superorganic, by A. L. Kroeber; The Negro and the Intelligence Tests, by Melville J. Herskovits; The Present Status of Eugenics, by Raymond Pearl. All communications should be addressed to The Sociological Press, Hanover, New Hampshire.

PROFESSOR R. KARSTEN has set out on a new expedition to South America to last eight months. He proposes to visit all the Jibaro tribes in the Marañon region (eastern Ecuador and Peru) in order to get a complete idea of the Jibaro culture, but in addition he hopes to be able to visit a couple of almost unknown and very primitive tribes near the rivers Ucayali and Napo. Later on he will visit the centers of ancient Inca empire, Cuzco, and the Titicaca lake, where survivals of the Inca culture may still be found among the Aymara and Quichua Indians.

MRS. L. ARMER gave a motion picture talk on *Ceremonial of the Navajo Mountain Chant* before the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, November 26, 1928.

THE NATIONAL MUSEUM of Canada has organized a series of free public lectures for children and adults. Mr. Harlan I. Smith is a member of the lecture committee. The lectures announced include one on Glimpses of Native Life in Far-off New Guinea, by D. Jenness.

THE EDITOR-IN-CHIEF of the Encyclopaedia of the Social Sciences, Professor Edwin R. A. Seligman, announces progress with the preparation of the first volume, which will probably be published in the summer of 1929. It will contain the Introduction and run through the letter A. The volumes are subsequently expected to succeed one another at the rate of two or three a year. The entire work will embrace 15 volumes at the price of $7.50 per volume. Members of the Constituent Associations are entitled to a reduction of 40%, provided they send in their applications within the next few months.

THE FIRST NUMBER of Social Science Abstracts is to be published in March 1929. The subscription price is $6.00 per volume. The intention is to abstract and index the world's literature in the social sciences. Isaiah Bowman is chairman of the Board of Directors, and F. Stuart Chapin, editor-in-chief. Among the advisory editors from abroad are: W. G. Bogoras-Tan, Leningrad; Celestin Bouglé, Paris; Manuel Gamio, Mexico City; L. Levy-Bruhl, Paris; E. Nordenskiöld, Göteborg; Albrecht Penck, Berlin; Richard Thurnwald, Berlin.

SIR WILLIAM BOYD DAWKINS, the well-known British geologist, formerly professor of geology and paleontology at the University of Manchester, died on January 15 at the age of ninety-one years.

A GIFT of $270,000 by John D. Rockefeller and a maintenance income by the Laura Spelman Rockefeller Memorial Foundation has been provided for the establishment and upkeep of a research institute and graduate students' training school in anthropology. Headquarters of the project will be in Santa Fe, New Mexico, where the Southwest Museum will be located as a laboratory for professional anthropologists and a working base for field training for graduate students. The controlling board will consist of Dr. Fay-Cooper Cole, of the University of Chicago; Dr. A. V. Kidder, of the Carnegie Institute; Dr. Roland Dixon, of Harvard University: and Dr. A. L. Kroeber, of the University of California.

GEORGE GUSTAV HEYE, director of the Museum of the American Indian, New York City, which he founded, has been awarded the honorary degree of doctor of philosophy by the University of Hamburg.

American Anthropologist

NEW SERIES

Vol. 31 JULY-SEPTEMBER, 1929 No. 3

CULTURE HORIZONS IN THE SOUTHWEST

BY T. T. WATERMAN

THE SOUTHWEST AREA

THE Southwest is usually viewed as a striking example of a culture area. As seems to be usually the case, however, the "culture" which all of us allude to with off-hand familiarity, is just the least bit intangible. For instance, it is a phenomenon without any marked boundary. Everyone, I think, recognizes that culture areas in general are not areas in any ordinary sense, for every culture area shades off into others, and is at most an indefinite region, with a focus where the culture is most striking. In the Southwest and in all other corners of the earth which I know about, the culture is itself a sort of patchwork, loosely cobbled together, consisting in large part of elements from outside. Corn and pottery, for instance, are of first-rate importance in Southwestern Indian life, but corn and pottery are in no peculiar sense Southwestern. Both are diffused over an enormous region, extending for thousands of long miles beyond the Southwest. Some of the institutions and the arts which we look upon as most peculiar to the Southwestern villagers (for example, kivas) are not encountered except in part of the region. It is difficult in brief, to find anything in the Southwest which is in any complete sense Southwestern.

This Southwestern or "Pueblo" country is the one part of North America where we find the best evidence of a long succession of cultures. As we go back, however, into earlier horizons, we find that the ancient remains gradually lose their "South-

western" complexion. This statement applies, for example, to houses. What we think of as a building style peculiarly and typically Southwestern, the terraced "apartment house" village, or "pueblo," is characteristic of only part of the region, and moreover, was in vogue for only a brief period, speaking archaeologically. If we take the terraced village for a problem, and trace the story of this type of habitation back to its beginnings, we find ourselves following clues which lead us out of the Southwest altogether. If we examine the pottery of the present-day villages, and follow the history of the craft back into the past until we encounter pottery products as ancient as possible, we shall very likely find ourselves sooner or later in horizons which do not seem Southwestern at all. Late Southwestern pottery is certainly very conspicuously different from early wares in the same region, and Southwestern pottery traced back to its original ancestry loses in some degree its Southwestern identity. I do not see that this needs to disturb us. We need merely to admit that when we pry into the very ancient horizons in our search for one thing, we are going to have to be satisfied with finding something else.

To trace the history of anything in the Southwest to its beginnings, is not easy or simple. A brief survey of the books which concern Pueblo culture brings to light a lot of contradictions, a sort of ballyhoo of inconsistent and warring ideas. The history of architecture, for instance, the story of how the terraced villages came into being, has been a popular theme with writers, and a theme much mooted. Perhaps the best way to present the various states of thought on any of these Southwestern conundrums, is to cite authors who have expressed their ideas in the past. The material listed below contains a few direct quotations, marked in the usual way. Material not included in quotation marks, represents the gist of what a given author said, or what he apparently tried to say. There is relatively little in the literature which lends itself to direct quotation. We may begin by seeing what various writers have said about culture epochs in general, the successive stages of advancement reached by the Southwestern natives, especially in early times.

Stages of Culture According to Various Writers

In the following summary or tabulation early stages or horizons are placed underneath the later ones, in the proper stratigraphic positions. All sources mentioned here and in subsequent passages are listed in a terminal bibliography.

Cushing, 474, 1882. Our author recognizes four stages, or levels, in what he calls "culture growth," as marked especially by habitations.

4. The people move into the cliffs, where, for lack of space, one clan house is set upon another. Thus arose the terraced village, or pueblo.

3. Isolated single story clan houses are used.

2. Rectangular rooms arise through the crowding or compression of circular dwellings.

1. The earliest houses are circular structures of lava blocks.

Mindeleff, 93, 1894. Our author recognizes two successive stages.

2. There is a later form of village, consisting of a cluster of houses on a mesa.

1. Earlier habitations are single houses, or small clusters, located in valleys.

Prudden, 61, 1897. This author recognizes two fundamental horizons.

2. The "Cliff Dweller" horizon. His use of this term is explained below.

1. The "Basket Maker" horizon. This term he borrowed from Mr. Wetherill.

Aside from the choice of catchwords, Prudden seems to have hit the mark. All recent investigators make a similar distinction.

Morris, 18, 1921. Four culture horizons are found in the San Juan watershed.

4. Late black on white (referring of course to pottery).

3. Early black on white (with reference to pottery, as above).

2. Pre-pueblo (here our author has dwellings in mind).

1. Basket-Maker.

This classification seems a bit hard to follow, since the author we are quoting passes from pottery to pueblos, and from pueblos to baskets. The things he seems to regard as symptomatic in each horizon, from the standpoint of *pottery*, are as follows:

4. Late black on white (the Grand Period), best development of smooth wares.

3. Early black on white (Mesa Verde period), best development of corrugated wares.

2. Pre-pueblo (period of "flimsy houses"), pottery wares in which less than thirty per cent of the sherds are decorated.

1. Basket-Maker (period of a people presumed by our author to have lived without houses of any sort), pottery entirely lacking.

Kidder, 68, 1924. Out author concludes that there are three stages in Mesa Verde pueblo growth, with a probable fourth stage below the bottom of the established series.

4. Mesa Verda pueblos (such as Spruce Tree house).

3. Multiple-unit villages, which resulted from the aggregation of earlier types of structures.

2. Unit-type dwellings, as described by Prudden.

1. Low mounds with "archaic looking" pottery. One of these mounds was excavated by Fewkes, who laid bare a one story structure, without a kiva, which he called Pipe Shrine house.

Kidder, 85, 1924. In the Santa Fé region there are three types of ruins. Ranged according to age they are:

3. Large pueblo structures of at least two stories.

2. Small houses in groups, one story high.

1. Small settlements ("pre-Pueblo").

Kidder, 74, 1924. A still earlier sequence, i.e., a sequence occurring further down in the stratigraphic scale, recognized at Kayenta.

3. Pre-Pueblo dwellings (i.e., rectangular pit-houses).

2. Post-Basket-Maker slab walled houses (our author having in mind pit houses).

1. Basket-Maker sites. "No houses have ever been reported"; but the sites which have been studied show numerous structures with slab walls known as "cists."

Jeançon, 214, 1926. This authority recognizes six stages or periods. They are characterized by the form taken by dwellings as follows:

6. Large pueblos, representing an aggregation of structures of type 5.

5. Small houses, six to eight rooms, representing an elaboration of the single room structures of type 4.

4. Single-room houses, built above ground, with walls of masonry.

3. Pit-houses of slab masonry ("slab masonry" with Jeançon means walls of stones horizontally coursed).

2. Pit-houses with cobblestone walls.

1. Pit-houses with walls made of clay grouting plastered on the earthen sides of the excavation. The roof is gabled.

Comment.—Cushing in the passage here cited makes his well-known suggestion concerning the history of Southwestern houses, which has attracted much criticism and some praise. He wishes us to believe that round houses in the course of time turned into square houses, through being crowded together: that thus a multiple-room clan house arose: and that owing to the fact that the ancients had meanwhile moved into caves, one clan house was set on top of another, producing the well-known terraced "apartment-house" structure. This is logical enough, and on the whole, it is

to be set down to Cushing's credit as a good guess. The theory is based in part upon an inner analysis of words, and in a paper published a year later, Cushing changed his ideas about these etymologies. When we have regard to the data now available, we realize that the series of house forms does not properly begin where Cushing said it did; with circular houses of lava blocks. Structures are now known which are earlier by a thousand years than the "earliest" type of structure which Cushing figures. Nor did rectangular houses develop out of circular houses on account of "crowding." On the contrary, houses became rectangular before communal dwellings ever appeared. Isolated rectangular houses, built in the open, are common in many localities and the pottery and other associated remains suggest that these rectangular pit-houses are very early. Cushing's idea that the terraced houses are a product of the caves remains unsupported. Terraced structures are as numerous outside of the caves as in them, and quite as early.

Mindeleff's remarks do not conform to the facts. Very "early" remains and ruins are reported from mesa and valley alike, and "later" remains likewise.

Prudden seems to have been a very careful and a very sensible observer, gifted with considerable acumen. This author does not use "cliff-dweller" in the sense or senses in which other writers have used the term. He does not hold that there was any separate cliff-dweller stage of advancement, but uses the term as a matter of convenience. His is a very early attempt at the development of a stratigraphy. He finds Basket-Maker material in a lower horizon, Cliff-Dweller material remains above. This recognition of two horizons has been the basis of the more elaborate classifications of culture, founded on data made manifest after Prudden's day.

Morris has dealt briefly with the cultures of a number of epochs and has summarized the principal symptoms of each epoch after a fashion, or, to speak more accurately, after his own fashion. His remarks leave the reader more or less puzzled. Thus he says that the people of his "second" period, the pre-Pueblo, had houses one story high, while the people of a subsequent epoch, the

"early black-on-white," built houses two stories high. This seems fair enough. The people of the first period had one variety of corn, while those of a third luxuriated in three varieties. This is certainly not illogical. The house remains of his third period he reports as more widely distributed than those of his second period, but the remains of his second period, he says, are to be found almost everywhere. This becomes a bit mystifying, for a distribution wider than universality is indeed hard to imagine. The Basket-Makers, according to Morris, had no pottery, no bows, and no houses. This last item sounds most improbable. The Basket-Makers, lingering along in what to Southwestern students seems a primitive stage of culture, were nevertheless enjoying in their day a state of progress far in advance of the tribes existing in modern times in other parts of North America. These other tribes, without agriculture, and sans pottery, living by hunting and wild products, nevertheless build habitations most complex and elaborate. It is hard to imagine that the Basket-Makers of our Southwest could have advanced so far in a number of lines, and meanwhile have lagged so far behind as Morris says they did in the matter of living accommodations. I cannot for my part imagine a farmer raising corn, until he has in mind a place to put it. The bare fact that the Basket-Makers were corn-growers raises a suspicion that they had permanent houses. I see no reason to suppose in any case that they were more backward than the basket-using tribes of California; and the California tribes built houses, plenty of them, and very good ones. The early Southwesterners may have built houses of perishable materials. That I am ready to believe. In fact I believe it, in any case. Morris' folk, then, are to be pictured not as a houseless herd, but as folk who left no discoverable ruins. This also is the opinion of a better student than myself.

Kidder, 78, 1924. "The houses of the Basket makers have never been identified. It is probable that they lived in more or less temporary structures of perishable material, built in the open."

Morris' chronology is very jumpy, for he sails from horizon to new horizon, leaving enormous gaps in the series.

Jeançon's classification is much more consistent with itself. His "pit-house" with a gable roof is, however, a long way from the actual base of the series. He assumes that clay walls, cobblestone walls, and walls of coarse masonry, form a genetic series. This is almost certainly an error, for all three types of construction are to be found in the walls of one room. What Jeançon noticed were differences that result from the nature of the building materials which happen to be at hand in a given vicinity. I think this is unmistakable.

In Kidder's table of culture sequences we are at last approaching something a simple and straightforward mind can grasp. In this scheme Kidder follows data of the most unimpeachable sort. He repeats Morris' declaration that from the Basket-maker epoch no dwellings have been reported. They have not been reported as dwellings, that is to say. Graves of the period have been described, however, in terms which throw some light on how the ancients thought things ought to be built. Numerous "cists" also are pictured, described, and alluded to, some of which cists come pretty close to representing houses. At least, when we read the literature, we hear only of "cists," but when we look at the photographs of such sites, we see the foundations of structures which certainly are big enough for houses, and look like houses. Somebody, according to Nussbaum, built a fireplace in one of these cists. This particular cist, therefore, was available to some mortal for a dwelling. Whether this mortal was an Indian or a cowboy, the fact remains that the cists served as a habitation. If a structure is used for a house, whether it serves its original owner or somebody else, I think we can call it a house, and we can learn from studying it, what kind of houses the ancient peoples presumably built. In any case, these "cists" are just about what we should expect to find if we were looking for house remains of the Basket-Maker epoch. Cists they have been called, and cists let them be. Meanwhile, they are burrowed somewhat into the ground, and stone slabs are set more or less on edge around the base of the wall. The upper part of the structure, judging from photographs of a few remnants of such cists which are in the literature, is built up of adobe plastered onto vertical wooden poles

or slats. This is known as "jacal" construction, and is still popular among the Papago, the Yuma, and other tribes of the Southwest. Statements on the part of Kidder and Morris that we know nothing of Basket-Maker houses, are, I think, only partially true. To assume that they had no dwellings of any sort, as some investigators have done, seems naïve. It is simpler to assume that we have not found their houses, or that their dwellings were built of perishable material and have not left any traces of themselves.

Scale of Horizons According to Present-day Evidence

In discussing Southwestern chronology Morris remarks that his tabulation, as already quoted, fits on to the bottom of the chronology worked out by Kidder at Pecos. The following list therefore shows Morris' San Juan chronology, with what he says is Kidder's Pecos chronology amalgamated with it. Pecos of course includes much later horizons than those uncovered in the San Juan region.

Table of Periods: Morris and Kidder

San Juan (Morris)	*Pecos (Kidder)*
8	Modern painted ware
7	Historic glaze
6	Three-color glaze
5	Two-color glaze
4 Late black-on-white	Two-color ware
3 Early black-on-white	
2 Pre-Pueblo	
1 Basket-Maker	

The terms Basket-Maker and pre-Pueblo in this table mean a great deal. That is, each term is a sort of portmanteau or catch-all. Each of the terms, as used by the authors we are quoting, includes an enormous variety of things, and there is every likelihood that each period saw a radical evolution in certain artifacts, especially pottery and houses. For example, the whole art of pottery evolved, or was introduced, somewhere in the Basket-Maker epoch. At least it appears full-blown in the succeeding epoch. In the

periods later than the Basket-Maker, the art of pottery was merely improved and elaborated. In place of defining the Basket-Maker horizon as the horizon without pottery, we should define it rather as the period in which simple pottery made its first début.

Whether or not the art of pottery leaped into sight like Athena from the brain of Zeus, is another matter. I doubt if it appeared as suddenly as this tabulation would lead one to believe. The pre-Pueblo wares, though they appear at the very base of the above tabulation, are already at that time well tempered, fired, and well embellished. In brief, pre-Pueblo pottery is pottery of a highly developed, or at least well developed, type. A manifest need arises of splitting the Basket-Maker and pre-Pueblo periods into subdivisions, if we are to portray a continuous evolution in ceramics.

The Basket-Maker epoch was in fact the epoch in which the southwest became the Southwest, with highly characteristic ideas and products. Southwestern archaeology as a science has edged along to the point where the origin of the culture lies almost in view. But concerning this origin, all the workers remain mute.

Yet if we take all that has been said, and hinted by various workers, about the genesis of culture in the Southwest, it seems possible to construct a tabulation showing in some detail the evolution of the Southwestern Indian's manner of living, from its beginnings. I should apply different names to the successive horizons from any that have been used so far, for the names now in use seem to be badly chosen. Such a term as "post-Basket-Maker" for instance implies that the people in this period had ceased to make baskets, which is not the case; its combination of Latin and English is rather distressing; and the term is clumsy.

In every case it seems better to classify periods by means of some institution or craft which runs through them all. Pottery does not extend down through all reported horizons. Textiles do, but the textiles are in such a state of wreck, and so scanty, that they would hardly serve us when we try to distinguish periods. They have survived for the most part only in fragments, from a

few special sites. We might expand the term Basket-Maker, using baskets to epitomize the whole evolution of culture in the Southwest, and classifying the stages by the types of baskets they produced. Every period produced its baskets, along with other textile fabrics, and one could trace a very clear evolutionary sequence.

Meanwhile every group of people in the Southwest, in every period, including probably the earliest period of all, built habitations, and the ruins show the most sensational variations from one period to the next. Consider, for example, the contrast between circular underground lodges, each built by itself, and the later structures like Cliff Palace or modern Zuñi. If we comb the literature, extracting all possible data concerning house forms, we get a chronological sequence such as that reproduced below. This tabulation shows along with successive house types the relative stage of advancement in another important art; that is, pottery. The form taken by the lower part of this table seems to be justified theoretically, though the books do not tell us very much about the remains found in these horizons; and less about the chronological sequence. To avoid misleading any reader, I have marked doubtful or theoretical statements with an asterisk, as philologists mark their hypothetical Aryan roots, which do not appear in any actual document. The terms adopted by the Pecos Conference are printed for convenience alongside of my own. This table is based entirely on the data quoted or cited in Kidder's *Southwestern Archaeology*. It is simply what actually emerged when an outsider, in this case myself, tried to visualize the complicated data so faithfully summarized in Kidder's well-known reference work.

Tabulation Illustrating Culture Horizons in the Southwest

(Early horizons appear at the bottom)

13. Horizon of existing pueblos

(Pueblo 5 of the Pecos Conference)

This is the so-called modern period, or the period of villages still inhabited, such as Walpi or Zuñi. Pottery consists of painted

Tabulation Showing a Theoretical Succession of Types of Houses in Thirteen Hypothetical Horizons, with the Types of Pottery Apparently Associated with them at Certain Well Known Sites

Architectural forms	*Names of ruins*											
	Aztec	Mesa Verde	Chaco	Zuñi	Upper Gila	Pecos	Hopi	Kayenta	Middle Gila	Hawikuh	Mimbres	Chihuahua
13. Existing pueblos Pueblo 5				Buff background		Modern painted	Recent, dirty-white slip			Recent glaze		
12. Historic pueblos Pueblo 4B				Black glaze polychrome		Two-color glaze Glaze 6 Late glaze 5 Early Glaze 5 Late Glaze 4	Yellow without crackling					
Decadent pueblos Pueblo 4A	Mesa Verde pottery					Early Glaze 4 Glaze 3 Glaze 2 End of corrugated Glaze 1 Biscuit ware End of black-on-white	Sikyatki Jeddito yellow Orange red		Polychrome	E. Polychrome (life forms)	Middle Gila sherds	Polychrome
11. Great planned pueblos Pueblo 3B	Chaco pottery	Black-on-white	Upper Gila sherds B-o-w; corr.	Little Colorado black-on-red B-o-w; corr.	Black-interior bowls Corrugated	B-o-w; corr.		Polychrome		D. Glaze plus paint C. Glaze on-white B. Green-glaze on-red Black-on-gray; corrugated		
10. Rambling pueblos Pueblo 3A							Black-on-white corrugated	Black-on-white; corrugated Proto-Kayenta wares		Pre-Hawikuh wares		
9. Multiple-unit structures terraced pueblo 2		Multiple-unit pottery	Early b-o-w; first corr.	Larger-house pottery	One-story-house pottery	Two-story-house pottery						
8. Unit-type structures												
7. "First" apartment house structures												
6. Single room surface houses			Little-house pottery			Archaic b-o-w; corr.						
5. Square pit-houses Pre-pueblo; Pueblo 1	Pre-pueblo	Pre-pueblo pottery	Pre-pueblo pottery	Pre-pueblo pottery	Archaic b-o-w	Pre-pueblo						
4. Square pit-houses Post-Basket-Maker, Basket-Maker 3	Post-basket-maker pottery				Pit-house pottery			Buff ware, with pattern Buff ware, line decoration				
3. Round pit-houses Basket-Maker 2	Fired pottery, no design							Buff ware, not decorated				
2. Round pit-houses Basket-Maker 1	Clay vessels, tempered				Basket-Maker utensils			Clay vessels, tempered				
1. Round pit-houses	Clay vessels, not tempered											
Nomads (?)												

wares, decadent when compared to earlier products, mostly displaying animals or other naturalistic forms.

12. Horizon of HISTORIC PUEBLOS

(Pueblo 4 of the Pecos Conference)

This has been called the "proto-historic" period. It is a time of shrinking Pueblo frontiers, of economic difficulties, and of the coming of the Spaniards. The period includes the years up to the Pueblo revolt. Pottery in this period is alrēady somewhat decadent.

11. Horizon of GREAT PLANNED PUEBLOS

(Pueblo 3 of the Pecos Conference)

This is the "grand" period; the epoch which saw the erection of Pueblo Bonito and Casa Grande. All the arts and crafts flourished. It is the period of the most elaborate painted wares. The designs are geometrical, most elaborate, most carefully thought out, and painstakingly executed. Patterns entirely mask the decorative field. Typical wares are the classical Chaco black on white, or the Kayenta polychrome.

10. Horizon of BIG RAMBLING PUEBLOS

This is the era of Cliff Palace, and constitutes the earliest "genuine pueblo" horizon. It is the period of the finest corrugated wares.

9. Horizon of MULTIPLE-UNIT VILLAGES

This has been called the proto-Mesa Verde horizon. The pottery is in many respects very like that of the well-known Mesa Verde ruins, but cruder.

8. Horizon of UNIT-TYPE DWELLINGS

The structures are very peculiar, as described by Prudden. The village consists of a range of one-story rooms, with a kiva connected by an underground passage. Little has been said about the associated pottery, but in decoration it seems to lack the meticulous filling in of spaces, which we find in subsequent wares.

The unit-type dwelling "holds the germ of true Pueblo architecture," says Kidder. This statement, if true, justifies us in making an archaeological horizon of the unit-type remains. Certain it is that information is sadly lacking.

7. Horizon of UNORGANIZED ONE-STORY APARTMENT-HOUSE SETTLEMENTS

This is the "early pueblo" horizon. Pipe Shrine house is a typical structure. Pottery is characterized by the boldness of the patterns or, to put it in another way, by the absence of the elaborated and high conventional embellishment so familiar in the later wares of the region.

6. Horizon of SINGLE-ROOM SURFACE HOUSES

(Pueblo 2 of the Pecos Conference)

This has been called the "small house" era; but other horizons have been tagged with this same label by various writers. The pottery wares are marked by a noticeable percentage of sherds without decoration and plain gray or buff in color.

5. Horizon of RECTANGULAR PIT-HOUSES (later phase)

(Pueblo 1 of the Pecos Conference)

This is frequently mentioned as the "pre-Pueblo" horizon. Corrugation appears on potsherds, but is limited to a band around the neck of the vessel. Sixty per cent of the sherds are not decorated at all.

4. Horizon of RECTANGULAR PIT-HOUSES (early phase)

(Basket-Maker 3 of the Pecos Conference)

Dwellings are similar to those of the fifth horizon, but the associated remains have caused these levels to be set off by common consent as a so-called "post-Basket-Maker" horizon. Pottery includes wares such as black on gray, buff, and fugitive red. Seventy-five per cent of the sherds are without decoration. Embellishment where it occurs consists of lines combined into simple patterns. These patterns are arranged across the decorative field,

but the background is not masked. Patterns in some cases are found on the outside of vessels, but more commonly on the inside of shallow bowls. This has also been called the "slab-house" period, which is not a bad name for it. Crania are not deformed.

*ROUND PIT-HOUSE horizon (*latest phase)

These *later circular houses supply potsherds in considerable variety. The wares are tempered, well fired, and are altogether better than we should expect wares in this horizon to be. Designs are in many cases derived from textile patterns. Such designs appear on the inside of bowls. Exterior ornamentation consists of simple line decoration, and these lines are badly drawn, the brush work is poor, and they are not well spaced.

*ROUND PIT-HOUSE horizon (*middle phase)

(Basket-Maker 2 of the Pecos Conference)

These *earlier round dwellings supply no traces of pottery, but they do supply crude clay vessels which are not fired. Such vesssels are tempered with plant fiber, and are marked in many cases with impressions of finely made coiled basketry.

*ROUND PIT-HOUSE horizon (earliest phase)

(Basket-Maker 1 of the Pecos Conference)

These *earliest round pit dwellings supply fragments of clay vessels, not tempered at all. Along with these are encountered textile fabrics showing complicated weaves resembling basketry rather more than cloth.

In the hope of being brief, as befits a maker of tabulations, I have in the above ignored difficulties, and have dedicated myself to the task of equating types of pottery with types of houses. What I have set down here seems to be the gist of what the books say. There exists a mass of information concerning the evolution of cultural objects, including sandals, weapons, textiles, corn, and a thousand other things. If one would consider any one type of artifact, and trace its various forms through this series of horizons, one would get a rather clear evolutionary story.

This story does not unroll itself in any simple way. Baskets, for instance, are in a high state of perfection at the bottom of our tabulation, but soon begin to deteriorate as we pass toward the top. Arts allied to basketry, like the making of feather and fur blankets, show a similar demoralization, almost from the start. The manufacture of sandals reached its highest perfection rather far down in the scale of horizons, and then degenerated. Pottery shows a very orderly progression after its first appearance until almost the top of the tabulation is reached. At this point, however, we witness a rather abrupt débacle. In other words, what we see on every hand is a progression as we pass upward through the horizons, remembering only that progression is not necessarily progress toward perfection. All the arts did not progress evenly. For example, the second "rectangular pit house" epoch, saw a remarkable jumping ahead in pottery techniques, while architecture lagged behind. This happened, no doubt, in the case of other things, and cannot be remedied by a tabulator. We must, I presume, reconcile ourselves to the facts, even though they spoil the orderly appearance of a diagram.

I should like next to discuss the evidence on which this tabulation rests; that is, to take up a number of topics, and indicate just what it is that the literature tells us about them. Writers are often laconic, and non-committal. Terms like "early," "archaic," or "crude" are freely used, often in different senses by different commentators. When these terms are used by somebody to describe potsherds which he has encountered, they are extremely baffling. I have satisfied myself with pointing out the evidence supplied by the authorities, with a few remarks about the nature and peculiarities of this literature. I have little to contribute to the discussion except a fresh viewpoint.

Let us begin by considering a few matters about which the literature is particularly vague and contradictory.

Points Offering Difficulty

The Cliff-Dwellers

The term "Cliff-Dweller" has long enjoyed a vogue, and has been tremendously popular. We might well ask ourselves whether archaeologists believe in the Cliff-Dwellers, or not.

Cushing, 353, 1891. The Cliff-dwellers abandon the cliffs in order to find homes closer to the "salt trail" (the trail along which salt passed as an article of commerce).

Fewkes, 195, 1900b. There was a cliff-building stage of culture.

Fewkes, 485, 1916. The cliff-dweller abandoned the caves and moved to the valleys, where he built pueblos.

Fewkes, 561, 1895. There never was any Cliff-dweller period. One and the same folk lived in the cliffs, in cavate lodges, and in pueblos, as convenience dictated.

Mindeleff, 159, 1895. Cliff-dwellings are relics of an early stage of culture.

Henshaw, 112, 1905. The Cliff-dwellers were the ancestors of the existing pueblo tribes.

Prudden, 244, 1903. There was no cliff-dweller stage of culture.

Comment.—We see in this tabulation that Fewkes contradicts Fewkes, and Prudden contradicts Cushing, while we latter-day investigators have to make up our minds from independent evidence. This evidence points to the fact that the cliff ruins (we do not allow ourselves to speak of "Cliff-Dweller" ruins) have been somewhat recklessly exploited. The reason is that cliff ruins, being sheltered from the elements, supply excavators with mummies, and examples of cloth, and other sensational remains. This is perhaps the reason that the word "cliff-dweller" is so extensively used. Corresponding ruins standing out in the open have not proved nearly so seductive to archaeologists or pothunters. "Relics" and "curios" from cliff ruins are very common in museums, and accounts describing cliff structures are very common in the literature. In the meantime the sites found in the cliffs contain the remains of numerous periods of culture, and there is little reason, if any, to recognize at this late day any "Cliff-Dweller" stage. If the cliff ruins had been let severely alone until archaeologists understood their business better, the existence of various stages of culture there, the remains of forty centuries of occupation in various stages of advancement, would long ago have been recognized. During every stage of advancement in the Southwest, apparently, certain individuals or groups have lived in the cliffs. Of all curious remarks about Cliff-Dwellers, Cushing's idea about the "salt trail" seems most unfounded.

Relations with Mexico

Fewkes, 167, 1898. Ancient vases from Arizona resemble wares from Mexico.

Baxter, 525, 1882. This author recognizes Toltec, Aztec, and Inca relationships in the pottery at Zuñi.

Lee, 412, 1872. Ruins in the Pima mountains are said by our author to be Aztec or Toltec.

Bandelier, 578, 1892. Elements "derived from Mexico" are recognized in Southwestern architecture.

Bandelier, 581, 1892. A gradual transition is visible in architecture as one passes from the Southwest toward Central America.

Fewkes, 173, 1896. Ancient Pueblo pottery is more like that of Mexico.

Fewkes, 325, 1907. Specimens of pottery from Casa Grande do not indicate Aztec culture, or that of any other Mexican race.

Huntington, 451, 1910. Arizona Indians are the ancestors of the Aztecs and Toltecs.

Hallock, 396, 1902. There was an immense exodus from Central America into Arizona, bringing in architecture and the arts.

Mearns, 747, 1890. Little violence would be done by uniting all of our Southwestern ruins with those in the northern tier of Mexican states.

Nordenskiöld, 1893. "Pueblo culture is not derived from Mexico, but was influenced by Mexico in its decadence."

Fewkes, 58, 1920. Stone masonry was not introduced from Mexico.

Comment.—The total evidence for relationship with Mexico is about in the status represented by the above random extracts. In other words, we can all of us believe what we like. The evidence suggesting contact in late periods is rather more satisfactory than for contact in early times. Baxter manifestly knew little or nothing about the Aztecs and so dragged in the Toltecs, and then the Incas, for good measure. In connection with Ellsworth Huntington's remark, one can only rejoin that in dealing with these matters Huntington is at his worst. His best is none too good. Bandelier's remark is noteworthy.

Genesis of the "Pueblo"

Mearns, 747, 1890. Walled buildings are of two kinds . . . . those in caves and those in the open.

Gannett, 668, 1880. There are two classes of structures, those in fertile bottom lands, and those in the cliffs.

Coronado . . . . The cities of Cibola have large houses, the smallest one story high, others two or three stories high, "and the house of the Lord four stories high."

Cushing, 349, 1891. The Cliff-dwellings of the older type are simple huts, disposed separately along the back walls of caves. These huts became rectangular, because they were crowded together.

Cushing, 357, 1891. "Yuman" houses at a period neither early or late, were L-shaped series of rectangular rooms. They owe their rectangular shape not to crowding, but to survival from a log-house type.

Cushing, 350, 1891. The round kiva is a survival of a separate round house.

Cushing, 344, 1891. Structures like Pueblo Bonito ("round" or "half round") are derived from the cliffs. The shape was established by the configuration of the caverns.

Cushing, 363, 1891. There are two sources for Pueblo architecture.
1. The round house, a product of the cliffs.
2. The rectangular house, obtained from the Yumans. "They merge in composite round and square pueblos, which are late."

Fewkes, 397, 1910. The step from the cave-dwelling to stone buildings built in the open, was an early one, probably brought about by overcrowding.

Fewkes, 393, 1910. The germ of stone architecture arose from the habit of dwelling in caves.

Bandelier, 425, 1892. In southwestern New Mexico and Arizona, and in the Sierra Madre of Mexico, are cliff-dwellings built without reference to the curved form of the caverns.

Mindeleff, 194, 1894. The supposition that rectangular rooms developed from circular rooms, by crowding in caves, is unnecessary.

Comment.—In his remark quoted at the end of the above display of curiosities, Mindeleff seems to have summed matters up rather well. Every step in development, from round pit-houses to square pit-houses, and so on to terraced pueblos of great size, seems to be represented by ruins standing on open sites, far from caves. Rectangular structures certainly have no particular association with caverns. Moreover, the shift from round to rectangular rooms occurred long before apartment-house types of architecture were invented. Houses became square while people were still living in pits. The square pit-houses of early horizons were built separately and independent of each other. The "apartment-house" arose as a conglomeration of rooms already square, not as conglomerations of round rooms, made square

by crowding. Square pit-houses are much older than the earliest apartment-house structures.

Mearns, in his remark quoted at the top of the list, means perhaps to say that buildings are found in two sorts of sites. Gannett also seems to confuse the nature of the sites, which were selected by the ancients, with the types of buildings which they put up. The observation quoted from Winship's account of the Coronado expedition reflects the commonplace fact that the early Spanish chroniclers had "Lords" and feudal dignitaries on the brain, which is a matter easily understood, but a matter which does not add to the accuracy of their statements. By "round-house" our friend Cushing means Pueblo Bonito [sic], and by "Yumans" he means the ancestral Pueblo tribes. His choice of terms is certainly quaint; but even with these emendations, his passage continues to make no sense. By "round" house in his third excerpt, he does not mean what he means by "round" house in the fifth excerpt. In the one case he has in mind structures "round" like a kiva, or a stove-lid, or a pancake; in the other case he refers to towns with a semicircular ground-plan.

Fewkes in the passage here quoted seems to support Cushing; but fails to support Fewkes.

Casa Grande

Theories concerning ancient building operations in the Southwest have until recently been of a very random and wandering species. This is well illustrated by looking at some of the "wise cracks" in the literature concerning Casa Grande.

Fewkes, 435, 1910. Casa Grande was abandoned because of invasions from further down the river.

Fewkes, 325, 1907. The "Pima" abandoned Casa Grande because it was too big to defend.

Fewkes, 293, 1907. The compound at Casa Grande is Mexican rather than Pueblo.

Fewkes, 325, 1907. Specimens there do not indicate Aztec culture, nor any culture higher than "old Pima."

Fewkes, 435, 1910. The survivors of the builders of Casa Grande are the modern Pima and Papago.

Fewkes, 329, 1907. The Pima who went north after the fall of Casa Grande ultimately joined the Hopi, with whom their descendants still live.

Fewkes, 329, 1907. The ruined houses of the Little Colorado were built after the fall of Casa Grande.

The difficulty of getting from the literature any orderly impression of anything, is well illustrated by the following remark.

Fewkes, 126, 1900b. The Kintiel ruin is "modern" (post-Spanish) and is of the same age as Pueblo Bonito.

Pit-houses

In the Southwest pit-houses exist. Their remains in fact are fairly numerous. In some cases the traces of these pit-houses lie directly under rectangular Pueblo structures.

Kidder, 76, 1924. The statement that pre-Pueblo people (i.e., pit-house people) antedated the inhabitants of the pueblos and cliff houses, rests on definite stratigraphic evidence.

Moreover, there are two sorts of pit-houses, round and square. We have at once to ask ourselves which if either is the older, the rectangular or the circular type.

Hough, 290, 1901. Circular houses are older than square houses.

Right here then, at this point in the stratigraphic series, we observe the change, the metamorphosis, in the form of the house, which Cushing saw by an inner enlightenment, and in the entire absence of evidence, forty years ago. If Hough, Cushing, and Kidder are right, and there is every temptation to believe they are, if the circular pits are more ancient than the square pits, we should certainly expect to find primitive artifacts in the circular dwellings, more advanced and more highly evolved remains in the square pits. Houses of both kinds have been found to contain potsherds. Unfortunately for the peace of mind of the tabulator, some of the pottery from the square pits is "primitive," while some of the pottery from the round pits is very highly perfected. Certain of the round pit-house settlements supply no pottery at all. This is somewhat horrifying. I think something can be made out of the conflicting facts referred to this horizon. The evidence meanwhile can be summarized as follows:

Square Pit-houses

(The so-called pre-Pueblo and post-Basket-Maker horizons of the Pecos Conference)

Judd, 65, 1916. A house of fifteen rectangular rooms with a kiva is uncovered near Beaver City, Utah. Four of the rooms are contiguous. Walls are of adobe grout. Four superimposed levels of occupation exhibit no shift in artifacts.

Morris, 190, 1919. A ruin near Grass canyon in Southwestern Colorado, has one hundred pit-rooms, no two rooms in a row having the same level. Walls are of clay plastered directly to the side of the excavation, sometimes reinforced by sandstone slabs which are set on edge along the lower border. Pottery found in these ruins has no slip. Of 62 vessels, only 26 show painted designs. A red pigment applied to the exterior of certain vessels is of the "fugitive" type.

Fewkes, 110, 1922. Our author figures a square structure outlined with big flat stone slabs set on edge. If not a pit-house, this structure verges in that direction.

Bradfield, 71, 1923. The surface of a mesa near Pecos is covered with pit-rooms, which extend under the pueblo ruin called South House.

Colton, 299, 1920. Rectangular depressions outlined with stones are encountered in the Little Colorado area.

These excerpts indicate that the presence of pit-houses in the Southwest is well established. That the square pit-houses appeared later than the round seems to be agreed by tacit consent. The square pit-houses seem to have persisted through *two* cultural epochs. Such houses are accompanied by pre-Pueblo and post-Basket-Maker artifacts. There is however a most amazing lack of information about the earthenware vessels of the pre-Pueblo period. Corrugated receptacles are said to be conspicuous by their absence, but we find a prototype of the classical corrugated ware in utensils which display corrugation disposed in a band around the neck of the vessel. Some black-on-white ware is encountered in the pit-houses along the San Juan, but the brush work of this archaic black-on-white is crude when compared to that of the classical Southwestern wares. Figures are not well designed or well contrived, nor is there any unity in the pattern. We contemplate one type of embellishment which consists merely of groups of dots, and they are not always well spaced. So much is derived from the study of the remarks concerning "pre-Pueblo" pottery in Kidder's book. Personally, I am impressed by the addi-

tional fact that a square pit-house pot is always a pot with lines of decoration on it, showing against a background. Wares from subsequent horizons show designs which entirely cover a pot, in such a way that there is no background. Also, square pit-house pottery is not quite so well fabricated. Further, square pit-house pottery seems on the whole to carry an excessive load of temper. More than fifty per cent of the wares reported from a certain square pit-house site in Grass canyon, were not decorated at all.

Having thus disposed of the later or "pre-Pueblo" square pit-houses, we turn to the earlier or "post-Basket Maker" square pit-houses. This earlier epoch is marked by pottery which Kidder characterizes as "crude." The term "crude" has already been utilized by our author for describing proto-Mesa Verde and later pre-Pueblo wares, but on this present occasion he wishes, I think, to be taken literally. The wares are rough to the touch, ornamentation where it occurs is simple, and more than seventy-five per cent of the sherds are not decorated at all. Kidder mentions one site in this horizon, in Sagi canyon, which supplies a "crude gray ware." The color in this case may well be due to a subsequent incrustation of calcium carbonate. Some such wares are gray until this patina is dissolved off with hydrochloric acid, in which case they are seen to be a warm buff. Ornamentation in any case has the trait we spoke of a moment ago: that is, it consists of patterns standing out against a background or ground color. The pattern, that is to say, is festooned over the ground color of the vessel, offering a contrast with later wares, in which the pattern covers the ground color, and buries it out of sight. In these early wares we recognize a plentiful sprinkling of patterns copied from textiles.

The term "post-Basket-Maker" seems to rest mainly upon pottery, and what is said by investigators about it is not always clear or convincing. The catchword itself seems to be the child of Guernsey's brain, aided and abetted by Kidder himself, who insists that the dwellings are like those of the pre-Pueblo period, but that the pottery is "different," and more primitive. The assumption that evolution in house-building did not march ahead exactly in step with pottery is curious, but involves no great difficulty, and ought not to upset anybody.

Round Pit-houses (latest phase)

(Basket-Maker horizon; Basket-Maker 2 of the Pecos Conference)

Evidence that round houses preceded the square pueblos, which are so familiar in the literature, was first noticed forty years ago. Cushing in a paper on *Pueblo Pottery and Zuñi Culture Growth*, actually attempted to trace the evolution of the round type from the square. The structures which he placed at the beginning of his series were round towers, dating from a horizon which later investigations have set almost at the top of the cultural column. What seemed "early" to Cushing, looks rather late to us moderns. He was right in his general idea, but more than a thousand years off in his chronology. The idea that the Pueblo architecture of the most advanced periods was a by-product of cliff-dweller habits, brought to pass by the peculiar configuration of cave floors, seems to be entirely mistaken. The essential feature of the apartment-house Pueblo dwelling underwent development in the open, not in caverns. If the remains of the early stages of house evolution ever existed in the caves, they at least have never been brought to light by cave exploration.

For purely logical reasons, we should look for remains of these old circular dwellings in all parts of the Southwest. They would have been recognized earlier, and more of them would have been reported, if investigators had been on the lookout. As it is, they have been reported by some very accurate observers, from widely separated neighborhoods.

Diaz, Melchior, 1540 (quoted in Winship, p. 485.) The account describes a valley called Senora, or Sonora, which lies an uncertain distance from a place which some critics identify as Casa Grande. Diaz refers to ". . . . tall men like giants, naked, who live in large straw cabins built underground like smoke houses, with only the straw roof above ground. They enter these at one end, and come out of the other."

Fewkes, 97, 1906. At Casa Grande, Arizona, a subterranean structure, apparently circular, the walls and floor plastered with clay, is found under the northeast exterior wall of Compound B.

Hough, 410–415, 1919. The author discovered a village of old circular pit-houses at Luna, New Mexico.

410. A great circular dance-house is excavated, eighty-four feet in diameter, entered through the roof.

414. Dwelling houses have stone pavements. Entrance is by a ladder through the roof.

412. Pottery is coarse, some vessels having pierced lugs.

422. Decorated fragments are scarce. Some vessels show a white slip. The decoration is unskilled, though the patterns include whorls and frets. Bowls are decorated on the interior, and there is some neck-corrugation.

415. The house has one center post.

Judd, 399–413, 1922. Our author reports round pit-house sites near Pueblo Bonito, New Mexico.

399. Two pit-houses, vastly more ancient than the small-pueblo ruins near-by, are uncovered by digging.

400. "Pit-house 1" is buried under the refuse-pile of a stone-walled surface ruin. The pit-room is finished off by dampening the walls of the excavation and tamping it. Six feet of river silt has accumulated above the roof level of this ancient dwelling.

405. Four center-posts are indicated. The wall extends above the ground level.

407. The pottery is tempered with quartz. It has a fine smooth finish with geometric designs in dark red.

409. A bowl found in a pit-house is rough on the outside, decorated on the interior. The ware is black-on-white, such as is characteristic of pre-Pueblo ruins (pre-Pueblo as used by this author includes or implies pottery older than true Pueblo wares). One pot shows feathered snakes, arranged spirally. Sandals found with these pots are thin, twined on parallel cords. Skulls are flattened.

413. Two types of houses are included in "pre-Pueblo" horizons; round pit-houses, and those of wattle (rectangular) construction, with slabs incorporated in the walls.

Judd, 64–69, 1916. The author describes his excavations near Willard, Utah.

64. He finds a circular structure with four center posts, roof made of willows, grass, and clay.

65. Similar structures are found near Beaver City, Utah. They are in close proximity to larger structures with walls of adobe, and flat roofs. The culture is similar at the two sites.

69. A cave in Cottonwood canyon contains circular rooms constructed of masses of adobe, reinforced with branches of rabbit-brush or sage twigs.

Morris, 106, 1911. Pit-houses are characterized by a wide range of pottery forms, and the non-appearance of skilled workmanship. Lack of conventionalized designs, in fact, goes hand in hand with an early stage of the industry. Designs on pit-house pottery are crude, but bold.

186. Circular pit-rooms are encountered, with plastered walls which slope outward. House walls are made of vertical poles, inclosed in clay.

Fewkes, 58, 1920. Ralph Linton, working with Fewkes at Mesa Verde discovers a structure called "earth-lodge A." It is a semicircular room, isolated, with floor slightly depressed. Walls are of adobe, plastered onto the

sides of the pit, or moulded into "turtle-backs." Posts are set "at an angle" (though the author does not say whether slanting toward the center, or away from the center). This dwelling "is of an epoch much older than the epoch of the Cliff-dwellers."

Judd, 66, 1919. The author is describing excavations made by him in Cottonwood canyon near Kaibab, Utah. He finds a rectangular dwelling built above the remains of a circular room, apparently a round pit-dwelling. "The pottery is pre-Pueblo."

Prudden, 1903, plate opposite p. 231. A photograph illustrating our author's article shows an apparently circular structure of "jacal" or posts-and-adobe. This stands on the floor of a large cave in Grand Gulch, Utah.

Fewkes, 603, 1897. This investigator finds two habitations near Taylor Springs. One is circular and the other is rectangular.

Comment.—In the round subterranean houses such as we have had described to us by the authors above quoted, we seem at last to have run Pueblo architecture to earth, in more senses than one. We have pursued the terraced Pueblo through all its metamorphoses, and now we have examined its primeval precursor, a round house excavated *in* the soil. What our authors say about the pottery recovered from such round pit-houses, leaves me, for one, somewhat baffled. Judd reports excellent and highly developed wares from round pit-houses in Chaco canyon. Hough in excavating his round pit-house metropolis at Luna, New Mexico, reports potsherds of a character different from Chaco ware, the product of a craft much simpler and less developed. Judd's wares are highly decorated. "Decorated fragments," says Hough, "are scarce." Morris meanwhile remarks that designs on pit-house pottery are often bold, but sees a lack of conventionalization. Hough, judging from his remarks, is not impressed by that at all. Except for a few obvious points, I find myself unable to get any impression of the pottery, other than an unhappy feeling that a great variety of wares exist, all obtained from the simplest and earliest kind of houses. In any case, these wares are not as uniform, nor as uniformly simple, as we should expect them to be.

It seems to me that we ought to divide the round pit-house horizon into several phases. One phase, which I presume is the latest, supplies types of pottery which at many sites are too well

made to fit consistently into our tabulation. To provide a background for the evolution of these actually early but relatively elaborate wares, we might postulate or assume a middle phase of round pit-house culture, a phase marked by the manufacture of clay vessels, not fired, and tempered only with *vegetable fiber*. Morris supplies rather full data concerning wares of this type. They occur in great plenty, though he does not associate them with any type of architecture, square, round, or otherwise. Below the "middle" phase we might similarly assume a "crude" phase, in which clay vessels were not tempered at all. The only ware simpler than clay tempered with fiber, would be clay without temper of any sort. Morris figures such non-tempered fragments also, without saying that they are older. I suspect, nevertheless, that Southwestern tribes made vessels of clay before they learned to temper the clay with fiber, or with anything else. This hypothetical stage I have on my own authority set at the bottom of the list. That these earliest stages are based on pure inference is certainly true. We have the tangible evidence of progress in the pottery fragments which these authors describe, though nobody has put the remains in chronological order. In other words, the logical steps in the genesis of pottery are represented by actual potsherds, but stratified deposits to determine the chronology of these sherds are not so far reported.

That progress occurred is at least to be inferred from data now available. It may have proceeded very slowly, and the advance from raw clay to fired pottery of a crude sort may have occupied a time longer than all the remaining periods of Southwestern history put together. I have ventured in the tabulation to divide the round pit-house period into three phases, marked off by these logical steps in the development of pottery. To divide it into three dozen phases would be perfectly proper, but my imagination does not go that far. When we remember that the earliest stage of those I have set down, saw the introduction of such a highly developed and civilized art as the cultivation of corn, to vaguely picture thirty antecedent stages is easy. In other words, the tabulation we have been examining may seem almost too elaborate. On the contrary, it is not half elaborate enough.

The beginning of our tabulation sees the Southwestern tribes already sedentary, and well advanced in the arts of life. Some day a more complete tabulation than mine will show their story from the very beginnings of primitive life in the region.

Speaking of omissions, there was, almost beyond doubt, a stage in which clay was tempered with cedar-bark, and fired. We encounter utensils of *unfired* clay, tempered with fibers, and specimens of early fired pottery tempered with minerals. This other stage, of *fiber-tempered* fired pottery almost certainly falls in between the two. To temper with plant-fiber would, it seems, have been the process followed before people began to use mineral tempers. To divide the period which saw the evolution from raw clay to pottery, into three phases, is a very conservative measure. If those phases I have listed are after all not the right phases, or are not properly named, periods somewhat corresponding to these will, sooner or later, let us trust, be identified, named, and properly labelled.

Conclusion

The specimens dug up in the Southwest and on exhibit in various museums, show clearly that pottery is an industry thoroughly at home among the Southwestern peoples. Not only do the modern tribes produce a large number of peculiar wares, but their ancestors have been producing highly characteristic wares for some thousands of years. As we work back into the most ancient horizons, however, the wares lose, little by little, their special Southwestern character. Spinden points this out, with the added comment that the early wares look suspiciously like certain archaic wares found in Mexico. I believe that in this he is right. The very earliest Southwestern wares are utterly primitive, but not particularly Southwestern. The evidence in the Southwest does not show very definitely whether the pottery craft was invented here, or imported from abroad. When we cease to wrap ourselves up in Southwestern pottery, and begin to view the whole distribution of pottery in the New World, this particular conundrum seems to find a fairly simple answer. Let me indicate what I mean.

The Southwest connects geographically with other regions where pottery has been fabricated for ages. The industry fades out as we pass toward California and northern Nevada. In the Mississippi valley, and in the South Atlantic states, the wares are very different from those of the Southwest, but Arkansas supplies certain wares that are in a sense intermediate. The whole industry fades out, also, when we pass northward to Maine. To the southward of our present region, the pottery industries of ancient Arizona and New Mexico merge into similar industries in Mexico, where the art is much more highly developed and at the same time enormously older. Better and better as well as more ancient products are encountered as we pass from this region toward Central America and Peru. The whole complex gradually fades out in the extreme south of South America. Our Southwestern region, then, is entirely surrounded by peoples and nations who produce pottery now, and as far as those on the south are concerned, have produced for a very long period. Under these circumstances, it seems more likely that our Southwesterners borrowed the art, and less likely that they invented it. Perhaps the whole art was borrowed in the long ago from Mexico, but borrowed not all at once. We should infer rather that every improvement in the art of pottery was borrowed in its turn. Even to temper clay with plant fibers, or sand, and to shape it into utensils, is a highly artificial proceeding, and is not an operation to readily suggest itself, it seems, to an untutored mind. If the Southwest borrowed the main idea, and a primitive form of the technique, the Southwestern tribes certainly invented their own designs. The elaboration of fresh styles of decoration is pretty easy, for pottery lends itself automatically to every kind of vagary in form and ornamentation. The earliest decorators invented a wealth of patterns, applied in forty ways and forty styles. Bit by bit as we pass toward modern times in the Southwest, these patterns become conventionalized, and elaborate detail is contrived and worked into the embellishment, and the draftsmanship becomes better and better until each district ultimately has its own peculiar "style."

At the beginning of the present essay, I remarked that a culture area is not in every case an area. I want to say now that in the literature concerning the Southwest, the word "period" does mean period. Kidder, for example, who knows the field as well as anybody, speaks repeatedly of a Basket-Maker period. But not even Kidder can tell you when this "period" began, when it terminated, nor how long it lasted. In other words, he is not talking about a period at all, nor do I think that the word "period" is at all proper in discussing the Southwest, unless the speaker refers to the period or periods subsequent to the coming of the Spaniards. In place of using the word period, we should say rather that Southwestern remains are more or less stratified, and that when we dig around in the ruins, we find ourselves in one or the other of numerous "horizons."

I have been at some pains to identify a number of these horizons, and to invent catchwords for them. It is time now to remark that in my opinion even these horizons do not really exist. Most horizons merge into adjacent horizons, and if we knew more about the matter, I fancy that we should see all the horizons coalescing into one. The history of every craft, and the whole story of culture in the Southwest, would be seen, with sufficient data at hand, as one continuous evolution. Every horizon in that case would be a transition horizon, pure and simple. In the absence of any other chronology, the recognition of separate horizons is convenient. Investigators may never agree upon names for these horizons. Meanwhile, the terms in common use seem remarkably awkward, and those worked out at the Pecos Conference no better. The names selected, whatever they may be, are of little moment so long as one of us knows what the others of us mean.

The series of horizons just catalogued reflects, it seems, an actual evolution of culture in the Southwest. No one site, however, presents more than two or three stages. Kidder's excavations at Pecos, for example, extending over a period of years, have given us the most elaborate series ever established in the Southwest. He unearthed, in all his digging, only six of the horizons listed in our tabulation. I believe that the Southwest has actually seen

the progress indicated by the tabulation. Not for a moment do I believe that all the Southwestern settlements were in a given horizon at any given moment. On the contrary, when matters at one of the focal points had proceeded to a pretty high degree of elaboration, outlying regions may have been lagging far behind. To say that Pueblo Bonito and Casa Grande passed through the same horizons is probably true. This, if it is true, does not mean that they reached a given stage at the same moment.

If we are correct in assigning thirteen horizons to the story of man in the Southwest, still we cannot expect to find these horizons following each other in order at each site. "Miss-outs" are of course to be looked for by any reasonable-minded investigator when he starts to examine a site. At a given spot, we might find horizon 6 planted, not where it "belongs," on horizon 5, but directly on horizon 4. For that matter, sooner or later somebody is going to unearth a site where horizon 5 is planted directly on horizon 1. This would mean, simply, that for a long period the site was not occupied at all. We ought not to be unduly disturbed to find horizon 1 on top of horizon 5. This, to be sure, represents a rank inversion of our stratigraphy; but in terms of historical events, it would mean that a rude tribe still lingering in a backward stage of culture came along in their wanderings and tarried for a time on a site where highly advanced people had previously dwelt. Cases of precisely this sort of thing have already been reported. Judd found "round pit-house" structures, representing an early culture horizon, flaunting themselves directly upon the remains of a ruined "pueblo" of a late horizon. Finding a cache of Navaho artifacts or ceremonial objects or other property, such as saddles or tin buckets in a cliff ruin, is easy to understand, for the Navaho as a matter of fact often cache their effects in exactly such places. The other instances are not a bit more mysterious, though they may be a trifle more trying to the tabulator.

The difficulty of divining what has happened in the long ago would be less oppressive, if each culture level were at least consistent with itself. In every horizon, and at almost every site foreign artifacts and utensils, from other times and other places, the product of different manners and other minds, creep in.

Prudden, 18, 1918. Pottery fragments found in unit type structures are diagnosed by our author as having no relation to the original occupants. They were put there, says he, "long after the house was in ruins."

A fireplace eighteen inches above the floor of a house, "was evidently improvised by some visitor, long after the house was in ruins."

Judd, 402, 1922. Potsherds excavated in a certain pit-house "are certainly not of pit-dweller origin."

Morris, 171, 1911. The Eagle Nest ruin is a "unit-type" dwelling. Broken pottery is strewn down the slope below. "It is hard to judge whose pottery this is."

Remarks like these from conscientious observers like Prudden, Judd, and Morris ought merely to put us on our guard, but the fact that we meet such inconsistencies in the data, need not discourage anybody.

To find evidence of all the stages, to find utensils and artifacts from all horizons, accumulated and piled up in an orderly way in one place, would be indeed a rare bit of luck, hardly to be looked for. Our scale of horizons is an abstraction, like the geologist's scale of sedimentary rocks. Primitive underlying stages in archaeological sites meanwhile are not to be interpreted as ancient times. Thus, M. R. Harrington at Pueblo Grande in Nevada uncovered remains which clearly represent primitive conditions. That they represent ancient times is pure assumption. They may be a thousand years younger than the big structure at Pueblo Bonito. In other words, a cross-section through the Southwest at any moment of its history, would exhibit every conceivable stage in cultural evolution; would show cultures at vastly different levels of advancement, but all flourishing at once; just as a cross-section in our own day would show different tribes and communities at startlingly different levels of civilization. Consider what a museum of contradictions would be brought into existence if one tried to equate the cultures of the Hopi, the Havasupai, the Navaho, the Yuma, and the modern Mormon communities. Yet these cultures are perfectly contemporaneous. I think every one of the culture horizons, mentioned in the tabulation, existed at one time or another in the Southwest. But

various folk went into a given horizon at the bottom and passed out of that horizon at the top, at different times, according to their history, their economic resources, and their opportunities. If we find remains of exactly the same sort at two widely separated sites, it does not mean, either, that the people at the two sites reached that stage of advancement at the same period. Two such villages, with similar pottery outputs, may have been separated by a thousand years of time. Two villages may be on very much the same level of culture, but local variations, especially in pottery, may creep in. In equating cultures from different neighborhoods, we must not look for what is identical, but for what is comparable.

To say, moreover, that a folk have reached an advanced way of living, at a given moment, does not mean at all that they have left behind them all primitive operations. "Neolithic" accumulations are deposits, for example, which supply polished stone objects. A deposit is properly called neolithic if one polished celt is recovered among thousands (as many thousands as you please) which are unpolished or "palaeolithic." When people learned to polish, they did not forget how to chip. In a similar way, we may imagine a village which at a given moment is manufacturing very fine pottery. But not all pieces are equally fine. On the contrary, for commonplace purposes, the people may be expected to make crude and rough pots. In a village where the pottery industry is right at its climax, cruder and more primitive methods may well survive, and crude wares may make up a part of the village output.

All of this makes a chronology seem difficult. I fail to see why it should make a chronology impossible. All of the uncertainties which I have alluded to, and others that I have not mentioned, have had their effect on the chronological table which I have tried to construct. This is simply an attempt to find out what the books say, and to set down the results, as far as they are consistent at all, or understandable, in the form of a diagram. Considering the opportunities which the Southwest affords, and the enormous amount of ill-considered digging which has been done, I think it is time that some kind of a scheme of horizons be agreed upon.

BIBLIOGRAPHY

BANDELIER, A. F. 1881. Report on the ruins of the Pueblo of Pecos. ("A visit to the aboriginal ruins in the valley of the Rio Pecos"). Archaeological Institute of America, Papers, American Series, vol. 1, part 1.

1892. Final report of investigations among the Indians of the southwestern United States. Archaeological Institute of America, Papers, American Series, vol. 4, part 2.

BAXTER, Sylvester 1882. An aboriginal pilgrimage. Century Magazine, 24: 526–536.

BICKFORD, F. T. 1890. Prehistoric cave dwellers. Century Magazine, 40: 896–911.

BRADFIELD, Wesley 1923. Preliminary report on excavating at Cameron Creek site. El Palacio (Museum of New Mexico, Santa Fe), vol. 15, number 5.

COLTON, H. S. 1920. Did the so-called Cliff dwellers of central Arizona also build "hogans"? American Anthropologist, n.s., 22: 298–301.

COLTON, M. R. F. and H. S. 1918. The little-known small house ruins of the Coconino forest. Memoirs of the American Anthropological Association, vol. 5, number 4.

CUSHING, FRANK H. 1882. A study of Pueblo pottery as illustrative of Zuñi culture growth. Fourth Annual Report of the Bureau of Ethnology, 473–510.

1891. Outlines of Zuñi creation myths. Thirteenth Annual Report of the Bureau of American Ethnology, 325–446.

DELLENBAUGH, F. S. 1906. The North Americans of yesterday. Putnam, 1906.

DIAZ, MELCHIOR, quoted in Winship, "The Coronado expedition of 1540–1542." Fourteenth Annual Report of the Bureau of American Ethnology.

DUFF, M. FRANCIS 1904. Some exploded theories concerning southwestern archaeology. American Anthropologist, n.s., 6: 303–306.

FEWKES, J. W. 1895. Preliminary account of an expedition to the cliff villages of the Red Rock country, and the Tusayan ruins of Sikyatki and Awatobi, Arizona, in 1895. Annual Report of the Smithsonian Institution for 1895.

1896a. Two ruins recently discovered in the Red Rock country, Arizona. American Anthropologist, o.s., 9: 263–283.

1896b. The prehistoric culture of Tusayan. American Anthropologist, o.s., 9: 151–174.

1897. Preliminary account of archaeological field work in Arizona in 1897. Annual Report of the Smithsonian Institution for 1897, pp. 601–624.

1898. An ancient human effigy from Arizona. American Anthropologist, o.s., 11: 165–170.

1900a. Pueblo ruins near Flagstaff, Arizona. A preliminary notice. American Anthropologist, vol. 1, pp. 422–450.

1900b. Two summers' work in Pueblo ruins. Twenty-second Annual Report of the Bureau of American Ethnology, part 1, pp. 1–193.

1906. Excavations at Casa Grande, Arizona. Twenty-eighth Annual Report of the Bureau of American Ethnology, pp. 25–179.

1907. Excavations at Casa Grande, Arizona. Smithsonian Miscellaneous Collections, 50: 289–329.

1909a. Antiquities of the Mesa Verde National Park: Spruce-tree House. Bureau of American Ethnology, Bulletin 41.

1909b. Prehistoric ruins of the Gila valley. Smithsonian Miscellaneous Collections, vol. 52. Quarterly issue, vol. 5, part 4.

1910. The cave dwellings of the Old and the New World. American Anthropologist, n.s., vol. 12.

1920. Field work on the Mesa Verde National Park, Colorado. Smithsonian Miscellaneous Collections, 72: 47–64.

1922. Archaeological field work on the Mesa Verde National Park, Colorado. Smithsonian Miscellaneous Collections, 74: 89–115.

GANNET, HENRY 1880. Prehistoric ruins in southern Colorado. Popular Science Monthly, 16: 666–673.

HALLOCK, CHARLES 1902. The primeval North American. Harper's Magazine, 105: 396–403.

HENSHAW, HENRY W. 1905. Popular fallacies respecting the Indians. American Anthropologist, n.s., 7: 104–113.

HOUGH, WALTER 1901. Archaeological field work in northeastern Arizona. The Museum-Gates expedition of 1901. Annual Report of the U. S. National Museum for 1901, pp. 287–358.

1919. Exploration of a pit house village at Luna, New Mexico. Proceedings of the U. S. National Museum, 55: 409–431.

HRDLICKA, ALES. Notes on the Indians of Sonora, Mexico. American Anthropologist, n.s., 6: 51–87.

HUNTINGTON, ELLSWORTH 1910. The first Americans. Harpers Magazine, 122: 451–462.

JEANÇON, J. A. 1922. Archaeological research in northeastern San Juan Basin of Colorado during the summer of 1921. State Historical and Natural History Society of Colorado and the University of Denver.

JUDD, NEIL M. 1915. Archaeological reconnoissance in western Utah. Smithsonian Miscellaneous Collections, 66: 64–71.

1919. Archaeological investigations in Utah and Arizona. Smithsonian Miscellaneous Collections, 72: 66–69.

1922. Two Chaco Canyon pit houses. Annual Report of the Smithsonian Institution for 1922, pp. 399–413.

KIDDER, A. V. 1917. Prehistoric cultures of the San Juan drainage. Proceedings of the Nineteenth International Congress of Americanists, pp. 108–109.

1924. An introduction to the study of Southwestern archaeology. Yale University Press.

LEE, J. C. Y. 1872. Ancient ruin in Arizona. Annual Report of the Smithsonian Institution for 1872, pp. 412–413.

MASON, C. C. 1918. Story of discovery and early exploration of the cliff houses at the Mesa Verde. In History of Colorado, J. A. Jeançon, chapter 5.

MEARNS, EDGAR A. 1890. Ancient dwellings of the Rio Verde valley. Popular Science, 37: 745–763.

MINDELEFF, COSMOS. 1891. The Casa Grande ruin. Thirteenth Annual Report of the Bureau of Ethnology, pp. 295–318.

1893. The repair of the Casa Grande ruin. Fifteenth Annual Report of the Bureau of Ethnology, pp. 321–344.

1894. The cliff ruins of Canyon de Chelly, Arizona. Sixteenth Annual Report of the Bureau of Ethnology.

1895. Navajo houses. Seventeenth Annual Report of the Bureau of Ethnology, pp. 469–517.

MINDELEFF, VICTOR. 1886. A study of Pueblo architecture in Tusayan and Cibola. Eighth Annual Report of the Bureau of Ethnology, pp. 3–228.

MORGAN, L. H. 1881. Houses and house life of the American aborigines. United States Geological and Geographical Survey of the Rocky Mountain region. Contributions to North American Ethnology, vol. 4.

MORRIS, EARL H. 1911. Preliminary account of the antiquities between the Mancos and La Plata rivers in southwestern Colorado. Thirty-third Annual Report of the Bureau of American Ethnology, pp. 155–205.

1921. Chronology of the San Juan area. Proceedings of the National Academy of Sciences, 7: 19–22.

NORDENSKIÖLD, G. 1893. The cliff dwellers of the Mesa Verde. Stockholm.

NUSSBAUM, J. T. 1922. A basket maker cave in Kane County, Utah. Museum of the American Indian, Heye Foundation, Indian Notes and Monographs.

PRUDDEN, T. MITCHELL 1896. A summer among cliff dwellings. Harper's Magazine, 93: 545–561.

1897. An elder brother to the cliff dwellers. Harper's Magazine, 95: 56–62.

1903. The prehistoric ruins of the San Juan watershed. American Anthropologist, n.s., 5: 224–288.

BOX 2393,
HONOLULU, HAWAII

THE PRESENT STATUS OF ARCHAEOLOGY IN THE UNITED STATES[1]

By NEIL M. JUDD

MUCH of what I shall say has been said before. But I repeat deliberately, and chiefly because the current trend in archaeological methods again urges introspection. I believe we might profitably pause periodically to take stock; to seek out the weak links of the chain we are forging; to ask which of our inherited tasks is most slighted at the moment. It is just such a stock-taking that I propose for this occasion.

As we interpret it in this country, archaeology has to do with prehistory. Where written history begins there archaeology ends. Archaeology seeks to supply the text for those chapters that obviously preceded historical beginnings. Archaeology is the backward extension of recorded history!

In his researches, the archaeologist expects to meet with obstacles—the trails he follows are known to be dim and uncharted. But it should be his privilege to work without the millstones of individual and communal interference encircling his neck. Lacking Federal recognition as of national concern, archaeology in the United States has been, and is still being, exploited by selfish or misinformed persons; it is being fettered by local emotions and further handicapped by obsolete conceptions as to the fundamental purpose of original field investigations.

Within the United States, archaeological inquiry centers about those aboriginal peoples, early or late, who inhabited the area prior to its conquest and occupancy by Europeans. Pursuit of this inquiry has been more or less casual and too frequently influenced by personal preferences. Rarely have major problems been attacked with understanding and perseverance.

Our only Federal law having to do with preservation of antiquities refers solely to lands owned or controlled by the Govern-

[1] Address of the retiring president, Anthropological Society of Washington, delivered April 17, 1928.

ment. Within recent years certain states have identified such prehistoric remains as happen to lie within their respective boundaries as assets of the commonwealth and have passed laws which tend to place a monetary, rather than an historic, value on aboriginal objects. There still exist museum officials who measure the success of an expedition by the number of specimens recovered, not by completeness of the data relating to those specimens. In consequence of these well-known facts, especially trained investigators are often restricted in their efforts to learn all that is ascertainable about the antecedents of our modern Indian tribes—the real aim of archaeology in the United States—and the public gains an erroneous idea of the object in view.

Public interest in prehistory is deep and firmly rooted. No other subject surpasses archaeology in popular appeal; none so quickly awakens the lay imagination. Civilized man is at least curious about his remote past; he is even more curious about primitive peoples, dead cities, and almost-forgotten empires. The Valley of the Kings discloses unknown splendors of ancient Egypt; Ur of the Chaldees adds substance to Biblical history; the felled jungles of Middle America exhibit ruins of marvelous pre-Spanish temples; colossal mounds in Ohio, shattered cliff dwellings in Arizona, gradually yield their secrets. Scarcely a day passes without some press account, however garbled or improbable it may be, of archaeological explorations somewhere in progress. News of such investigations finds ready welcome at the editorial desk; pleas for illustrations and feature stories are endless. I venture the guess that eighty percent of our people possess a latent curiosity which, given opportunity, will spur them to physical activity on an old Indian camp ground. The casual stroller, having found an arrowhead, lingers to seek its fellow; transcontinental tourists and local picnic parties amuse themselves digging for relics. In the last two years this proven public appetite for information pertaining to primitive man and his accomplishments has prompted numerous books and magazine articles by pseudo-scientists and rehash artists who write with an air of authority yet know very little, actually, of the intent or results of current anthropological research.

As a science, United States archaeology had its uncertain birth less than 100 years ago. During its period of adolescence, it was characterized by wild imaginings and fantastic theories, some few of which still persist. But the last half century, more especially the last quarter century, has witnessed a definite forward movement. Progress was certain to follow realization that the 200 or more principal Indian tribes inhabiting our country at the time of its discovery had a remote, common origin however independent their subsequent development may have been. Keen minds, analyzing artifacts from prehistoric sites in various localities, detected apparent relationships indicative of tribal migrations or cultural influences. Which tribe, which culture, came first? When these questions were asked the time element was introduced; chronology became a factor. And now, with field explorations based on stratigraphy as the foundation of chronology, the science of archaeology in the United States may be said to approach maturity.

Despite certain notable achievements which influenced this growth, one cannot avoid the feeling that archaeology in our country has not yet won the permanent place it rightfully merits. It does not command sufficient respect; it is too generally regarded as a mere game, an avocation, at which all may play with equal promise of success. Witness the number of ancient sites mutilated each year by those not trained carefully to observe or to interpret their observations; witness the prevailing custom of designating as an "archaeologist" any collector of curios, every dabbler in prehistory. Upon occasion, even reputable institutions have sent out on collecting trips representatives with absolutely no knowledge of where to look or how to proceed. It may be that we students take ourselves and our work too seriously, but I have a feeling that relatively few of our neighbors realize fully that archaeology is a subject requiring a deal of application and considerable experience for the proper evaluation, and more likely solution, of the complex problems involved. For these problems vary with each site; no two are exactly the same. Neither strength to wield a shovel nor success in amassing specimens makes an archaeologist.

I have tried earnestly to fathom this situation; to learn why so many of our fellow-citizens look upon Old World archaeology with something of reverence and yet regard every ancient village site or burial ground in this country as fair prey for the first person who happens along. And I have reached the conclusion that lack of Government attention is primarily responsible. Ours is the land of equal opportunity; always we have stressed the paramount rights of the individual. But the history of any country, and so its prehistory, is more truly national than individualistic. The United States is the only major power in the world, perhaps the only American republic, that does not reserve in behalf of its nationals a prior right to all material records of its prehistoric past, wherever and however found. It will surprise many to learn that Mexico, in proportion to national wealth, leads the world in Federal effort toward the conservation, and investigation, of her archaeological heritage. In marked contrast, we of the United States, prone to boast of our educational leadership, contribute from the Treasury an extremely insignificant sum for anthropological research and make a very feeble gesture indeed toward preservation of such aboriginal works as have survived from pre-Colonial days.

Our only national law pertaining to this subject is the so-called Antiquities Act of June 8, 1906. This relates exclusively to the public domain—lands administered, respectively, by the Secretaries of Agriculture, the Interior, and War. What a Secretary of War, for example, might know of archaeological matters is a moot question. But the case loses its humorous aspect when one realizes that the rules designed to carry out the provisions of the Antiquities Act may be changed at any time by the secretaries of the three departments without reference to the Smithsonian Institution, since 1846 the Government's recognized authority on, and depository for, anthropological material. Then, too, no provision has ever been made for enforcing the Act or its dependent regulations; in consequence, illegal excavations still continue on Federal lands, frequently by local agents of the departments supposedly responsible for preservation of American antiquities.

Throughout the mound area east of the Mississippi, as in the southwestern states, the gathering and sale of prehistoric objects is a recognized, though minor, industry; local residents regard it as their inalienable right to dig for "relics" wherever fancy dictates. Neither public nor private property is secure from these vandals. Their work, to be sure, is largely superficial but it is equally true that, in proportion to their activities, every site attacked is rendered useless to the student qualified to read from its fragmentary, cultural remains something of the aboriginal people who once occupied it. The pot-hunter seeks salable specimens only; his interest goes no further.

I prefer to believe that a desire to check commercialism, and the vandalism which feeds it, actuated those primarily responsible for certain recent state laws governing archaeological exploration. But not all these could possibly have been worded by men thoroughly cognizant of the scope of archaeology. Natural barriers and not the arbitrary, political lines we may draw on maps, tend to limit the wanderings of primitive tribes. Our native Americans recognized territorial divisions that meant nothing to their European conquerors. Therefore, when any state by legislative enactment reserves to itself the right to excavate prehistoric sites within the state, prohibits the sale or transportation beyond its borders of archaeological specimens, and makes it a misdemeanor for any non-resident, directly or indirectly, to conduct local investigations even of a superficial nature, selfishness and not science is being served. Manifestly illegal, laws of this type carry the unmistakable odor of commercialism; they imply a ready market for old Indian artifacts and leave with the uninformed an impression that the state itself intends to monopolize the sale of curios. It follows that those with opportunity at hand are stimulated to greater activity; pot-hunting continues, if less openly.

Within the past four months I have seen, from citizens of states which prohibit archaeological exploration by non-residents, several letters offering for sale collections of antiquities from those states. I have in my possession a list of over 200 objects illegally collected from cliff-dwellings on the Navaho reservation, yet I

am informed the department having jurisdiction over that reservation cannot confiscate this collection nor punish the collector for violation of a Federal statute because no one actually saw him exhume the objects. Yet I have his signed letter and list; his offer to sell. The father of this same man, while employed by the Government to prevent unauthorized excavations in ruins on certain public lands, gathered from those ruins and sold a similar collection larger than that noted above. But no one saw him do it; there is no redress!

Now the Act of June 8, 1906, is sufficient insofar as the public domain is concerned; where advisable, laws can be formulated which amply protect any state's interest in prehistoric ruins situated on state lands. The difficulty lies in the fact that such laws do not enforce themselves. Some one must be charged definitely with that responsibility. Too many individuals have found pleasure or profit digging for curios; they would resent any curtailment of what they have come to regard as a personal privilege. Legislation affecting private property is not readily passed, especially if it appear inconsequential to the legislative mind. But Massachusetts has already pointed the way by extending its right of eminent domain to include objects of antiquarian or historic import. This is altogether equitable and should prove efficacious provided authority, appropriations, and a trained personnel are available to make it effective.

During optimistic moments I have thought a concerted educational program on the part of anthropologists might suffice to create a public sentiment so intense and sincere as to guard from further spoliation ancient Indian remains either on private or other lands. But what a task that would be! I have thought, too, of possible state legislation prohibiting traffic in aboriginal American antiquities. Yet even this scarcely seems feasible. Action would come too late; the damage would have been done before forty-eight states could pass enforceable laws toward which a considerable number of their citizens were unsympathetic. One other alternative suggests itself: Museum officials can contribute gradually to discouragement of pot-hunting through refusal to purchase specimens offered by professional diggers.

Extensive vandalism, however, would have occurred before these men, and the retailers, learned by actual experience that the ultimate market had been closed to them.

There is another angle to this subject of commercialism, namely, faking. The widespread demand for curios and the ambitions of a few collectors of special forms have brought about the fabrication and sale, in ever increasing numbers, of spurious antiquities. Just now these frauds come mostly from Kentucky, Tennessee, and Alabama; others have appeared, heretofore, from New York, Pennsylvania, Wisconsin, and elsewhere. Some, at least, of these fakes are so cleverly made as to deceive the expert. Generally they go first into private collections but sooner or later they reach public museums, bearing seemingly plausible notations as to the place and date of discovery. We shall always have with us, no doubt, the man intent upon hoaxing the scientist but the successful faker is a snake of different color.

Recently there came to my desk the advertisement of a Kentuckian offering to reproduce, at from $1.50 to $10.00 each, almost any type of stone object used by the ancient Indians. This man dodges postal regulations by stating on his printed catalog that the items offered are "modern forms made at the present time." But who may say at what museum these reproductions will eventually appear, perhaps with a donated private collection, as genuine antiquities? Commercialism is the most insurmountable obstacle to constructive research with which we have to contend, and I cannot but believe that the strength of its present position results solely from failure of our Government to exhibit an active interest in that diverse Indian civilization which it supplanted.

If we turn to consideration of field work in the United States we are again forced to conclude that, after 75 years, archaeology has less of substance to its credit than one could wish. Explorations have continued almost annually; notable achievements have been recorded. But, by far and large, these explorations have been haphazard and without definite objective other than collection of specimens. That their results fail wholly to meet our needs today, is further proof that the science of archaeology has matured

with the years. Experience has taught that detached artifacts do not suffice in tracing the migrations of a prehistoric people; in reaching a comprehensive understanding of the life they led or its bearing upon that of later tribes. Specialists have learned the historic worth of a specimen is determinable not from its physical appearance alone but from the data accompanying it in situ. Those data form the indispensable factor in modern archaeological research; without them, any product of aboriginal industry is merely something else to look at.

I do not wish to appear too dogmatic nor too ungenerous in my criticism. I doubt that anyone can be too critical of investigative work, whatever its nature; I doubt that anyone who has given thought to public and private exploitation of prehistoric remains in the United States can fail to realize that past and present archaeologists will be censured bitterly by those of the future for failure to record all essential data relating to field researches. Bear in mind that, of necessity, the archaeologist destroys his major evidence as he collects his information. No mound is the same after excavation even though its former contour be restored; opportunities for observation, once lost, are gone forever. A ruin mutilated by pot-hunters retains but an incomplete story for the trained observer.

Here and there across the continent one finds an institution still guided by the notion that accumulation of specimens is the prime purpose of archaeology. In such cases, close inspection usually discloses an individual vanity dominating the research staff. The latter, if engaged in field work, invariably have discovered that the circumstances under which a specimen is found may be, and frequently are, more important than the specimen itself. An earthenware pot from Illinois is just an earthenware pot from Illinois but one found four feet below the surface of Cahokia mound, for example, and underlying material undeniably Iroquoian in origin would immediately assume an historical significance entirely outweighing whatever interest the specimen might hold as an object of primitive craftsmanship. Despite the crudeness of this illustration, it clarifies my point: Chronology is the key that will unlock many secrets of American prehistory and stratigraphy is the stuff of which chronology is made!

As a student of archaeology, engaged with such collections as come before me, I am constantly being reminded of the paucity of fundamental information at our disposal concerning Indian peoples of the Colonial period and following. Our historic tribes are the immediate descendants of those we call prehistoric; a more complete knowledge of historic Indians, their manners and customs, would contribute largely to our meager understanding of tribal life in pre-Columbian times. Of work along that hazy borderline between the historic and prehistoric, United States archaeology stands in greatest need today.

In our ethnological researches, study of material culture has rather gone out of fashion during the last quarter century; emphasis has been placed on fast-disappearing languages, ceremonies, and social organizations. Indian arts and crafts, the effect of environment and tribal contact, have not received their due share of attention. We are told that some two hundred unrelated, or distantly related, tribes inhabited the present United States at the time of its discovery by Europeans. For how many of these tribes do we know the types of buildings ancestrally employed, their detailed methods of construction, and the purposes to which each was dedicated? One searches almost in vain for light on this subject. For how many tribes do we possess reasonably complete information concerning domestic utensils, weapons, and objects of personal adornment, together with all the minute factors involved in the manufacture and use of such diverse artifacts? In only three or four cases, so far as I am aware, has serious effort been made to list the native plants, of culinary or medicinal value, utilized by tribes familiar to us. Yet, since 1900, a half dozen plants known and used anciently by American Indians have been developed into 20th century economic necessities. At least 300 similar plants or plant products remain to be tested, perhaps adopted and improved for our use, by botanists and chemists. Maize was widely grown throughout the United States in prehistoric times yet we know precious little, actually, of varying tribal practices in its cultivation, preparation, and use.

There are those who hold such information nonessential; that surmises or inferences bring us close enough to the truth. It is

my contention, on the contrary, that we who seek to construct the groundwork for future knowledge of Indian peoples, past and present, within the United States have assumed an obligation to make our studies as thorough as is humanly possible. We have not been thorough heretofore simply because no one perceived the present requirements of our science. We are not being thorough today since the current tendency toward specialization leads naturally to omission of significant data—data which may prove highly desirable a few years hence.

This is true of anthropology in its broader aspects. Although we have come to think of them as separate fields for investigation, it is impossible absolutely to divorce archaeology and ethnology. Especially is this so here in the United States where the prehistoric merges imperceptibly with the historic. Mounds erected since Colonial days are distinguishable from those of an earlier period only by the presence of articles of European manufacture. To be at all certain in his deductions, the archaeologist necessarily works from the known to the unknown; hence, he is dependent to a considerable degree upon ethnological findings. Were exhaustive ethnographic studies more numerous, the prehistory of our Indian groups could be reconstructed with greater assurance.

In presenting my thoughts I seem quite unable to avoid a paternalistic attitude. I truly regret this. But it should be self-evident that any endeavor to portray the current status of archaeology in the United States, especially from that particular angle I have chosen, necessarily means a balancing of methods and results. If, by indicating some of the deficiencies I perceive, there follows a more determined effort to supply them before it is altogether too late, I shall be content.

Few of our so-called "wild" Indians now remain as prospective informants. Before they, too, pass on, it should be possible—surely a way can be found—to secure whatever they recall of the past, be it tribal customs, material culture, folklore. Vocabularies, alone, are inadequate; anatomical studies possess but limited application. There are tasks for a hundred workers; time presses. Anthropologists are fully aware of the present, rapid Americanization of our Indian tribes; of the rapidity with which

old practices are dying out; of the certainty with which the accumulated lore inherited from past generations is passing beyond our reach. For three successive summers I recently employed a Zuñi boy, still in his early twenties, who could recite the capitals of the forty-eight states, expound at length upon Eli Whitney's cotton gin, or give a plausible impersonation of ex-President Wilson delivering an address but he knew nothing of Zuñi history, mythology, or ritualism. The same lack of knowledge may be found in any other village. Indian youth, home from school, has little patience with the older order of things. What cannot be salvaged within the next few years is lost, utterly.

An archaeologist rarely finds his ideal—a region inhabited by Indians whose forefathers lived at known sites to which they had moved from other, older locations. The Pueblo area of the Southwest most nearly approaches such an ideal; the Iroquois section of New York, to a less degree. But there are few archaeologists in the United States who have not nursed an ambition to trace a given Indian tribe, through remains of its evolving culture, backward from historic and proto-historic villages to the very point of its independent origin. Doubtless such an ambition will never be realized but it would be quite possible to travel far along prehistoric trails if the ethnography of historic tribes were more completely recorded.

Within a few hours' motor ride from Washington are village sites, occupied at known periods by Indian groups whose identity may be learned from early histories and books of travel. Few, if any, of those sites have been examined intensively by trained archaeologists. Algonquian, Siouan, and Iroquoian tribes contended for the verdant valleys of Virginia; their superimposed cultures should be evident at some favorable site. But our knowledge of tribal groups in this vicinity is woefully inadequate considering the 321 years that have elapsed since settlement of Jamestown.

From Maine come meager data on the so-called "red paint" people, makers of adzes, gouges, and ground-slate projectile points—types of stone artifacts that do not occur in near-by shellheaps. Did the clam diggers precede those who buried in

ocher-stained graves? And what relationship, if any, existed between these simple "red paint" people of Maine and the now extinct Beothuk of Newfoundland? There is an answer if one could but find it.

In Florida are problems to satisfy the most persistent investigator. Cushing's marvelous San Marco culture has not yet been found with equal purity at any other site. From San Marco and elsewhere in Florida occasional specimens convey a strong suggestion of trans-Caribbean art; West Indian influences have been noted as far north as the Carolinas. Just when and how these exotic traits reached the southeastern United States remains to be determined.

More than one prehistoric culture is represented in Florida. The innumerable shell-heaps bordering the east and west coasts were not raised by the same people responsible for neighboring mounds. Crania from those mounds are predominantly brachycephalic; those from the shell-heaps, dolichocephalic. Comparable differences are noted between artifacts from the two types of structures. The mounds exhibit the higher culture of the two but close observers detect a cultural variation in some, at least, of the shell accumulations. For example, stamp-decorated pottery has been found in the upper layers of certain east coast shell-heaps; plain ware only in the middle strata; and no pottery at all in the lowermost deposits. Stratigraphic evidence has been disclosed also on Weeden island, off the west coast, but no one has yet persevered long enough to untangle the threads of this complex archaeological problem. At coming of the Spaniards, the lower peninsula was dominated by Calusa Indians; they, too, raised shellheaps.

Within the past few years interest has focused on the puzzling association, in Florida, of human artifacts with remains of Pleistocene mammals. From the meager data now available, this association may force some revision of time computations as they pertain to local geology but it cannot convincingly extend the human horizon. The occurrence does not admit of immediate explanation; it is not so simple as it seems. For one thing, the geology of Florida is too little understood; the effect of great

natural disturbances, such as the hurricane of 1926, is still unmeasured. Palaeontologists are not accustomed to the lesser time intervals employed by anthropologists; neither group is wholly familiar with the field methods and reasoning processes of the other. When some hold that a discovery such as this proves man as old as the mammalian remains; when others contend that the artifacts do not differ sufficiently from protohistoric types to warrant such a conclusion, it is perfectly obvious that the problem calls for painstaking research over a number of years and the earnest cooperation of geologists, palaeontologists, and students of aboriginal life. Otherwise the real facts in the case—and these, after all, are what we seek—may be lost in the fog of conflicting opinion.

Whether we wish it or not, the question of early man in the western hemisphere is to force itself more determinedly into the anthropological foreground during the decade just at hand. Within the past few months direct association between Indian projectile points and the remains of extinct mammals have been reported from Texas, Oklahoma, and New Mexico. No one may yet say what these discoveries promise; students qualified to express an opinion do not agree in their deductions. In these three instances, as in Florida, the fact of association will scarcely be questioned since the artifacts, firmly positioned, were seen and even photographed in situ by trustworthy observers. But the fact of original contemporaneity in each instance may be questioned, for the present at least.

Problems of this sort may not be solved, nor dismissed, with a wave of the hand. Archaeologists, for instance, will find it far easier to believe that man dwelt in North America during late Pleistocene times and hunted now extinct bison with spear-points of a given type than they will to believe the same type of projectile was also employed in the early Pleistocene, assuming man was then present. Man's body may not change perceptibly throughout a hundred generations but his handiwork will change. Because of the human factor involved, objects fashioned by man may not be employed absolutely as palaeontological material in the determination of geologic sequences. Nevertheless, most

anthropologists would welcome convincing proof that the American continent was inhabited during the Glacial epoch for the very simple reason that such proof would largely explain the great diversity of native languages and cultures. Until convincing proof has been presented, however, representatives of the several branches of science directly interested must strive for more complete cooperation, insisting only that all possible factors bearing upon the subject be assembled and weighed in unbiased scales. In this connection, I presume also to suggest the urgent need for more detailed knowledge than we now possess of post-Glacial geology. No one may say where the Pleistocene ends and the Recent begins; no one may say that a given species, supposedly extinct in one region at a certain Interglacial period, did not in fact survive for a considerable time in another district not reached by the ice.

For a hundred years Indian mounds and earthworks throughout the Mississippi valley have tempted inquiring minds. Fantastic theories of the last century have long since gone into the discard; facts of association and descriptive data are now demanded. The so-called Mound Builders were not a superior race, related to the Lost Tribes of Israel or to the mythical Atlanteans; neither were they a race of giants, later dispossessed by more aggressive tribes. Ancestors of historic Shawnee and Cherokee warriors built many of the mounds in Tennessee; the Shawnee and Creek are jointly credited with construction of the famous Etowah group in Georgia, a settlement supposedly visited by De Soto in 1540; Siouan tribes are thought to have erected at least some of the Ohio mounds. In any event there remains but little doubt that all the mounds and earthworks of the Mississippi valley were constructed by ancestors of those Indian tribes inhabiting the region at commencement of European exploration and settlement. It remains to identify the various mounds with the several tribes. Toward this end it would seem but the natural procedure first to excavate sites historically occupied by known groups; to employ the facts there disclosed in attempting to solve the secrets of other, older sites. This appears not to have been done in any appreciable degree.

In present-day Ohio, with its diversity of Mound Builder problems, the remarkable Hopewell and the dominant Fort Ancient cultures have recently been thoroughly studied and delineated. But the tribes responsible for those unlike remains are still unknown; they passed off the local stage before Europeans, struggling for supremacy in the region, made possible the advent of those Indian peoples known to Ohio since colonial days. Algonquian groups, controlling for a time, were later expelled by Iroquoian warriors. Iroquoian remains have been found overlying those of Algonquian origin. But in northern Ohio, where historic Erie villages are identifiable and where the imprint of other Iroquoian influence should be most indelible, little investigative work has been undertaken.

In New York the record is clearer. The area occupied by each unit of the Iroquoian Confederacy is fairly well established; its individual cultures have been circumscribed, at least in part. It has long been my hope that the fascinating Iroquois pipes and pottery, together with other equally distinctive artifacts, would exhibit group differences from which some close observer might eventually gauge the pressure exerted by each Iroquoian unit upon those Algonquian peoples who formerly dwelt south of Lake Erie. But such comparative studies naturally belong to the future.

I have purposely cited these several examples by way of illustrating my conviction that the archaeology of no one area in the United States is yet thoroughly understood. We have prepared a general map but without topographic detail. Data that did not seem essential, or the existence of which did not occur, to most of our predecessors—men whose names are ineradicably associated with the formative period of the science in our country—are vital to current researches. In the last decade and a half our whole point of view has altered; we look now to the trees that form the forest rather than to the forest itself. When I began my studies at the National Museum seventeen years ago I was urged to abandon my prime interest in the prehispanic Pueblo area on the ground that all which could be learned from that region had already been disclosed and published. But it

has since become clear that those earlier investigations were not complete in themselves; that they may best serve as the foundation on which a more finished structure is yet to be erected.

So it is with nearly every other section of the United States where prehistoric Indian remains are present. Much has been accomplished but there is even more still to be done. Arikara groups supposedly built the low, conical mounds in western South Dakota but what affinity, if any, exists between them and similar mounds in the eastern part of the state; or in Wisconsin; or Illinois? And what is the real relationship between Mississippi Valley mounds and those that lie 150 miles north of the Canadian border?

The prehistory of the Southwest is better known today than that of any other culture area in the United States. And it should be, for the story there is more accessible, more easily read. Nevertheless, the line that shall mark the outer limits of Pueblo dispersion has not finally been drawn; the earliest Basket Makers are still strangers to us and their subsequent wanderings, uncharted. Many interrelated, local puzzles are to be solved before students engaged with this fascinating region will be content to withdraw, satisfied that their interpretation of its prehistory is reasonably correct and complete.

Before 1540, and even later, the Apache and Navaho, possibly the Ute, collected heavy tribute from Pueblo villages in present-day New Mexico and Arizona, yet the ancestry of these three tribes is still debatable; their ethnography, largely unrecorded. Relatively little is known of cultural sequences in the Great Basin, from Colorado to California. Artifacts bearing indubitable evidence of contact with early Mexican tribes have been exhumed from Texas caves and mounds of the lower Mississippi valley but the trails on which aboriginal commerce crossed the Rio Grande in prehistoric times lie unmarked.

When all else fails, there remains that alluring theme: the origin and antiquity of the American Indian. Theory still points to Bering strait as the gateway through which man first entered the New World. Superimposed cultures have been observed in the Aleutian islands and elsewhere but no one, to my knowledge,

has yet found in the Bering region artifacts that cannot be attributed to ancestors of the present Eskimo or Indian inhabitants. Explorations now under way in western Alaska may be expected to clarify, in some degree, the question of ancient immigrations and contra-movements. Probable trans-Bering influences; the apparent isolation of the Northwest Coast culture; the seeming lack of relationships between Pacific Coast tribes and those of the interior, all have an inseparable connection with this enigma of origin and distribution. If man reached Alaska and turned southward in Glacial times, material proof cannot forever escape trained observers. But while exploration continues, it might prove illuminating if careful examination were made in selected caves and rock shelters, at various strategic points between the Atlantic and Pacific.

We who are engaged with these problems of prehistory will not actually solve them, however much we may contribute to their ultimate solution. Meanwhile, the very evidence from which conclusions are finally to be drawn is left a prey to vandals and curio seekers. That is the tragedy of it all! Every mound pillaged, every cliff-dwelling despoiled, means just so much less with which the student has to work—just so many more pages torn from the record he seeks to interpret. With existing laws inoperative and rather lacking in public support, I fail to perceive any practicable means of checking this destruction. It will continue so long as pot-hunters find a market for their plunder; so long as cliff-dwellings and mounds remain to tempt the curious. It would seem that only by greater industry, concentration of effort, and closer cooperation between research organizations and their trained personnel can sufficiently reliable data be assembled from the major culture areas to answer every need of that historian who some day will write the prehistory of the United States.

As a contributory factor in the development of archaeology, most research institutions have learned that the scientific success of an expedition depends almost wholly upon the ability of its leader; that mere enthusiasm is one of the lesser qualifications for leadership. Consequently, field investigations today are generally better organized, better financed, and more ably directed

than ever before. Deductions that seem to bear the mark of permanence have followed realization of the fact that prehistoric objects, however desirable for visual instruction, contribute far less to human knowledge than exact information as to the circumstances under which they were found. As a result of this advance, further progress may be anticipated.

A relative chronology for each culture area is one of the surpassing needs of archaeology in the United States today and, happily, our foremost investigators are earnestly cooperating to this end.

U. S. National Museum,
Washington, D. C.

PREHISTORIC ROCK BASINS IN THE SIERRA NEVADA OF CALIFORNIA

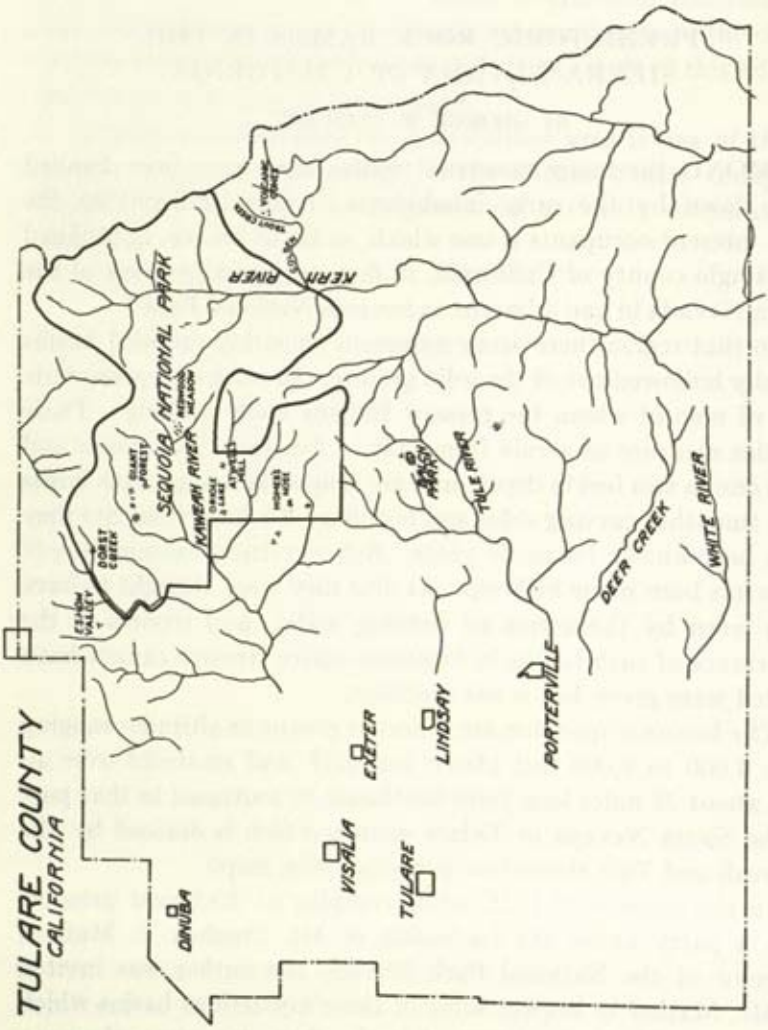
By GEORGE W. STEWART

AMONG the many unsolved riddles that have been handed down by the early inhabitants of this continent to the present occupants is one which, so far as known, is confined to a single county of California, in fact, to a small section of the Sierra Nevada in and adjacent to Sequoia National Park.

In that region there occur numerous smoothly rounded basins artfully hollowed out of the solid granite, the work of a prehistoric race of men of whom the present Indians know nothing. These cavities measure as a rule from four to five feet in diameter and from one to two feet in depth, and are shaped like huge wash bowls with smoothly curving sides and bottoms. To local residents they have been known for many years. But no critical examination of them has been made hitherto. At first they were thought to have been worn by the action of running water, and reports of the occurrence of such basins in locations where streams cannot have existed were given but scant credence.

The basins in question are found in groups at altitudes ranging from 4,000 to 9,000 feet above sea level, and scattered over an area about 35 miles long from northwest to southeast in that part of the Sierra Nevada in Tulare county which is drained by the Kaweah and Tule rivers (see accompanying map).

In the summer of 1925, while camping at Redwood meadow with a party under the leadership of Mr. Stephen T. Mather, Director of the National Park Service, the author was invited by Mr. Mather to inspect some of these mysterious basins which are excavated in the tops of small knobs of granite scattered among the sequoias, pines, and firs adjoining the meadow. The knobs consist of essentially unfractured, massive granite and measure from five to fifteen feet in height and from twenty to thirty feet in major diameter. The basins are almost perfectly circular in out-



MAP 1. Approximate location of groups of Indian rock basins in Sierra Nevada, Tulare County, California. (Prepared by T. W. Switzer, under the direction of George W. Stewart.)

line, and smoothly concave. In a general way they resemble the well known mortar holes in which the Indians grind acorns and seeds, but they are many times larger and more smoothly finished.

The granite knobs, being free from joints, are exfoliating in the manner characteristic of massive granite throughout the Sierra Nevada, and consequently have each of them two or three concentric scales or shells that envelope the main mass, curving around it like the layers of an onion. These shells are from a fraction of an inch to three or four inches in thickness, and the basins are sunk through them into the massive granite beneath. The smooth curvature of the basins is, however, scarcely marred by the partings.

All the basins were found deeply filled with a litter of twigs, leaves, and fragments of bark from the neighboring trees. Excavation of several of the basins revealed underneath this litter some bits of charcoal and ashes, some humic earth, comminuted granite and, at the bottom, a deposit of fine-grained, cream-colored material five or six inches deep, which according to analyses made by Dr. C. S. Ross, mineralogist of the U. S. Geological Survey, consists of volcanic ash (rhyolite). Throughout the litter, except at the bottom, were occasional fragments of granite derived from the sides of the basins.

In one basin was found an angular block of granite about twenty inches long and twelve to fifteen inches thick, that showed no evidence of abrasion. In several other basins were small blocks of granite six to eight inches long and four or five inches thick that exhibited slight evidence of wear; and on one of the larger knobs, near a group of basins, were two ordinary mortar holes and beside them several small stones which appeared to have been used for pestles. A growing fir tree seventeen years old was taken from one of the basins.

It was apparent from the outset that the basins are of artificial, not natural, origin, and this fact was verified by Mr. F. E. Matthes of the Geological Survey, who assisted in the excavating of the basins. According to him there are in the Sierra Nevada two types of natural rock basins with which those here discussed might possibly be confounded, namely, the familiar pot-holes that are worn

in streams beds by rotating cobbles, and the less well known but common weather pits that are produced in bare surfaces of granite by localized disintegration and the solvent action of standing water. However, the basins in question are readily distinguished from both pot-holes and weather pits by the wonderful regularity and perfection of their shapes. Pot-holes, being literally bored by rotating cobbles, tend to assume cylindrical forms and sometimes

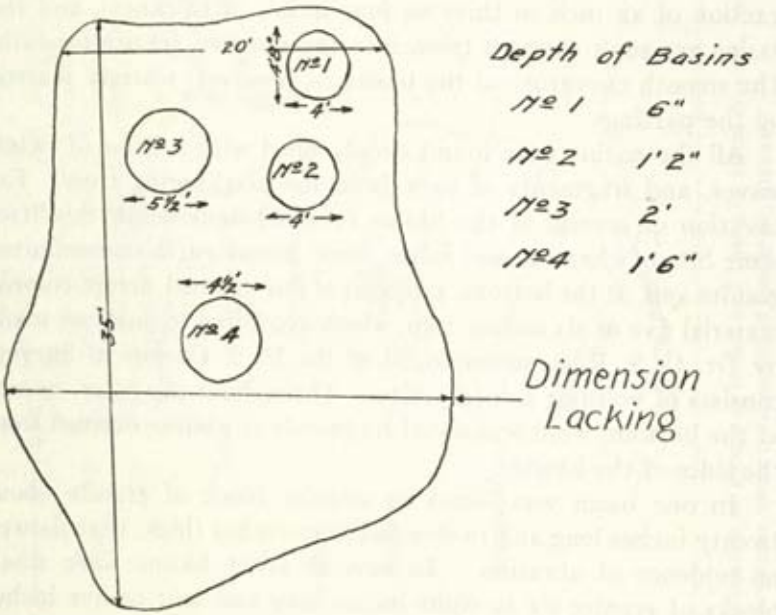


FIG. 1. Ground plan of rock mass showing disposition of basins on it.

are broader at the base than at the top, but seldom shaped like wash bowls; and weather pits expand as a rule laterally more rapidly than downward, and therefore tend to acquire somewhat irregular outlines and flat bottoms.

Measurements were made of two of the larger masses of granite and of the basins sunk therein, and diagrams were prepared by Mr. Matthes showing the dimensions. Figure 1 represents the ground plan of one of these rock masses and the relative positions of the basins excavated in its surface, and figure 2 is a cross-section of

another granite mass, showing several shells detached, or becoming detached, by the process of exfoliation, and a basin sunk through them into the solid rock underneath. Plate 25, gives some idea of the appearance of such a basin.

In the Giant Forest, near the rangers' headquarters in the Sequoia National Park, is a group of twenty basins, from three and a half to six feet in diameter but not so deep as those at Redwood meadow. They occupy a space about sixty feet square on a long sloping surface of bare granite. The distances between these basins were not measured, but their relative positions are approximately as shown in figure 3. Plate 26 shows very clearly the character of one of these shallow cavities and the partly detached rock shells through which it is sunk.

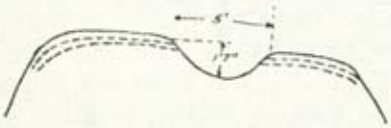


FIG. 2. Cross-section of rock mass showing concentrically curving shells produced by exfoliation. A basin is shown sunk through the shells into the massive granite underneath.

Not far distant are two large expanses of bare granite on which the excavating of a few basins had been begun, but not completed.

About a mile northeast of the group of basins just described are two other groups situated close together. The first, comprising ten basins, is on an extensive granite platform the surface of which is littered with fragments of exfoliation scales, decaying branches of trees, twigs, leaves, charcoal, and disintegrated granite. It covers a space about one hundred and fifty by forty feet, as shown in figure 4.

The material removed from the holes in this group was found to consist of granite fragments, small amounts of charcoal and wood ashes, soil formed by the disintegration of granite, humic earth, and volcanic ash. Near the top was a considerable amount of twigs, leaves, pieces of wood, and rock. The volcanic ash was more generally diffused through the contents of these basins than

was the case at Redwood meadow, owing probably to the fact that these basins are located on a large and gently sloping platform from which the rains and melting snow from time to time have

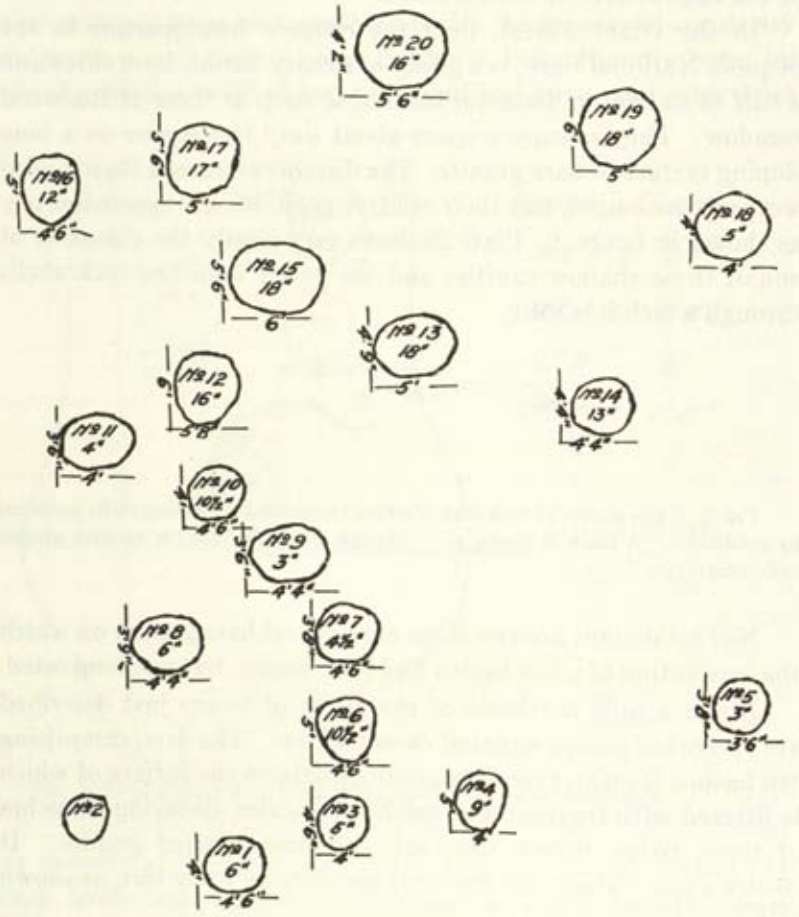
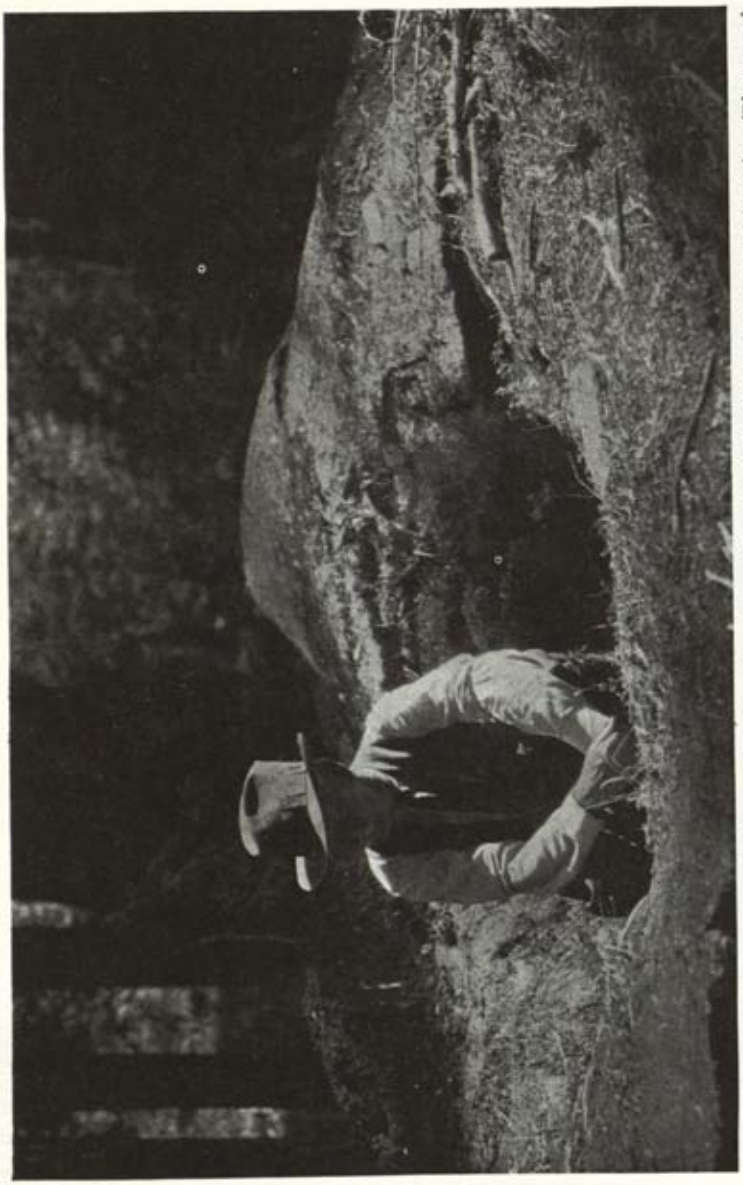
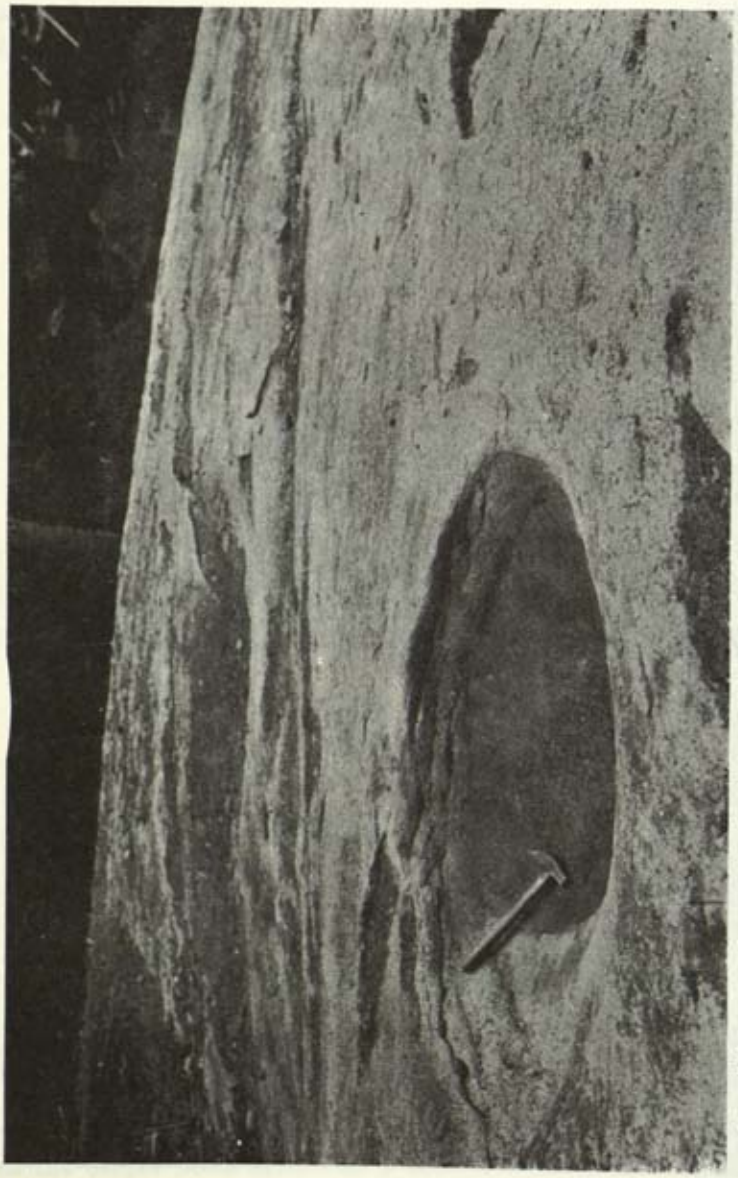


FIG. 3. Group of twenty basins near ranger's headquarters in Sequoia National Park. The lower number in each basin gives the depth in inches.

washed the ash into them, together with other material. In some of the deeper holes there was a bottom deposit of volcanic ash about three inches in depth. From one hole was taken a small pine tree, fifty-one years old, and a very small fragment of pottery.



One of the larger and deeper basins near Redwood meadow, after the débris had been excavated from it. (Photograph by F. E. Matthes.)



One of the group of twenty basins situated near rangers' headquarters, Sequoia National Park. The smooth curvature of its sides and bottom, and the thin exfoliation shells through which it is sunk are clearly shown. (Photograph by F. E. Matthes.)

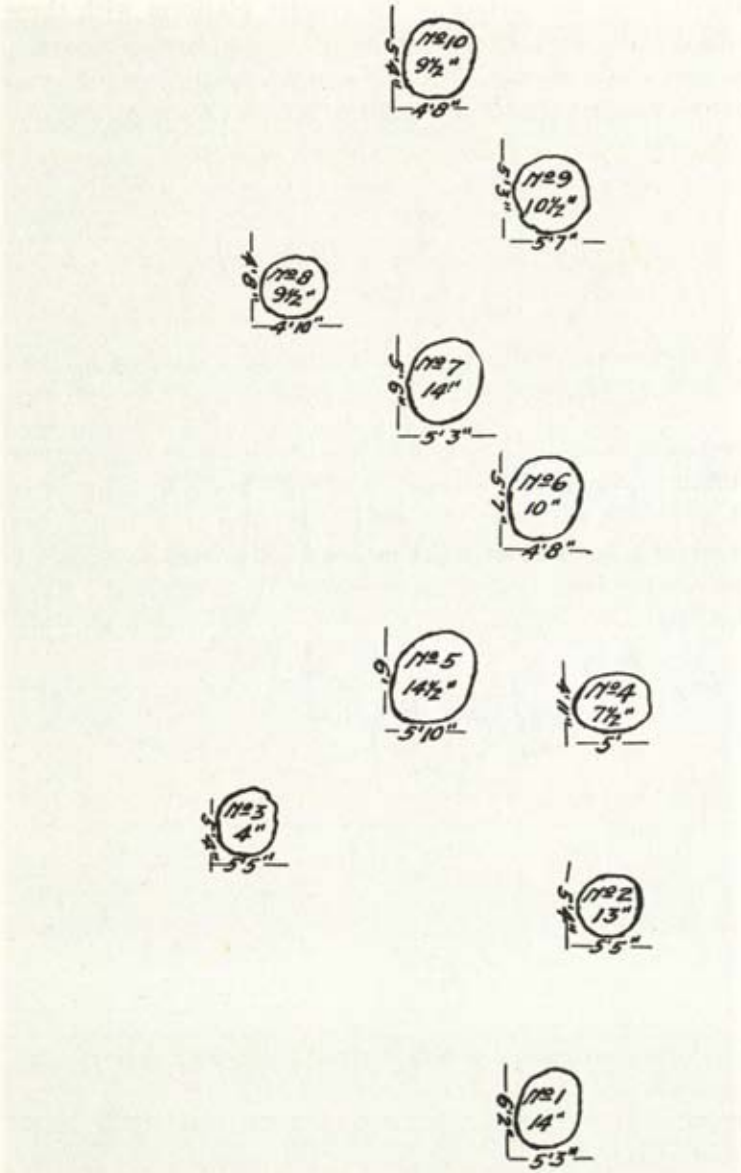


FIG. 4. Group of ten basins situated about a mile northeast of ranger's headquarters in Sequoia National Park. The lower number in each basin gives the depth in inches.

Plate 27 shows the surface of the granite platform with three basins filled with débris, the one in the foreground having a growth of moss around the margin. Plate 28 shows a partly cleaned basin with blocks taken therefrom ranged about the margin, and the light-colored volcanic ash appearing near the bottom.

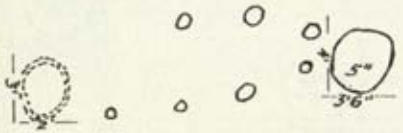


FIG. 5. Two basins, one of them unfinished (shown by broken lines) and seven mortar holes, situated on a small tabular mass of granite in Sequoia National Park.

About fifty yards to the south of this group, on a small granite table, beside a diminutive stream, is a single basin, four by three and a half feet in diameter and five inches deep, and near it are seven mortar holes five to eight inches in diameter and four to seven inches in depth. Here also is visible the outline of a basin three by two feet in diameter, the excavation of which had just

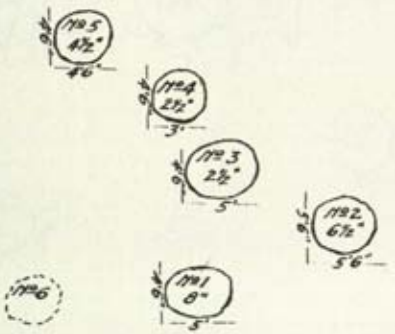


FIG. 6. Group of six basins, situated in vicinity of those shown in figure 5.

been begun, but from which the central mass had not been removed. See figure 5.

About fifty yards farther south is another group of six basins the contents of which were disturbed only enough to permit the measuring of their depth. The dimensions are shown in figure 6.

Some of the group of ten basins situated one mile northeast of rangers' headquarters, Sequoia National Park. The basins are shown in their undisturbed condition, filled with débris. (Photograph by Susan P. Thew.)

One of the ten basins partly cleaned. The blocks taken from it are placed about the edge. Some of the light-colored volcanic ash is visible at the bottom. (Photograph by Susan P. Thew.)

At the lower end of Crescent meadow in the Giant Forest, and also on the South fork of the Kaweah river at an altitude of about 4,000 feet, are basins which have not been measured.

A small group of basins with ordinary mortar holes associated with them occur, further, on a rock platform near Dorst creek, five miles northwest of the Giant Forest, and a similar group occurs on a ridge between Eshom and Pierce valleys, ten miles northwest of the Giant Forest. On a high granite rock near Oriole lake are five basins reported to be five feet deep and only two and a half feet in diameter. In a mass of granite near Atwells mill are two basins, of which one, measured by Rodney S. Ellsworth, is over six feet across at the top and four feet deep, circular in outline, tolerably perfect in form, with smoothly curving sides. The other basin is smaller and less perfectly shaped.

Near Salt creek, a mile from the west boundary of Sequoia National Park, are three large basins and several smaller ones, and on the high ridge between the South fork and the Mineral King fork of the Kaweah, a mile east from the above small group, are said to be seven "stupendous mortars" five to seven feet deep and averaging three feet in diameter. Two basins on a granite surface near-by, and one situated half a mile to the east, are said to be larger than any herein described. These basins appear to have the shape of a deep vase rather than that of a bowl.

The late Orlando Barton mentioned the existence of a group of eleven basins situated about three miles southeast from the last described, at an altitude of 9,000 feet, on the top of a bold landmark known as Homer's Nose. One "large mortar" at this place he reported to be in an unfinished state, the rock having been removed from it to a depth of only about one and a half inches. The periphery of the excavation, as far as completed, he described as the segment of a circle three feet in diameter. The bottom of the hole he stated to be quite rough, as if the work had been done with a chisel, but the sides just below the rim were smooth.

Groups of basins occur also at several places in the watershed of Tule river, namely on the divide west of the Middle fork, on a high block of granite, at an elevation of 5,800 feet; on Black mountain, south of Camp Nelson, at an elevation of 6,500 feet;

in Balch Park; and a short distance to the south thereof. These groups are similar to those already described, but their contents have not been examined.

Thus far nothing definite is known of the use that the Indians made of these basins. It has been suggested by different persons that they may have been used for grinding gold-bearing quartz, for tanning hides, for sweat-houses, for roasting seeds or meat, for baking pottery, and for storing supplies.

Débris from the bottom of some of the basins has been "panned out" without showing any color of gold, and as most of the basins are situated at great distances from quartz veins, none of which bear evidence of having been anciently worked, and as no fragments of quartz have been found in or near any of the basins examined, there appears to be no support for the supposition that the basins were used for the extraction of gold.

Indians made buckskin, and cured pelts without removing the fur, but it is not known that they made leather by immersing hides in vats with tannin; nor are the interiors of the bowls stained, as would be the case if tannin had been used, particularly the red sap of the sequoia, which carries a high tannin content. Therefore, the theory that the basins were used for tanning vats does not appear well founded.

If utilized for baking bread or roasting seeds, nuts, or meat, the basins were large enough and sufficient in number to serve a great multitude; but no bones or charred pieces of bones have been found in or about them.

That they were made expressly for sweat-houses seems quite improbable, for a serviceable sweat-house can be constructed with much less labor, and few if any of the basins are located near streams or bodies of water suitable for bathing. Had they been used for sweat-houses, or for the baking of pottery, small scales of granite would have become detached from the sides and bottoms, leaving them rough and discolored, whereas the interiors are remarkably smooth.

If used for storing acorns, seeds, flour, or other articles of food, the dampness would have impaired the quality of the contents or would have utterly ruined them; and satisfactory receptacles for storage could have been constructed with less trouble.

When the basins were first examined it was supposed that their excavation was begun by building fires on the granite and by throwing water on the heated surface, so as to cause it to fracture and scale off. If so, they must have been completed by other means, for the sides and bottoms of those finished are very smooth. They might have been made by pounding or rubbing with blocks of rock. Perhaps the stones shown in plate 28, which exhibit wear, were used for this purpose. The rough interiors of the unfinished basins observed by the writer in the Giant Forest and by Mr. Barton on the promontory known as Homer's Nose, however, lead to the belief that excavation was effected in part by some method similar to chiseling, but no implements have been found which could have been so used.

The basins in the southern groups, it would appear from the reports, are much deeper than those which have been measured further north. The question, therefore, suggests itself: Do the increased size and depth of the southern basins indicate that the people who made them came from the southeast or east, and that they had occupied the southern portion of the area described for a longer period than the northern?

All the basins are situated at considerable altitudes, the majority of them in the zone in which the forests of *Sequoia Gigantea* occur. Is it merely a coincidence that these basins occur only in the Sierra Nevada where the sequoias flourish in greatest numbers? Was the purpose for which they were made connected, possibly, in any way with the proximity of the sequoias?

The deposits of volcanic ash found at the bottom of the basins at Redwood meadow and in some of those in the Giant Forest were notably undisturbed, and unmixed, or only slightly mixed, with other materials.

There was, moreover, no other loose material under the layer of ash. Evidently, then, the basins were empty and clean when the volcanic shower fell, and this would show that they had been used only a short time before the eruption took place. Furthermore, the fact that this material has not been removed is proof that the people have never returned to the mountains, though they must have lived there for a long period. It may be reason-

ably presumed, however, that a heavy fall of suffocating volcanic dust would have driven the inhabitants of the region in haste from their homes.

From which volcanoes the ash may be derived is as yet uncertain. The volcanic cones nearest to Redwood meadow are those situated in the basin of Golden Trout creek, east of the Kern River canyon. They lie about 22 miles to the southeast. These cones have in the past discharged large flows of lava, but volcanoes of this type are explosive at times, and it is not improbable, therefore, that they have emitted great volumes of ash, the finer particles of which were carried to great distances by the wind. As the winds in this part of the Sierra Nevada blow frequently from the south or southeast, the ash from these volcanoes would naturally have been carried in the direction of Redwood meadow and other portions of Sequoia National Park.

As yet no information is at hand that permits us to answer the questions which naturally arise: Who were the remarkable people that excavated the basins? For what purpose did they make them? At what date did the volcanic eruption take place which put these people to flight? Whither did they go? Who are their descendants?

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PLANTS OF JAMAICA USED BY NATIVES FOR MEDICINAL PURPOSES

By MORRIS STEGGERDA

WHEN traveling in Jamaica one is struck with the fact that the natives attribute medicinal properties to most common plants. This is true for both white and black populations, and the knowledge of their uses is quite uniformly distributed. The general method of preparation of the medicine is to boil the leaves; the liquid resulting from this is known as "tea." This "tea" is generally taken internally. Definite leaves are used as poultices for aches and pains, and in some plants the roots are used for medicine instead of the leaves. It is necessary in welfare clinics constantly to advise mothers not to give the baby these "teas" since it is often one of the first drinks the infant receives.

Since such use of plants represents a rapidly passing phase of human healing, the material is presented while it is still available, for its ethnical interest.

The plants mentioned in the table are those collected in Jamaica, by the author, while on an anthropological investigation for the genetics division of the Carnegie Institution of Washington.[1] The author wishes to express his appreciation to Misses Ethel and Faith Henderson of Kingston, Jamaica, for aid in collecting and identifying the plants. The scientific names were supplied by the New York Botanical Gardens.

The common names shown in the table are those used by the natives. Some of these terms are descriptive of both the plant and its uses. It may be surprising to note from the table the large number of plants used for "colds," which probably indicates a high percentage of colds among the population. In a government publication presenting the causes of death, a table shows tuberculosis and pneumonia as among the four highest. This high

[1] This paper is No. 152 of the Contributions from the Department of Zoology of Smith College. The expenses of the expedition were supplied by a grant made by Col. W. P. Draper.

rate of pulmonary diseases may be due to unsanitary living and also to a weakened condition resulting from the still prevalent malaria. It is of interest to note that the weeds are used medicinally for such complicated cases as heart, kidney, and bladder troubles. The medical profession in Jamaica is of the highest caliber and is rapidly replacing this more primitive type of healing.

The following table shows the names and specific uses of plants used for medicinal purposes by the natives of Jamaica of British West Indies.

Common name	*Scientific name*	*Use and additional remarks*
1. Leaf of Life	Bryophyllum primatum (Lam) Kurz	Colds
2. Spirit weed	Argemone mexicana L	Colds (especially used for young children)
3. Rolling calf bed	Zebrina pendula Schnitzl	Colds
4. Sour sop	Armona muricata L	Colds (invariably induces perspiration)
5. Spanish needle	Bidens pilosa L (?)	Colds
6. John Charley	Varroma (cordia) globosa Jacq?	Colds
7. Strong Back	Merbomia sp.	Colds and kidney trouble
8. Juba	Iresine celosia L	Colds and dropsy
9. Elder	Sambricus simpsoni Rehder	Colds and fever (boiled infusion)—also for ring worm (leaf applied as poultice)
10. Rational-Ram-Goat	Turnera ulmifolia L	Colds
11. Cow foot	Heckaria umbellata (L) Kunth.	Colds and headaches

Common name	*Scientific name*	*Use and additional remarks*
12. Sage	Schobera angiosperma (Murr) Britton (Heliotropium parviflorum L)	Colds—also as a beverage
13. Wild Sage	Lantana sp.	Colds and fever
14. Jackney-bush	Eupatorium sp.	Cold and fever (induces perspiration)
15. Ginta leaf	Piper sp.	Colic
16. Peppermint	Mentha sp.	Stomach ache
17. Devil's Horse Whip	Cyathula achyranthoides (H. B. K.) Moquim	Colic (root boiled with pimento)
18. Ceresee	Momordica charantia L	Stomach ache—(tea used especially for babies)
19. Wild Tim	Pilea microphylla (L) Liebin	Tonic for babies
20. Pepper-elda	Piper amalago (L)	Tonic for blood impurities
21. Black sage	Varronia (Cordia) globosa?	Tonic
22. Know you	Operculina dissecta (Jacq.) House	Cathartic
23. Water Grass	Commelina elegans (H. B. K.)	Malaria fever
24. Wild Marigold	Wedelia triloba (L) Hitch	Fever
25. Rock-bush	Gesneria sp.	Induces perspiration in cases of fever
26. Muskmelon (?)	Eupatorium macrophyllum (L)	Shows positive reaction for yaws if person is susceptible.
27. Tamarind	Tamarindus indica (L)	Kidney trouble—"cooling"-of blood

Common name	*Scientific name*	*Use and additional remarks*
28. John bush	Blechum blechum (L) Millap	Sore feet—also used in bath
29. Hog meat	Ipomola sp.	Leaves used as a poultice
30. Kingston buttercup	Tribulus cistoides (L)	Kidney and bladder troubles
31. Guinea hen weed	Petiveria alliacea (L)	Heart trouble
32. Fit weed	Eryngium foetidum (L)	Stops convulsions—also used in bath.
33. Chicken net	Miconia laevigota (L)	Sores—itch
34. Guma	Solanum nigrum (L)	Sores in mouth
35. White back	Chaptolia nutans (L) Polak	Lame feet
36. Hog hook	Tournefortia hirsutissima (L)	Diabetes
37. Pumpkin (squash)	Cucurbita moschata (Duch)	Kidneys (increases urine)
38. Goucka	Mikania sp.	Diarrhoea
39. Wild tobacco	Pluchea odorata (L) Cass	Sores (also used for women in labor)
40. Dandelion	Cassia sp.	Kidneys. Also removes swellings (root used for colds)
41. Worm weed	Artemisia absinthium (L)	Worms—also diarrhoea—(mixed with pimento and starch).

SMITH COLLEGE,
NORTHAMPTON, MASSACHUSETTS

THE TAWASA LANGUAGE

By JOHN R. SWANTON

The Material

A FIND of considerable interest has recently been made by Mr. David I. Bushnell, Jr., whose discoveries of objects, drawings, paintings, and manuscripts dealing with the American Indians are already familiar to Americanists. It is one which has a significant bearing on the relations between some of the southeastern languages and the speakers of them.

In the American Anthropologist for Oct.-Dec., 1908, Mr. Bushnell called attention to

> an old manuscript of unusual interest, relating to the Creek Indians in 1706 and 1707.

This manuscript is no. 13, vol. 4, of the Ludwell Papers, preserved by the Virginia Historical Society at Richmond, and Mr. Bushnell states that it

> was either written or dictated by Robert Beverley, the historian, two years after the first edition of his *History of Virginia* was published.

It relates the story of an Indian calling himself Lamhatty, belonging to the Tawasa town and tribe, who had been captured by the "Tusckaroras," carried through several Creek towns, and finally sold to the "Souanoukas," evidently the Shawnee of Savannah river, from one of whose hunting parties he had escaped to the English settlements in Virginia.

The manuscript consists of a single sheet of paper and on the reverse of this is a map of the country through which Lamhatty had passed, his route being shown by a dotted line. The narrative and map, with comments on both, appeared in the above-mentioned number of the Anthropologist (pp. 568–572) under the title "The Account of Lamhatty."

Last summer Mr. Bushnell learned from Fairfax Harrison, President of the Southern Railway, who is deeply interested in the antiquities of Virginia, of the existence of a letter referring

to Lamhatty in the archives department of the Virginia State Library, Richmond. The writer of this letter is thus described by Mr. Harrison:

> *John Walker,* . . . . was one of the leading men in King and Queen county from its organization in 1691 as a frontier county. In the land roll of 1704 he is listed as the owner of 6,000 acres. In 1707–1709, when the pressure of the Iroquois upon the Virginia and Carolina Indians had repercussions upon the Virginia frontier, Colonel Walker was "first" in the K and Q commission of the peace and lieutenant-colonel commanding the county militia, and was thus responsible for that particular sector of the frontier. This was the occasion for his reports to the provincial government. He died *ante* 1714.
>
> He was the grandfather of Dr. Thomas Walker (1715–1794) of "Castle Hill" in Albemarle, the pioneer explorer of Kentucky.

This letter and another by the same writer and in the same connection, but not mentioning Lamhatty, were published by Dr. W. P. Palmer in the *Calendar of Virginia State Papers* (1: 113, 118, 1875). Mr. Harrison sent copies of these letters, as published, to Mr. Bushnell but called attention to the fact that they evidently contained some errors and suggested that Dr. McIlwaine, custodian of the archives, be asked to find the originals and make photostats. Mr. Bushnell followed this advice, but, while complying with the request, Dr. McIlwaine discovered, on the back of the letter referring to Lamhatty, an Indian-English vocabulary of 60 words under the heading "Sum words of his language explained." This had not been reproduced by Dr. Palmer, but Dr. McIlwaine included a photostat of it with the others, and in September, 1928, just after my return to Washington from the Congress of Americanists, Mr. Bushnell brought these and other notes in his possession bearing upon the subject to me.

The letter referring to Lamhatty is dated 1707/8, January 16, and runs as follows:

> May it please your Hon^{r}—
>
> When ye Reporte was of ye late murder in ye neck, I was told by Coll. Waller that ye Coll. of New Kent County and himself had sent out parties of men in Search of ye Indians; Whereupon I thought myself obleged to do y^{e} like, and ordered one in y^{e} upper parts to take 12 men and range our frontiers; he could make but 7, and they not above two shoots of amnition a piece; they were out 3 days, but made no discovery.

I must also acquaint your hon: that we have no amnition in y^e^ County that I know of, & have been in that condition a great while.

On Saturday, y^e^ 3^d^ of Jan^r^ Instant, an Indian came naked of armes into one of y^e^ houses of y^e^ upper Inhabitants in this County, upon which the people there tied him by y^e^ arm, & brought him to me; they got to my house with him on y^e^ day following; at first I put him in irons, and would have brought him to yo^r^ Hon^r^, but the extremity of y^e^ weather prevented any passage over Yorke River. After three dayes, finding him of a seeming good humour, I let him at liberty about the house where he still continues; I got y^e^ Interpreter and a tuscarora Indian to talk with him; he at all times seemd verey inclinable to be understood, and was verey forward to talk, but neither of them could understand him.

What I have learnt from him in this long acquaintance is thus he calls his name Lamhátty, and his town Towása, near which there were nine other nations of Indians, confederates with his Town, under distinct names for y^e^ particular, but all under the common name of Towása's, which are described by those O's on y^e^ North side of the East and West line; those O's on y^e^ South side y^e^ sd. line with severall others which he says are there, have also their particular names, but all under the comon name of Tuscaróras he says that not far from their Town is great falls, and a little below that a great salt water [lak]e, whose waves he describes to tumble and roar like a sea he sayes He was taken prisoner 9 months agoe; that he was 3 months in carrying to Telapoúsa where they made him work in y^e^ groun[d] That there they use canoes that he was 2 mo. in carrying through ye 6 next Towns, and one month in passing from ye 6^th^ from Telapoúsa to y^e^ 7^th^, where he was sold, viz^t^. Sowanóuka They in a short time took him out a hunting, viz^t^. 6 men 2 women and 3 children, along y^e^ ledge of Lower mountains, (as he at first described to us by heaps of dirt tho' his geography has not made him hit it right in this draught) Whence he run away from them, and in 9 dayes time came to ye house by Robert Powells where he was taken and brought to me He says that ye first time y^e^ Tuskaroras made warr, they swept off 3 of their nations clear, and y^e^ next time 4 more, and y^e^ other three run away The map is all his own drawing which I thought might be satisfaction to your hon^r^ to send, y^e^ red line denotes his march, y^e^ black lines y^e^ Rivers, & y^e^ shaded lines y^e^ mountains, which he describes to be vastly big among some of those Indian Towns for y^e^ rest I must referr yo^r^ Hon^r^ to y^e^ map; he seems very desirous to stay, if I might have yo^r^: Hon^rs^: leave to keep him and am

Yo^r^: Hon^rs^: most humble Servant,
John Walker.

In order to place all of the material before the reader, it will be best to reprint here the narrative which Mr. Bushnell published in 1908.

M^r^. Robert Beverleys Acco^t^. of Lamhatty

Lamhatty an Indian of Towassa of 26 years of age comeing naked & unarmed into the upper inhabitants on the north side of Mattapany in very bad weather in y^e^. X^t^. mass hollidays anno 1707 gives this acco^t^.

The foregoeing year y^e^. Tusckaroras made war on y^e^ Towasas & destroyed 3 of theyr nations (the whole consisting of ten) haveing disposed of theyr prisoners they returned again & in y^e^ Spring of y^e^ year 1707 they swept away 4 nations more, the other 2 fled, not to be heard of 'twas at this second comeing that they took Lamhatty & in 6 weeks time they caryed him to Apeikah from thence in a week to Jäbon, from thence in 5 days to Tellapousa (where they use canoes) where they made him worke in y^e^ ground between 3 & 4 months. Then they carryed him by easy Journeys in 6 weeks time to the Opponys, from thence they were a month crossing y^e^ mountains to Souanouka's where they sold him.

A party of y^e^ Souanouka's comeing northward under the foot of y^e^ mountains took him with them, there were of y^e^ Souanoukas, 6 men 2 woman & 3 children, he continewed with them about 6 weeks, & they pitched thier Camp on y^e^ branches of Rapahan: River where they pierce y^e^ mountains, then he ran away from them keeping his course E b S & E S E. Crossing 3 branches of Rapahan: River & thrice crossing Mattapany till he fell in upon Andrew Clarks house which he went up to & surendered himself to y^e^ people they being frightned Seized upon him violently & tyed him tho' he made no manner of Resistance but shed tears & shewed them how his hands were galled and swelled by being tyed before; where upon they used him gentler & tyed y^e^ string onely by one arme till they brought him before L^t^. Coll^o^. Walker of King & Queen County where is at liberty & stays verry contentedly but noe body can yet be found that understands his language.

Postscript [torn] after some of his Country folks were found servants [torn] he was sometimes ill used by Walker, became very melancholly after fasting & crying several days together sometimes useing little Conjuration & when warme weather came he went away & was never more heard of.[1]

These are evidently the results of independent interviews of Lamhatty, or independent sets of interviews, but as it is probable that the same imperfect interpreters were used, we should not be surprised to find blunders. Some such blunders, actual and probable, will be pointed out, but in spite of them it is surprising how well the narratives agree with each other and with information otherwise obtained.

One very obvious mistake was made by Walker in stating that the ten towns called collectively "Towása" are indicated on the map "by those O's on y^e^ North side of the East and West line; those O's on y^e^ South side y^e^ sd. line" having the common name "Tuscaróras." It is evident from the map and from common sense that we must transpose the words "North" and "South." Beverley himself has made a slip in saying that after seven "nations" had

[1] Am. Anth., n.s., 10: 568–569, 1908.

been swept away "the other two fled." For "two" we should of course read "three," following Walker.

A third error, due perhaps to the desire of the Tuscarora interpreters to exalt the importance of their nation, is the extension of the Tuscarora name over numerous towns which had nothing to do with that tribe, except it may be as occasional enemies. Most of these really belonged to the Creeks.

Still another possible error is Beverley's statement that the Tawasa towns had been swept away in two successive years. The French writer Pénicaut says that the Tawasa came to Governor Bienville at Mobile in 1705 to ask for a piece of ground on which to settle and were given a plot a league and a half below the fort. But Pénicaut quite uniformly goes astray in his chronology, and La Harpe does not mention the tribe until 1707, the very year when Lamhatty states that they were driven from their old homes. In a copy of Bienville's memoir on the tribes of Louisiana, the French explorer is made to state that he had drawn the Chatot Indians from Florida to the neighborhood of Mobile in 1703, and, since the Chatot constituted part of the Tawasa confederacy, it is possible that the first raid upon the latter was four years before the second instead of one. However, the copyist has erred in reproducing some figures in other parts of the Bienville document and there may be a mistake here. I may add that I did not have access to this memoir when I compiled Bulletin 73 of the Bureau of American Ethnology. It is also possible that some Chatot remained in their old homes after the rest of the tribe had moved.

The stages of Lamhatty's journey, as reported by our two authorities, agree very well if we may be allowed to suppose the word "weeks" to have been inserted in one place instead of "days." Placing the two side by side we have the following result:

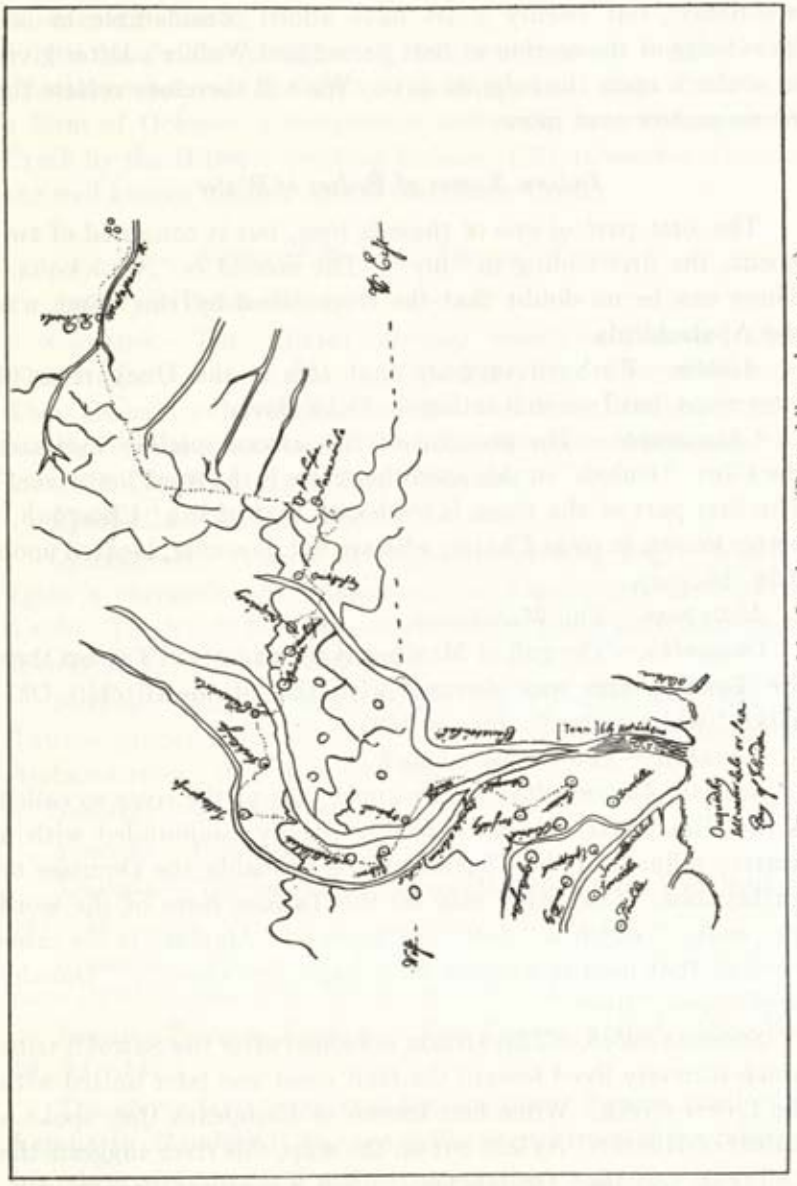
Lamhatty's itinerary according to Walker		*Lamhatty's itinerary according to Beverley*	
"Towása" to "Telapoúsa"	3 mos.	"Towassa" to "Apeikah"	6 weeks
		"Apeikah" to "Jäbon"	1 week
		"Jäbon" to "Tellapousa"	5 days (weeks?)

At "Telapoúsa"	3–4 mos.		
"Telapoúsa" to "Opponys" (or "Oŭquáney")	6 weeks	"Tellapousa" to 6th town (i.e., "Oukfusky")	2 mos.
"Opponys" to "Souanouka"	1 month	"Oukfusky" to "Sowanóuka"	1 mo.
		At "Sowanóuka"	"a short time"
With "Souanouka" hunting party	about 6 weeks		
		After leaving hunting party	9 days

Both agree that Lamhatty reported 9 months (actually of course "moons") had elapsed from the time when he was first captured until he reached the white settlements, and, measured by that standard, Walker allows too much time, 10 to 11 months, and Beverley too little, less than 6 months. If the "5 days" which according to Beverley Lamhatty's captors consumed in going from "Jäbon" to "Tellapousa" should be "weeks," as I have suggested and as the map would indicate, the testimony of our authorities regarding the time consumed between Tawasa and Tallapoosa would agree. There is a discrepancy of only two weeks in the itinerary between "Tellapousa" and "Sowanóuka." It seems to the writer that these stages of the journey are represented with approximate accuracy and probably that from "Sowanóuka" to the English settlements but that Walker understood more time to have been spent in the Tallapoosa villages than was actually the case. Perhaps the "3 to 4 months" includes the entire period between the arrival at "Telapousa" and the arrival at "Opponys." An exact correspondence is not to be expected in any case.

Study of the Map

Mr. Bushnell believes that the map preserved with Beverley's manuscript narrative and here reproduced (map 1) is only a copy. The names were of course written in by a white man in any case. If they were on the original, they were probably inserted by Walker and copied by Beverley. In consequence, it is quite probable that some of them contain errors, and this fact must be kept in mind in any attempts at identification. In his first paper



MAP 1. Country traversed by Lamhatty. (Dotted lines show route.)

Mr. Bushnell gave identifications of part of the place names mentioned, but twenty years have added considerable to our knowledge of the section at that period and Walker's letter gives us a check upon the original data. We will therefore review the whole matter once more.

Indian Names of Bodies of Water

The first part of one of these is torn, but it consisted of two words, the first ending in "bly." The second is "Netúckqua." There can be no doubt that the river called by this name was the Apalachicola.

Alatám.—Bushnell suggests that this is the Duck river of later maps, but I see in it rather the Ocklocknee.

Chauctoúbab.—The position of this stream plainly indicates the Flint. "Oubab" in this and other cases is the word for "river." The first part of the name is evidently that of the "Choctóuh," better known to us as Chatot, who are not, however, located upon it in this map.

Matapani.—The Mattapony.

Ouquodky.—The gulf of Mexico. If the name is in Tawasa then the Tawasa term was identical with that of the Hitchiti, Okihâtki, "white water." (See p. 449)

Rapahan.—The Rappahannock.

Sayénte Alatám oúbab.—The upper part of the river so called is the Tallapoosa, which Lamhatty plainly confounded with a western affluent of the Chattahoochee, probably the Omussee or Yattayabba. "Sayente" may be the Tawasa form of the word for "snake," which is "sinti" in Choctaw. "Alatám" is the same word as that used in another river name (see above). "Oúbab" is, of course, "river."

Sowoólla oúbab.—This stream is named after the Sawokli tribe which formerly lived toward the Gulf coast and later united with the Lower Creek. When first known to Europeans they spoke a dialect of Hitchiti. As laid out on the map, this river suggests the Chippola, but the "Ogolaúghoo," upon a northern branch of it, are undoubtedly the Yuchi band known to have lived near Choctawhatchee river, and it is probable that the later name of

the river itself was derived from that of the Chatot tribe here represented close by it.

Wichise.—The position of this watercourse indicates the Chattahoochee, which the name itself confirms since it is plainly a form of Ochesee, a designation ordinarily bestowed upon the Creek by the Hitchiti-speaking Indians. Chattahoochee river was the well known historic seat of the Lower Creek.

Names of the Ten "Tawasa" Towns

Aulédly.—Unidentified.

Choctóuh.—The Chatot already mentioned, from whom Chauctoúbab was named, and probably the Choctawhatchee. They are said to have spoken a dialect different from but related to that of the Choctaw with whom they were frequently confounded. (See B. A. E., Bull. 73: 134–136.)

Ephippick.—Unidentified.

Ogolaúghoos.—A form of Hogologee or Hog Logee, which is again a corruption of Tahogalewi, an Algonquian name of the Yuchi. The Yuchi here mentioned are the Choctawhatchee band. (See B. A. E., Bull. 73: 298–304.)

Poúhka.—Without much doubt the Pawokti who, like the Tawasa proper, later settled among the Alabama Indians on the Alabama river. (See Bull. 73: 141.)

Socsokóy.—Unidentified.

Sonepáh.—Unidentified.

Sowóolla.—The Sawokli tribe mentioned above. (See Bull. 73: 141–143.)

Tomoóka.—A band of Timucua, perhaps identical with the later Osochi. (See Bull. 73: 25–26, 165–167.)

Towása, Towasa, Towassa.—The Tawasa proper. (See Bull. 73: 137–141.)

The above facts show that the so-called "Tawasa Nation" of Lamhatty, if indeed it was not rather a construct of the minds of his white auditors, was nothing more than a group of towns of Muskhogean, Timucua, and Yuchi affiliations, probably thrown into a kind of confederation by common fear of the Creek.

Names of the Towns through which Lamhatty was Carried

"Towasa," where Lamhatty was captured, and "Scosoóky," the first town to which he was afterwards brought, belonged to the Tawasa confederation and have already been mentioned. The party then crossed to the east bank of Chattahoochee river just below the mouth of some stream entering from the west which seems to have impressed Lamhatty with an exaggerated idea of its size (see "Sayénte Alatám oúbab" above). On the east bank of the Chattahoochee higher up they came to a town called Apéicah (in text "Apeikah"). This word suggests the Creek town and tribe of Abihka, and there is no other Muskogee town with a name anything like it. The difficulty in such an identification is the fact that Abihka was well up Coosa river in what is now Talladega county, Alabama, distant the entire width of the Creek country. Nevertheless I believe that there is a solution of this perplexing problem. The point where the town is located on Lamhatty's map corresponds very closely to that of a Lower Creek settlement known as Eufaula Hopai ("Far away Eufaula") or Lower Eufaula, so called to distinguish it from another Eufaula on Tallapoosa river of which it was traditionally a colony. There was, however, still another Eufaula in the Abihka country, called Eufaula Old Town or Eufaula Hatchee, and there is every reason to believe that this was the mother town of all of them. As the term Abihka was applied, not merely to certain specific towns but generally to the uppermost body of Creek, those in the Coosa River country—and sometimes to the entire nation—it is quite possible that it was retained as one designation of the Lower Eufaula Indians. They are known to have settled here at a comparatively late date though they were in that spot as early as 1733.

Crossing the river at "Apéicah," Lamhatty's captors passed through two more towns on the west side. The first of these is called "Jábon" or "Jäbon." In the present form this word is unidentifiable, but if we suppose that one or two slight mistakes were made by Beverley in copying and that it was really "Jáhau," "Jáhaw," or something very like these, it is probably the Chiaha

town, at one time in about the place indicated. The second town is "Alabáchehati" and if we assume some mishearing and miscopying again we may suppose this to have been "Abalachikoli" the Hitchiti form of the name Apalachicola. The Apalachicola did, indeed, live at a corresponding point at one period, but I had supposed that they were among those towns in the Tawasa nation whose names cannot now be identified. Possibly the town was farther toward the northwest than the map shows and may have belonged to the Alabama. The first part of the name would lend some color to this theory and the latter part might be Creek *chati* or *tcati*, "red" (cf. the Alabama town Kantcati, "Red Ground"). However, I incline to the other interpretation.

The next objective was "Tellapoúsa" or "Telapoúsa," an old town on the river which bears the name and not far from its junction with the Coosa. "Tockhoúsa," the next place reached, may be intended for Muklasa, if "l" has been miscopied "h." The position would be exactly as indicated. Otherwise I have no suggestion to make regarding it. "Cheeawóole" is beyond reasonable doubt the Upper Creek war town of Tiwahali, Creek surd *l* when initial being repeatedly recorded as *ch* by English speakers. If would seem, however, as if Lamhatty had here confounded the Tallapoosa river with the upper course of the Chattahoochee.

"Coweta," which is next in order, is the well known head war town of the Lower Creek. The place so called on this map was probably that afterwards named Coweta Tallahassee ("Coweta Old Town"), later Broken Arrow, near the falls at Columbus, Georgia, but on the Alabama side of the river. It is, however, possible that the Coweta Indians were then at a settlement on Ocmulgee river, which they occupied temporarily to be near the English traders. In the name of the next place, "Awhíssie," I am inclined to find that of the Creek "Atasi" Indians a band of whom were at about this period on Ocmulgee. At any rate there can be no reasonable doubt that "Oŭquáney" (badly misspelled "Opponys" in Beverley's text) refers to the Oconee since not only is the name sufficiently close but the map position agrees very well with that of the Oconee town at Rock Landing on the river bearing their name.

"Oukfusky" designates in Creek a point extending out into the water or a point of land between the mouths of two confluent streams. It was applied to a number of related Upper Creek towns but, while some branch settlements were on the upper course of the Chattahoochee, none is known to have been as far east as the point here indicated. While Okfuskee Indians may have been in this vicinity, I am inclined to regard this as a Creek name for the Yuchi town on Ogechee river, which would be directly on their line of march for the Shawnee village. For there can at any rate be no question that the "Sowanoúka" of the map, the "Souanouka's" of the text, and Walker's "Sowanoúka" are variants of the Creek term Sawanoki or Sawanogi applied to the Shawnee Indians, and the only Shawnee settlement corresponding to the place here indicated was that near the present Augusta on Savannah river. The only suggestion that I have to make regarding the last town indicated, "Poehússa," is that the concluding portion of the name resembles parts of some eastern Siouan tribal names such as "Monahassano" or "Nahyssan," and "Hassinunga."

Earlier Classification of the Tawasa

Our knowledge of the Tawasa extends as far back as 1540 when the chroniclers of De Soto mention them, under the names "Toasi" and "Tuasi," as a tribe on the lower Tallapoosa or upper Alabama. The occasion and date of their removal to the Apalachicola are unknown to us. After having settled near Mobile in the manner already indicated, they remained there about ten years when they returned to the very country where De Soto had found them and constituted one town among the Alabama. Afterward they followed the fortunes of the latter Indians, and during my researches in 1910–14, among those living in Texas, I found that the name was still remembered.

Until the appearance of the present vocabulary, it was assumed, on the best of grounds, that the language of this tribe differed in no respect from standard Alabama, and this impression was actually strengthened by the discovery of the first Lamhatty manuscript and accompanying map.

"Ouquodky," for instance, which it is natural to assume was the Tawasa name of the gulf of Mexico, is, as stated above, practically identical with the Hitchiti term for the same, and the Alabama form differs but slightly. Some of the place names also suggest a Muskhogean derivation, and we have, or had, the best of reasons for supposing that two of the other towns of the Tawasa confederacy, Choctoúh and Sowóolla, were of Muskhogean speech. The only difficulty appeared in the term "oúbab," evidently signifying a "river," but this was not insurmountable since it might be considered a variant form of Alabama "apa'ni" and Choctaw "bok."

The New Vocabulary

On the basis of this new vocabulary, however, we must apparently revise our conclusions, at least in part, and align Tawasa with the language or languages of the so-called Timuquanan stock of northern Florida. Such an unexpected result might cause us to question whether Lamhatty may not have belonged to some minor foreign group of Indians, such as the "Tomoóka" shown on his map. While no final answer can be given to this suggestion unless other Tawasa linguistic material comes to light, probability is against it. It is always possible that an individual taken at random from some tribe will belong to an enclave not really representative of the group, but it is unlikely. Such a theory would gain strength if the language were absolutely identical with that recorded by the Spanish Franciscans, Pareja and Mobilla, but, as we shall see, it diverges from that language sufficiently to entitle it to a distinct dialectic position. These facts will be more clearly apparent on a comparison of the material to which we will now proceed. First I present a copy of the new Tawasa vocabulary as carefully made as possible, only a few forms being in doubt.

Sum words of his language explained

Dog	Effallàh
bread	písso
meat	soúa
knife	pítchot
Drink	ocoòt

potato	Necóa (or Neoóa)
Corn	Chesapà
Cat	heăt
1	yánkfah
2	Eúksah
3	Hóp-ho
4	Checúttah
5	Márouah
6	Mareékah
7	pekétchah
8	pekénnahough
9	pekétchcuttah
10	toómah
11	toomayaúkfa
20	tomoeúcha
23	tomo-eucha-Hop-ho-Coláh
26	tomo-eucha-Maréekah
hand	foóley
leg	Secah
stocking	secútchenou
pipe	'scùt
tobacco	hewéenou
door	ocut-soúa
chair	I-hewanna
sun	Hássey
day	I'nny
night	Miltéwah
moon	A'ssick
full moon	A'ssick hóomah
I	oū
you	hé
he	chénah (or chénoh)
here (?)	Uēkqūah
there	Uēkheth (?)
. . . . ay	Hūekquah
go	so macu (?)
come	hĕmèh
sit down	héwăh
fire	Túteah
come to the fire	Túteah hemèh
boy	Loókqŭy
Woman	Néah
man	wiedōō
Bow	Colúte
Arrow	Piékcutt
fight	loúchat

tied	Cōckqūit
River	Wiéott
Salt River	Wiéott opût (?)
East	Âssick-toúquah
West	Âssick-Eachah
Mountains [or river]	Oū bāp[2]
great	yów, e
little	Chícky (or Chiéky)
how many	sōquàh

Linguistic Material from the Map

A few words might also be added from the names on the map if we could be sure that they had not been borrowed by Lamhatty from some other dialect. Indeed, the few supplied to us in this manner present puzzling contradictions with which it is difficult to deal. In the first place the map name for "river" is plainly "oúbab," but this is almost identical with "Oū bāp," the word signifying "mountains" in the vocabulary. Are these in fact two distinct but slightly differing words, or was a mistake made in the original record? If the latter is the correct explanation, it seems pretty clear that the map interpretation is to be accepted since so many errors of the same kind are incredible. We need not be disturbed by the fact that the vocabulary contains a word for "river" quite distinct from the one in question, because some Southeastern languages contain two terms applying to watercourses, as Choctaw *hahtca* and *bok*; Natchez *wała* and *abál*. Almost all of them also employ the word for "water" to designate streams, and this last fact may serve to explain another difficulty, one presented by the name given to the gulf of Mexico, for "Ouquodky" is evidently identical with the name for the "ocean" or "gulf" employed by Hitchiti speaking people. We usually spell this Oki-hâtki or Okhâtki, and it is compounded of *oki*, "water," and *hâtki*, "white." Slightly variant forms were used by the Alabama and Choctaw. If this name is really Tawasa and not borrowed from some neighboring language, the fact would

[2] See discussion in next section.

prove that the former tongue shared these two words with the Muskhogean dialects cited. It would also tend to indicate that, like the Choctaw and Natchez, they had two words meaning "river" besides the common term for water. "Oúbab" would find correspondences in Choctaw *bok*, Alabama *pa'ni*, Natchez *abal*, Timucua *ibi* (*ibine*, "water"), and probably Cusabo *bou*, or *boo* (as in Westobou, "River of the Westo"). The possible connection of Sayénte of the river name "Sayénte alatám oúbab" with Choctaw "sinti, serpent," has been mentioned. Fortunately these uncertainties do not affect the more important conclusions to be drawn from this material in any marked degree. We will now proceed to compare it with corresponding words in Timucua and the more important Muskhogean dialects.

Comparison with Other Languages

In consulting the following tables please bear in mind the fact that no attempt has been made to standardize the phonetics. The Tawasa words are given exactly as in the original text and the letters are such as would be selected spontaneously by a speaker of English. The Timucua terms are taken unchanged from the grammar of the Franciscan missionary Pareja and the phonetics are such as a Spaniard also versed in Latin would naturally employ. The Muskhogean examples are drawn from my own material or that of Dr. Gatschet and in one or two cases are reproduced as written by my native informants. The order of words is that of the Tawasa vocabulary. The final -t of many of the Tawasa words is a case ending or suffixed connective.

I. *Tawasa-Timucua Correspondences*

English	*Tawasa*	*Timucua*
dog	effallàh[3]	efa
bread	písso	pesolo
meat	soúa	soba
knife	pítchot	picho
drink	ocoòt	ucu(nu)
cat	hiàt	hiyaraba
1	yánkfah	yaha, yanka

[3] llàh = la, it is he, is.

2	eúksah	yucha
3	hóp-ho	hapu
4	checúttah	cheqeta
5	márouah	marua
6	mareékah	mareca
7	pekétchah	piqicha
8	pekénnahough	piqinahu
9	pekétchcuttah	peqechaqeta
10	toómah	tuma
door	ocut-soúa	ucu-chua
night	milté,wah	ilaqe, pilani
full moon	a'ssĭck hóomah	homo ("to finish")
I	oū	honihe[4]
you	hé	hechie, hete[4]
come	hĕmeh	hime
sit down	héwăh	hibua
fire	tútcah[5]	taca
boy	loókqūy	aruqui
woman	néăh	nia
man	wiedōō	viro
bow	colúte	colo
salt	opùt	api
east	assick-toúquah	toco ("to come out")
great	yów, e	yayi
little	chĭcky (or chiéky)	chiri
how many	sōquah	chuca

II. *Tawasa-Timucua-Muskhogean Correspondences*

English	*Tawasa*	*Timucua*	*Muskhogean Tongues*[6]
dog	effallàh	efa	ifa (M, H, A, K), ofe (C)
bread	písso	pesolo	páspa (A), páska (C)
drink	ocoòt	ucu (nu)	iski (M), iska (A), hku (N)
cat	heăt	hiyaraba ("panther")	katca (M), kowa (C), kowi (H), winatuh (N), ("panther")
one	yánkfah	yaha, yanka	tcafa (A, K)
door	ocut-soúa	ucu-chua	okhetca (A), sokotci (H)
night	milté,wah	ilaqe, pilani	nilī (M), niła (A, H)
come	hĕmeh	hime	minti (C)
fire	tútcah	taca	totka (M), tikba (H)
little	chĭcky (or chiéky)	chiri	tcutkī (M), tcikka (A), tsigīc (N)

[4] Ho and ni and he and chi are separable stems.

[5] t and c are pronounced independently.

[6] M = Muskogee or Creek; H = Hitchiti; A = Alabama; K = Koasati, C = Choctaw.

III. *Additional Tawasa-Muskhogean Correspondences*

English	*Tawasa*	*Timucua*	*Muskhogean Tongues*
corn	chesapà	hulubu, tapola	tcàsi (A), àtci (M), aspi (H)
sun	hássey	ela	hàsi (M, A, H K, C)
day	Ínny	equela	nitta (M), nihta (A), nihtagi (H)
moon	a'ssick	acu	niła hàsi (A)
he	chénoh	oqe	icina (N)

IV. *Tawasa Words Without Correspondences in the Other Tongues*

English	*Tawasa*	*Timucua*	*Muskhogean Tongues*
tobacco	hewéenou	ypopi	hitci (M), hàktcuma (A), aktcomi (H)
arrow	piékcutt	atulu	łí (M), łáki (A), łäihi (H)
fight	loúchat[7]	peramo, ica, siso	itibi (A, H), tipoka (M)
river	wiéott	ibi	hàtci (M), hahtci (H), hahtca (C); bok (C), pahni (A), abàl (N), oĭwa ("water") (M)[8]

The results of this analysis may be summarized as follows:

Whole number of words in vocabulary	60
Words used in comparisons	43
Resemblances between Tawasa and Timucua	33
Resemblances between Tawasa, Timucua, and Muskhogean	10
Resemblances between Tawasa and Muskhogean alone	5
Tawasa words without correspondences	4

Relationship Between the Timuquanan and Muskhogean Stocks

The number of correspondences between the Muskhogean tongues and Timucua had, previous to the discovery of this Tawasa vocabulary, led the writer to believe in the genetic relationship of the two varieties of speech. The following examples may be given and at the same time they illustrate the number of resemblances in the grammatical processes. As in the case of Natchez, it appears that the resemblances are closest in the processes and the structure generally than in the vocabulary.

[7] Probably from Spanish *lucha*.

[8] oĭwa is evidently a late modification of oki or oka.

V. *Timucua-Muskhogean Correspondences*

English	*Timucua*	*Muskhogean*
I	-a	-ä(M), -ya(N), -la(C)
me	ni-	ni-(N), tca-(M, H, A), sa-(C)
you	tci-	tci-
he	oqe	ak, akka, akko (A)
plural suffix	-bo	-bi (N), -pi (K)
negative suffix	-ti	-ti (H), -hat (N), -ti (it's noth'g) (A)
causative suffix	-si, -so	-tci (M), -tsi (N)
noun-forming prefix	na-	na- (C)
reflexive prefix	s-	c- (N)
this	ka	ka (N), ya(M)
that (remote)	ma (also article)	ma (*passim*)
up, above	abo	aba (C)
tree	aye	ahi (H)
to walk	aliho	aya, ała (A)
snake	yyola	ula (N)
mother	isa	ishki (C), itski (M)

Conclusions

The following conclusions seem inescapable:

1. If Lamhatty's language is actually Tawasa the latter was a dialect belonging primarily to the so-called Timuquanan stock.

2. It was intermediate between the dialects of that family hitherto known to us and the tongues of the Muskhogean group.

3. Taken in conjunction with the numerous recognized points of resemblance between the languages of these two assumed stocks, including a virtual structural identity, it seems practically impossible to maintain longer the separate position of the latter. While there is a considerable body of material in Timucua, which cannot as yet be identified in the Muskhogean languages, the nature of the resemblances given in table V, which contains merely a selection, shows the vital character of those that are known.

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THE STONE ART OF THE SAN DIEGUITO PLATEAU

By MALCOLM J. ROGERS

THE region considered in this paper lies in western San Diego county, California, contiguous to the lower drainage of the San Dieguito river, and embraces an area of about one hundred square miles.[1] Flowing in a southwesterly direction the San Dieguito river breaks through the low Coast Range about six miles from the Pacific, and continues in this general direction in a deep, broad valley across a greatly dissected plateau to the ocean. This coastal plateau averages six miles in width, stands from three hundred to five hundred feet above sea level, and is composed of uplifted Tertiary marine beds, and some Pleistocene. These formations are but slightly indurated, especially the upper strata, and are greatly eroded. They consist of intercalated sandstone, shale, sandy marl, and gravel. In general the gravel caps the entire region, or has capped it previous to the recent period. Although this coastal region is criss-crossed with myriad canyons and some broad valleys, it presents the general appearance of a plateau, when viewed from a distance. Most of western San Diego county, bordering on the Pacific, is of a similar topography.

With one exception (locus IV, fig. 1) it is only in the above-described region that the writer has been able to locate a certain chipped stone industry, thoroughly distinctive from other local industries. It will be pertinent first to consider certain factors relative to the latter to bring out the salient points of the former, for they are quite different.

When the Spanish arrived in California they found San Diego county occupied by two different linguistic groups, one speaking a Shoshonean language and the other a Yuman. Neither had a tribal entity, and there was some dialectic variation within each of these groups. A line drawn approximately east and west

[1] This paper has been prepared from data gained through field work, begun in 1920 in western San Diego county, and carried on intermittently down to the present time.

through the middle of San Diego county would define the linguistic boundary between the two stocks. Those clans in the south half of the county, viz., the Yuman, came under the influence of the San Diego mission and became known as the Diegueño, and likewise those in the northern half, the Shoshonean

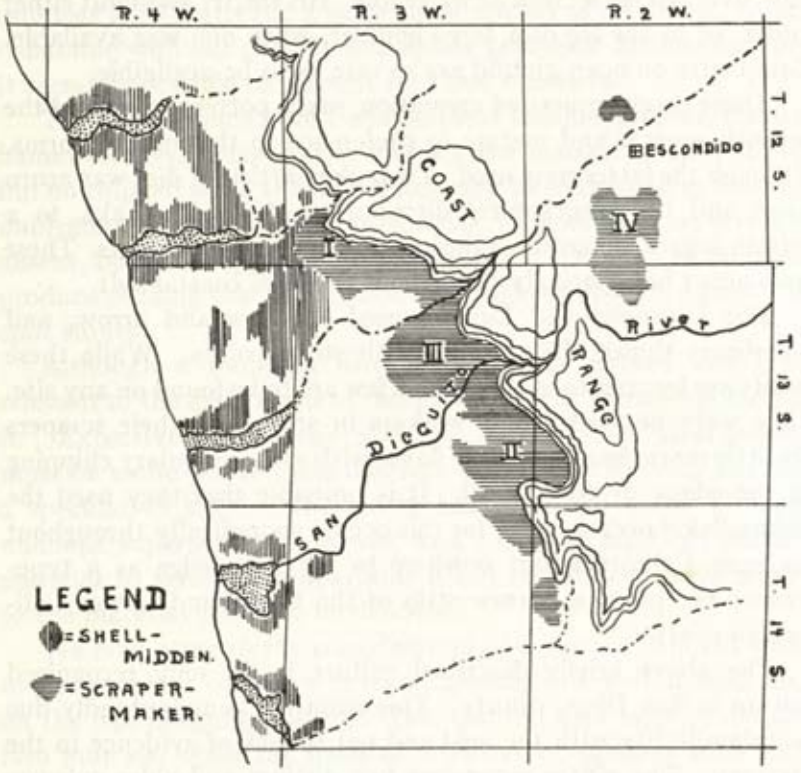

Fig. 1. The San Dieguito plateau.

people, were named Luiseño from their association with the San Luis Rey mission. The cultural similarity of these two groups is such as to permit their being considered together, and henceforth in this paper I shall refer to them collectively as Mission Indians. A complete résumé of their material culture is outside the province of this report, and it has been adequately presented elsewhere.[2]

[2] A. L. Kroeber, Handbook of the Indians of California. Bur. Amer. Ethnol., Bull. 78 (Washington, 1925).

It is necessary, however, to mention some of the principal features in order to bring out the dissimilarities between their culture and the one to be described.

In the choice of camp and village sites the Mission Indian showed a marked preference for the east sides and tops of rocky hills, overlooking a creek or waterhole. His shelter was built either under, or in the lee of a large boulder, when one was available. Camp sites on open ground are so rare as to be negligible.

These people practised cremation, made pottery, and used the bedrock mortar and metate in preference to the portable forms, although the latter were used. Their chief article of diet was acorn flour, and the geographical distribution of the live oaks, to a certain degree, determined the location of their settlements. These trees occur but sparingly throughout the local coastal belt.

The Diegueño and Luiseño used the bow and arrow, and sometimes tipped their arrows with stone points. While these points are by no means common, a few are to be found on any site. They were but indifferent workers in stone and their scrapers are little more than percussive flakes with some secondary chipping on the edges, or none at all. It is probable that they used the teshoa-flake[3] occasionally, for this occurs sporadically throughout southern California, but nowhere to my knowledge as a type-scraper except on a narrow strip of the Upper and Lower Californian coast.

The above briefly described culture is the only recognized culture in San Diego county. This situation is undoubtedly due to unfamiliarity with the field and not to lack of evidence to the contrary. The writer recognizes two distinct and older cultures throughout the coastal belt. The first and probably the older is chiefly characterized by numerous shell middens. These middens are to be found not only on the coast, but as far as four miles inland. In elevation they range from tidewater to two hundred and fifty feet above sea level, the inland ones being usually located

[3] Shoshone term for a shoulder-flake (plano-convex type) struck from the long axis of a water-washed cobble. This form was first described by Dr. Joseph Leidy of the Hayden Geological Survey (Sixth Ann. Rept. U. S. Surv. of the Territories, Washington, 1872).

at the greater height. They are invariably located on mesa rims adjacent to sanded-in sloughs, which indent the local coast and extend inland often for several miles. Judging from the contents of the middens, these sloughs formerly supported an abundant molluscan fauna. Whether the unusual location of the higher middens is indicative of a subsequent crustal uplift or not, is not debatable with our present incomplete geological knowledge; but it seems impossible to account for them otherwise.

The surface finds from these middens include metates, manos, hammerstones, teshoa-flakes, and a great amount of split stone, but no chipped stone artifacts which may be recognized as finished implements, unless it be the teshoa-flakes. Potsherds are entirely absent, but occur sparingly in the vicinity. Many of the middens produce nothing that would associate them with man, except the split stones.

Although a thorough discussion of this culture would be relevant to the main thesis of this paper, lack of knowledge forbids it. Extensive excavations with special regard to stratigraphy must be made before these middens can be viewed from any but a speculative angle. The writer has examined many of these middens superficially, however, and collected sufficient surface material to warrant comparisons if not conclusions with regard to the material about to be described.

We now come to the consideration of a certain chipped stone industry, which conforms in its occurrence to a well-defined zone on the San Dieguito plateau. This cultural area may be divided into four loci upon the basis of intensive occupation with each locus having at least one site of sufficient size to be dignified with the name of village, the remaining local area being scattered over with small camp sites. It will be seen from the accompanying map (fig. 1), that this zone parallels the shell midden area on the east, and in some places merges with it; also that in only one locus is it found back of the Coast Range, viz., in the Escondido region.

To the people who produced this industry I have given the provisional name of Scraper-Makers, after the most numerous and distinctive of their stone implements. Their camp and village

sites are found only on mesas and ridges whose tops are covered with at least a moderate depth of soil. These locations are at variance with the rocky sites of the Mission Indian, and are often at considerable distance from any modern water supply.

The usual occupational stratum of dark soil, which is to be found on sites where men have long dwelt, is entirely lacking on these sites. It is the writer's opinion that this stratum was once present, but that the sites are of sufficient age to have lost it through erosion. The stone implements of these people, due to their bulk, have settled in place, while the lighter constituents of the occupational stratum have been carried off. All the stone material of this industry occurs upon the surface, or but slightly below. None of the sites has produced an arrowhead or a potsherd, although pottery sites are in close proximity. On sites exhibiting the greatest degradation with recession of the mesa edge, the artifacts, chips and rejects are scattered throughout the talus. No excavations have been made on these sites as it has been deemed useless. If these people interred their dead the burials would have suffered destruction, unless placed at an unusual depth. As yet the mortuary customs are problematical.[4]

The chipped stone implements of the Scraper-Makers may be grouped under three generic types: (1) scrapers, (2) knives, and (3) ceremonial stones[5]; and they are numerically common in the order named. The first-named type of artifact so far outnumbers the other two types that it often constitutes the sole evidence of a Scraper-Maker site. Although the scrapers are all

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[4] In May, 1926, the writer witnessed the uncovering of two skeletons beneath a shell midden at La Jolla, California. In all, nine skeletons were torn from this site through the activities of a steam shovel. There were no mortuary offerings of any kind with these burials. There have been many such interments uncovered accidentally, due to road grading and various land improvements throughout the coast region of southern California, and although they were not uncovered by trained observers, they must be reckoned with. I know of none which have yielded Caucasian material, but do know that Mission Indian interments (a post-Spanish practice) invariably do. Unsatisfactory as it is, the available mortuary data on this region would seem to indicate that interment preceded the practice of cremation.

[5] This type of artifact is so named by the writer to facilitate discussion, rather than to imply knowledge as to its usage.

Scraper-planes from the San Dieguito plateau. Natural length of *a* is 125 mm.

of the plano-convex type, they may be differentiated into two classes upon the basis of both form and fabrication.

The type-scraper of the industry, which is found in the greatest numbers, is conical in shape and acutely convex (plate 29). It was fashioned either from a teshoa-flake, or from a nucleus possessing at least one even plane. From this platform flakes were struck off about the perimeter until a disk shape was obtained. If a satisfactory edge had been secured, retouching was dispensed with. The finest secondary work is confined to the medium-sized and small scrapers, also to scrapers made from specific materials, the discussion of which will follow.

The technique of the larger scrapers is less finished and refinement is confined to the edges. Little attempt seems to have been made to remove the irregularities of the backs. Many individuals are devoid of secondary chipping except on short marginal sections, and are so crude of technique that one might doubt that they are purposeful artifacts; especially when viewing a detached member of the group (pl. 29*a*). Many would pronounce them flake cores, but the secondary working of the edges precludes such an assumption. Furthermore even those scrapers that lack retouched edges often show a battered edge, where the worker made repeated attempts to bevel a refractory margin, i.e., a section with a plunging grain. And again, the flakes obtained from such nuclei would not be of sufficient size to fashion anything from except small arrowheads—implements which this industry has failed to produce.

This scraper, or more properly scraper-plane, resembles to a marked degree the Palaeolithic planing tools of the Aurignacian industry, and was possibly used for the same purpose, i.e., for dressing hides. This comparison has been made because of the interesting coincidence of two widely separated peoples possessing in common a rare type of artifact.

There are, however, some distinctive differences in the respective groups. The San Dieguito planes have not the long, fine, parallel retouches of those of the Aurignacian. This is undoubtedly due to the poor flaking qualities of the stone employed, as the respective techniques seem to have been identical. A few of the

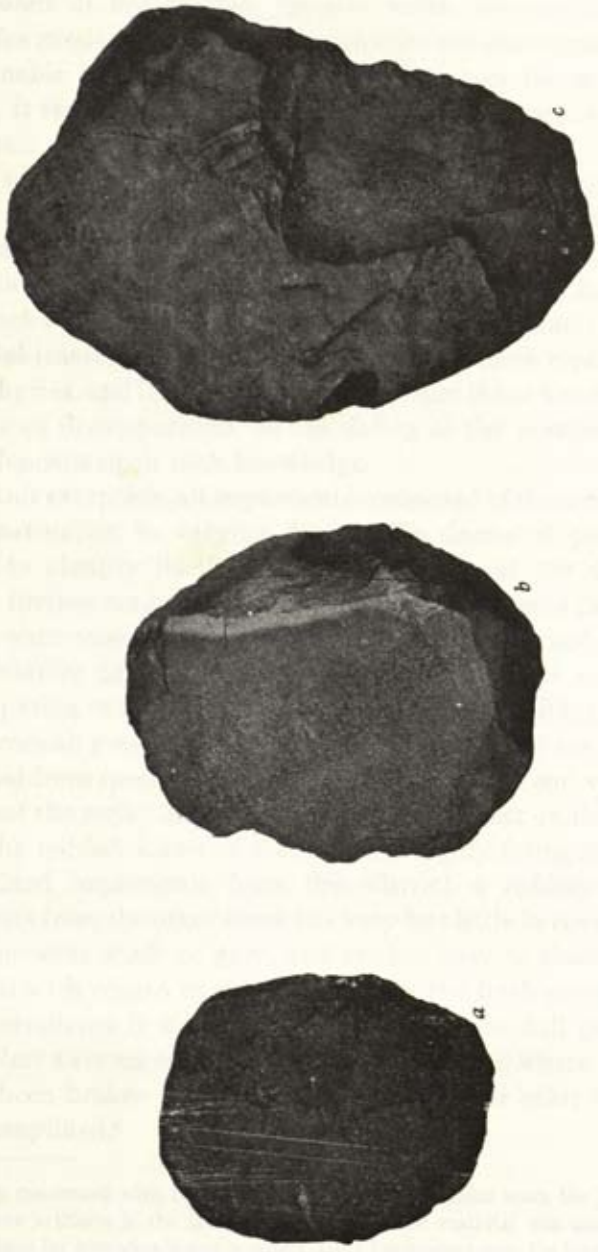
local planes are elongated and keeled like the European, but the predominant type is conical. They are more abruptly beveled and much larger than the grattoir Tarte of the Aurignacian.

The minimum and maximum breadths exhibited by the local planes are one and one-half inches, and five and three-quarters inches. The largest specimen that this industry has produced has a weight of three pounds. The average plane will measure about two and one-half inches across the base. This average is derived from material representing the entire region. When separate averages are taken from each of the four loci shown on the accompanying map (fig. 1), different results are obtained. In loci III and IV, where the finest chipping technique is found, planes fall slightly below the general breadth average. In locus II the largest scraper-planes are found and the breadth average rises to three inches. Here, too, the workmanship is the crudest. Locus I has produced the smallest planes of all and but few in number. This area runs more to side-scrapers than to scraper-planes. This condition of variability in size and technique extends to other chipped implements of the industry. Considering such variability within a region of so small an area, we must conclude that we are confronted with transitional stages rather than with synchronous, stylistic divergency.

The second and numerically minor type of scraper is the side-scraper, also of the plano-convex type, but of low convexity and indefinite outline (pl. 30). The more carefully worked ones are roughly oval. They are fashioned from percussive flakes, have conchoidal bases with torsional edges, and are not suitable for planing. In this group, as in the first group, chipping is confined to the convex face and sometimes to one margin.

With this culture certain aberrant forms such as the borer and the end-scraper do occur, but so seldom that they must be attributed to the originality of individuals.

The material utilized for chipping by the Scraper-Makers is of two different sources, but both are in the immediate region. The most readily usable material was the extensive stratum of ancient river gravel that caps the greater part of the coastal plateau. This gravel possesses a varied lithology but in the main



Side-scrapers from the San Dieguito plateau. Natural length of *c* is 88 mm.

is composed of fine-grained, igneous rocks, among which the porphyries predominate. These porphyries are short-grained and not amenable to long flaking. As they also lack the conchoidal fracture, it is practically impossible to employ a pressure-flaking technique.

The second source was in the eruptive rocks of the Coast Range. Where the San Dieguito river cuts through this range several large bodies of latite and felsite are exposed, and it was from such material that the finest chipped work was fashioned. These rocks are fine-grained and uniform in texture, have a conchoidal fracture, and flake well. They alter more rapidly than the porphyries, and it is unfortunate that more is not known about their rate of decomposition, as the dating of the Scraper-Maker culture depends upon such knowledge.

Without exception, all implements composed of these eruptives exhibit patination in varying degree; the degree of patination seeming to identify itself with certain phases of the material. I believe further study will prove that this condition is the major factor in such variation, and that this variability is not entirely due to relative age differences. The latite artifacts carry the heaviest patina of all. In color this patina exhibits either a putty grey, a greenish grey, or a reddish buff. These shades are peculiar to material from specific sites. There is considerable soil variation throughout the region and it has had a marked effect on the patina color. The reddish loams of locus IV are highly ferruginous and have stained implements from this district a reddish brown. Implements from the other three loci vary but little in color, being most often some shade of grey, and are less easy to classify on a color basis with regard to their source. As the fresh groundmass of these eruptives is a bright greenish grey, the dull patinized surface offers a strong contrast. On scraper *c* (pl. 30), where a recent chip has been broken off from the left margin, the color contrast is well exemplified.[6]

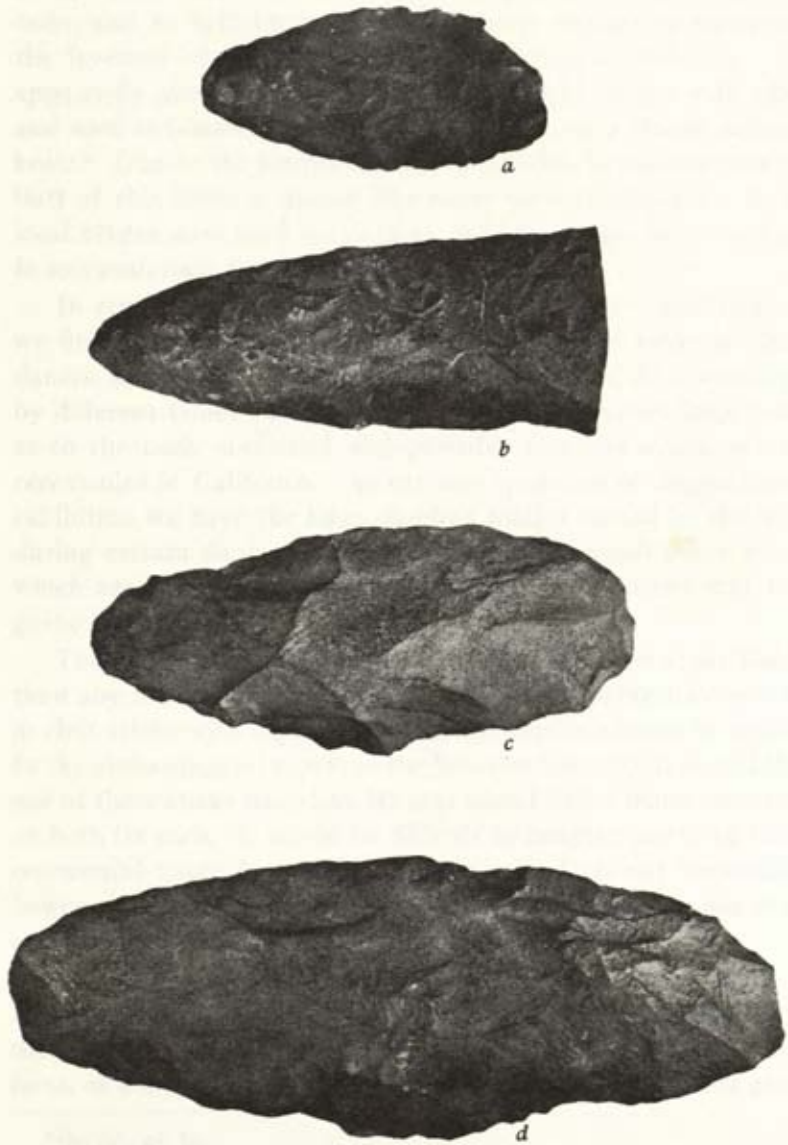
[6] Directly concerned with the subject of chemical alteration upon the surface of Scraper-Maker artifacts is the fact that the same stone material was used by the Mission Indians for arrowheads and scrapers, yet I have never seen the least trace of patina on any of their implements.

The second type of chipped stone work associated with this culture is shown on plate 31. These knives are far from common, the whole region having produced but six complete, and about twenty-five broken ones. It would seem that the incomplete ones were either broken in the making or but a short time after, for the patination is of the same depth on the fractures as on the worked faces. The same material was employed in the making of knives and of scrapers. Knives of latite and felsite predominate, whereas porphyry ones are rare. They range from two to five inches in length, the average being about three and one-half inches. In outline they seldom depart from the elliptical, although a few lanceolate and willow-leaf forms are present, the latter forms being particularly strong in locus IV. In the elliptical type both end curvatures are often identical, and, in such cases, it is impossible to specify which are the points and which the butts, if such distinction ever was intended.

It is probable that two different techniques were employed in fashioning these knives, viz., (1) reduction from an inchoate mass, and (2) reduction from a percussive flake (on some knives near the butt a percussion bulb is still evident). Reduction was accomplished and completed most often wholly by percussion, flakes being struck from both faces of the nucleus. On the finer specimens this process was supplemented by pressure flaking. Although a few knives display such secondary work (pl. 31*a*, *b*), the majority are devoid of retouching. One can not regard the latter as rejects, for the entire industry has produced so few knives evincing secondary chipping.

In classifying this type of artifact as a knife, the writer has followed the conventional classification of implements of this shape, but not with complete conviction. It would seem that such a decision is hazardous on several grounds. From the standpoint of comfort it would be impractical to use such a blade without a handle. Perhaps the surmounting of this difficulty is explained by similar artifacts mounted in balls of asphaltum, shaped to fit the palm of the hand, which have been found in California.[7] Most

[7] Lieut Geo. M. Wheeler, U. S. Geographical Surveys West of the 100th Meridian, 7: 69, fig. 17, 1879.



Knives from the San Dieguito plateau. Natural length of *d* (in San Diego Museum) is 98 mm.

of the local blades are thick in cross-section, even toward the ends; and to haft them in wood securely enough to withstand the leverage of actual use would present great difficulty. An apparently similar blade hafted in wood and bound with pitch and cord is featured, however, by Kroeber, as a Yurok salmon-knife.[8] Due to the wrapping, it is impossible to say whether the butt of this knife is shaped like those under discussion. If the local blades were used for cutting, this must have been confined to soft materials, for none show dulled edges.

In reviewing the ethnological data on Pacific Coast Indians, we find a widespread ceremonial use of chipped stone blades in dances, shamanistic ritual, etc.[9] Although this cultus as employed by different tribes has ritualistic variations, it leaves little doubt as to the basic similarity and probable common origin of such ceremonies in California. As extreme examples of chipped stone exhibition we have the huge obsidian blades carried in the hand during certain dances of the Karok, and the small stone points which are hafted into the dance-sticks of the Luiseño and Diegueño.[10]

The Channel islands have produced more hafted stone blades than any other Californian region. These are invariably secured in cleft sticks with asphaltum, and are usually classed as knives. In the archaeological report of the Wheeler Survey,[11] it is said that one of these sticks from San Nicolas island had a blade cemented on both its ends. It would be difficult to imagine anything but a ceremonial usage for such an implement. It is not impossible, however, that we are here confronted with a secondary use of an artifact primarily made for a knife.

The third class of chipped stone artifacts from this industry is shown *in toto* on plate 32. Repeated and persistent searching of the region for several years has produced only five of these artifacts, of which only two are intact. Chipped stones of this genre

[8] Op. cit., pl. 16.

[9] Ibid., 26, 56, 192, 198, 262, 418, 638, 665.

[10] T. T. Waterman, The Religious Practices of the Diegueño Indians. Univ. Calif. Publ. Am. Arch. Ethn., 8: 300, 301, 1910.

[11] Op. cit., 60.

have been discussed by H. Newell Wardle in a previous issue of this publication[12]; their source is San Miguel island. She reports having seen stones of a similar nature in the American Museum of Natural History, which were from the Channel islands and Santa Barbara county. One other artifact of this nature is featured by Heye in reviewing San Miguel island artifacts.[13]

The very paucity of these stones would seem to preclude a utilitarian purpose for them, and all speculation to such an end. No ethnological information in regard to the use of such stones has been found in California, and if they are of a ceremonial nature, they represent a cultus long extinct. Wardle believes them to be scarifiers, and there is some record of scarifying having been practised by shamans and individuals of various Pacific Coast tribes,[14] but no evidence of so elaborate an implement having been used.

Three of the stones (pl. 32*a*, *c*, *e*) described in this paper are from a large village site in locus III, and two (pl. 32*b*, *d*) are from the largest site in locus IV. As one may only theorize with regard to them, I offer the suggestion that they were the property of the local shamans, because of their rarity together with the fact that they are only found at sites large enough to have supported a shaman. Whether they were employed for scarifying or merely exhibited during ceremonies, I should guess that they were hafted at the centers into cleft sticks at right angles to the sticks with the notched margins upward, as shown in figure 2.

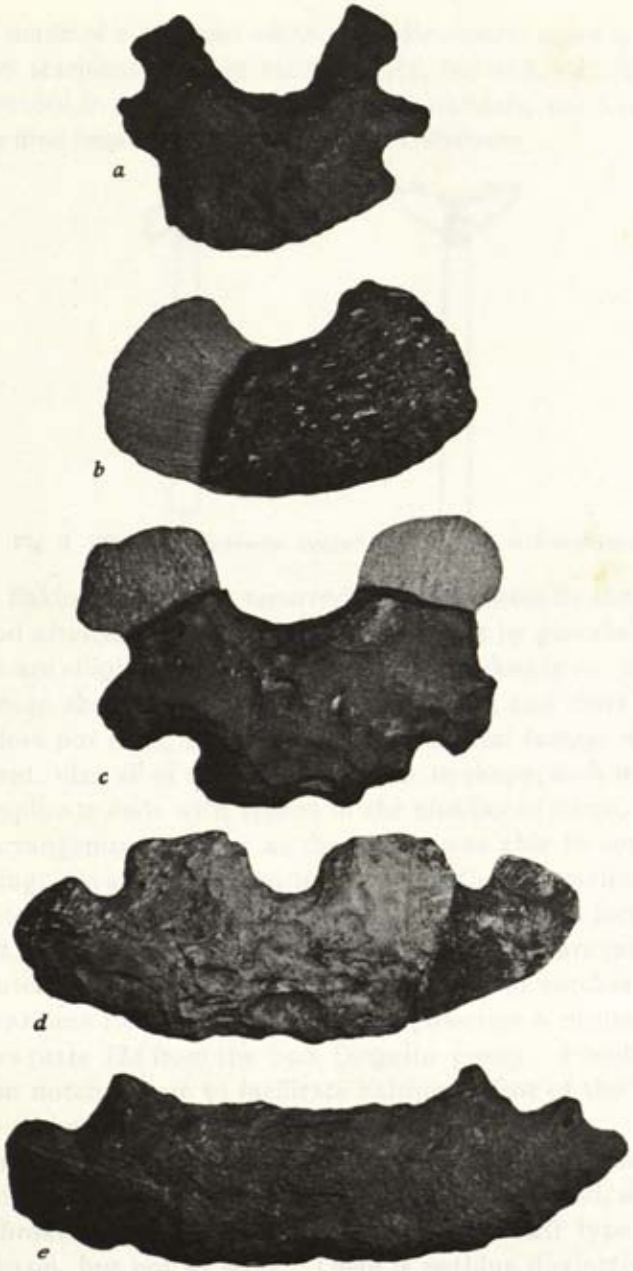
Hypothetical Hafting of Ceremonial Stones in Cleft Sticks

The skill necessitated in the manufacture of these implements is of no small degree, and it is superior to all other Scraper-Maker chipping. The material employed in their making is the same as that used in other work and shows great diversity, each artifact

[12] H. Newell Wardle, Stone Implements of Surgery (?) from San Miguel Island. Amer. Anthr., n.s., 15: 656-660, 1913.

[13] George G. Heye, Certain Artifacts from San Miguel Island. Ind. Notes and Mono., 7: 72, fig. 3, 1921.

[14] S. Powers, Tribes of California. Contrib. to N. Am. Ethn., 3: 152, 181, 239, 354 (Washington, 1877).



Ceremonial (?) stones from the San Dieguito plateau. *a*, *c*, *e* are in the San Diego Museum. *b*, *c*, *d* are restored. Natural length of *e* is 73 mm.

being made of a different stone. Wardle reports some of the San Miguel scarifiers as being made of flint, but this material is not represented in any of the San Dieguito artifacts, nor have I ever n a flint implement from southern California.

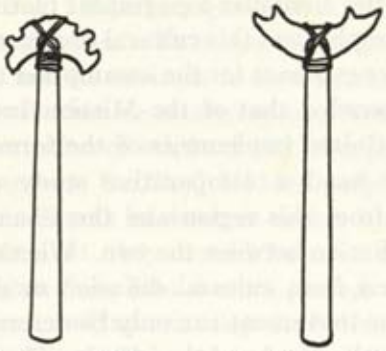


Fig. 2. Hafted stone blades secured in cleft sticks with asphaltum.

In flaking, chips were removed from both faces by the pressure method after the form had been roughed out by percussion. The stones are elliptical in cross-section, but not thickly so. Although the group shows considerable form variation, and exact duplication does not exist, there are several technical factors which are constant, viz., all of them are crescentic in shape; each individual has duplicate ends with regard to the number of cusps, notches, and arrangement, insofar as the maker was able to control the chipping. On all of those featured by Wardle the notching is confined to the inner periphery, and only three of the local stones depart from this arrangement, plate 32*a*, *c*, which are notched on the outer periphery, and plate 32*b*, which has no notches. One of the scarifiers from San Miguel island possesses a median notch, as does plate 32*d* from the San Dieguito group. Possibly these median notches were to facilitate hafting. Most of the cusps on the local implements show definite wear.

The only other artifacts found with this culture are the metate and mano. Only a few of the former have been found, and these were broken. They are of the usual Pacific Coast type with an oval basin, but not so large. There is nothing distinctive about the manos either.

Conclusion

It will be seen, by comparing the material culture of the Mission Indians with that of the Scraper-Makers, that the two do not resemble each other except in the joint possession of the metate, also that the dissimilar topographic placing of the respective village sites emphasizes this cultural divergence.[15] At present there is no stronger evidence for the assumption that the Scraper-Maker culture preceded that of the Mission Indians, than that offered by the patinized implements of the former.

On the other hand a comparative study of the notched, crescentic stones from this region and the Channel islands indicates cultural affiliation between the two. Whether this apparent connection resulted from cultural diffusion or direct migration, the direction of the movement can only be determined by further field work on both the coast and the islands. The knife, too, seems to be common to the two regions; and although the scraper-plane has not been reported from the Channel islands, it might easily have been overlooked during the looting for the more spectacular artifacts connected with this culture.

Returning to cultural comparisons within the immediate region, we see that the Scraper-Maker culture can be connected, through its chipped stone industry, with still another culture, viz., that of the Shell-Midden people; in fact, there is some evidence that the former is an outgrowth of the latter. The numerous flake cores of the middens might easily be prototypes to the scraper-planes; at least, they are an essential stage in the construction of the latter. Felsite and latite flakes are rare on midden

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[15] While considerable study has been expended on contrasting the house-types of different peoples, next to nothing has been done toward gaining an understanding of the significance of the topographic placing of houses within a specific terrain. The choice of a house, camp, or village site was hardly a haphazard affair even with the most primitive people, but must have been made in conformity with some economic, social, or climatic condition, or all three. A complete or even partial understanding of this subject would give to the investigator yet another diagnostic medium with which he might not only differentiate primitive cultures, but date them with regard to priority. I believe that the solution of the chronological order of the local cultures could not only be helped by such a study, but that they are to a degree the reflection of the aforementioned conditions.

sites, but do occur and are found to carry equal if not greater surface alteration than that found on Scraper-Maker material.

On the west side of locus 1 two Scraper-Maker sites blend into shell middens without a break. Furthermore, in the talus below one of these middens, I found scraper-planes identical in technique and degree of patination with those here described. I should consider this site and its environs to be a transitional region, and to be extremely valuable for stratigraphical work.

If, on the exhaustion of sea food on the adjacent coast and in the contiguous lagoons, the Shell-Midden people were compelled to move inland in search of food, it seems likely that in their economic readjustment they would become a hunting group, specialize the teshoa-flake into a more perfect fleshing-tool such as the scraper-plane, and later develop the knife. If this hypothesis be correct, this territory offers an invaluable field for studying the effect of changing economic conditions upon the material culture of a people.

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NOTES ON THE SARAMACCANER BUSH NEGROES OF DUTCH GUIANA

By MORTON C. KAHN

THE Bush Negroes of Dutch Guiana are descended from African slaves who revolted against their masters, the Dutch colonial planters, beginning in about 1749. After a series of wars lasting a number of years, during which period the Dutch forces, even aided by certain English mercenaries, were unable permanently to subjugate them, the Bush Negroes finally gained their complete and officially recognized freedom, and a truce was signed by the whites to that effect. The treaty provided that the blacks were to remain unmolested in their newly-won fastness, provided they did not entice other slaves to join them, give succor to those slaves who escaped upon their own volition, nor engage in any further raiding or burning expeditions against the outlying plantations. John Stedman,[1] an Englishman who participated, gives an excellent account of the rebellion and events leading up to it.

From that time and to the present day the descendants of these rebel Negroes have lived an independent existence on the banks of the Surinam, Saramacca, and Marowyne rivers. Certain of the slaves who revolted were born in the colony, but a goodly number of their ranks were recent arrivals from Africa. The present day Bush Negroes are, therefore, possessed of a culture which seems to have certain West African characteristics.

During July and August, 1927, I visited several villages on the lower Saramacca river and on the middle and upper Surinam. These are included in the realm of the Saramaccaner tribe.

Physical characteristics.—The Bush Negroes, or Djukas, as they are locally known, seemed to be of the conventional, West African, strictly Negroid type: round head, broad nose, thick

[1] John Stedman, Narrative of an Expedition to Surinam (London, 1796).

lips, kinky hair, and dark color. From more than casual observation it did not seem as though they were adulterated with white, aboriginal Indian, Javanese, or East Indian blood, there being several thousand Javanese in the colony as well as a considerable number of Hindus. I saw no mulattoes in the villages, and understand that intermarriage outside of the tribe is strictly forbidden. The darker Negro shades are the predominating colors.

These people are medium in height, the average stature of a man being some five feet five or six inches and that of the woman being an inch or so smaller. No accurate measurements were taken but my own height was used as an indication (five feet nine inches). In the village of Djun on the upper Surinam there were several men who towered well above me. They appeared to be a little under six feet in height. Jankoeso, the Gran man or king of the Saramaccaner tribe, is by actual measurement six feet one and one-half inches tall.

The men and women appear to be well developed, very muscular, clean-limbed, deep-chested, and well proportioned. I saw no evidence of physical deformity. Both sexes carry themselves in a proud and erect manner, and one is at once impressed by their aristocratic bearing.

Dress.—In the village or working on the river the men wear as their sole dress a loin cloth of trade cotton held in place with a string of twisted fiber. This string is either plain or ornamented with beads or shells. When the men visit another village, or when strangers come into their own habitat, they immediately don a toga-like garment. This is made of particularly bright-colored cotton patches cunningly stitched together so as to form a design of angular motif. They drape this cloth over their right shoulder, the left shoulder being bare, or vice versa. The toga hangs well below the waist but not quite to the knee. This garment is also donned during a dance or on ceremonial occasions.

The mode of dress I saw among the women was of three types. One consisted of a piece of bright-colored cloth draped entirely around the body above the breasts and hanging to the knees, while another was characterized by the same kind of garment tied

below the breasts and hanging somewhat below the knees. In some of the more remote villages the women affected even a more scanty costume, having only a small bit of cloth covering the vulva. These everyday garments are simply cheap, colored cotton print. The only essential, seemingly, is that they be brightly colored. On ceremonial occasions, as during a dance, the women wear a cloth costume in the same positions, but of white or light-colored material embroidered in various colored designs. Children of both sexes remain naked until about ten years of age, when the boys have a string tied about their waists and a year later don the conventional loin cloth. They do not use the toga until after the age of puberty.

Headdress and ornamentation.—Most of the Bush Negroes pay particular attention to the headdress, which becomes an arduous and painful ordeal because of the closely knit and kinky hair. For this purpose they use an elaborately carved comb made of a single piece of wood with tines four to six inches in length. First a part is made in the hair from ear to ear, and then at right angles to this, from back to front, as many subdivisions as possible are made in these quadrants and the wool is gathered up, braided or rolled, finally being tied at the ends with grass or fiber, length permitting. The plaits either stick out from the head in small tufts or fall in a loose pendulous manner about the head.

Ornamentation among the men, while not infrequent, was not found to be general. Some of them had bands of tightly woven cotton fiber, about two inches wide, fitted very tightly just below the knees or about the biceps. (I have seen this same type of decoration among the Arawak of British Guiana.) Many of them wore bracelets of heavy iron wire, and practically all had about their necks amulets or charms of one kind or another, many individuals wearing several of these. Each amulet has a special significance; such as to bring good luck in hunting, safety in the jungle or upon the river, to guard the wearer from being spoken evilly by his companions, to bring good fortune, and to court the favor of a special god, etc. The charms are worn by both sexes, and seem to have a definite construction. The claw of a fresh-

water crustacean serves to guard from misfortune upon the river, the red breast-feathers of a macaw bring luck in hunting, while a pierced three and one-half cent Dutch coin deeply imbedded in a certain brown fiber serves as an emblem to court good fortune. These charms were difficult to collect and were parted with only for relatively valuable consideration. The use of the tightly woven bands of cotton about the knees is very general among the women, and at some villages tight coils of brass wire bracelets were worn about the ankles and above and also about the lower arm, possibly an African survival.

A custom widespread among the Bush Negroes is that of tattoo by embossing or cicatrization. The patterns are placed on the forehead, arms, cheeks, chest, back, thighs, or chin, and so arranged as to form a design of angular proportion. The use of the circular or curved-line motif was not in evidence. Incisions are made in the skin with a knife and into these wounds finely ground charcoal powder is rubbed: when the cuts heal a welt is raised of scar tissue, and the design is formed of several of these welts. This custom is a possible survival of African culture. I have not seen it among the Indians of British or Dutch Guiana.

The method of carrying infants is of interest. The babies are placed on their mothers' backs with their faces pointing forward and their legs straddling around the mothers' waist. They are held in this position by a wide band of cloth which completely encircles the mother. Guiana Indian women usually carry infants on the right or left side.

Temperament.—The Bush Negroes of this tribe appeared to be intelligent. They are proud and independent, realizing their strategic position and their independent mode of gaining a livelihood. They seemed courteous, of good humor, and able to drive a good bargain. They covet anything that attracts their attention, and will take and ask for many presents. They have a well developed sense of humor, know many jokes, and will attempt first to see the humorous side to almost any situation. The traveller is first impressed by the fact that the Bush Negroes are not subservient in any degree. While they are not inhospitable,

one feels that one is being tolerated rather than welcomed, and this impression prevails among white residents who have long been in contact with them. I was told that the Bush Negro thinks first and always of the welfare of his kind, and it is difficult to make more than superficial friends among them. At the village of Santi-gron on the lower Saramacca river the inhabitants are distinctly arrogant and desirous by choice of having little contact with the whites. Curiously, Santi-gron is the closest of their villages to Paramaribo, the capital of Dutch Guiana, being only some twenty miles away. Taken as a group, the Bush Negroes have no desire to copy the civilization of the white man, although cognizant of it and some of its ramifications to a degree. Most of them (the men, at least) have at one time or another in their lives visited the white settlements, although there are still villages in the more remote parts of the country whose occupants have not seen white men for many years, if at all. In spite of this familiarity with white civilization the Bush Negro still clings tenaciously to his own culture. They feel that too intimate a contact with an alien civilization will mean their oblivion, and further inquiry showed that their ardent desire to remain segregated was due also to a fear of becoming reenslaved.

In the upper Surinam they showed great curiosity about our camping equipment, taking great pleasure in watching our method of preparing food; our use of dishes seemed to afford them high amusement. The custom was to form a group about us at meal time, when they would comment on the type of food we ate. They would pick up empty tins, smell the canned foods, and expectorate in disgust as though the odor was distinctly unpleasant. This was not because the food was decomposed, as I smelled several of the cans after they had smelled them and found the food to be unspoiled. The superstition about the camera is outstanding. In some villages on the lower Saramacca river and on the Surinam below Gansee, although shyness and fear were affected at first, some natives could be induced to pose by a small present. Above Gansee, however, it was difficult indeed to get them to pose, and at some places they even showed fear or dis-

pleasure at having field glasses pointed in their direction. On the other hand, no desire was exhibited to prevent photographs of their huts, gods, utensils, etc.

Probably none of the Negroes are openly hostile; and as long as he observes the laws of common decency, the traveler is absolutely safe among them. Only on one occasion was difficulty experienced—owing to overzealousness to obtain a photograph. There were a few threatening gesticulations, which subsided promptly once the camera was removed from sight.

In their relation to one another kindness and understanding prevail throughout their daily lives. Theirs is a highly communal life, with help to one another in hunting, clearing land, lumbering, building huts, etc. If large game like tapir is shot everyone shares in the spoils. Several dances were witnessed, and whenever a participant did a particularly interesting or amusing step the others were quick to show their pleasure by embracing the dancer. This salutation took the form of touching cheek to cheek on both sides.

In the villages nearer the Dutch towns leaf tobacco and money were the means of exchange by which their various implements could be purchased, but as one goes farther back the value of money decreases and that of leaf tobacco increases. These people are very fond of candy, but I could not use it as a means of exchange as they felt that it should be thrown in as a bonus. They were not at all eager to sell the various carved implements I desired to purchase, and finally parted with them, if at all, in a very condescending manner.

In conversing with them through my interpreter I was surprised to find that they have no memory or cognizance of their African origin. Their history, as far as they are concerned, dates from the slave rebellion and they know nothing of their origin prior to that event.

Tribal divisions.—The Dutch Guiana Bush Negroes have divided themselves into three main tribes. The largest tribe is the Saramaccaner, which inhabits the upper Surinam and Saramacca rivers. Then there are the Boni and Aucaner with homes on the

Marowyne river and some of its tributaries. Vandercook[2] states that the word "Djuka" designates a separate tribe still distinct from the three mentioned. No information could be gathered to substantiate this. It seems that the name does not imply a separate tribe but is the title by which the Aucaners used to be known. The term is now used by all of the Bush Negroes, however, when speaking of themselves. The various tribes do not differ to any great extent in their customs. Some have reported the Boni and Aucaner as intolerant toward white men, but no evidence could be gathered from travellers to the Marowyne districts in substantiation.

There is but little intertribal intercourse or trespass, for the members of one group seem jealous of the rights of their rivers and resent intrusion by another tribe. If alien Negroes are caught they receive a severe drubbing with fists and canoe paddles, and are warned not to trespass again. On the other hand, a foreign Bush Negro in a white man's employ is not molested when he enters the village of another tribe. This intertribal jealousy seems to have originally arisen over lumber cutting and balata bleeding rights, as well as from the poaching of game and fish. Some of the Negroes derive additional income from the first-mentioned enterprises, which enables them to purchase ironware, shot, powder, guns, etc. The Saramaccaner have at one time or another surreptitiously taken balata and timber from the Boni and Aucaner realm, and the reverse has also been the case. Punishment quickly followed detection.

Not many years ago there was definite hostility between the tribes, even leading to minor wars, but these are no more. Members of all the tribes have occasional trouble with convicts from the penal colonies in French Guiana who attempt to escape by overland routes. Some of these convicts have made themselves formidable enemies of the Negro by raiding their villages, stealing provisions, ravishing women, and the like. I understand that in some villages the Djuka men shoot these convicts almost on sight.

[2] John W. Vandercook, Tom-tom (New York, 1925).

Back of the territories inhabited by the blacks, and also on adjacent rivers and streams, are the villages of the aboriginal Indians. There is very little mingling between these people, both feeling themselves superior. My impression is that the Negro is the more intelligent of the two. The jungle black feels himself highly superior to the urban Negro, whom he calls "Buckra Schlaff" (white man's slave). As far as I was able to learn there is no intermarriage between the Bush Negro and the town black, nor are the town blacks allowed to become members of Bush tribes. The town black, of course, considers the Bush Negro a very primitive person, and does not share in the high opinion the Djuka has of himself.

Government.—The following accounts I gathered from conversation with E. W. Rogalli, J. M. W. Strang, and Alexander Wolff, residents of the colony who have long been in close contact with the Bush Negroes.

The three principal tribes each have a king or, as he is called, a Gran man. This individual usually lives far into the interior and is the nominal and actual head of his tribe. The Gran man of the Saramaccaner tribe is called Jankoeso, and he lives in the village of Siddonuppo, eight days up the Surinam river from Gansee. White men seldom get up into his country and he has forbidden any intrusion unless the visitor announces himself several days beforehand. The Gran man of the Boni is named Amekti. I did not learn the name of the Aucaner ruler. Besides this king or chief of the river, practically every village has a captain of the village proper, who is responsible to the Gran man for the actions of the inhabitants of his village. The Gran man holds his office until death. He cannot be deposed or in any way interfered with. When a vacancy occurs he is chosen by the Dutch government, from among the captains of the villages, or receives his title by descent. The captains, however, receive their title by inheritance. This inheritance always passes through the female side of the family. The captain's son will not succeed him, but the captain's sister's oldest male child will be next to fall heir to the office. If there is no such individual, then the oldest male child of

the nearest female relative will be chosen as the next captain. The Dutch governor at Paramaribo every once in so often calls the Gran men for a conference in regard to relations between Bush Negroes and the Dutch authorities. These conferences are always conducted under the most diplomatic and pleasant circumstances, and it is refreshing to learn how tolerant and understanding the Dutch are in their ways of dealing with these natives. Each year the Dutch government gives the Gran men several hundred guilders worth of presents. This custom is a survival of the times when tribute was actually paid *by* the Dutch to the rebel chiefs to insure peace.

When an argument or dispute occurs in a Bush Negro village it is at once referred to the captain, and if it is of minor nature he settles it himself. An emergency case, however, is referred to Basiea or Council composed of mature men of the village. When they have handed down their decision, the occupants of the village abide by it without questioning.

Villages.—The villages are situated on high ground near the banks of the rivers. A few of them are directly on the river bank, the rest being from an eighth of a mile to a mile away. Upon inquiring for the reasons, I found that they desire to allow for the flooding of the river; also in the old days it was felt wise to camouflage the exact location of their villages in case of attack by white forces. A number of the villages are also situated just above low falls or extremely rapid water in the river. These, in times of emergency, acted as sort of a fortification and made it additionally hazardous for invaders to attempt penetration.

Across every path leading from the river to the village is a barrier of woven fronds under which every person must pass. This is to ward off evil spirits and also to cleanse the visitor of any evil intentions toward the occupants of the village. The villages are situated in a thick jungle on either bank of the rivers and are from half a mile to several miles apart. When one enters the village clearing one is impressed by the apparent cleanliness of their camps, there being little debris or filth gathered about. The huts are situated around the clearing and behind the main

group of huts there may be still others. There seems to be no special plan about locating huts. When a white man enters a village it is the custom for him to go at once to the hut of the captain and make a small present of a few tobacco leaves. This insures cordial relations, and it is well to answer any questions that the captain cares to ask.

The huts are rectangular, about 7 by 10 feet, composed of four walls and a thatched roof, the roof hanging very low at the sides. The walls are made of tightly woven grasses and leaves, and they, as well as the roof, are weather-tight. The huts are made of grasses known as paralu, cumu, and tash. I was not fortunate enough to obtain specimens of these, and was unable to ascertain the botanical names. The uprights and sills are made of wooden poles or hand-hewn boards. These are lashed together and made solid with the use of bush vines and lianas of one kind or another. In some of the villages even the use of nails was apparent. The posts of the doors are very often carved in an elaborate snake or circular design. The huts are at times divided into two rooms by a wall of woven mat. The front room is used for cooking and as a general living-room and the back room for sleeping. The man sleeps in a handmade hammock of woven cotton or in a hammock made of grass, which latter form is traded from the Indians. The wife sleeps on a mat of woven grass directly below the hammock of her husband. In some of the villages there was a communal kitchen, simply a thatched roof on four uprights, where several women could be seen preparing food for their families at the same time. In other villages I saw cooking going on only in the individual huts. Kitchen utensils usually consist of an iron pot, in which all the food is prepared, and a flat slab for making cassava bread.

The fire.—The sticks are arranged in a circular manner on the ground, the fire being in the center, and as the fire burns the sticks are pushed toward the center to add more fuel.

Food.—This consists mainly of bush meat which they are able to shoot; monkey, peccary, agouti, tapir, various rodents, birds, and fish. Armadillos are considered sacred and are not used for

food. The staple is the bitter cassava, bread made from it forming their principal article of diet. They also have peanuts, yams, peppers, and rice and sugar-cane. One of their principal articles of diet is mareepa palm oil, which they obtain by pressing the nuts or fruit of the mareepa palm. They relish this a great deal and few take a long journey without a plentiful supply of this oil. They also eat what wild fruits and nuts they are able to gather in the jungle.

Drink.—These people are temperate. I saw no evidence of a native fermented drink in their villages. The cassiri or pewari which one encounters in almost every Indian village in the Guianas was not in evidence, but they seem fond of a liquor brewed in the Dutch towns called high wine, which is nothing but a strong alcohol made from sugar-cane juice. I saw no such alcoholic stupors among the Negroes as I have seen in certain Indian villages in British Guiana. They do not use tea or coffee, milk or cream, but are fond of cocoa. No cattle nor domestic swine are found among them, and what game or fowl they have in excess is usually preserved by smoking. Most of the preserved meat had an odor of decomposition about it, but the Bush Negroes did not seem to mind this in the least, although, as I have said, they showed disgust at the aroma emitted by our tinned foods. They drink the water from the rivers and streams but do not boil it. Several of the villages possessed domestic fowl.

Hunting.—These people are expert huntsmen, principally using the shot gun, which they hold in a peculiar fashion. Instead of placing the stock against the right shoulder, as we do, they hold it against the palm of the left hand, which is extended about twelve inches from the body. I understand this fashion of holding the firearm to be a remnant of the days of flintlocks when a flash from the fire pan was often dangerous to the eyes. The method of using the shot gun is quite accurate. It also has its advantages in shooting game in high trees. The hunter squats on his haunches under the tree, shoots upward, and the gun held in the fashion described is pivoted much more rapidly. Bow and arrow are also used for hunting, but most of the natives possess shot guns, which

they seldom clean. The bow is of typical Guiana Indian construction. The guns are usually single barrel, eighteen-gauge type. The use of arrow poisoning is not understood, or if so is not in evidence. This seems peculiar in view of their close association with the Indians in former times. I saw no blow-guns among the Bush Negroes.

Fishing.—Fish are usually shot with a bow and arrow. They use a three-pronged arrow, a harpoon arrow, or a plain arrow, all with metal points which are filed from old knives. They stand upon rocks in the middle of the streams or in their boats and shoot the fish from these locations. They also use a hook and line when procurable and have a very ingenious fish trap made entirely of sticks and reeds which the fish enters, springing the trap so as to be captured alive without bodily injury. No more than one fish can enter a trap. Fish nets are also used by some of the individuals for collecting fish which they have poisoned with a plant known as "neccu," the juice of which is expelled into the water and stupefies the fish.

Tilling.—The provision fields or grounds are situated a mile or more in back of the villages in obscure spots. They were placed thus in former times to insure a food supply in case the village was raided or burned. In those days when the whites made a foray the Negroes used to repair, if necessary, behind the provision field and if possible live upon it from that locality. The men prepare the ground by felling the timber and clearing the space, and the women have sole charge of the growing, harvesting, and attending to the crops. They act communally in regard to agricultural projects.

The cassava is squeezed in the usual tubular squeezer, of the type used by the Indians of Guiana. The preparation of cassava and removal of its poisonous ingredients seemed not to differ in any way from the Indian methods.

Marriage.—The Bush Negro may marry outside of his own village but not outside of his own tribe. As far as choosing a wife or husband is concerned, I have heard two versions. According to one, the girl has much to say about whom she is to marry; the

other version is that her parents do the choosing. It is their duty to see that the intended is a good provider, an able artist, and a worthy husband in every way. If the girl is a virgin, the prospective husband must give her parents a few pieces of cloth, a certain amount of sugar, and a few carved household implements; otherwise the price is not so high. If after the marriage the husband finds that the girl is not a virgin he so informs the council of the tribe, and part of the purchase price must be refunded. On the bridal night, I understand that the entire village stands outside of the hut to hear what the groom has to say about the bride's virginity. This seems to be part of the marriage festival. There is said to be but little actual marriage ceremony, the wife simply moving to her husband's hut. These people are very strict about marrying an alien but are immoral among their own tribes. They seem to tolerate, especially, feminine capriciousness, and a married woman may gain a divorce from her husband without much ado. If her man is a poor provider, or if she is bored with him, she may leave him, either moving to the home of the man of her choice or locking the door against her erstwhile husband. When the men are away on long hunting trips or other expeditions, it is usual for the women to cohabit with other men. If a woman's husband hears about this his family comes to punish the erring wife by beating her severely. Her family tries to aid her, and this is followed by a general melée. The hard feelings between families do not last long. All is soon forgotten by both sides and the couple, if they choose, live amicably together again. But, on the other hand, men are at times killed in these fights. When a father dies his property reverts to his mother, sisters, and brothers, and not to his wife's children, as he is not sure of the paternity of her offspring. Children become the "property" of the mother's family. The father technically is not related to his children, decent being entirely matrilineal. The maternal grand-uncle is head of the family, and when he dies the maternal uncle is the head. If the woman has only male children her family dies out.

Men hold all the public offices, such as they are, and men are the head of the family, the clan, and the tribe. Women, however,

are the channels of inheritance. Polygamy is widely practiced.

Medicine.—There is a highly developed system of medicine, the natives using various roots, herbs, nuts, etc., which they gather in the jungle. The medicine and rites attendant upon its administration are in the hands of specially designated witch-doctors. I was not able to get into very intimate contact with these and did not learn much about it, with the exception of their famous snake bite cure or snake cutti, which is so highly thought of that it is difficult to find a person even in the Dutch towns who will not speak favorably of it. The snake cutti, besides having power to cure snake bites, is supposed also to render the person who has taken it immune even to the attack of a snake. When a person treated comes near a poisonous reptile it is supposed to remain motionless, or slink away long before he sees it, or the snake actually drops dead! This medicine is supposed to be so strong that if a person who has taken it enters the house of a pregnant woman a miscarriage will be caused. Or, if he comes into the room where there is a newly born infant, the child will immediately go into convulsions. They recognize that there are various kinds of snake cutti. The substance is prepared as follows: when a poisonous snake is killed, the tail and head are cut off and the tail is put in the mouth of the snake. This is then roasted over a slow fire and the whole is reduced to a black powder, which is finely ground. It may be administered in two ways, internally, or by a small incision in the arm and rubbing some of the black powder into the wound. This substance is also used in treating cases of snake bite. I was first inclined to think that some of the venom may have remained in the head of the snake and an actual immunity thus set up against the particular type of venom, but I feel that the roasting procedure to which the head is subjected would destroy any toxin remaining in the gland, and no anti-toxin, accordingly, would develop. I heard such enthusiastic accounts of the marvelous powers of the snake cutti, even among the white people of the colony, that I myself took some, supposed to be of a particularly powerful nature. Upon my return I went to the Bronx Zoo and spent a morning in the reptile house, standing

for various lengths of time before the cages of all the snakes. I must confess that nothing strange took place. However, glass was superimposed between the snakes and myself!

On the upper Surinam river, not far from where our journey ended, there is the sacred medicine city of Dahomey, which white men are not allowed to enter. If a man receives a serious injury, such as a gun shot wound, broken leg, or severe illness with which the local witch-doctor is unable to cope, his relatives take him to Dahomey, where he is locked up in a hut and rites are performed. I have heard that patients very often emerge cured from severe illnesses. The patient is attended only by old men, old women, and virgins. No married women or young men are allowed to participate in the medical rites. When I inquired from my paddlers the reason for not allowing white men to come to this village, they replied that it was not the Bush Negro's fault but that it was the god who disliked the presence of the white men. They said that a white man would fall asleep before he got to the village and not wake up until after he had passed it, or upon a white man's approach to the village such terrific rainstorms would be started by their god that the white man would not be able to land. I learned further that if a white man proceeded to enter the village he would be set upon and forcibly removed.

Menstruating women are never allowed to remain in any of the villages, but must resort a half mile or so away to a hut especially set aside for them at such periods.

Religion.—The fragments I picked up on this topic were gained from conversations with the above-mentioned men who had lived among these people for a number of years. I myself saw no actual rites taking place.

Voodoo and obeiah is universal among them. They believe in a great god called "Gran Gadu," a ruling spirit over all things. They also have several minor gods, the most important being the alligator and the boa-constrictor, which latter accompanies the voodoo ceremony, and in addition the cottonwood tree, which they call the con con dree. Almost every object, animate and inanimate, is inhabited by a spirit. There is also a god of the jungle,

a god of the river, a god of the provision ground, spirits which are called "wintee" and spirits which are called "wishi," and many others. They are especially careful about their conduct towards snakes, except the venomous kind. Mr. Alexander Wolff related to me how on one occasion a snake came into his hut near Gansee when he was in conversation with several Bush Negroes. He got up to kill it but was prevented from doing so. The Bush Negroes spoke kindly to the reptile, held a conversation with it, telling it that its place was in the jungle and not in Mr. Wolff's hut. The snake did not leave, so one of the Bush Negroes was dispatched to the village, where he procured a so-called snake whip—a stick some three feet long, upon the end of which were tied soft grasses eighteen or more inches in length. The snake was gently chastised with these soft grasses until finally it crawled around to the door through which it was allowed to escape unmolested.

Besides the gods mentioned, each village has a god of some sort in the center of the clearing, and each family has a house god. The sacred objects are very crudely carved in contradistinction to the elaborate type of decoration conferred upon almost every article used. At various points along the rivers I saw shrines at which Bush Negroes worship when on long journeys. These usually consist of long poles stuck into a slightly raised platform of earth. The pole is plain or festooned with grasses, and at some of the shrines there was a decoration of shells, stones, and pieces of wood around the base of the platform. At times remnants of food and drink were to be found, possibly placed there as a sacrifice. Some of the village and household gods were placed beneath a small thatched roof to shade them from the sun, while at other villages such provision was not made for the comfort of their deity. Small vessels containing food and drink were at times seen beside these sacred objects.

Many of the Djukas had personal gods which they wore in the form of a bracelet or rushes having cowry shells situated in a manner to form a design similar to a three-leafed clover. Each morning the native greases the personal god with oil made from the mareepa palm nut as a form of personal offering.

Burial ceremony (witnessed by me at the village of Toticampu, Lower Saramacca).—When a Djuka dies, the body is wrapped in a blanket of woven reeds and placed in a hut without walls upon a platform about four feet in height. Here the corpse is allowed to remain for from six to ten days in the tropical heat until it exudes a putrescent fluid. No one is believed to die naturally, death being due to some villager's witchcraft. This, however, appears to be ceremonial, and not now considered a criminal act. Therefore the ensuing rites do not purport to find the guilty party for objects of punishment, but are probably survivals of days when such was the case. In any event, some of the putrescent fluid is gathered from the body and passed around from door to door, while the corpse is carried in the rear of the procession headed by the witch-doctors and obeiah priests. Any one who refuses to drink part of this fluid is supposed to be the one who inflicted death upon the deceased. There is a modification of this ceremony, in which the putrid corpse is carried from door to door suspended upon the shoulders of four individuals. The procession stops in front of each hut and the witch-doctors ask the question of the corpse, "Is this the man who killed you?" The four men carrying the body then move slightly in such a way as to cause the head or the entire body to incline to one side or the other. If the inclination is toward the occupant of the hut in front of which the procession has stopped, it is taken to mean that the body is answering, "Yes, this is the person who killed me." If the body inclines away from the door the answer is supposed to be negative. Various other questions are asked of the corpse. If the person who died is of high standing in the community and is well known for his prowess as a hunter, wise man, etc., those who wish to have the virtues of the dead man conferred upon themselves rub upon their skins some of the fluid emanating from the body.

Needless to relate, the hut in which the rotting corpse remains is simply teeming with flies (*Musca domestica*) and other insects, and buzzards and vultures attracted by the smell of the carrion are seen perched in convenient places about the village. These birds (believed to be omens of ill fortune) are fooled, however, for

the body is buried far back in the jungle. A hut in which a person has died is never used again, but allowed to go to ruin.

Dancing.—The dances indulged in by the Djukas may be divided into two groups—those of religious or ceremonial nature, and those definitely lascivious. I did not see the former but on four occasions witnessed the other type. These were performed to the beat of the tom-toms, which are always played in rapid rhythm. Accompanying the tom-tom was an instrument known as the qua-qua, a small plank of hard wood beaten with two sticks. At some villages we saw the saka-sake in use. This is a rattle-like instrument composed of a hollow gourd containing seeds or pebbles, with a handle through the center. At most places the saka-sake is reserved for the Voodoo or obeiah ceremonies, but usually several of the dancers had anklets and bracelets of seed rattles.

The women did most of the dancing, performing an intricate stiff-legged step combined with movements of the arms, hands, and body. Occasionally a man in full regalia would burst into the group of dancing women and single out one of them for his partner. He would then go through motions indicating passionate desire for the woman and finally actual coitus. The woman's part in such a duet consisted of steps and movements certainly designed to urge her male partner on. This dance is known as the oggaloosa. At times two or three women would stand in a row about four feet from where we were sitting, with their backs toward us. They would then place their hands behind their necks and exhibit extraordinary muscular control by rolling and lifting their buttocks and abdomens in perfect time to the music. This dance is called bandamba. Several little girls, certainly not more than ten years of age, were also quite expert in these movements, so their training seems to begin at an exceedingly early age. The children danced and chanted as well as the adults, and the parents insisted that the children have their share of the alcoholic beverages we dispensed. At one of the villages the people danced themselves into an absolute frenzy, making us for awhile quite uncomfortable.

At no time were we able to stop a dance that had once started, even though we indicated fatigue and exhaustion.

Diseases.—Yaws, a syphilis-like disease caused by infection with Spironema pertenue, is common. I saw many infected children and not a few adults in the secondary and tertiary stages. Probably one of the main hazards to the traveller among these people comes from living or sleeping in huts heavily infested with the Spironema. Its port of entrance is usually through abraded skin surfaces, so it is important that one attend promptly to any minor cut or abrasion. This disease often readily succumbs to treatment with certain of the arsenical compounds, and a single injection will at times effect a cure. A physician properly supplied with these chemicals and a few syringes and needles could in a year's time do these people an enormous amount of good.

Malaria, including the severe tropical type, is often found among the Djuka, as is hook-worm infestation. Although filariasis, leprosy, and rectal schistasomyasis are common in the towns, I saw no evidence of these diseases among the jungle blacks. Umbilical hernia is of ordinary occurrence in children.

Method of using tobacco.—Very few of the Bush Negroes smoke. In fact, I remember the use of tobacco in this form only on two occasions. The usual method is to sniff up the nose a dark brown liquid prepared by soaking tobacco leaves in water to which a little wood ash has been added. A small vessel containing this fluid is socially passed around, much as we would pass a package of cigarettes. A little of the liquid is poured into the palm of the hand and sucked up the nostrils with a noise very loud indeed. Both sexes use tobacco in this form.

Canoes and river work.—The men are expert rivermen. They make their canoes by felling large trees and hollowing out the centers with fire and axes. The canoes are delicately balanced, usually not more than half or three-quarters of an inch thick. Many of them have elaborately carved bow and stern. These boats range in length from six feet, used to convey one or two people, to as long as thirty-five and forty feet. When going upstream, the man in the stern uses a paddle while the man in the bow uses a stout pole, some ten feet in length, with which he grips the bottom of the river and propels the frail craft against the

current. In going over falls that are relatively high (four feet), the canoe-men will get out of the canoe and forcefully push and shove the craft up over the falls. It was a wonder on many occasions that our men were not swept from their feet by the swift torrents. Sometimes, if the river was a little too swift, the craft would lose momentum and start backward downstream. This seemed to cause no special consternation among the paddlers, and in the proper time the sternman would put his feet out of the canoe and block its progress by placing them against any rock that happened to be in his path. Going downstream, both bowman and sternman use paddles. One cannot speak in too high terms of the skill and dexterity of these people in their work on the rivers. When going into the interior, the white men are absolutely dependent upon them.

Language.—The ordinary speech of these people is the Talkee-Talkee language identical in every way, as far as I could learn, with that spoken by all of the natives of Dutch Guiana. It seems a mixture of Dutch, English, French, Portugese, and a modicum of corrupt West African dialect. It is not difficult, so that in a few days one may collect a vocabulary sufficient to make one's immediate wants known. Some of the words having a particularly English sound are as follows: knife, neefee; boat, boto; ring, linga; far away, fadaway; long ago, langa langa; very long ago, langa langa langa; look here, luku; mother, mama; give me a drink of water, wada ah killame (water or I die); gun, boom boom; and many others. Certain of the syllables are spoken in a long, resonant pitch of different tone sounding not unlike Chinese, the last syllable often being held for at least a second of time.

On festive occasions and when stories are told the songs center around the old slave rebellion and the prowess of the Djuka. For the most part these songs are sung in a language called "Deepee-talkee" (deep talk) which is a noble, or literary, speech differing entirely from Talkee-talkee and, so I am told, composed mostly of modified African words. It is unintelligible to others than the Bush Negro, the town blacks being unable to understand it. The obeiah and voodoo ceremonies are also held in the Deepee-talkee

language. Besides this, these people have a highly developed system of drum telegraphy. I have heard calls "white man comes," "come quick, sick," "call the captain," and others. They telegraph messages from village to village of happenings on the river, and we found that our presence was always known in advance. The signal drum is an elaborately carved instrument known as Apente. Some use it for talking to their god, feeling that the throb of the instrument is more liable to be heard than words or thoughts.

My chief paddler's name was Quacoe, a name also held by a king of the Ashanti people.[3] Anything tabooed is known as "trafer." This is a Hebrew word meaning "unclean." Many of the early slave holders were Portugese Jews who came to Dutch Guiana from Brazil. It is possible that the word was borrowed from them.

The Bush Negroes have no written code, and their Deepee-talkee saga has been preserved entirely by word of mouth.

Art.—Artcraft is highly developed and takes the form of wood carving. I saw but little pottery or basketry in the villages. No painting was evident. The woodcarving is principally in the hands of the men, and an adept is looked upon with high favor by the women.

Practically every wooden implement used in the daily life of the tribe is decorated. Ladles used only for stirring food pots are highly carved in one or more of the traditional designs. Canoe paddles, especially those which the women use, are similarly decorated, and the low stools and benches upon which they sit (for they seldom sit upon the ground) almost always call forth superb efforts on the part of the artist. The combs are carved in designs both delicate and graceful, and the coiled snake or spiral motif with the coils and twists superimposed, all made of a single piece of wood seem especially difficult. Among other implements that are highly decorated are the calabash gourds which serve for plates and spoons, a low tabourette used for resting food, trays made for carrying food and cassava, and even a lowly wooden

[3] George F. Dow, Slave Ships and Slaving (Salem, Mass., 1927), p. 250.

scrubber for cleaning soiled cloth. Most of the villages contained several huts, the door posts of which were carved in the symmetrical snake or other design. The decoration of the drums seems to call forth elaborate efforts, and many of the canoes possessed bow and stern treated to highly carved design.

It seems that the Djuka has not come into contact with another people who could have instructed him in this artistry or in motif displayed. The Guiana Indians have little in their work which approaches the efforts of the Bush Negro. The Javanese and Hindus are relatively recent importations and the Bush Negro has but little contact with them. The town blacks seem sterile as regards their creative artistic efforts. How is it, then, that the jungle blacks have developed so highly in this regard? It is hazardous indeed for one inexperienced in the interpretation of primitive artistic motif to even venture an opinion, but even the most casual observer could not help being impressed with the distinct similarity between certain West African carvings and those found among the Djuka. Dr. Melville Herskovits, Department of Anthropology, Northwestern University, kindly consented to inspect the collection made by me for the American Museum of Natural History and attested to the similarity of certain of the designs to those known among the Ashanti. Lindblom,[4] in his studies on the art of the Bush Negro notes a marked similarity with motif displayed to those of the upper coasts and interior of Guinea, especially as regards certain circular ornamentation—also the circle with various pendants, being a symbol of Afa, the god of wisdom, in Dahomey. Lindblom states that the wooden combs with their pierced ornamental work are certainly of West African origin, as they are still being made and used today in upper Guinea, the French Ivory Coast, Agna, Cameroon, and Calabar.

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[4] Gerhardt Lindblom, Einige Details in der Ornamentik der Busch-Neger Surinams. Riksmuseets Etnografiska Avdeling (Stockholm, 1926). *Also*, Lindblom, Afrikanische Relikte und indianishe Entlehnungen in der Kultur der Busch-Neger Surinams; Kung l. Vetenkaps och Vitterhets—Samhalles Handlingar. Fjarde Foljden xxviii l. 1924.

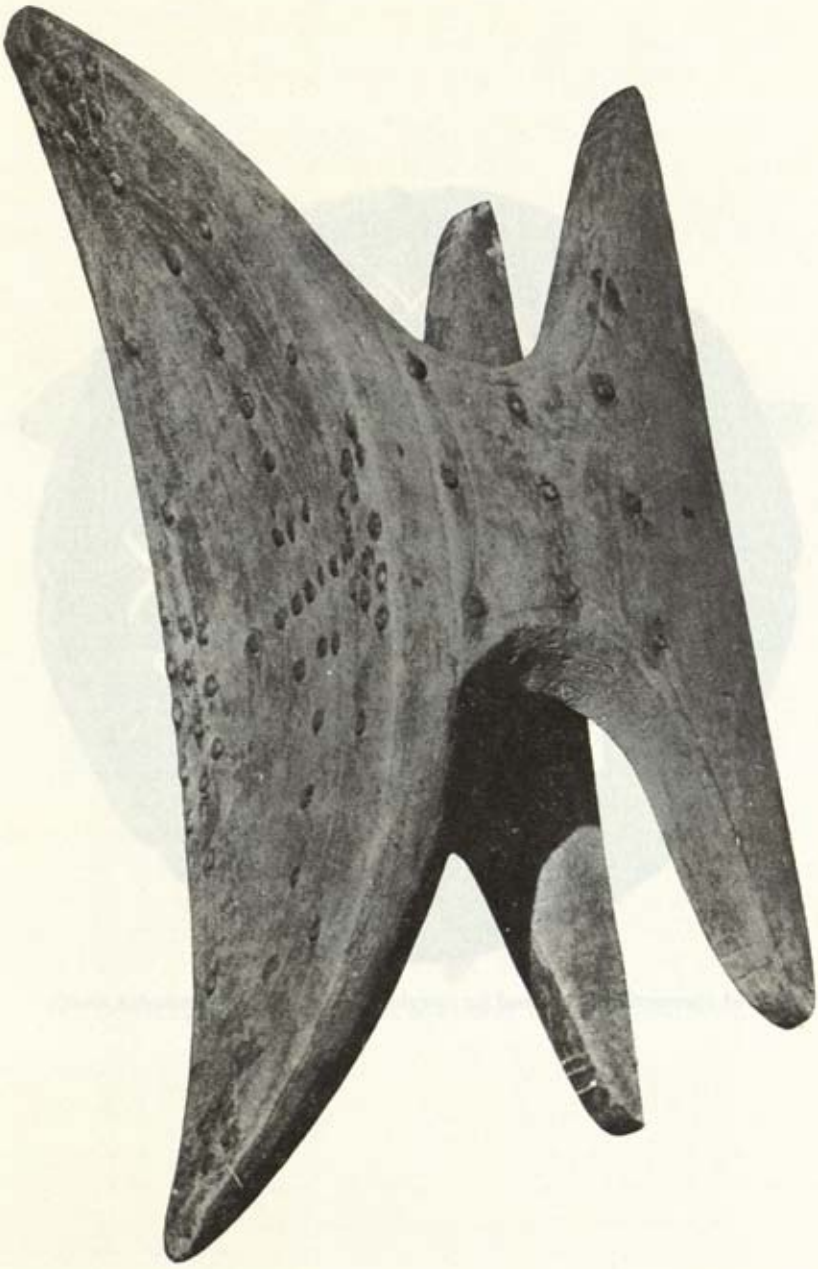
The accompanying illustrations will give a more graphic idea of the qualities of the Bush Negro art which are reminiscent of West Africa. Lindblom notes that just as the details brought from West Africa contain the material culture and also the religion and magic of the Bush Negro this most likely occurs in the same manner with their art, even if this latter received to a certain extent a special development in South America. He states further that probably some ornaments are not made for adornment only. As pointed out by Van Panhuys,[5] birds as well as snakes are holy animals for the Bush Negro and likewise in West Africa (particularly the snake), where at Dahomey and Whydah, from which places so many slaves were shipped, the snake worship has its center. The technic of the carving may be divided into four groups:

1. Ornaments carved or engraved with compass and knife.
2. Ornaments branded by means of a hot knife or wire.
3. Ornaments in low relief.
4. Ornaments consisting of pierced work.

The superb finish is given the carvings by a mat of grass or cloth dipped in fine river sand.

CORNELL UNIVERSITY MEDICAL COLLEGE,
NEW YORK CITY

[5] Jonkheer Van Panhuys, About the Ornamentation in Use by Savage Tribes in Dutch Guiana and its Meaning. Proceedings of the International Congress of Americanists, 209–212, 1902.

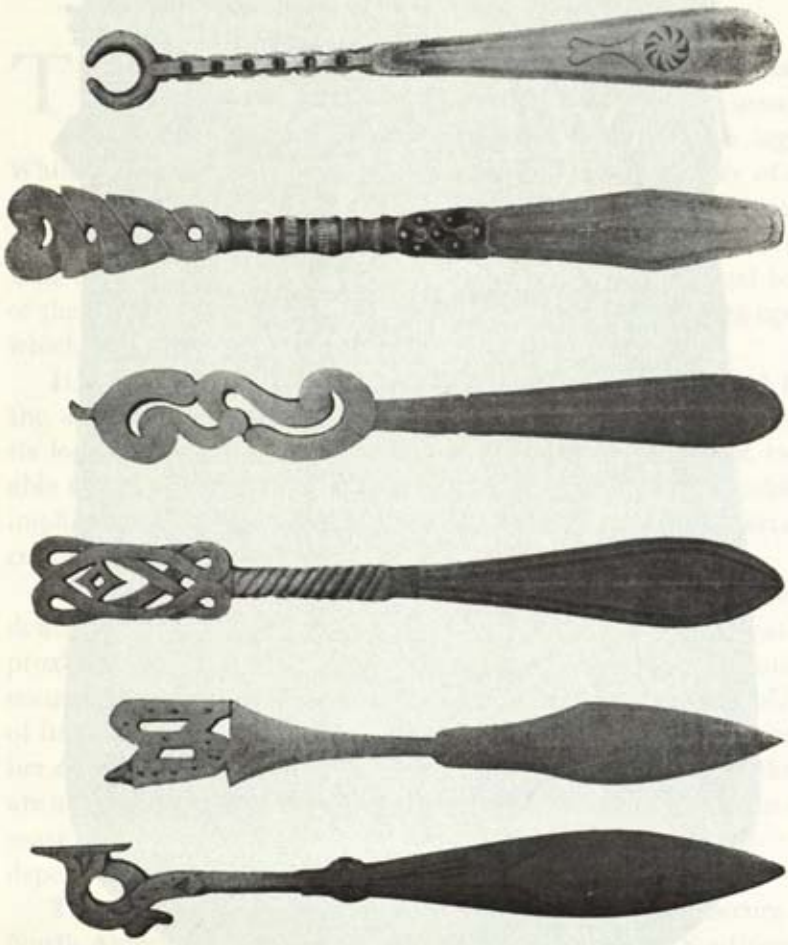


Crescentic stool made of one piece of wood (Upper Surinam river).

Carved openwork tray of wood for carrying cassava (Lower Saramacca river).

Carved openwork stool of wood, snake motif (Upper Surinam river).

Combs made of single pieces of carved wood (Upper Surinam river).



Carved wooden paddles for stirring food pot (Upper Surinam river).

Apente or signal drum, snake motif (Upper Surinam river).

DIFFUSION AND INDEPENDENT INVENTION: A CRITIQUE OF LOGIC[1]

By JULIAN H. STEWARD

THERE exists a large proportion of anthropological data which admits of no clear-cut methodology but is usually handled according to inference and common sense logic. While this method may be soundly rational, the possibility of an enormous subjective element and fallacious logic is ever present and is demonstrated by the existence of the diffusion controversy. This controversy is made possible not only by the personal bias of the investigator but also by a confusion of the principles upon which the solution is based.

It is not my purpose to present a rule-of-thumb method for the settlement of the diffusion controversy but to inquire into its logical implications and discover whether these are not capable of formulation. While this will but formulate the principles implicit in most work, it will also reveal the possibility of certain confusions and inconsistencies.

Certain factors are involved in every instance where there is doubt concerning independent invention or diffusion: the spatial proximity of the localities where the culture element in question occurs, the apparent uniqueness of the element, the possibility of its derivation from a common ancestral culture, and the number of other elements shared by the localities. While all of these are usually taken into consideration through a method of common sense logic, certain of them are frequently ignored or one made to depend upon another in an illogical manner.

This may be illustrated by inverted speech[2] which occurs in North America in the Plains area, California, and the Southwest, and also occurs in Australia. Shall we account for these four occurrences by diffusion or independent invention? The solution depends upon inference from the assembled facts, but what is the

[1] Read at the meeting of the American Anthropological Association, Dec. 28, 1928.

[2] A custom of clowns and others of saying the reverse of what is meant.

logic of our reasoning? We ask: How probable is communication between these areas? How difficult an achievement is inverted speech? It is tempting immediately to postulate diffusion between the North American occurrences but independent invention for Australia. This would be solely on a basis of distribution and by this we should be prone to judge the uniqueness of the element. A consideration of California, the Southwest, and the Plains alone would lead us to regard the invention of this trait as an inherently difficult accomplishment, largely because of the comparative ease of communication between the three areas which it seems to have diffused. But the Australian data, in view of the difficulty of communication between Australia and America, lead us to regard inverted speech as not so difficult an invention after all, for it clearly has been invented a second time. What logical justification would there be for the assumption that independent invention is inherently less possible for the Plains, California, and the Southwest than for Australia because the first three happen to be geographically more accessible?

If we conclude that communication was quite possible between two or more localities possessing the same trait, we are prone to regard the trait as unique. Conversely, if we decide that the trait is not unique and may frequently appear, we are less impressed with the possibility of communication. Thus by disposing of one factor we beg the question for the other. Thus, those who regard all elements as unique and impossible of multiple invention beg the question in favor of the probability of communication everywhere and are called "extreme diffusionists." On the other hand, those who regard all elements as easily arising everywhere, the "evolutionists," beg the question against the probability of communication. Without looking to the extremist, we find that everyone is constantly called upon to make decisions in problems of this kind. Personal bias and a confusion of factors which must logically be kept distinct may affect the solution.

We are concerned here, however, not with reconciling the extremists but in defining the methodology used by unbiased investigators—if there be such—and stating its logical justification.

I therefore submit the following three principles as logically valid formulations of the methodology employed, implicitly or explicitly, in the solution of these problems. These principles are stated in terms of probabilities, and for this I make no apology to scientists for the most exact scientific laws are philosophically but statements of high probabilities.

When a culture element is found in two or more localities (and it is assumed that the element is identical in each case), the probability that independent invention has occurred is:

(1) Directly proportionate to the difficulty of communication between the localities.

(2) Directly proportionate to the uniqueness of the element—the "qualitative criterion."

(3) Inversely proportionate to the probability of derivation from a common ancestral culture.

(1) *The probability of independent invention is directly proportionate to the difficulty of communication between the localities.* The logical validity of this lies in the fact that as communication is difficult, the chance of its having occurred to transport the element is small. Factors determining the difficulty of communication are: geographical accessibility and means of transportation, intertribal relations, and cultural receptivity. These have been clearly discussed by Sapir in his *Time Perspective in Aboriginal Culture.*[3]

A measure of the difficulty of communication is the number of other culture elements shared by the localities. Other things equal, each culture element common to the localities strengthens the probability that communication has occurred. Therefore as a supplement to (1), we may state as

(1*a*): *The probability of independent invention is inversely proportionate to the number of traits shared by the two localities*—the "quantitative criterion."

That culture elements of different types diffuse with varying degrees of facility would be taken into consideration under cultural receptivity and intertribal relations.

A further supplement to (1) is:

(1*b*): *The probability of independent invention is inversely proportionate to the elapsed time since the appearance of the trait in either locality.*

[3] Canada, Department of Mines, Mem. 90 (Anthr. series, no. 13), 1916.

That is, the amount of communication between the localities is, other things equal, a function of time.

(2) *The probability of independent invention is directly proportionate to the uniqueness of the element.* The uniqueness of a culture element—that is, the probability of its being invented—is the most difficult problem to determine. This will be decided by the investigator upon his experience and knowledge of the cultural setting and circumstances under which it may have been invented. But his decision must not depend upon either of the other two principles stated here. To the probability of an element of culture arising in a particular culture, the existence of this element in other localities and the difficulty of communication between the localities are totally irrelevant.

(3) *The probability of independent invention is inversely proportionate to the probability of derivation from a common ancestral culture.* The solution of this depends partly upon the number of other culture elements which the localities have in common so that (*1a*) may also apply here as a possible supplementary principle:

(3*a*): *The probability of derivation from a common ancestral culture is proportionate to the number of elements shared by the localities.*

It also depends upon known factors of racial and linguistic relationship. These have also been discussed by Sapir.[4]

Where one or two of these three principles fails to yield data in terms of probabilities, our inference as to what has occurred must be drawn entirely from the known. Most commonly the unknown will be (2), the possibility of invention of the trait—its uniqueness—and we shall consequently be thrown back upon distributional inferences. Thus, to return to inverted speech, if the possibility of its arising in any culture is totally unknown, we are forced to decide its origin in any locality upon the possibility of its diffusion from another locality also having it or its derivation from a common ancestral culture. This, however, will establish probabilities merely as to whether independent invention or diffusion has occurred in this particular instance and does not

[4] Ibid.

throw light on the problem as to whether or not inverted speech is a trait that is inherently difficult to invent.

The final solution of any problem of this type will rest upon a summation of the probabilities derived from each of these three principles or criteria but the principles themselves must logically be weighted separately without the least interdependence.

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A TFALATI DANCE-SONG IN PARTS

By JAIME DE ANGULO

I RECENTLY had occasion to study the Tfalati dialect of Kalapuya (formerly spoken in the vicinity of Portland, Oregon) with a man who is the sole survivor of his tribe. Louis Kennoyer[1] is now 60 years of age. He could give but little information on the customs of his people. They had already adopted white ways when he was a little boy. However, he was able to recall several songs that he had heard in his childhood, and these he was kind enough to sing into the phonograph.

They all are simple melodies built on the same scales that I have worked out for the music of the tribes of northern California (study soon to appear in *Anthropos*). One of them, however, merits special attention. Our informant insisted that this song consisted of four parts. He said that he needed at least two women's voices and two men's voices to sing it properly. He sang the parts separately into the phonograph, and even instructed some of us eager pupils. The final record obtained was somewhat of a cacophony, but the intent was clear enough, and it is the intent that we publish in the accompanying sketch.

It will be noticed immediately that the two women's voices (they sing the main motif of the melody, in the upper octave) string out very nearly the same melody. They are in complete unison throughout, except for the two notes in white. And as a matter of fact, Kennoyer said that if we could not get two women, one would do.

The very same remarks hold for the men's voices, an octave below. They really amount to an accompaniment, or drone.

Is this singing *in parts?* Is this the beginning of harmony? How much of this is due to the influence of white music? Our informant, of course, insisted that this song was centuries old.

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[1] His Indian name is Pahawatis. His father was Kenoy. His grandfather was Qayakuts, the chief who signed the treaty of Calapooia Creek in 1854.

I have noticed a tendency to sing "in parts" (very much in the fashion illustrated in the present song) among many Indians. They are fond of such singing. They call it "nice singing." Some say it came in with the whites. Others say it was always that way. One does not know which side to believe. It is perfectly clear however that a great many Indian songs are built

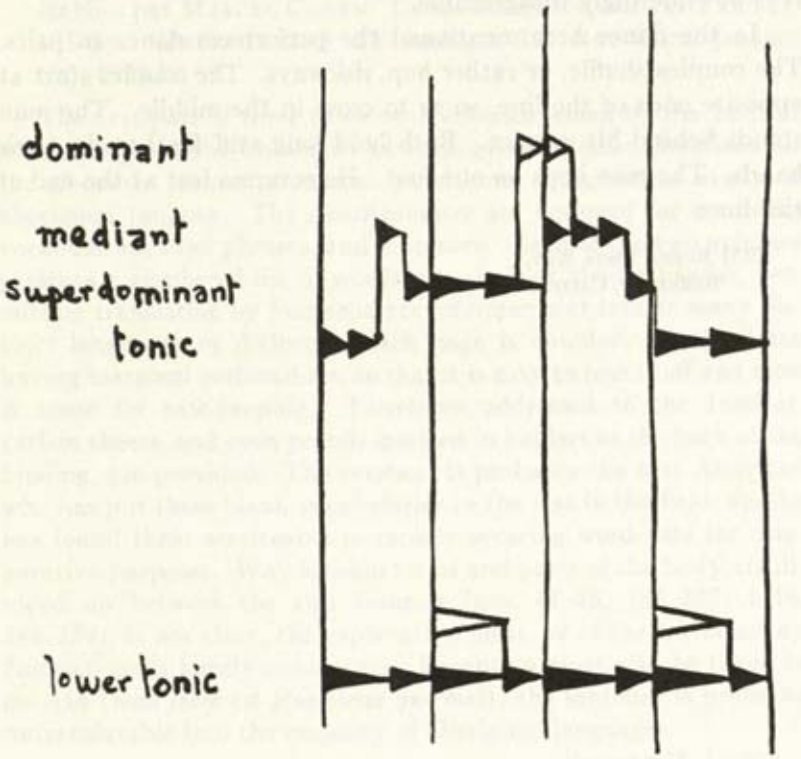

FIG. 1. Song, in four parts, sung by Louis Kennoyer, informant.

on a melody of two or four phrases, and that there is a tendency (at dances, gambling parties, shamanistic performances, etc.) to convert the confusion which arises naturally from a leaderless crowd, into a pleasing effect. Ever so many songs are built so that you may start (by mistake) the song afresh at the end of the third bar, while the main body of the singers continue, thus producing what we call a "round," and yet nothing dissonant happens.

This is probably due to the intervals that are most frequently used in Indian music of this type, viz., the second, the major third, and the perfect fifth, and less often the inverted third.

True part singing, i.e., every voice singing a different note throughout most of the melody, I have never heard among Indians. I don't even know whether it is pleasing to them or whether it is bewilderingly disagreeable.

In the dance here mentioned the performers dance in pairs. The couples shuffle, or rather hop, sideways. The couples start at opposite ends of the line, so as to cross in the middle. The man stands behind his woman. Both hold long stiff feathers in their hands. The man hops on one foot. He reverses feet at the end of the line.

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BOOK REVIEWS

METHODS AND PRINCIPLES

Instructions pour les Voyageurs; Instructions d'enquête linguistique établies par MARCEL COHEN. *Questionnaire linguistique* I and II. 125 pp. (Paris: Institut d'Ethnologie, 191 Rue Saint Jacques (5e), 1928.)

The first part of these three neat volumes issued by the Institut d'Ethnologie of the University of Paris gives succinct directions for the phonetic transcription and provisional grammatical study of aboriginal tongues. The *Questionnaires* are designed for recording vocabularies, brief phrases, and sentences. Each of the two volumes presents a numbered list of words, etc., in four identical series, permitting translation by four separate informants or into as many distinct languages or dialects. Each page is doubled, the duplicate having marginal perforations, so that it is easy to tear it off and send it home for safe-keeping. Envelopes addressed to the Institut, carbon sheets, and even pencils inserted in holders at the back of the binding, are provided. The reviewer is probably the first American who has put these blank vocabularies to the test in the field, and he has found them serviceable in rapidly securing word lists for comparative purposes. Why kinship terms and parts of the body are divided up between the two volumes (nos. 41–48, 282–297; 1–16, 244–259), is not clear; the explanation on p. 69 of the introductory *Instructions* is hardly convincing. Exception must also be taken to no. 414 (*mon frère est plus vieux que moi*); the sentence is probably untranslatable into the majority of aboriginal languages.

ROBERT H. LOWIE

Reallexikon der Vorgeschichte. Herausgegeben von MAX EBERT. (Berlin: Walter de Gruyter & Co., 1927. Vol. 10, 391 pp., 163 pls. 43.50 M; cloth 52.50 M.)

Previous volumes have already been noticed in the AMERICAN ANTHROPOLOGIST (27: 561, 1925; 29: 332, 1927; 30: 714, 1928). The present volume conforms closely to the standards set by its predecessors. Considerable space is devoted to two archaeological articles, "Polen" (pp. 177–200) and "Pyrenäenhalbinsel" (pp. 336–

391), the Paleolithic sections of both being by Professor Obermaier. In consonance with his earlier views this author derives the Polish Solutrean from Hungary (p. 177), and identifies certain Spanish finds of Mousterian age with the Sbaikian and Aterian of North Africa.

> Dass diese beiden Stufen auf europ. Boden nunmehr in fester Stratigraphie erwiesen sind, ist von nicht geringer Wichtigkeit und liefert auch den endgültigen Altersnachweis für die nordafrik. Vorkommnisse, welche zumeist Oberflächenfunde darstellen (p. 342).

This culture is designated as Ibero-Mauretanian. In the general treatment of the "Paläolithikum" (pp. 2–5) he gives an elementary exposition of the facts, stressing the occurrence of distinct culture areas even in the earlier periods. In the discussion of "Palästina-Syrien" (pp. 7–14) his determined stand against J. Bayer's system is worthy of note.

Among the other archaeological articles may be cited the symposium on "Pfahlbau" (pp. 85–101) and Sprockhoff's essay on "Pfeilspitzen" (pp. 102–109). The latter author regards the Aurignacian as the period in which bow and arrow developed. As to the origin of pile-dwellings, the late W. Bremer holds that the oldest of these settlements had a culture of Michelsberg type. Its bearers once had occupied a large part of South Germany, and were pushed back into Alpine territory. Unable to cut down the virgin forest hemming in the Swiss lakes and thus confined to a narrow border strip between water and woods, they had to build houses on piles to safeguard themselves against inundation (p. 94).

The ethnological articles, such as "primitive Kultur" and "Patriarchat," are again by Dr. Thurnwald and reveal the customary range of his reading.

There is the briefest of articles on "Papier; Vorderasien" by B. Meissner and a somewhat longer one on "Papyrus" by Roeder. Here the reader whose interests are in culture history as a whole pines for a general article, taking in such phenomena as the invention and spread of Chinese rag-paper. Notwithstanding such gaps, the *Reallexikon* remains far and away the most useful work of its kind.

ROBERT H. LOWIE

The Oriental Institute of the University of Chicago. JAMES W. BREASTED. (August, 1928. 36 pp. 10 cents.)

The Oriental Institute of the University of Chicago: First Report of the Prehistoric Survey Expeditions. K. S. SANDFORD and W. J. ARKELL. (University of Chicago Press, January, 1928. 52 pp. $1.00.)

In the first of these amply illustrated pamphlets the Director of the Institute gives a fascinating account of the magnificent series of operations it is carrying on in both Egypt and Western Asia. In the second paper, the authors—members of the Oxford Department of Geology—set forth in popular manner the geology of the Nile country and the outstanding facts of Egyptian prehistory. To put the matter as shortly as possible, they found Chellean, Acheulean, and Mousterian strata in the order familiar to the student of Western Europe; while a technique of Capsian affinities takes the place of the Aurignacian, Solutrean, and Magdalenian.

> We may say there is a Capsian influence in the post-Mousterian implements of Egypt, but that is all we are justified in saying at the moment (p. 25).

The severity of the authors' chronological criteria (p. 13) inspires confidence in their findings, and their full reports will doubtless arouse the greatest interest.

ROBERT H. LOWIE

An Introduction to the Study of Society. FRANK HAMILTON HANKINS. (New York: The Macmillan Company. 1928. Pp. XIII, 760.)

It is the contention of the present volume that any effective study of sociology proper must be prefaced by some mastery of the geographical, biological, and psychological preconditions of social life and by some understanding of the institutional organization of society. But if the student is to begin the study of sociology before entering the graduate school, it is not possible to set as a prerequisite courses in psychology, anthropology, human geography, and genetic biology. The author undertakes, therefore, an organized presentation of such material from these fields as he considers essential to two groups of beginning students: those who will take no other course in social science, and those entering upon a serious study of social phenomena.

The volume opens with a discussion of the pitfalls of bias in the understanding and interpretation of social reality, and a presentation

of the evolutionary point of view. It then takes up the origin and antiquity of man, including man's relationship to the other animal forms, and the nature and types of the fossil races. It then goes to a discussion of race, criteria of races, hybridization, racial inequality, and related data. Four chapters are then given to a survey of the geographical, biological, psychological, and cultural factors of social life. The final section of the book deals with the evolution of material culture, religion and related phenomena, marriage and family, and the social organization.

The book is designed for the use of beginning students in sociology but it is not in any sense a sociology. There is a reasonable agreement in the professional camp that sociology is a method and a point of view for the study of the social process. The present volume does not deal with the social process and neither its method nor its point of view is sociological. It deals almost exclusively with pre-sociological information. It may best be characterized as a social anthropology written by a sociologist. The point of view is, however, biological rather than cultural.

The author appears to be far from clear in his own thinking concerning the relationship of sociology and the allied sciences and social disciplines. There is an endless confusion of social reality with the facts logically antecedent to social life. At one place he conceives the pre-sociological information with which he is chiefly concerned as a sort of informational background necessary to the student of social phenomena; at another he treats this body of material as the subject-matter of sociology itself. The confusion seems, fundamentally, to be a consequence of an undefined point of view. The student of social phenomena must decide what, for him, constitutes a description and explanation of social reality. He may occupy, consciously or naïvely, the position that group and culture phenomena are essentially illusory and that the only explanations that have any significance and meaning are in terms of the characteristics of the biological organism and the physical environment. On the other hand, he may operate on the assumption that social phenomena represent a relatively independent order of reality that must be understood, if it is to be understood at all, in terms of itself. Either position is defensible and either procedure legitimate. But they are contrasted in point of view and method and lead to totally different, though supplementary, types of explanation. The one gives a sociology, or a social anthropology, while the other elaborates a pre-social body of information or, at most, gives

an interpretation of social and cultural reality in geographic and biological terms.

In regard to the content of the book, two points call for special comment.

One is struck by the gross carelessness in the handling of details: almost every page is marred by erroneous or questionable statements. A few random examples must suffice. The author appears to hold the doctrine of use inheritance (p. 46). Embryology is given as the most convincing piece of evidence with regard to the animal ancestry of man (p. 50). The orang is declared to be as close to man as the gorilla and the chimpanzee (p. 70). Pithecanthropus erectus is spoken of as human (pp. 75, 77). Rhodesian man is said to be older than Heidelberg (p. 75). Australopithecus africanus, the fossil ape, is classed as an extinct type of man (pp. 77, 88). The position of M. Boule in regard to the Piltdown remains is misunderstood and misinterpreted (p. 79). The Mauer jaw is said to have been found 69 feet below the surface (p. 80). The Java man is stated to have been found in 1892 (p. 90). Thomson's name is misspelled (p. 91). The conception of race is confused and unclear (pp. 92, 93). Much is made of stature and its distribution as a racial trait (p. 94). Eskimos generally do not live in tribes (p. 99). The cephalic index is given as the most fundamental of all marks of racial distinction (p. 102). Cranial capacity is taken up under racial traits (p. 102). Intelligence is treated as a racial trait (p. 125). The list might be extended almost indefinitely.

The eugenic and pro-racial bias of the book is pronounced. It takes the position that the races are unequal in capacity. The Negroes particularly are shown to be grossly inferior: they are said to have sufficient capacity to imitate some of the elements of white culture but not to create them, and they are said to be absolutely incapable even of comprehending many of the elements of white culture. There are similar, though less marked, differences between the European races. Civilization is made a function of race: it can be created and maintained by great races only; the decline of civilizations has been due, at least in part, to the dying out of the abler strains of the populations. The same general position is expounded in regard to social classes and occupational groups. There is a naïve and uncritical acceptance of the findings of the Army Mental Tests and a solemn recital of the familiar eugenic patter in regard to the superior native

ability of the economically successful, the inferiority of the rural folk, the incapacity of the newer immigrant stocks, and the like.

The inaccuracies of the book and its bias make it unusable as a text where a balanced presentation is the teaching objective. But most sociology teachers will not be irritated by the first since they will not recognize them. The second will make a positive appeal to a goodly number of teachers who want their textual material in line with the popular prejudices. The book, therefore, is likely to have a good sale and a wide use. It will do its part in the struggle against tolerance and democracy.

It is a pity that some competent anthroplogist does not prepare a general volume suitable for class purposes.

E. B. REUTER

Pots and Pans; the History of Ceramics. H. S. HARRISON. (London: Gerald Howe, Ltd., 1928, VIII, 88 pp., 2s. 6d. net.)

It would be hard to cram more of significant fact and sound psychology into a narrow compass than Mr. Harrison has succeeded in doing in this little volume, which forms part of the series "The Beginning of Things," sponsored by Professor G. Elliot Smith. Written in an easy style, with delightful flashes of humor, it is a model of popular exposition, all the more because of its far from obtrusive use of the diffusionist position.

As to the main issue, the reviewer has steadily tended to attach greater weight to the diffusionist argument wherever technological considerations enter. At one time I should have unhesitatingly indorsed the position recently expressed by Dixon:

> Thus clay, as affording an opportunity for the invention of pottery, is not only wide-spread, but caked and dried by the sun or baked by the fire, obtrudes itself in a dozen different ways on man's attention. It invites the genius to take advantage of it.[1]

But after reading S. Linné's *The Technique of South American Ceramics* (Göteborg, 1925)which I am glad to note in Mr. Harrison's bibliography—, I regard the invention of ceramics as little short of miraculous. Until someone refutes Linné's statement I shall be loth to believe that true pottery was often invented and am quite willing to believe that it may have been invented only once. If earthenware is so obvious a thing, why was it never produced by the Magdalenians?

[1] R. B. Dixon, The Building of Cultures, 48, 1928.

On similar grounds I cannot accept a multiple invention of the bow, such as Professor Tozzer favors.[2] As Kroeber suggests, a bow falling below a certain standard is useless, and the initial steps towards its invention are far from clear.[3] Again, on the subject of domestic beasts I am obliged to take a view even more extreme than Professor Elliot Smith's, who seems to consider the domestication of animals a very simple thing compared to so complex a matter as totemism. Surely, there is a confusion of ideas here. The *concept* of a domestic beast may be simpler than the vagaries of totemistic thinking. But a chasm yawns between a species *conceived* as breeding freely under human control and one that actually is brought to the point of so breeding. As Nordenskiöld has pointed out, all our animal husbandry has failed to add a single economically important animal to those handed down by ruder ages. So in the case of the bow the crucial thing is not to envisage a piece of wood and a string jointly forming the segment of a circle. No doubt that geometrical abstraction may have suggested itself over and over again. The trouble is that the form is not enough for archery. Leonardo da Vinci *conceived* the idea of flying, but it took several centuries to make it a reality. Early men cannot be supposed to have constantly produced prodigies of genius followed at short intervals by vast numbers of specialists bent on bringing their insight to fruition. If fifty Magdalenians tried to make clay vessels, not one got to the point of making a pot that did not crack when fired; and there were not groups of trained workers striving to make ceramics a reality.

In non-material culture the case is radically different. The experiment in thought need not be translated into reality, it is not subjected to the malice of the objective universe,—merely to that of the social environment. The chances of cultural creation are thus indefinitely enhanced. One can *think* of a lump of clay converted into a pot without the nerve-racking experiences of tempering and firing; one can *think* of straddling a reindeer without having to worry about the weak backs of local breeds that will not bear a rider. In other words, day-dreaming is an inexpensive luxury. The psychological situation in many phases of non-material culture can be compared with that which holds for linguistic phenomena. Chinook and Bantu share the principle of concord, Takelma and Greek are "mixed-

[2] Social Origins and Social Continuities, 27, 1925.

[3] Anthropology, 167 f., 1923.

relational" in Sapir's terminology,[4] yet no one suggests historical connection to explain the resemblance. Correspondingly abstract similarities of mythology, social structure, and ceremonial will have to be approached from the same angle. On the other hand, those who glibly assume that mechanical inventions, domestication of animals, and so forth, may have recurred an indefinite number of times in the history of culture may profitably occupy their leisure moments trying to manufacture earthenware vessels from local clays, getting musk-oxen to breed in captivity, or constructing a cart-wheel without previous training. Mr. Harrison's charming booklet will at least warn them against overweening confidence in the success of such enterprises.

ROBERT H. LOWIE

Der Aufgang der Menschheit: Untersuchungen zur Geschichte der Religion, Symbolik und Schrift der atlantisch-nordischen Rasse. Textband 1: *Die Grundzuege.* HERMAN WIRTH. Mit 68 Textabbildungen, 28 Bildbeilagen und einem Schrifttafelanhang. (Jena: Eugen Diederichs, 1928. Pp. 632. Price, bound, M. 58.)

The writer's general thesis is that pretty nearly everything worth while in the higher spiritual culture of the Occident harks back originally to blond, longheaded Nordics. Our historic Nordic race is the offspring of the *arktisch-nordische* or *vor-nordische Urrasse* that first appeared in the Tertiary on the then vast warm Arctic continent. These Proto-Nordics, with the coming of the glacial epoch, wandered perforce southward, into North America, "Atlantis," and Asia. The American Indian is basically, in the northern part of the continent at least, Proto-Nordic. The Mongoloid strain in him is due to subsequent infusions during later glacial times of Mongoloid blood, via Alaska, from Asia, the Mongoloids themselves being the result of hybridization between the Arctic Proto-Nordics who had had to migrate into Asia and the dark *Urrasse* they found there.

Traces of and evidence for the historic, prehistoric, and protohistoric wanderings and blendings of the Proto-Nordics are found by Wirth, as the result of a long, minutely detailed comparative study, in the myths, cults, customs, symbols, hieroglyphs, systems of writing, and languages of the world. He finds confirmatory evidence for his thesis in the data from racial blood tests. The Proto-

[4] E. Sapir, Language, 123, 151, 1921.

Nordics are or were of blood group I, the present Nordics of blood group II, the dark Asiatic *Urrasse* of blood group III. Wegener's theory of the origin of the continents is accepted by Wirth and does yeoman service in helping him get the Proto-Nordics down from their native homeland on the top of the world.

A couple of random samplings among the hundreds of remarkable arguments used and conclusions arrived at by Wirth will give the reader a better idea of this work than would any comments by the reviewer. The oldest inscription in the world is the one discovered in 1856 on Monhegan island off the coast of Maine. It is at least twenty-five thousand years old. It belongs to the writing system of the Proto-Nordics, as do also the "hieroglyphic" inscriptions of the much later Magdalenian period (p. 149). Hopi si-pa-pu is genetically related to supon, sūpr, soppe, suppe (soup), etc., of the northern European languages, as also to Sumerian ab-zu (pp. 198–201, 249).

The whole work is planned to be issued in two parts. The present enormous volume is Volume One of the first part. Volume Two of the first part, together with an elaborate *Bilderatlas*, will appear in the course of the next year. They may be cordially recommended to all the faithful who believe with Wirth that the Nordic race is "die Trägerin der höchsten Geistesveranlagung und die Urheberin der höchsten Geisteskultur."

JOHN M. COOPER

Het hoogste Wezen der Primitieven. Studie over het "Oermonotheïsme" bij enkele der laagste Volken. J. J. FAHRENFORT. (Groningen, Den Haag: J. B. Wolters, 1927, 311 pp.)

Thirty years have passed since the late Andrew Lang dropped a bombshell into the anthropological camp by the publication of his Gifford Lectures on *The Making of Religion* (1898; revised editions, 1900 and 1910). The conclusions there reached were directly contrary to the current theories of the evolution of religion, as expounded by Herbert Spencer and particularly by E.B. Tylor. Lang dismissed these *in toto*, arguing for the existence of "high gods of low races"; for the non-animistic origin of such gods, who were active in the world before death, a comparatively late intruder, came into it; and for their gradual submergence under a mass of ghosts and spirits, the belief in whom may well have arisen later than that in "All Fathers." We cannot prove, indeed, that the god-idea is historically prior to the ghost-idea,

since all savage folk have both gods and ghosts, but we are not bound, either by logic or by the evidence, to assume a development of the former out of the latter. Such is Lang's "pre-animistic monotheism," as it has been termed. He himself disowned the expression, denying that he ever ascribed to any savage tribes religious beliefs which could be properly called monotheistic in the strict sense of the word. He did hold, however, that primitive conceptions of supreme beings form the germ of the most advanced monotheistic ideas found among civilized peoples.

Lang's onslaught against animism, as the seed of all religion, commended itself to the rising school of historical anthropologists, and especially to the members of that school who combined, or tried to combine, science and religious orthodoxy. Here we need only instance the indefatigable W. Schmidt, who in *Der Ursprung der Gottesidee* (1912; second edition, 1926) and in numerous other publications, either his own or inspired by him, has swallowed primitive monotheism completely—hook, line, and sinker. Much less dogmatic is Archbishop Söderblom in *Das Werden des Gottesglaubens* (1916; second edition, 1926). And best of all, from a scientific point of view, is R. Pettazzoni's *L'essere celeste nelle credenze dei popoli primitivi* (1922), the first volume of a work on the formation and development of the idea of God, to be published under the inclusive title of *Dio*.

Comes now Dr. Fahrenfort with a new book on primitive monotheism and a fresh survey of all the evidence that has so far been adduced for it among the lowest peoples, including the Andaman islanders, the Semang and Senoi of Malacca (Malay peninsula), the Negritos of the Philippines, the Bushmen of South Africa, the Central African Pygmies, the Fuegians, and the Australian aborigines. Dr. Fahrenfort considers them all at considerable length, but nowhere finds a *locus classicus* against evolutionary theories of religion. If we are to accept his conclusions, Lang's bombshell was nothing more or less than a dud. Fathers Schmidt and Koppers are also targets for some destructive criticism, particularly in chapter 8, which bears the suggestive label "Tendentieuze Ethnographie."

Our author is perhaps a better hand at criticism than at construction. He himself does not propound a general theory of the origin of supreme beings and suggests rather that the belief in them may sometimes arise from the observation of natural phenomena, may sometimes be a product of animistic or manistic conceptions, and may also be due to special conditions of tribal society. He further points out

that with all the supreme beings considered there are now associated features that must have been once wholly foreign to them.

> I have tried to make it clear that a [divine] figure which attracts attention has a tendency to step forth as a "concentration-figure" and thus to become the possessor of qualities and the performer of deeds which were earlier attributed to other beings. It is therefore obvious that the supreme beings of these low peoples are the outcome of a long period of development (p. 306).

A thorough investigation of the evidence for high gods other than those treated in this book would throw light upon the whole problem of "primitive monotheism."

HUTTON WEBSTER

Cultural Evolution. A Study of Social Origins and Development CHARLES A. ELLWOOD. (New York: The Century Company, 1927. viii, 267 pp.)

This book represents an attempt by one of our leading sociologists to popularize some anthropological lore. It is admitted, however, to be "merely an outline of the author's theory of human evolution," intended as a text for courses in social origins and social evolution. It undertakes

> an evaluation of the traditions of our civilization and of the various factors in social and cultural evolution.

An introductory section has chapters discussing various points of theory: the difference between social and cultural evolution; cultural stages; the nature, method, and causes of cultural evolution; and the origin of cultural patterns. The main body of the book is a series of thirteen chapters, each devoted to tracing the hypothetical and actual development, and present trend of some important cultural complex or institution. The topics taken up are: physical tools, the food process and its pathologies, agriculture, war, clothing and bodily decoration, housing, the fine arts, property, the family, law and government, morality, religion, and education and science. A final chapter gives a retrospect and prospect, with sharp accents in the progressive mood.

Professor Ellwood characterizes cultural evolution as a collective learning process, as continuous trial and error.

> Cultural evolution is a process of active adaptation on the part of individuals and groups, carried on by the human brain as an active adaptive organ and by means of intercommunication among the members of human groups (p. 76).

He follows Professor W. I. Thomas in indicating that the process of invention, and thus of the method of cultural evolution, is one of "crisis, attention, and control."

Recognizing the complexity of culture, Dr. Ellwood rightly emphasizes the disparateness, as well as the unity, of its different elements, and he indicates that every society will have different traditions with regard to different cultural traits. In theory, at least, Dr. Ellwood comes out against the unilinear evolutionists:

> This theory of culture leaves no basis for what we may call the sociological superstition of a unified and simple social evoluton which takes place upon a single basis. Culture, we see, consists of a number of growing traditions, each concerning a different phase of the life-process. We have, for example, the technological tradition, which may and does grow more or less independently of other traditions. Thus there can be a very high development of tool making with apparently little development of the artistic tradition, or of the fine arts (p. 78).

This book may be useful to sociology teachers, for whom, of course, it is intended. While it is not overburdened with facts, it has summarized much valuable information gleaned from anthropological handbooks, although always from a particular point of view. Indeed, the author says in his preface that the generalizations offered have been reached only after teaching a course in Cultural Anthropology for over twenty years. The bibliographies at the end of each chapter contain good suggestions for further reading by students. But it is important to note that they are nearly all secondary and tertiary works. Except for some material cited from Thomas' *Source Book for Social Origins* and books of the same kind, there are almost no references to first-hand accounts of institutions as "going concerns" in primitive cultures. By way of explanation and defense, Professor Ellwood says:

> If all the supporting evidence of anthropological and historical facts which have been gathered were published with these generalizations, the work would make several volumes; and those who know the limited time available for writing and research to a teacher in a state university, with large undergraduate classes, know how impossible such an undertaking is in such circumstances (p. vii).

II

Professor Ellwood practices an unusual—or is it the usual?—eclecticism: he superimposes some of the most recent and best, with outmoded and fallacious theories and points of view. He is a follower, it seems, of all the schools of anthropology—Tylor,

Frazer, Lewis Morgan, Elliot Smith, Boas, and Malinowski—with strange results, as could be expected.

To be specific: He is a functionalist, but he does not show us the functioning of institutions. On one page (52) he says that the inventive, exceptional mind is rare; on another (54), that man is everywhere an experimenter. He has read Lowie's *Primitive Society*; yet he still believes that primitive governments were democratic (pp. 208, 209). He quotes Malinowski's *Encyclopedia Britannica* article a half dozen times, and yet he can write in regard to parallelism:

> Inasmuch as the materials for invention are frequently the same in different localities, and inasmuch as there is a fundamental unity of the human mind in all races and stages of development, we should expect such parallels to occur. (P. 54).

He maintains that the primitive mind was uncritical, was prelogical in the sense that it did not know as yet how to criticize or how to control its thought processes. (P. 84.)

To this reader, at least, it appears that Professor Ellwood's material took form before his anthropological theories; and/ or that he did not rewrite his book as his mind changed with regard to his assumptions and postulates (see p. vii); and/ or that he did not follow all the implications of the more probable and logical of his theories.

The discussion of the development of the family (see chapt. 14) shows how far removed, in reality, Ellwood is from the best work of recent anthropologists. He points out that a simple pairing monogamy was the principal form of sex relation which prevailed during the more than 100,000 years of savagery. For a long time the physiological connection between the father and the offspring was not known.

> When man reached the concept of blood relationship, therefore, it must have been a concept which applied only to the relations of mother and offspring. That the child was of the mother's blood was an observable fact; but a considerable degree of scientific knowledge is required to reach the conclusion that it is also of the father's blood.
>
> We have every reason for concluding, therefore that the earliest form of the family was not only monogamic but metronymic. Those writers who have argued differently and who have concluded that the patronymic family is as early as the metronymic, have not sufficiently taken these facts into consideration, but have based their generalizations upon the observations of peoples like the American Indians, relatively advanced in culture. (P. 196.)

He adds the following note:

Practically all of the British anthropologists, such as Marett, Malinowski, Hartland, Hobhouse, and Briffault, uphold the view that the metronymic system of naming was primitive. (P. 197.)

III

There are criticisms which could be made of almost every chapter of the series treating the development of institutions, apart from general considerations of methodology. Let me mention a few: It is difficult to see how anyone could conclude:

There is little evidence to support the view that either polygyny or prostitution was common until women were captured in war (p. 197).

Throughout the book there is an overemphasis, it seems to me, on war (in the abstract) as a factor in cultural change anddevelopment (see pp. 38, 199, 208), although the author thinks that war is a custom characteristic of barbarians and one which will be outgrown. The significance of individual and cultural differences, and the relationship between an individual and his culture are not well stated. The treatment of religion is devoted chiefly to the evolution of the idea of god. The distinctions and interrelationships between magic, science, and religion are not clearly understood. The material in the chapter on morality is taken from books and not from life.

Professor Ellwood's book is colored by a rationalistic, optimistic bias—a bias that anthropology has only recently outgrown. Evolution is regarded as a development away from error: man stopped mutilating himself, according to Professor Ellwood, because he saw that it was irrational (p. 155). Almost every institution discussed is said to be on the road towards progress—and there are quite similar charts at the end of every chapter to show this flight towards perfection.

Furthermore, the book is spiced with particularistic, moralistic, and homiletical comments. Alcoholic beverages have played an important role—some would declare, have performed a useful function—in human history; and yet Dr. Ellwood says that

they seem to have been one of the incidental disadvantages which have come to men through the development of agriculture (p. 113).

The trend in the fine arts, it is indicated, is towards increasing beauty; but this is not regarded as sufficient.

It must be admitted that beauty when pursued by itself is a disturbing element in the development of culture. It is only when its pursuit is combined

with the pursuit of truth and right that it becomes a positive force in cultural evolution (p. 170).

And after discussing the development of morality Professor Ellwood criticizes those students of comparative morals who are relativists.

We have many general principles in morals just as well established as many of the more general principles in science (p. 222).

MAURICE G. SMITH

AMERICA

Southwest Museum Papers. Number one: *An Anthropological Reconnaissance in Sonora.* MONROE AMSDEN. Number two: *Excavations at Casa Grande, Arizona.* HAROLD S. GLADWIN. (Southwest Museum, Los Angeles, 1928.)

This new series of the Southwest Museum, which has recently re-devoted itself specifically to work in the area of its name, is attractive in appearance and promising in content.

Amsden's Sonoran reconnaissance has value in reporting on a region practically unvisited by archaeologists except Bandelier and Lumholtz. Even its cursory statements are therefore welcome, though one sometimes wishes that more detail on ruins and pottery replaced some of that on mule behavior and the weather. There should also have been included drawings of typical sherds encountered. The area transversed lies in the mountainous northeastern quarter of Sonora. Over about half of this tract the pottery was found to be of Chihuahua (Casas Grandes) type, though inferior. This area extends from Douglas to Bacadehuachi and lies in the middle and upper drainage of the Bavispe (Granados), an affluent of the Yaqui. This was northeastern Opata territory. Houses seem to have been perishable, since only outlining upright slabs remain. To the west and perhapsout hs is a second area, characterized by unpainted pottery, and the occurrence of some adobe, as well as flat-laid stone foundations. This was northwest Opata territory, and embraces the drainages of Rio Sonora from Cananea to Baviacora or beyond, of the Moctezuma (western affluent of the Yaqui), and apparently the lowest Bavispe-Granados and adjacent Yaqui (Aros).

Gladwin's paper on Casa Grande is an important one. It shows conception of problem, achieves results, and suffers chiefly from over-

compactness. Certain of his data, such as his absolute sherd numbers by mounds and strata, should be published in full, and with them illustrations of his design types: "small," "geometric," "broad solid," "maze," are vague terms, since museum collections contain little material from the area. The following table compiled from Gladwin's report presents his salient data on the pottery sequence.

PERCENTAGE OCCURRENCE OF TYPES AT SITES, CASA GRANDE REGION

x, present; -, absent; r, rare, earlier layers only

	4	*12(8)*	*1*	*2*	*6*	*3*
Native pottery						
Red-on-buff	29	12	12	5	6	3.5
Red, interior smoked, dull	8	13	12	12	10	6
Red, interior smoked, polished	-	7.5	15	12	17	14
Polychrome, later layers only	-	-	.1	.3	1	-
Polychrome, all layers	-	-	-	-	-	2
Remaining ware plain						
Red-on-buff variations						
Int:ext. design ratio	63	76	4	4	10	12.5
Design both sides, bowls	-	-	-	4	4	10
Small repeated designs	4	6	r	-?	-?	-?
Maroon-red designs	x	x	x	x	x	x
Mustard designs, acid-soluble	-	x	-	-	-	-
Flaring bowl	x	x	r			
Returned neck olla	x	x	r			
Vertical neck olla	-	-	x			
Intrusive pottery strays						
Proto-Kayenta B on W	x					
Corrugated, early N.	x					
B. corrug., int. polished			x			
L. Colo. B on R			x	x		x
Hopi yellow (Jeddito?)						x

In most mounds, layers dipped so that stratification tests by physical level could not be made. The layers, however, showed consistent differences at sites 1,2,6,3, full quantitative data on which would be desirable.

Other culture features are less continuously represented than the pottery, but seem to fall in line. For the period of site 4, no house remains or bodies have been found. The period of site 12 practised cremation and built in reinforced construction. Massive adobe (caliche) construction seems to characterize the period of site 1. Throughout the area, inhumations have polychrome pottery associations.

cremations red-on-buff ones. An interpretation of the differences as regional is practically precluded by the fact that all sites lie within a range of half-a -dozen miles.

Schmidt's preliminary results (Proc. Nat. Acad. Sci., 13: 291-8, 1927) from Pueblo Grande, seven miles east of Phoenix, agree generally with the foregoing. In condensation and conformable terminology, they are:

	Pueblo Grande, 15 cm. Strata					
	18–16	*15–13*	*12–10*	*9–7*	*6–4*	*3–1*
	Bottom					*Top*
Sherds, total number	430	3140	4233	3233	2873	4265
Red-on-buff, %	6.7	3.0	1.6	1.3	.7	.1
Black polished interior, %	10	14	16	18	21	16
Polychrome, total	–	–	3	1	–	12
Black-on-white, total	1	1		1	1	1

Evidently Gladwin's site 4 is earlier than the lowest stratum at Pueblo Grande. On the other hand, the top of the Pueblo Grande refuse heap would appear to be later than Gladwin's latest site, 3. For the rest, the same periods seem to be represented in Gladwin's horizontal and Schmidt's vertical distributions: sites 1 and 2 correspond fairly to strata 18-13, site 6 to 15-7. The lower frequency of polychrome in Schmidt's top levels may be a function of locality instead of time. Black-on-white and red-on-buff were also found by Schmidt associated (in inverse proportions) at Spring Creek (Roosevelt lake) and La Ciudad (Phoenix), though at the polychrome site Togetzoge black-on-white had been replaced by later foreign types.

The skeleton of the history of the middle Gila area can thus be reconstructed as follows. At a relatively early period there existed here an agricultural, irrigating, stick and adobe building, cremating culture of Sonora-Gila-Colorado type, probably not dependent on the Pueblo center but related to it through collateral descent from some Mexican culture. The pottery of this Gila culture was painted red-on-buff with small, free-standing, repeated designs. Then the designs enlarged and shapes changed. Still later, massive adobe construction, burial, and polychrome pottery came into vogue. These evidently represent an impact of Pueblo culture from the east on the old non-Pueblo Gila culture. This impact seems to have begun in the Great Pueblo period (3) and to have continued into the Late (4). The local Gila culture may therefore be assumed to have been already

in existence contemporaneously with Pueblo 2. It survived the time of Pueblo influence, and after reflux of the latter, perhaps toward the end of Pueblo 4 period, many of its elements continued to live on in the vicinity. The pottery made today by the Piman and Yuman tribes is a direct and in part close descendant of the old red-on-buff; the agriculture may be conjectured to be so. In short, we seem to have in hand—or to have as soon as full design and shape types are published —a fairly reliable outline, over a period perhaps half as long as the Basket-Maker-Pueblo development, of a culture contiguous to the Pueblo but largely independent of it. The importance of more investigation in the area need not be dwelt on; its productiveness in meaningful results should commend it to those planning expeditions.

The Southwest Museum is to be congratulated on an auspicious start. When it segregates its publications into a wholly scientific and an essentially popular series—the former unafraid of tables, statistics, and sherd drawings—all classes of readers are likely to be more completely satisfied.

A. L. KROEBER

An-nik-a-del. The History of the Universe as told by the Modesse Indians of California. C. HART MERRIAM. (Stratford Co., Boston, 1928. 166 pp.)

This is the mythology of the westernmost Achomawi as obtained in a sort of synthesis from one gifted and interested individual. Some of the constituents are familiar from other myths of northern California; some are interesting variants; and some are new and perhaps peculiar to the tribe. The stringing of them, somewhat irregularly, on a thread of continuity is the characteristic feature, and at once recalls Curtin's *Creation Myths* from the near-by Wintun. The Modesse are actually in contact with the latter people. The long, amalgamated myth series is therefore validated for this part of California. Whether the other Achomawi participate in the tendency to systematization is not stated by Dr. Merriam; it may be hazarded that they do not, or to a less degree. That Dr. Merriam's informant was conscious of the scheme in which he was arranging the material known to him, is evident. There are even some rudiments of a coordination of directions, plants, animals, (and colors?) into a symbol system (pp. 31, 109), but the culture of northern California is so feeble as regards this pattern, that the attempt is still-born. A certain rude grandioseness of conception cannot be denied this "history of the universe."

The principal characters are World's Heart, a spiritual personage; his grandson, Annikadel, who finally turns into the blue-throated lizard after acting as a sort of demiurge; Cocoon, under whom foam of the primal ocean condenses into earth; Edechewe or Traveler, of many adventures; his younger brother, Weasel; Coyote; Silver Fox; Spider; Frog-woman; Cloud-girl or Eagle-woman. Dr. Merriam is as conscientious as always in his treatment of the native material; and one can only hope that this volume is but a foretaste of what he will soon publish of the unduplicatable data that he has collected for thirty years.

A. L. KROEBER

Ueber die Wurzeln der Tainischen Kultur. Teil I, *Materielle Kultur.* SVEN LOVÉN. (Göteborg, 1924. 453 pp., 11 pls.)

This intensive analysis of the sources of Taino Arawak culture is in the manner of E. Nordenskiöld and perhaps largely stimulated by him. It is conservative in judgment, objectively documented, and based on thorough comparisons. Of outward apparatus, only the useful maps and artifact sketches of Nordenskiöld are missing. The translation into German is fair, the proof-reading astonishingly bad and only partly compensated by 7 pages of Corrigenda. The material culture of the Taino is dissected as exhaustively as the historic and archaeological data allow. A future second part is to cover society, religion, sculpture, and ball games. The conclusion drawn is that Taino culture was fundamentally South American, chiefly derived from the manioc-planting tribes of the mainland before the culture of these had reached its full development. Space forbids the enumeration here of this class of elements. Native developments on the islands are traceable rather in stylistic patterns than in culture content. Central American influences from Yucatan appear in the metates or stone stools, importance of cotton, true cloth, cotton loop on spear-thrower, imitations of gold-inlayed masks and copal burners, possibly frontal deformation. From the United States the Taino may have derived the pipe (so far as indigenous), the concept of the monolithic ax (cf. Wissler), and certain influences on pottery shapes and ornament. This is a valuable monograph and should be completed.

A. L. KROEBER

Dighton Rock; A Study of the Written Rocks of New England. EDMUND BURKE DELABARRE. (New York: Walter Neale, 1928. 369 pp., 108 ills. from rare prints, photographs, drawings, charts, and maps.)

Dr. Delabarre's summer home is not far from the famous inscribed rock which forms the subject of the greater portion of his book. For the past thirteen years much of the time during his long vacations has been devoted to intensive studies of this and other pictographs of New England, the result of which has been made accessible principally through the *Publications of the Colonial Society of Massachusetts*, the *Rhode Island Historical Society*, and finally in the present volume.

Dighton rock is probably the most famous object of archaeological interest in America. The author has listed under forty-three headings the different drawings, engravings, and photographs which he has been able to find in Europe and America. These range from John Danforth's delineation of 1680 to the excellent flashlight photographs made by the author. More than a hundred pages are devoted to theories advanced by various writers concerning the probable meaning of the inscription; and the people to whom its origin has been attributed, which include Phoenicians, Scytheans, Trojans, Jews, Egyptians, Libyans, Japanese, Chinese, Norse, Portuguese, English, and the American Indian. The bibliography of the subject numbers 596 items. Many of these theories were, or course, advanced before knowledge of the wide distribution of Indian pictographs became general.

Readers of the ANTHROPOLOGIST are more or less familiar with the Dighton rock inscription through the drawings which appear in Mallery's paper in the tenth volume of *Reports of the Bureau of Ethnology*, plate 54. The more prominent of the figures are shown with some variation in nearly all the pictures that have been produced. In addition there are many other artificial lines more or less indistinct which can be traced with difficulty, and in no two drawings are they rendered wholly alike. There are, also, indications of other markings so nearly obliterated that it is practically impossible to trace them satisfactorily. "There is such a confusion of lines and such certainty that not all of them have been discovered," that it was often difficult for the author to decide which of the markings should be grouped together.

The pictographs, which are undoubtedly of Indian origin and which are accepted as such by Dr. Delabarre, consist of crudely executed figures of men and quadrupeds, and numerous other designs which are meaningless to the ordinary observer. In addition to these are certain markings which seem to the author to be Roman letters and Arabic numerals arranged sometimes in sequence as though forming parts of words and numbers. Dr. Delebarre thinks these are as old as most of the other portions of the inscription. These characters, however, should not be confused with the groups of name initials of recent origin.

By comparing all the drawings and photographs obtainable he found his own flashlight pictures the most serviceable. He says that there is little likelihood that any one of his discoveries would have been made by examination of the rock itself without the aid of his photographs.

On several plates of the volume appear side by side duplicate enlarged groups of markings from his photographs. Upon one of each pair of these duplicates he has emphasized in ink the letters and lines as he interprets them. This excellent arrangement allows each reader to form his own opinion as to the accuracy of the author's observations.

Briefly, the most salient features of Dr. Delabarre's conclusions regarding the less prominent markings are as follows: The appearance of the name of the Portuguese explorer MIGUEL CORTEREAL in large letters near the center of the inscribed face of the rock; two dates, A. D. 1511, and 1592; the supposed abbreviations V DEI hic DUX IND above a design which he considers the coat-of-arms of Portugal; the name THACHER; and the sentence INJUN TRAIL TO SPRING IN SWOMP YDS 167, with an arrow indicating the direction.

Some of these readings he considers conjectural and he says their historical value can be regarded as sure, only to the degree to which they are accepted as well founded.

A few of the characters identified by Dr. Delabarre as letters forming the above words can be traced without difficulty in his illustrations, but the majority of them appear to be too obscure for unqualified acceptance.

In the second section of the book have been brought together accounts of other known pictographic rocks of New England, the majority of which are in the vicinity of Narragansett bay. Others occur on the Connecticut at Bellows falls and near Brattleboro in

Vermont, and also at Machias, Maine. All of these are doubtless of Indian origin. Excluding Dighton rock, the more important in the vicinity of Narragansett bay are the one at Mt. Hope and those at Portsmouth, Triverton, and Warwic. Excellent photographs are shown of such as remain, also reproductions of a number of old drawings of those which have been removed or built into foundations. The most interesting of these pictographs is at Mt. Hope. It consists of several characters arranged in a line, above which appears the outline of a boat. These bear a general resemblance to a considerable group of characters which have been brought to light in various parts of the country, notably those appearing on the so-called Grave Creek stone, West Virginia, and on the tablet from Bat Creek mound, Tennessee. It seems doubtful if any of them are very old, and some of them are probably of Cherokee origin dating from about 1821.

Dr. Delabarre is of the opinion that the Mt. Hope inscription is in Cherokee characters, and would be pronounced in that language Mu-ti-ho-ge-me-di-mu-sv-quv. Should one attempt to write Algonquian syllables by means of Cherokee characters he would select the nearest resemblances, therefore the author thinks the first part should read Metahocometi (Metacomet), the *mu* which follows, uniting with the *s* of the next syllable forming *mus*, one of the forms to which Trumbull assigns the meaning "great," the whole being intended to read Great Metacomet, Chief Sachum. It will be remembered that the village of Metacomet, better known as King Phillip, was not far from Mt. Hope. The author conjectures that the inscription was written about 1834 by Thomas C. Mitchell, a half-breed Cherokee, the husband of a Wampanoag woman.

Numerous small pictographic stones and tablets from various parts of New England are described and discussed. Some of these are of Indian origin, others are undoubtedly frauds. The latter are included under the heading, "Frauds, Rumors, and Reports."

Not the least interesting chapter bears the heading "Psychological Observations," which treats of the mental attitudes of those writers who have been interested in the more noted of these rock inscriptions. Dr. Delabarre is professor of psychology at Brown University and it was his psychological interest in the almost endless variety of observations and theories concerning these pictographs which was responsible for drawing him into the intricacies of the research.

In the final chapter the opinion is set forth that all the rock pictographs of New England are post-Columbian and that most of them were made in colonial times, that the first rock writing in this region was by Cortereal in 1511 and that subsequent examples by the Indians were in imitation of marks by Europeans, that these

> designs were trivial scribblings and pictures made only for pastime and attendant admiration.

This opinion is hardly in accordance with what is generally accepted by ethnologists. Would the author apply the same reasoning to the many other pictographs in America?

This book is a valuable contribution to New England archaeology, whether or not the reader is able to accept all the author's conclusions, which are presented in a clear and interesting manner.

CHARLES C. WILLOUGHBY

AFRICA

Religion and Art in Ashanti. R. S. RATTRAY. With chapters by G. T. BENNETT, VERNON BLAKE, H. DUDLEY BUXTON, R. R. MARETT, and C. G. SELIGMAN. (Oxford Univ. Press, Am. Branch, 1927. xviii, 414 pp. $10.00.)

To his earlier volume *Ashanti*, Mr. Rattray now adds the second of a trilogy; the forthcoming volume is to be on Ashanti law and constitution. Beyond the title, the present work is concerned with crafts, the rites of birth, puberty, marriage, and funeral rites for humans, animals, and trees, and with dreams. *Ashanti* was somewhat special in its subject matter, not a general introduction to the ethnography of the kingdom, so that the present volume provides a much-needed balance to the picture. Like its predecessor this is a purely descriptive work, very rich in content and full in presentation, full in fact to the point of being prolix.

The direct treatment of religion establishes the variety of spiritual powers, the nature of the fetish, and the training of medicine-men and priests. Of the spiritual entities perhaps the most unique is the class that pertains to certain kinds of trees, which must be propitiated before the wood is worked. By grace of the same there are funeral rites for trees. A series of specific examples fix the content of the term "fetish" so far as the Ashanti are concerned. It is regrettable that Mr. Rattray did not define the concept apart from the particulars.

A considerable part of the book is given to so-called crisis ceremonialism, which Mr. Rattray elaborately sets forth under the rubric *rites de passage* only to find himself denying that they are *rites de passage* in Van Gennep's sense. Of the series of crisis ceremonials there is this much to be said, that the rites at birth and puberty far outweigh the utterly simple marriage procedure. Perhaps, as Mr. Rattray says, because first marriage at least is essentially part of a woman's puberty celebration. The series further constitutes a continuum; the child before birth is a spirit, first introduced to this world in the naming rite, a fixity which grows as the child develops until at puberty its connections with the spirit world are completely severed and the child becomes a man or woman of this world (see esp. p. 103).

Mr. Rattray makes the important observation that birth, puberty, and funeral rites do not coincide with the event. Hence they must not be casually catalogued as honorific of the individual but are rather, to these social-minded folk, for the purpose of safeguarding the community. I would add that by the same token they are not to be construed as spontaneous activities to gloss an emotional crisis.

Dreams are caused by the visitation of spirits or when one's own soul wanders. An interpretation is regularly sought of those skilled in the practise. It appears that they are usually interpreted as forecasting the contrary of the dream-happening. Both that part of the dream considered significant and its interpretation are stereotyped. The range of predictions covers death, success in hunting or acquiring wealth, conception, and ancestors (to whom a sacrifice is then in order). In a brief note appended, C. G. Seligman points out that the manifest content of the dream is rejected in its interpretation, which rests on the latent (symbolic) content. He records that two dreams at least, flying and the loss of a tooth, have a wide distribution in the Old World. I am led to remark that my impression is that I have never seen either in dream collections from the North American Indians, nor have I ever recorded such.

One of the most striking and unusual items concerns oaths. The treatment of the subject is here confined to a particular sort, the mention of a tabooed word of great moment, momentous because connected with a calamitous event that befell some historic personage. Both the oath hurler and the one whose conduct merited it must be brought to court by a witness, where the reasonableness of the wrong and the provocation to the oath may be decided. This was in fact a recognized method of appealing from the verdict, wherein the dis-

satisfied party coupled the name of the judge with a greater oath. The judge becomes in this manner a defendant in a higher court, standing accountable for his judgment.

One of the curious features, though not at all confined to this African culture, is the proverbial associations that all and sundry things carry. Thus, a stamped-cloth pattern is called "a hen treads upon chickens but does not kill them."

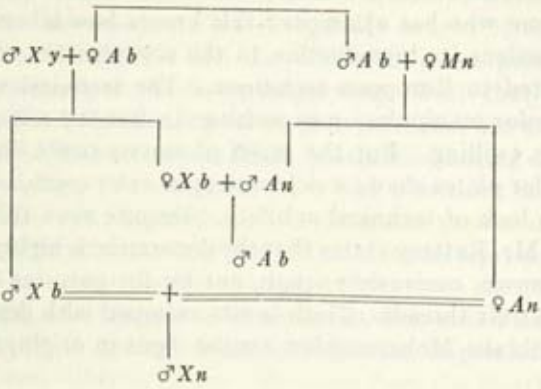
What strikes an Americanist is the endless series of apparently random activities and formulas to ensure good luck, to ward off mischance, etc. This makes so marked a contrast with our Indians, whose comparable practices are in contrast brief, specific, and direct. There is nowhere, so far as I know, that day-long series of observances, aimless so far as the activities at hand go, that characterizes Africa. There is a wholly different patterning of thought and outlook. There is, of course, no novelty in this reflection; it is but a way of repeating the old observation that Africa, and the whole Old World for that matter, is a land of magic, while magical practice and its sentiments are so rare as to seem wholly lacking in North America.

Of the several crafts described, weaving is treated painstakingly (and only one who has attempted this knows how laborious it is!). Tradition assigns its introduction to the seventeenth century; it is closely related to European technique. The technical variation is limited to color manipulation in wefting; in fact the sole mechanical technique is twilling. But the series of woven stuffs illustrated in excellent color plates shows a rich variety of color combination to set against this lack of technical subtlety. Despite even this apparent variability, Mr. Rattray states that the decoration is highly standardized, and known, curiously enough, not by the patterns but by the order of the weft threads. Cloth is also stamped with designs which the author thinks Mohammedan amulet signs in origin, but locally renamed.

Pottery is made by hollowing out a clay lump and literally wiping it into shape. The art, like all others, is confined to certain villages, where plain wares are women's product by heredity, modeled forms men's. Metal casting is now confined to bronze and gold, which in the author's opinion reached its high point two centuries ago. The method is *cire perdue*. Evidences of iron smelting are abundant but the art has been completely lost.

At only one point does the book take an analytical turn, the matter of cross-cousin marriage. To understand Mr. Rattray's ex-

planation of its origin, we need to know that each person has two (or more) souls, his "blood" received from his mother, his *ntoro* spirit from his father, and that a child is a reincarnation of someone having the same combination of blood and spirit, whose name in fact he receives. Such a combination is possible, we read, only if brother and sister marry their cross-cousins on the maternal side. In fact, the maternal uncle, as head of the family, compels his nephew and niece to marry his children in order that his own name (or one famous in his family) be given to his son's child. Cross-cousin marriage does indeed effect this insofar as the son's child would have identical blood and spirit as the maternal uncle. If however the reincarnation were of some more remote ancestor, there would be no need for cross-cousin marriage for *some* ancestor could always be discovered who had the same combination of blood and spirit as the child, no matter who the child's mother. But the suggestion will not apply at all to the case of this maternal uncle's daughter's child. This child will have the spirit of the original maternal uncle's sister's husband but cannot have his blood except by chance.



(Spirit is indicated by capital letter, blood by lower case.)

The discussion of this problem is at times quite obtuse. Thus

Mrs. Seligman has drawn attention to the importance of the question which form of marriage is more common, maternal uncle's child or father's sister's child.

The answer is given in this wise:

the last five kings of Ashanti all married their maternal uncle's daughters

and

> of the nine Queen Mothers . . . . three out of the nine married their maternal uncle's sons (p. 321).

But from the point of view of the unnamed spouses these were marriages with their father's sister's children, an exactly identical number!

Mr. Rattray further argues that this, and other evidence, supports a theory of an earlier dual organization. Traditionally each matrilineal clan was linked with another with which alone it intermarried; now marriages are random. This is no dual organization as we usually recognize it. A hypothetical dual organization will provide a reason for the existence of cross-cousin marriage but there are other equally plausible explanations, as has been abundantly demonstrated.

Since the book is wholly descriptive, with this exception, we are left to our own devices so far as the relation of this culture to others is concerned. Nevertheless as a descriptive work it is adequate. At the risk of appearing insatiable in the presence of so much, may I observe that it would have been enriched by a series of "case studies"? Mr. Rattray is so obviously party to the personal histories of his Ashanti wards that one feels certain he could readily have cited cases to illustrate his general points. For example, these would have been especially desirable in the discussion of marriage and divorce. The variation permissible under Ashanti custom would then have been explicit. Undoubtedly his volume in preparation on Ashanti law will present material in this fashion.

LESLIE SPIER

A Bibliography of the Negro in Africa and America. Compiled by MONROE N. WORK. (New York: H. W. Wilson Company, 1928. $12.00.)

The American Negro. (Vol. cxxx of The Annals, American Academy of Political and Social Science. November, 1928. Philadelphia.)

These two works represent the latest two additions to the growing literature of the Negro in the United States. For the compilation by Dr. Work, there can be only the highest praise, and we should be thankful for this time-saving contribution which has come from his department of Research and Records at Tuskegee Institute. Professor Work divides his Bibliography into two parts, one dealing with the Negro in Africa, and the other with the American Negro.

The term "American" is to be regarded as restricted, in the main, to the United States, for of the three sections ("The Negro in the Settlement of America"; "The Negro in the United States"; and "Present Conditions of the Negro in the West Indies and Latin America") the first and last occupy but relatively small space.

The entire first part will be of interest to the anthropologist, of course, but the first section of it, which deals with the bibliography of early discovery and exploration in Africa, will be especially useful. When we consider the subdivisions dealing with African laws and customs, religious beliefs and practises, languages, art, music, and folklore, the compilation does not strike us as perhaps so impressive. However, all the standard references are to be found, and many of the less obvious titles in the periodical literature. *The Journal of the Royal Anthropological Institute, Man, the Journal of the African Society*, for example, seem to have been combed with some degree of thoroughness, but when, for a student of the standing of Maes, we find only two titles listed in the entire work, we begin to suspect that there is much in journals such as *Congo* and other periodicals less widely known that has been missed. At the same time, it is ungrateful to expect completeness in a monumental task such as this, and, at least as far as African literature is concerned, we can be sure that Dr. Work would be the first to insist that this is but a beginning.

On the Negro in the New World we have a somewhat fuller selection of titles. The references to the early historical sources appear to be complete, but it is obvious that Dr. Work's interest is essen tially in the present-day achievement of the Negro, when we compare the eleven pages given to titles on Negro Suffrage, the thirteen to the Education of the Negro, and the twenty-two to the Negro and Literature with the space devoted to the Folk-Lore of the Negro in the United States (three pages) and to the Folk Music of the Negro in the United States (four pages). The amount of repetition of a given title might well have been avoided to release space for further titles which have been omitted owing, I imagine, to a lack of space. But one can find nothing but praise for the general index of authors' names at the back of the book, which greatly eases the problem of deciding under which classification a given title is to be found; while, on the other hand, the chapter headings are logical and comprehensive, and certainly assure the seeker for bibliographic material ample to start with and on which to build a specialized bibliography

of his own. The shortcomings of the book are essentially those of the pioneer in a vast field, and we can only hope that this is but the first edition of a work which, appearing later with additions and corrections, will keep to the high standard of the present volume.

The November number of the Annals of the American Academy was edited by Professor Donald Young, with the assistance of an advisory editorial committee composed mainly of those whose special interest lies in the field of research on the Negro problem. It is to be regretted that there is such unevenness in the work, and it but once more makes the point of the necessity for extreme care which must characterize the handling of a cooperative effort. With forty contributors a certain amount of mediocre production is inevitable, and, as has been indicated, this book is no exception.

As may be imagined, the book ranges widely. Negro criminality and susceptibility to tuberculosis, segregation and the Negro in business, early African culture and educational achievements of Negro children, the church and Negro progress, and recreational facilities for Negroes, are all discussed; some well, others poorly indeed. On the whole, one can characterize the psychological sections of the book as being the most informative, and Peterson's, Thompson's, and Vitelles' discussions are easily head and shoulders above the general average for the work as a whole. Dr. Dubois contributes a trenchant essay on the state of race relations in this country, and Franklin Frazer an admirable summary of the Negro family, although one perhaps might not agree with his statement that the family life of the Negro is as far afield, psychologically at least, from the African traditions of family solidarity as he seems to imply.

Raymond Leslie Buell's essay, "Black and White in South Africa," is a brilliantly lucid exposition of conditions there, and it is a pity that the descriptions of the conditions of the Negro elsewhere outside the United States must be measured against this masterful presentation, for they suffer sadly by comparison. One wonders at the sop to African origins, that is becoming popular to take into account in discussing the Negro, that Frobenius' paper gives. It does not fit in the volume, and the status of Frobenius' theories is such that it is at best of questionable value. There is much in the book that is to be classed as *obiter dicta*. Take, for example, Reuter's contention that the mixed Negro cannot exhibit low variability:

> Of course it is possible to get a certain spurious stability by the application of superficial statistical methods. But such procedure simply amounts to concealing the essential facts of variability in a biologically meaningless mathematical average. A stability of physical type is not a possibility so long as the process of hybridization continues. Such stability will come, if it comes at all, when intermarriage and racial intermixture give way to a prolonged period of selective breeding. That this will come about so long as the divergent races occupy the same territory there is no reason to anticipate.

Yet not one scrap of data to prove these sweeping assertions, stated so categorically, is offered! Davenport's extensive measurements of Negroes during the World War, and Todd's intensive work with cadavera and skeletal material both show that the American Negro does exhibit low variability, and neither, to cite but two instances, relies on "biologically meaningless" averages. Where the discussions are factual, as in the case of Burgess, Dublin, or Newbold, there are often valuable summaries of tabular data. But the more general papers show once again that objective investigation of fact, and scientific detachment of attitude in dealing with the race problem in America are yet to be attained. For, from point of view of scientific research, bias in favor of the Negro is as reprehensible as that against him.

The fact that this volume does contain a number of papers which can be termed scientific is in itself significant. It is to be hoped that the tradition of studying the Negro in this manner will grow.

MELVILLE J. HERSKOVITS

OCEANIA

Orokaiva Magic. F. E. WILLIAMS. (Oxford University Press, American Branch. New York, 1928. Pp. XII, 225. 12s 6d.)

This very excellent volume is composed of three essays, all dealing with the same people, the Orokaiva of the Northern Division of Papua. The second essay, *The Garden Culture of the Orokaiva*, is a clear and careful statement of native agricultural method and the possibilities of its improvement. It contains useful material for the comparative study of agriculture and is a good example of the use to which administrative officers might put a knowledge of native techniques. The other two essays deserve separate treatment.

The Taro Cult. This is a careful analysis, rich in detail of historical sequence and ceremonial procedure, of a new religious cult among the

Orokaiva. This cult had as its declared objective an increase in the taro and as its distinctive mark of conversion an involuntary shaking fit, known as *jipari*. In the hands of individual prophets and disseminators of the cult, each one of whom proved his authentic inspiration by the addition of some new ceremonial detail, the cult became diversified into many minor sects. The originators of the sects, to whom supernatural powers were freely ascribed, took their places in the social life of the groups as medicine-men of note. Group feasts and intervillage visiting became important elements in the formal conduct of the religion.

Williams traces illuminatingly the very rapid toning down of the one really aberrant and unfamiliar element in the Taro cult dogma, the theory that human beings were possessed by the spirits of the Taro. Not many miles from its origin this belief became blurred into a theory of possession by the dead and thus conformed strictly to prevalent religious beliefs. Two things stand out clearly from Williams' analysis. He shows how a cult which purports to be new is made up of age-old elements, uses the familiar psychic mechanisms of dreams, possession, and epileptic seizures, and conforms in essentials of ceremonial procedure to usual practice. And second, he demonstrates what a very slight debt the new cult owes to white culture. With the exception of the ubiquitous handshaking, a European habit which had some vogue before it was taken up by members of the cult, no element either of belief or practice can be traced to the whites. Nor can the cult be interpreted as an anti-European movement. No doctrine of a return of the dead, or a restoration of native autonomy inspires the Taro men. Williams seems really to have caught, as he very tentatively suggests, a cross-section glimpse of a characteristic mutation in native culture. The only appreciable difference between the conditions under which this cult spread and strictly aboriginal ones is the probable wider spread of the cult among peoples formerly hostile but now living peaceably under government supervision.

Students of American Indian problems will be interested in the dissimilarity between the Taro cult and American Indian cults which were prevalent after the coming of the whites. Williams has rightly made his comparisons not with American Indian cults as a group, but rather with the Shakers and even more illuminatingly with revival phenomena among American Negroes and the "jerks" of Kentucky mountaineers. The infrequency of such violent involuntary

physical seizures among aboriginal North American Indians supports Williams' demurrer as to whether these characteristic Papuan manifestations can rightly be called "primitive." He draws slightly upon the Ghost Dance material in his comparative discussion. But the definite use of physical paroxysms to produce visionary experiences in the course of the Ghost Dance would seem to be a different phenomenon from the automatic and involuntary seizures, attributed in Papuan theory to "possession." Although presenting some points of likeness to cults like that of Smohalla, which insisted in the name of a new revelation upon an old established prohibition such as not ploughing up the earth, the Taro cult is without reference to culture contact or culture conflict. It is not a violent espousal of the old culture as was the preaching of Smohalla and the Peyote cult among the Arapaho, nor does it show the hostility to older native religious forms shown by the Peyote cult among the Winnebago and the teachings of Handsome Lake and the Delaware prophets. In comparison with the American Indian material, the Taro cult stands out as no feature of a decaying culture, nor of a culture in transition, but as a genuine culture change inaugurated by specially gifted individuals and spread in traditional fashion within the limits of one homogeneous culture pattern. The wealth of detail in Williams' account provides invaluable material on the role of the individual—of the mentally unstable in originating new cults, of the gifted organizer in elaborating and disseminating them.

Orokaiva Magic. This, the third essay, is a luminous analysis of magic practice among the Orokaiva. It records only such concrete material as is necessary for illustration, but the instances are vivid and to the point. Upon the basis of Orokaiva practice Williams elaborates a theory of magic, excellent insofar as it is a schematization of Orokaiva magic, but hardly possible of wide application. He makes the illuminating point that there is no name for the practitioner of good magic, as good magic is practiced by everyone, a part of everyday stock-in-trade. He further distinguishes between those symbolic and imitative acts based upon false sequences, which the natives regard as merely common sense procedure, containing no supernatural element and the similar procedure which, through the inclusion of some substance of supernatural potency, which he calls the "specific," is regarded as supernatural or magical in quality. It might be pointed out that while the distinction, between practices based upon false analogues but considered as common sense and routines which compel

events through supernatural means, may well hold good for any primitive people, the supernatural element may enter the routine in many different ways. The *mana* of the individual practitioner, the *mana* of the locality in which the routine is performed, or even the supreme importance of the occasion may furnish the distinction.

Orokaiva magical formulae, community property as they are, are discussed as very slight formulizations of audible wishes and spontaneous mimetic activities. Some of these spells have grown unintelligible through long use or diffusion beyond linguistic boundaries, but sanction-giving mythological concepts seem virtually absent. The lack of systematization of magical procedure, the variation and spontaneity allowed the individual practitioner, seem to have led Williams to undervalue the thought processes involved. He defines magic quite simply and inadequately as: "The symbolic representation of a hoped-for result which is felt to assist the realization of that result" (p. 207). This definition makes no distinction between magic and religion nor between the type of procedure which involves the supernatural and the procedure which does not. Upon page 189 he insists that the symbolic character of magical procedure based upon association, as where twin berries are used to produce twin children, is entirely unconscious. This insistence does much to blur the value of his discussion of the origin of magical procedure in every day routines which are regarded as common sense. It is because the association between twin berries and twin babies seems a matter of course to the native, that practices which seem to him natural, seem to us magical. To insist that the very association based upon similarity or contiguity, which seems to the native to give his behavior obvious logical sanction, is "*ex post facto* fabrication" is to introduce unnecessary difficulties into the understanding of primitive mentality. It is only necessary to recognize that the conscious acceptance of such false sequences as lie at the base of much magical procedure is a common characteristic of untrained minds, whether the minds of children, peasants, or primitive peoples.

But it were folly to quarrel further with these somewhat sweeping generalities, when the essay as a whole is such a valuable and significant contribution to our knowledge of magic, its practice and its categories, among a particular people.

MARGARET MEAD

Coming of Age in Samoa. A Psychological Study of Primitive Youth for Western Civilisation. MARGARET MEAD. Foreword by FRANZ BOAS. (New York: William Morrow, 1928. xv, 297 pp., 12 pls.)

In her Samoan field-work Dr. Mead deliberately set herself a task distinct from the traditional ethnographer's. Ignoring the conventional descriptive pattern, she concentrated on the individual's reactions to his social setting,—specifically, the adolescent girl's adjustment. She tried to become intimately acquainted with the girls of three contiguous villages on the island of Tau and to study their psychological problems. The technique of her case study is outlined in Appendix II (pp. 259-265), which might more suitably appear as an introduction. The author further departs from ordinary practice in pointing a moral. One of her principal theses is that the sexually uninhibited Samoan adolescent is thereby freed from the stress and strain characteristic of *our* adolescents, hence these disturbances are not rooted in original nature, but in the repressive agencies of our society. Therefore,—but I am afraid Dr. Mead has not been quite ingenuous in her applied anthropology and fortunately readers of this journal are not concerned with pedagogical sermonizing.

However, there is one basic point that concerns us. Miss Mead's graphic picture of Polynesian free love is convincing. It falls in line with the reports of earlier travellers; it is supported by Dr. Handy's evidence from the Marquesas; and from another Oceanian area we have Dr. Malinowski's Trobriand observations. Nevertheless, this is not the whole story. The author knows it (p. 98) and even enlarges on it—in an appendix. There we read as follows (p. 273 f.):

> But it is only fair to point out that Samoan culture, before white influence, was less flexible and dealt less kindly with the individual aberrant. Aboriginal Samoa was harder on the girl sex delinquent than is present-day Samoa. And the reader must not mistake the conditions which have been described for the aboriginal ones, nor for typical primitive ones. Present-day Samoan civilization is simply the result of the fortuitous and on the whole fortunate impetus of a complex, intrusive culture upon a simpler and most hospitable indigenous one. . . . .
>
> Deviations from chastity were formerly punished in the case of girls by a very severe beating and a stigmatizing shaving of the head. . . . . The girl whose sex activities are frowned upon by her family is in a far better position than that of her great-grandmother. The navy has prohibited, the church has interdicted the defloration ceremony, formerly an inseparable part of the marriages of girls of rank; and thus the most potent inducement to virginity has been abolished. If for these cruel and primitive methods of enforcing a stricter régime there had been substituted a religious system

which seriously branded the sex offender, or a legal system which prosecuted and punished her, then the new hybrid civilization might have been as heavily fraught with possibilities of conflict *as the old civilization undoubtedly was.*[1]

How are the two pictures to be reconciled? On the one hand, we are shown licensed freedom precluding mental derangements; on the other, we see all girls of rank originally subjected to the defloration rite and the *taupo* liable to the death penalty for unchastity. If it is only modern Samoa that connives at free love, it may still remain true that adolescence is not necessarily a quasi-pathological condition; but the *social* applications become banal. We have long known that the Middle Westerner in Greenwich Village snaps his fingers at Main Street, that the British bourgeois is quite himself somewheres east of Suez. In other words, it is one thing to have a community treat the individual's sex life as an individual matter when the society is in a normal state; quite another, to find it unconcerned with his amours when abnormal contacts destroy old standards and fail to impose substitutes. The reformer must face the question whether any *normal* society can and will practice that lofty detachment found in Samoa nowadays.

But Dr. Mead's pedagogical theses, whether sound or not, should not obscure her solid contributions to ethnographic fact and method. Her picture of child life is among the most vivid I know. The six-year old girl impressed into nursery service and bullied into indulgence by her squalling ward (pp. 22-24); the child fleeing from a cruel parent to the sanctuary of a near-by relative's household (p. 43); the irksomeness of premature chieftainship (p. 36),—these will linger in memory. Many important details are brought out incidentally, such as the brother-sister taboo (p. 174), the functions of the young men's society (p. 33 f.), the bond created between boys circumcised at the same time (p. 69), the communism of borrowing (p. 125). Along with other records from the same general area Dr. Mead's account (e.g., 41f., 188) throws doubt on a proposition I have hitherto vigorously maintained, viz., the universality of the individual family. The question involved is not at all that of consanguinity, but of a differential bond between a restricted group—mother, child, mother's spouse—as against the rest of the universe. In Polynesia

[1] Reviewer's italics.

this bond does seem to be exceptionally loose and to be superseded by more widely diffused ties.

On some points made by Dr. Mead I must frankly avow skepticism. It is hard to believe that all but the youngest boys and girls should fail to use ordinary kinship terms correctly (p. 132); or, in an absolute way, that Samoan children do not learn to work through learning to play (p. 226). It is hard to understand how certain conclusions could have been arrived at. Says Dr. Mead:

> The Samoan girl never tastes the rewards of romantic love as we know it. . . . . (p. 211).

Query: What, never? And: Who are "we"? Unless the Samoans are different from other Polynesians, they indulged in the luxury of romantic love precisely like other folk, to wit, in their fiction. Only after the most thoroughgoing search in Samoan folk-literature had yielded no trace of the sentiment, should I feel disposed to accept a negative result. Finally, perhaps from a Plains Indian bias, I am not convinced by Dr. Mead's picture of the "low level of appreciation of personality differences" (p. 221). With due regard to the insolence of seniority and of caste, I suspect that here, too, the normal aspect of ancient Samoan life has been blurred by the blighting contact with European civilization. "The new influences have drawn the teeth of the old culture" (p. 276). When tattooing declines, the differences in fortitude on the victims', or in skill on the artists', part would naturally fade away; and so with other aspects of aboriginal life. Plains Indians no longer go on the warpath; but the record of their mad competitive strivings has remained, and modern equivalents, though diluted, are not lacking. Would a similar, i. e., historical, approach to Samoa yield comparable results? I deny nothing; I am asking for information.

These reservations should not be taken to obscure the value of Dr. Mead's achievement. Dealing with problems incomparably subtler than those which usually engage the ethnographer's attention, she has not merely added much in the way of illuminating information but also illustrated a new method of study that is bound to find followers and to yield an even richer harvest.

ROBERT H. LOWIE

PHYSICAL ANTHROPOLOGY

The Brain from Ape to Man: A Contribution to the Study of the Evolution and Development of the Human Brain. FREDERICK TILNEY, with chapters on the reconstruction of the gray matter in the primate brain stem, by HENRY A. RILEY. (2 vols., pp. xxvii, 472; pp. xv, 475–1120. New York: Paul B. Hoeber, 1928.)

The text of these two volumes comprises five parts. The first part deals in brief with the behavior and *in extenso* with the brains of lower primates (lemur, tarsius, marmoset, and howling monkey); the second part discusses in a similar way the intermediate primates (baboon, macaque, and gibbon); the third part discusses the higher primates (orang, chimpanzee, and gorilla). The fourth part carries the discussion from primitive to modern man, studying the human brain in its present state as a point of departure for comparison with the brain of prehistoric man. The fifth part treats of the evolutional modifications in primate brains, especially as related to the development of behavior. Numerous references for further reading are listed at the end of the second volume.

The avowed purpose of this work is to answer the questions, "Whence came the human brain, and how?" To this end the author has spent fifteen years in preparation, collection, and study. Considering the scope of the questions, however, this length of time seems not remarkable. His labors would have been facilitated and the results improved if he had taken full account of the work of his worthy predecessors and contemporaries in this great field. His failure to do so constitutes the first and most fatal weakness of his enterprise. Either he has not covered the literature, which in itself would take a long time, or else he has with peculiar determination excluded his readers from his confidence. Otherwise the familiar names of Monakow, Retzius, Edinger, Brodmann, Rademaker, Oskar Vogt, Kappers, Brouwer, Sherrington, and many others would take their proper places in his text. Another conspicuous omission is the work of Elliot Smith on modifications of the visual centers in relation to the evolution of the primate brain. It is conceivable, too, that the meninges and cerebrospinal fluid are related to the author's subject, but his treatment of them, insofar as he treats them at all, represents the state of knowledge some fifteen years ago. The more recent advances in this field are not included.

One gets the impression, mainly from certain fantastic illustrations of habitat groups, and from descriptions of habits and habitats, that the work is in some degree a concession to the general reader,—an apparent attempt to give the uninformed a great cosmic view after the fashion of a museum trip. Such a purpose, if it exists, seems inconsequential to the rest of the work, and certainly is frustrated by the long technical descriptions which only a neurologist can understand. Yet these descriptions, with all their cumbersome details, lack much of the precision which would make them useful to a neurologist. Abundant technical illustrations are provided, but the photographic reproduction is so faulty as to render many of these illustrations worthless.

In matters of taxonomy there are some curious lapses, which may prove annoying to those who use the book in reference to their own investigations. The inconsistent or antiquated terminology, not infrequent in these pages, could well have been avoided by adherence to the comprehensive taxonomic work of Elliot, which the author cites for further reading.

The closing chapters do, by sheer cumulative weight, silence anything the opponents of the Darwinian view may have to say regarding the kinship of man and the higher apes, as judged by a comparison of their brains. A clear correspondence in parts, especially of gorilla and man, is convincingly presented. The author does this so well, in fact, that a certain confusion arises from his discussion of prehistoric man. Does he in the light of his own exposition adhere to the disconnected family tree of apes and man as urged by Osborn? Or does he with Gregory trace the lineage direct to some remote anthropoid stock? The very title of his book suggests the latter alternative.

The treatment of earliest human brains, as derived from endocranial casts is, one might say, speculation reconstructed from speculation on a meager substratum of facts. In the present state of collected material it is necessarily so. And yet we are informed in bold italics that Pithecanthropus could speak. Perhaps he could, but the evidence is so fragmentary that a flat statement of this kind strains the most amiable credulity. We do not know, and at present cannot know, such things. Therefore, in deference to the archaeologists and ethnologists who rely on us for this sort of information it is only fair to say we guess that Pithecanthropus could speak, that he probably could use his right hand better than his left, because there is some evidence that the frontal lobes were well developed, better so on the left than on the right side, as shown by impressions on the fragment of a single

skull. That at least is the truth, and there is no apparent need to embellish it.

There is a distinct penchant throughout the book for difficult words. One word "neokinesis" recurs so frequently as to become almost a slogan, yet the author's belated definition (p. 700) leaves the word even more algebraic than we supposed. Thus:

> The neural combinations assembled in the neopallium and projected by the pyramidal system have their externalized expression in an extensive group of reactions known collectively as neokinesis.

Occasionlly in those parts of the book dealing with man the author gives way to metaphysical vagaries, The following from page 729 is perhaps the most unrestrained passage:

> Were it possible to behold man toiling upward over the long stages of his slow progress during the past half million years or so, this genesis might be the more readily traced. It might be seen in the gradual specialization in those parts of his organization, his hands, with which he has continued to reach out and finally to lay firm hold upon the psyche or soul. This surpassing endowment, Professor Osborn believes, came to man at some critical period when he stood up in the dawning glory of his Cro-Magnon manhood and drew upon the walls of his cave the first imperishable record of his greatness.

The book as a whole is commendable more by reason of its intentions than its achievements. It sets out with the sturdy faith, which some of us share for lack of an alternative, that human biology is a coordinate branch of mechanistic science. But what conclusion can we draw? It is with the greatest reluctance that we draw any; but if we must, then let it be this: the case of human biology has not been reduced to a mechanistic science by anything we have ever read, certainly not by this massive treatise on the brain from ape to man.

CHARLES F. DEGARIS

Lehrbuch der Anthropologie in systematischer Darstellung. Mit besondereer Berücksichtigung der anthropologischen Methoden für Studierende, Ärzte und Forschungsreisende. RUDOLF MARTIN. Second enlarged edition. Three volumes. 1928. Vol. 1, pp. XVII, 1—578; vol. 2, pp. VIII, 579–1182; vol. 3, pp. V, 1183–1816. (Jena: Gustav Fischer. Cloth $24.)

The long expected second edition of this *Lehrbuch* is out, replacing the first edition of 1914, which was exhausted a few years

after its publication. The present division into three volumes is a marked improvement over the one-volume colossus, the handling of which always required some physical effort. Dying too soon in his sixty-first year, on July 11th, 1925, Rudolf Martin did not live to see the second edition of his work, which he himself to a large extent had prepared with regard to a rearrangement of the subject matter, numerous additions, and extensive enlargements. The number of illustrations is increased from 460 to 547, and instead of 2 observation sheets there are now 7, in addition to 3 plates. At Rudolf Martin's request the chapter on anthropological methods was rewritten by Dr. Albert Huth, and a chapter on the methods of biological albumen differentiation was contributed by Professor Theodor Mollison, the author's successor to the chair of physical anthropology in the university of Munich, who likewise revised the chapter on photographic methods. The credit for shaping the work into its final form is due to the discriminating and meticulous labor of Dr. Stefanie Martin-Oppenheim, Rudolf Martin's widow, herself an anthropologist and an academic lecturer for a number of years.

The systematic treatment of the subject matter, in itself a highly complex affair, follows, in the main, the order of the first edition. New problems arose in physical anthropology during and after the war, which are being investigated with constantly increased stress, such as the physiological effects of war constraints, the interest in race composition and racial diagnosis, infant study, the phenomena of inheritance and of adaptation, collectively comprised under the caption of constitutional research, all of which represent fields of specific interest in the domain of physical anthropology. The author himself had organized, first in the city of Munich, where he held the chair of physical anthropology in the university after the death of Johannes Ranke, a constitutional investigation of the school children, which in the years following assumed nation-wide importance and which has become a factor of research in the biological and sociological behavior of a nation. The methodical means of investigation received in the new edition a new shaping and classification so as to make possible an exhaustive study of the problems alluded to.

True to the author's vision that "a handbook is first of all a book of facts from which the fundamental concepts of a science are to be gained" (second foreword, 1: IX), it is the facts of methodical procedure and substantiating statistical data which form the principal

gist of the present three volumes. Culminating in the methods and technical directions worked out during the many years of academic teaching, the author at the same time presents a conspectus of the methods employed by the various authors and their schools as well as those internationally agreed upon. It is the accuracy of detail and the painstaking conscientious interpretation which make the *Lehrbuch* such a valuable guide and companion to the anthropologist.

The following list of contents may serve to convey an idea of the distribution of the subject matter over the three volumes:

Volume 1 contains the general introduction on the scope and nature of physical anthropology (pp. 1–26); anthropological methods, general, mathematical, and biological (pp. 26–116); the somatological part, comprising the somatometrical and somatoscopic techniques (pp. 117–231); the discussion of the body form in its various considerations as to size, weight, type, and racial distinctions, proportions of the parts (pp. 231–446); the integument and integumental organs (pp. 446–522); the soft parts of the head and face (pp. 522–566).

Volume 2 deals with the craniometric, craniographic (craniodiagraphic), cranioscopic, and osteometric techniques (pp. 579–695; 992–1071), and the metrical and descriptive treatments of the skull and its parts and the remaining parts of the skeleton, complexly and separately (695–991; 1071–1182).

Volume 3 is reserved exclusively for physical anthropological bibliography in R. Martin's classification and adaptation to Dewey's decimal system (pp. 1183–1782). There is furthermore a general and an authors' index (pp. 1783–1816).

It cannot be the intention of the reviewer to find fault with minor shortcomings of this monumental work, which is an up-to-date representation of the science of physical anthropology—the only one of standard compass for the student as well as the investigator. Whatever such shortcomings are, or may be, those who have devoted their best efforts to the study of physical anthropology know very well that methodical and technical explanations do not always yield easily to exhaustive interpretation, and that statistical figures can behave quite viciously at times. The usefulness of the work is proved by the demand which the first edition experienced, and everything bids fair that the present second edition will share the success of the first.

Too much praise cannot be accorded to the execution of the three volumes, which not only applies to the paper, the binding, and

the excellent execution of the numerous illustrations, but especially to the clear readable type and the careful proof-reading of the text.

BRUNO OETTEKING

MISCELLANEOUS

Festschrift. Publication d'Hommage offerte au P. W. Schmidt. W. KOPPERS, Editor. (Wien, 1928, pp. XXIX, 977.)

In this stout volume Father Koppers has gathered together seventy-six papers written by pupils and friends of Pater Schmidt, in honor of his sixtieth birthday. As founder and, since its beginning twenty-two years ago, editor of the journal *Anthropos*, Father Schmidt has done much to further the growth of anthropology and has, as a bibliography of a hundred and fifty titles shows, himself contributed abundantly to its more important literature. His latest work *Die Sprachfamilien und Sprachkreise der Erde* was only recently reviewed in these pages. The *Festschrift* is a well-earned tribute to his scholarship, energy, and wide range of interests.

As it would obviously be impossible to review a volume of this sort in detail, I have compromised by calling brief attention to those papers only which are of direct interest to Americanists. There are few aspects of anthropology, however, which are not represented in the long array of papers.

In the first group of seventeen titles, dealing with linguistic subjects, there are two on New World topics, the one by Haberl on sound shifts in the Yamana (Yaghan)of Tierra del Fuego, the other by Uhlenbeck on the emphatic use of relative pronominal endings in Blackfoot. Of the second group, dealing with ethnological matters and comprising forty-five titles, a larger proportion are concerned with the American field. As interesting primarily students of the Central American and Mexican area there is first a comparative study by Andres of the Athenian Bufonia sacrifice and that in the Mexican cult of Xipe-Totec. The author finds reason to believe that in each case the significant features of the ceremony were the result of the blending of an older and younger cultural stratum. Dr. Röck discusses the Central American calendar system, and analyzes it, in standard culture-strata fashion, into a series of historically sequent forms, each related to a definite culture type. He accepts Indo-Malayan influence as undoubted, and places it in the first century

A.D. Dr. Krickeberg in a very useful paper sums up the evidence for mutual cultural influences between Mexico and Peru, and concludes that it is sufficient to lead to the conclusion that some influence was exerted by the early Central American cultures upon Peru, probably by sea. This contact was, however, later interrupted, and only resumed again with the Ecuador coast region much later, continuing down to the Spanish period. A suggestive paper by Dr. Preuss shows the way in which old Cora and Aztec myths of the sun and morning-star have been blended with biblical episodes from the life of Christ, to form the modern tales. As a result of his studies among the Cuna of Panama, Baron Nordenskiöld contributes an admirable sketch of their concept of soul-kidnapping as the cause of illness, and of the procedure of the shamans in applying a cure.

A considerable group of papers deal with South American topics. Father Gusinde treats of the highest deity of the Ona, picturing their faith as monotheistic and this deity as a personal though bodyless god, eternal, omnipotent, and omnipresent; creator and also moral judge and avenger of mankind. Short sketches of individual Yaghan are contributed by Father Koppers, to demonstrate that primitive peoples are not uniform in characteristics, but exhibit definite individuality. In a paper on the aborigines of Chile, Dr. Oyarzun presents a useful summary of our knowledge of the tribal and cultural divisions in this area, and discusses the evidence for and the extent of the influences which reached Chile from the Calchaqui, Tiahuanaco and Inca cultures. In continuation of previous studies of Inca culture, Dr. Trimborn discusses the extent and organization of the government control of the individual under Inca rule. He finds that there was on the whole less complete suppression of the individual than has been commonly supposed. In his differentiation between pre-Inca conditions and those of Inca times, he allies himself clearly with the Culture-strata school. Dr. Tonelli treats interestingly of the usages in regard to personal names, both of the living and of the dead, among the eastern Bororo of Matto Grosso. Finally Dr. Müller lists the medicinal plants used by the Guarani in Paraguay, and Father Tastevin lists and compares the generic terms for streams and water-courses in the languages of tropical South America, and shows how in numerous cases, the evidence of river-names is of assistance in tracing migrations and popular movements.

Directly concerned with the much discussed question of trans-Pacific cultural diffusion are three papers. Father Kreichgauer brings

forward a number of unimportant and fanciful analogies between Old and New World cultural traits. Convergence is regarded as impossible, and without any attention to relative chronology, they are presented as evidence of far-reaching diffusion. Dr. Imbelloni seeks to prove Polynesian influence in America on the basis of a linguistic comparison of the term for axe or adze in the former region with words used by the Araucanians, the Ges tribes of Brazil, certain tribes of the Northwest Coast, and the Algonkian tribes of northeastern North America. In the latter case, he equates the Polynesian "toki" with "tomahawk"! As a corollary he believes that the phrase "to bury the hatchet" was not confined to the "Redskins," but was an "idiomatic constant" in both America and Oceania. Dr. Rivet again takes up the question which he has recently dealt with on several occasions, i. e., Melano-Polynesian contacts with America. He first recalls the linguistic parallels in the names for the sweet potato and the stone axe, in the two areas, and then passes to a discussion of the legendary tales of the invasion of giants on the Ecuadorian and Peruvian coasts. This is followed by a summary of the accounts of mysterious traders coming to these shores from rich islands and lands to the west, and of the tales of the successful quest of the Inca Tupac Yupanqui, in which he sailed in search of these distant lands, and returned with black-skinned captives, much gold, and the jawbone of a horse. Dr. Rivet concludes from his study of the data that all these legends rest on a substratum of fact, and sees no reason to doubt extensive and even frequent intercourse between the South American shores and some conveniently unspecified Oceanic islands.

North American topics are also not neglected. Father Cooper discusses with characteristic care and thoroughness, the practice of scrying and of scapulimancy among the northern Algonkian tribes. The as yet known North American distributions of the customs are outlined, and the conclusion reached that there is as yet no clear evidence to connect this New World area with its Asiatic counterpart. In a general study of head, skull, and long-bone sacrifice to the highest deity among the reindeer peoples of northern Asia, Dr. Gahs attempts to correlate this with the Eskimo game taboos, ceremonial treatment of animal skulls, and concept of a Mother of Animals. He thus secures a circumpolar distribution from a hypothetical center of origin among the Samoyed, and regards the whole as part of a culture-complex comprising in addition the domestication of the

reindeer, the use of the bow, conical tents etc. This he then treats in typical Kulturschichte fashion, and carries it back to pre-Mousterian times. Finally, Dr. Kroeber in a very interesting and valuable article on the Kato, gives a description of the character of the fighting employed by this Californian tribe, and discusses their attitude toward war.

Throughout the volume in some measure, but particularly in these papers dealing with the New World, one notes the frequent emphasis on the "Culture-stratum" theory. This is only natural in view of the fact that Pater Schmidt is perhaps the leading protagonist in its defense, and has written at length upon its American application. But after reading these contributions one can hardly help feeling that most of the advocates of the theory themselves tend to discredit any value which it may have, by the uncritical character of their thought. Chronological and historical factors are as a rule calmly ignored, serious practical difficulties brushed aside with indifference, and contradictory evidence often totally neglected. The cultural analogies between America on the one hand and southeast Asia and Oceania on the other unquestionably raise problems of fundamental importance, but their solution will be attained only by a rigidly critical study of all the facts.

These brief notes have dealt only with a part of the long series of papers which the *Festschrift* contains. The range of subjects covered by the whole takes in virtually the entire field of anthropology, and in the volume everyone is certain to find much of interest and value. It is a tribute of which Pater Schmidt may well be proud.

R. B. Dixon

DISCUSSION AND CORRESPONDENCE

THE MOUND BUILDER PROBLEM TO DATE

Several interesting articles, and notably the one by W. C. McKern, Esq., relating to Hopewell culture and published in the AMERICAN ANTHROPOLOGIST, April-June, 1929, suggested to me the propriety of briefly sketching our various Mound Builder studies as they appear at the present time. I am quite aware that the distinguished Ohio archaeologist, Professor Shetrone, has in preparation a large and important publication to which many of us are contributing. There seems to be an increasing interest on the part of archaeologists in our mound problem, and after many years of excavation in fifteen states, I should like to set forth briefly certain observations.

We do not need to cover the early history of mound theories. It began in 1787 with the settlement at Marietta. I desire, however, to remind readers that Messrs. Squier and Davis, who were honored by the first volume of the Smithsonian Institution, seem to have sensed the difference between the art and customs of mound-building tribes as contrasted to that of Indians in general. One of our most careful, thorough, and persistent students of American Indian life, Dr. Daniel Brinton, speaking at a meeting of the American Philosophical Society, November 6, 1896, with reference to the remarkable discoveries made by Frank H. Cushing in the Florida Keys, gave it as his opinion that mound culture, generally, followed the same lines of development, although "deeply influenced by ethnic and local peculiarities." So, while Squier and Davis never used the term Hopewell, or for that matter Fort Ancient, in the light of our present and rather extensive knowledge their original contentions seem substantially correct.

During the past thirty years there has been widespread activity in mound exploration on the part of institutions, individuals, and states. A great deal of money has been expended and much effort, therefore the public may reasonably demand of us an account of our stewardship. Obviously in this brief paper one is confined to essentials.

First. Mound-building is widespread throughout the Mississippi and St. Lawrence basins, and the South. Externally mounds are

more or less homogeneous. It is significant that the custom did not extend east of a line drawn from central New York to the mouth of the James, and is not in evidence westward from the center of our Great Plains. Assuming central and northern New York as the home of the Iroquois stock, it is interesting that there are no true mounds in the Mohawk valley or lake region, neither are there mounds east of the Hudson. Many of the Plains tribes themselves can not be definitely classified as mound-builders.[1] The statement might be made that possibly some of the early Sioux tribes did build mounds. However, this paper is based on researches rather definite and extensive, and so far as possible what is in doubt or obscured is eliminated.

Second. Explorations of mounds and detailed study by competent observers clearly indicate that certain mounds are comparatively old, others perhaps more recent, but that the vast majority are strictly prehistoric; also that mounds served many purposes; the preponderance of those in the extreme North being burial, whereas the majority of those in certain other sections are house or temple sites.

Third. In the writer's opinion most students who have confined their operations to a restricted area, do not fully realize the marked local differences in cultural development. That is, highly specialized development is due to long residence on the part of a certain tribe in that particular section of the country. Naturally, they developed peculiar characteristics of their own. It is quite probable that through trade or travel on the part of Indians, persons in another section of the country somewhat modified their own arts or customs. In brief, the influence of great art centers such as Etowah, Hopewell, or Cahokia penetrated to distant points. It seems to me that this simple explanation solves some of our problems. The presence of a few Hopewell types in Wisconsin, or Etowah forms in Iowa, does not necessarily imply widespread Hopewell or Etowah cults in those regions. It would appear that some of our students have extended the boundaries of the particular culture in which they are interested entirely too far.

Fourth. The part played by ceramic art is very important. I think we have underestimated it. Certain mounds contain absolutely

[1] Small house-site elevations are scarcely mounds.

no pottery, in others pottery predominates. Generally, pottery is vastly more frequent in Southern tumuli than in Northern.

Fifth. The association or combination of mounds and earthworks, and especially the presence of highly developed symbolism in certain of the artifacts taken from mounds of such groups, is highly significant. An area 400 miles in diameter with Louisville, Kentucky, as its center, includes the vast majority of works of the character described, and most of regions where symbolism in copper or on stone was much in vogue. After all, the old theory, promulgated sixty years ago to the effect that the highly complicated and extensive geometric earthworks of Ohio are of religious character, may be true. Certainly we should discard the "fortification" theory.

Suppose we contrast archaeology in the Southwest with that of the mound area. If there were no surviving Pueblos and archaeologists were dependent upon the profusion of specimens of ceramic art and the ruined buildings, would Stevenson, Cushing, Fewkes, Parsons, or others have been able to reconstruct the complicated rituals of the Antelope and Snake societies? Imagine, then, the well-nigh impossible task confronting the student of a highly developed mound builder technique. He may be of the opinion, as is Mr. Willoughby, that quite as complicated ceremonies occurred among the Hopewell, Etowah, or Cahokia as were common to the Pueblo. Through painstaking study of cosmic and earthwork symbols Mr. Willoughby, or someone else, may be able to indicate the connection between these and the motive back of the construction of the earthworks. At present, this very interesting subject is still enshrouded in mystery—well-nigh impenetrable.

Sixth. The skeletal material, and particularly the crania, should be carefully tabulated. At present we do not know whether crania from Ohio Hopewell sites are of the same tribe as those obtained elsewhere from so-called "Hopewell"; neither do we know if skulls from graves of the Tennessee-Cumberland region are precisely of the same people who inhabited large sites lying along the Ohio near Cairo, Illinois. We have been urged repeatedly to save this skeletal evidence, and thousands of mound crania are stacked in our store rooms. The copper, clay, stone, shell, and bone artifacts have been studied. It is high time the physical anthropologists did their part!

Seventh. Mound construction itself is not of especial benefit. During the past forty-two years my field parties have examined some hun-

dreds of mounds. Instead of uniform construction, there are variations not merely in the whole river valley, but even in the mounds of one group. We already possess thousands of pages of wearisome "mound technique"—much chaff and little wheat!

Let us sketch the characteristics of some of our mound areas. Beginning with the South, we proceed northward. Thanks to extensive excavations by Mr. Clarence B. Moore, it is safe to assume that the Florida mounds and their contents indicate rather low culture. Aboriginal trade and commerce was not extensive, and copper, very precious to the Indian, is seldom found. There are few truncated earth pyramids; advanced art in stone and shell, quite rare. At Key Marco and adjacent regions in Florida, Frank Hamilton Cushing found masks and effigies, carvings, and other objects. These are illustrated and described in his interesting report published by the American Philosophical Society, No. 153, Volume 35. Except in some of the Ohio altars, where fragments of carved wooden objects (carbonized) have been preserved, we have no wood carvings of mound builders available for study. Hence Cushing's work is very important, and it is proper to urge further exploration of the Florida Keys. It has seemed strange to the writer that practically all exploration in Florida was concentrated on sand and shell mounds.

Proceeding northward into Georgia, the shell mounds of Florida gradually disappear. The tumuli are of earth and there is a decided rise in the cultural scale. That south Georgia and Florida were more or less homogeneous one may readily admit. The variations in design and form in the ceramic art of this entire region are significant, and when Miss Margaret E. Ashley completes her extensive study we shall be able to trace relationships between Southern tribes.

In northern Georgia occurs the high culture development of the Etowah people. This occupies the same relative position in the South that the Hopewell sites do in the North. A comparison between work in shell, copper, clay, and stone of the Etowah people and sites northeast where lived the Cherokee, would indicate that Etowah is not Cherokee but early Shawano. Etowah art is very different from that of Hopewell and it is now perfectly clear that the Hopewell culture was somewhat influenced by a knowledge of Southern tribes. The reverse is that the Southern villagers were not affected by any knowledge of the North. Copper is eliminated because it was used by nearly all mound tribes throughout the United States.

Assuming nineteen type units in measuring mound-builder culture, one would assign Hopewell thirteen and Etowah eleven. Seven similar units occur among both people. Six at Hopewell are not present at Etowah. Four seen at Etowah are not in evidence at Hopewell.

Copper was widely distributed, but subject to varying local development. At Etowah, far from the source of supply, there are very few copper tools—but four axes were found. The plates portray human figures in costume and with headdresses. The numerous Hopewell plates indicate different treatment, cosmic symbols predominating, although the eagle is shown and there are copper masks.

Proceeding northward 150 or 200 miles to the valleys of the Tennessee and Cumberland, we note an analogy between the stone grave people, which Thruston and Myer considered as early Shawano, and Etowah. The long, slender, problematical blades chipped from Tennessee brown flint are characteristic of this culture; also the engraved shell gorgets of exquisite workmanship, and small clay effigies both human and animal. We, therefore, place Etowah as belonging to the Tennessee-Cumberland area, central portion, not the headwaters which were chiefly Cherokee territory.

Returning to the Gulf and again working northward, we observe two cultural areas as yet not sharply defined. A winter of extensive excavations in the Natchez sector failed to produce objects indicating that high development described by the French and presented at length by Dr. Swanton in his excellent memoir. This does not imply that the French exaggerated, but probably that our field work was insufficient. Pottery predominates, and the sun symbol is much in evidence, yet the many mounds tested or trenched, with few exceptions, failed to present indication of art in shell, copper, or stone.

In central Alabama, the country of the Creek, particularly at Moundville, we find specialization. The excavations of Mr. Brannon and Mr. Moore indicate high ceramic and stone art, yet there is very little copper, and portrayals of life on shell are not numerous. By Indian trail from Etowah to Moundville it is not more than one-hundred and sixty miles, yet we find considerable differences in art.

Kentucky presents a complicated and interesting situation. Roughly speaking, it is a "buffer state" between the Tennessee-Cumberland and the Ohio. Poverty of accurate data prevents conclusions worthy of the name, yet the labors of Mr. Harlan I. Smith in large village sites of northern Kentucky, and Mr. Moore's investigation upon Green river, the researches of Mr. Fowke and others, tend to

prove that the so-called Fort Ancient (Madisonville) development was widespread throughout the state, and there are highly developed areas here and there, such as the Green river site. The general characteristics of these are Southern, rather than Northern. That is, there is little Hopewell influence. Professor Mills's term, "Fort Ancient" culture, properly applied in Ohio, is rather indefinite when extended throughout the whole Mississippi valley, yet we have no other designation. It represents cultural status of the greater body of Indians of all sections, neither low nor high, but average—what we should term in white communities "middle class."

In the AMERICAN ANTHROPOLOGIST, April-June, 1920, Professor H. C. Shetrone presented an able paper entitled "The Culture Problem in Ohio Archaeology." In addition to the two major groups there is that interesting one to which the writer referred many years ago under the title "glacial kame burials." Mr. Shetrone comments upon this probable third culture. No reflection is intended when one ventures regret that no more attention or technique has been expended on these interesting burials. It can not be absolutely proved, yet it is likely, that these preceded mound construction in the Ohio valley. Many of them are mound-like in character, and what would be more natural than their selection by Indians for mortuary purposes in pre-mound times?

As Professor Shetrone maintains, there is an extensive Iroquoian culture along the shore line of Lake Erie. Some work has been done by the Ohio Archaeological Society, but not sufficient. Mound art and concept are seldom in evidence on these Iroquoian sites. It is very important that the entire lake front between Toledo and the Pennsylvania border be examined as well as the Maumee valley itself, where we probably have a variation, or departure, from Fort Ancient culture.

The Wabash valley, Indiana, presents an interesting problem. Where it joins the Ohio was a large village site and burial ground. Examination of this indicated marked Southern influence, the pottery, particularly the effigies, being an exact counterpart of Missouri-Arkansas forms. The pipes, however, were early Siouan. There were evidences of contact with French traders. The mounds of Indiana have not been studied, but such artifacts as are available indicate both Illinois and Ohio influence, the former predominating. Like Kentucky, Indiana appears to be a buffer state. One might predict, after viewing collections, that the upper Wabash bears

close relationship to the upper Maumee, and these are promising fields.

The University of Illinois has completed much work the past eight years in that state. Recently the University of Chicago has also entered the field. Beyond question there are three, and probably four, clearly defined tribes, one or more of which extended into modern times.

Near East St. Louis are the truncated pyramids and mounds constituting the famous Cahokia group. Five seasons' labor has proved beyond question that the Cahokia village site is six miles in extent, and therefore the largest of any north of Mexico. There is no indication of contact between these people and those of Hopewell or Etowah, neither is there culture of the general Fort Ancient class. Manifestly, it is the farthest northward push of a distinctly Southern culture. Many of the designs on the pottery are common to other regions, yet there are distinct Cahokian types. There is a peculiar form of projectile point. So far, no copper has been discovered, nor are there engraved shells, and curiously enough, there is slight evidence of the smoking custom. When the burial place of the Cahokians is discovered, we shall be able to draw more intelligent conclusions.

North of Cahokia is the Illinois river, and from thence to a point near Joliet ancient remains have been studied the past two years by Engineer Jay L. B. Taylor under the writer's direction, for the University of Illinois.

Near Lewistown Dr. Don Dickson has built a field museum over two-hundred burials, leaving them in position, with accompanying objects. It is one of the most interesting and important exhibits in the entire United States.

The large village of the Illinois Indians seen by La Salle and Hennepin was where the village of Utica now stands. A comparison of pottery fragments and tools found at Utica with those exhibited by Dr. Dickson, and investigations by Mr. Langford, indicate similar cultural status. Mr. Langford published his discoveries in the AMERICAN ANTHROPOLOGIST for July-September, 1927.

Near the town of Liverpool, on the Illinois river, has been found a third culture, restricted to a limited area. Some of the burials are in log cists. Cut bear teeth, copper celts, human bones worked into ornaments, and platform pipes indicate modified Hopewell types or Hopewell contact. One would assign the "log tomb" tribe eight

type units. Pottery is profusely distributed in the general culture (Illinois) but absent in the Hopewell burials, which is significant. All these tombs, indicating an approach to Hopewell types, were found by untrained workers, and Engineer Taylor spent two months checking up their observations. Permission to excavate or trench was denied, and his studies therefore are rather unsatisfactory. We are certain however that this limited Hopewell-like development was placed in the center of a widespread and more primitive culture, not related to it.

Certain objects seen by the author in various collections indicate to his mind another culture, which originally occupied the lake front both north and south of Chicago, and probably extended up the Chicago river and other streams. Possibly one should say "tribe" rather than "culture." Field studies are recommended.

The upper St. Lawrence basin has been the subject of study by archaeologists of Wisconsin, Michigan, and Minnesota. Considerable literature exists. That there is much Hopewell evidence is to be doubted. True, in a few mounds were monitor pipes, worked bones, and other objects, yet distinct Hopewell cultural affinities are questionable. Charles E. Brown, Esq., who for many years has labored in the Wisconsin field, in a letter to the writer, February 14, 1929, mentions six—Siouan, Algonkin, Iroquoian, Hopewell, Middle Mississippi Valley, and Gulf States.

Mr. McKern advised me on April 18th that the famous Aztalan group included typical Cahokia pottery and other traits. Naturally one would not desire to dispute with Mr. McKern, yet until the evidence is available one is disinclined to place Cahokian influence that far north.

Our cultural problems in Ohio and Illinois are rather simple compared with those of the Upper St. Lawrence region. Perhaps ten years hence we shall be able to assign both boundaries and characteristics.

In eastern Iowa researches indicate a modified Hopewell culture, or rather that certain tribes of Iowa mound builders made use of art objects similar to those in vogue in the main villages of the Hopewell. All through Iowa and Kansas, and for that matter Nebraska and both Dakotas, are small mound and house sites, and indications of many sub-tribes dependent upon the buffalo. Ancient Siouan culture is widespread in this region, and extends into Wisconsin. However, specialization and local development do not attain Etowah, Cahokia, Moundville, or Hopewell heights.

Along the Mississippi, from the Gulf up to central Missouri, lies what Professor W. H. Holmes used to call the "pottery belt." A profusion of ceramic art rather than in other forms or materials occurs. In Oklahoma, where Professor J. B. Thoburn's studies have been carried on for many years, exists the general Caddoan influence, details of which and relationships to other cultural areas have not as yet been fully worked out.

Origin of mounds. Some observers have assumed that mound-building and arts originated in central Mexico and spread northward. Unquestionably, there are certain facts difficult for us to explain upon any other basis—such as in southern United States the monolithic axe; seated human figure; idol heads, plumed serpent; tripod vessels; engraved shells; (small) ear ornaments; "swords" and truncated pyramids. If one assumes Mexican origin of mound cults, it is difficult to explain why no truncated pyramids or real "mound art" exist in the extensive area between Mexico and western Louisiana, more than fifteen hundred miles.

Mrs. Zelia Nuttall found "seven lines of comparison" between Etowah art and early Toltec. Perhaps we should say that certain concepts occurred to both people in ancient times and independently of knowledge or contact. Naturally, the subject leads to endless speculation. However, we may offer some suggestions as to Hopewell development rather than as to origins of mound construction as a whole.

In an area some one hundred and fifty by one hundred miles in southern Ohio lay the large centers of this highest mound-art development. Its influence radiates out in various directions. Along Lake Erie's shore, north we have Iroquoian —no Hopewell. In Kentucky to the south, general Algonkin and Southern. Again, little or no Hopewell. One concludes, therefore, the Iroquoian stock, a forceful body, prone to war, carried on conquests whereas our more sedentary Hopewell folk established themselves within great earthworks, devoting themselves to certain arts. Nothing in common in arts or construction is observed between the Iroquois and the Hopewell.

The origin of Hopewell? It is not Southern, rather one would say it began in Iowa or the upper Mississippi, moved eastward, developed gradually, and reached its culmination near Chillicothe, Ohio. The Muskingum valley, eighty miles beyond, is influenced by it, yet the Kanawha, to the south-east, appears to be something else. Space does not permit full discussion of my reasons for a western origin

of Hopewell. I shall set them forth in some detail in Professor Shetrone's volume.

Age of mounds.—As yet nothing definite. We can not establish stratigraphy as at Pecos. There are no "pottery levels."[2] Yet we know sufficient to assign mound works north of the Ohio to pre-Columbian times. Possibly there are a few exceptions, yet the larger groups were not inhabited during the historic period. Shortly after 1660 the French in Quebec heard of that large Illinois village. Eight hundred Onondaga attacked it in 1680. Had the Ohio valley earthworks been inhabited, obviously the French would have visited places much nearer Quebec.

That ancient Delaware legend, the Walam Olum, published by Dr. Brinton, refers to the Snake people. He had made a special study of Delaware traditions, and was of the opinion that they, rather than the Iroquois, defeated the villagers of the mound groups.

Other writers have theorized to the effect that mound builder culture was destroyed by the Iroquois. A raiding party coming into an inhabited mound builder village would find copper hatchets, effigy pipes, and many other objects superior in workmanship to those of their own. It would seem plausible that at least some of these would have been carried back as trophies, yet practically no mound-builder art forms occur in Iroquoian graves, or upon their village sites.

As previously remarked, we can assign no dates. Yet the high local developments at certain centers in Tennessee, Illinois, Ohio, or Georgia were not attained during a few hundred years. That would appear impossible. We must allow two or three thouand years. Were all the cultural arts of these people uniform no such claim could be made. But the more detailed our study, the more we are convinced that these high neolithic specializations were the result of a steady and slow local development. In short, just as in historic times our progressive Pueblos lived in the midst of roving Utes, Apache, or Navaho, so the men of these great mound-centers were surrounded by masses of "middle class" Indians of "Fort Ancient" culture. Some years hence to complete the mound story will not be difficult. To trace the migrations, or origins, of the less settled or undeveloped Fort Ancient bands, is an almost insuperable task.

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[2] Save possibly at Fort Ancient, which Professor Shetrone and the writer have agreed to intensively investigate at some future date.

We should establish a definite and far-reaching plan of cooperation and coordination of our researches and concentrate upon the following essentials:

1. Complete study of the ceramic art of the mound area by river valley.
2. Tabulation of the crania from mounds and sites.
3. Mapping of all prehistoric monuments.
4. Detailed explorations of regions of which we know little—the James, Kanawha, Missouri, Wabash-Maumee, Allegheny-Monongahela and several others.
5. Most of the art objects recovered by means of excavations and researches have been figured or studied, yet in the larger sense we have not grouped or classified them.
6. Unfortunately there are no survivors from whom we might secure information as to cults and ceremonies. In our symbolism manifest in copper, shell, and the great earthworks themselves, although at present we lack the proper "Rosetta Stone," we may through patient investigation find the solution to certain of our most perplexing problems.

WARREN KING MOOREHEAD

ON THE SOUTHEAST ASIATIC ORIGINS OF AMERICAN CULTURE

Professor Roland B. Dixon's *The Building of Cultures*, 1928, is so invaluable a book, and I find myself in such complete accord with all its theses, save one, that only with regret do I write in criticism of that one. I refer to his presentment and evaluing of the proposition that there has been a considerable influence exerted on American culture by culture from Southeastern Asia, by way of Oceania. On this subject Dr. Dixon in eminently calm and open-minded, leaving the issue as still open; but I think he has not lent the full power of his great talents and erudition to the subject. At any rate, he has presented the diffusionist thesis as weaker than it is, and the process of demolition has therefore been all to easy.

Aside then from the Graebner theory,—in which there is much good,—and the Smith-Perry theory,—in which there is little,—let us see how the issue appears.

(1) Dr. Dixon does not duly emphasize *the localization of the parallels in question; and the practical geographical continuity of the areas of localization in America and Asia.*

In America the parallels are generally confined to the coast area, and when not so confined point to the west coast as the place of origin.

In Asia, they point generally to an origin in tropical southern or southeastern Asia, Dravidian southern India apparently being a center of development.

The ocean between southeast Asia and west coast America is dotted with archipelagoes.

Were it not for the ocean distances and the absence in Polynesia of so many of the traits in question, Dr. Dixon would not question the diffusionist explanation.

But he does not even mention the possibility that there were more and greater archipelagoes in Polynesia one or two thousand years ago. And he does not duly emphasize the fact of cultural decay in Polynesia. The ancestors of the Polynesians knew pottery and the bow, but gave up the bow save as a toy, and have lost even the tradition of pottery,—all for no explicable cause at all.

However, the problem of the Polynesian hiatus, granted the validity of the diffusionist thesis , will have to be solved. It is difficult, but Dr. Dixon makes it appear more serious than it is, yet he does not seem worried about the vast ocean hiatus between Java and Madagascar!

However, even if the Pacific were today without islands or peoples I should still feel that the diffusionist explanation of the parallels is the logical one. I will explain.

(2) Not only does Dr. Dixon fail to duly emphasize the geographical relationship of the areas in question, but he *underemphasizes the volume of parallels in question.*

He mentions the blow-gun, pan-pipes, crutch paddle, negative dyeing, gauze weaving, the sewn plank boat, herb and lime mastication, mummification, pyramids, agricultural terraces.

Elsewhere[1] I have enumerated a great many others, but here I will cite only some of these which Dr. Dixon should have at least casually mentioned, in justice to the diffusionist point of view.

For example, in religious institutions or linked intimately with religious practice: absolution of sins through public and auricular confession; baptism; incensing and the tripod support for pottery; cremation (as well as mummification); the convex and concave mirror for producing new fire from the sun; vestal virgins to guard the sacred fire; the divining crystal; suttee; the cross in various forms, including the Latin cross and the swastika; sanctuary and cities of refuge; besides, various elements of myth.

[1] See chap. 1, and app. 1, of my book, The American Indian Frontier, 1928, written at the same time as Dr. Dixon's evaluation.

And, for example, in other phases of culture: Cotton cultivation; murex culture; the paddle and anvil technique in pot making; mosaic featherwork; the "Roman" balance; toe string sandals; the balsa; the quipu; the concept of zero; certain axe and adze forms; certain house types.

Dr. Dixon, insofar as he considers this volume aspect of the problem at all, passes it off with the note that, after all, the various traits in question are not found all together in any one American locale. He does note that on the Peru-Ecuador coast the pan-pipe, blow-gun, and tie dyeing are all found, but does not add that Peruvian archaeology is in its infancy, and many more material evidences may yet be found; and that social institutions there cannot very well be archaeologically substantiated. Moreover, not adequately noting the volume of the traits in question, naturally he does not do justice to the actual linkages present. He does note the linkage of gauze weaving and tie dyeing in Peru and concedes that this perhaps is significant. He should have added that not only is it significant that gauze and tie dyeing are found together there, but that among those present in the same culture are also the quipu, intimately linked with the concept of zero; the balsa; lime and herb chewing; confession of sins and other religious traits enumerated above; the convex and concave mirror; mosaic featherwork; the Roman balance; sandals; and many others, not to mention language, and traits of social organization, at all. (And, not to mention, also, the fact that the plank boat to the south is marginal to this development and the three-piece bark canoe beyond is marginal to the plank boat.) I should like to know how Dr. Dixon appraises this wholesale parallelism!

Take another locale. Dr. Dixon rules out the plank boat of southeast California as not being of Polynesian derivation. He denies Dr. Rivet's identification of Hokan as of Austronesian affinity. He ignores the presence in the general vicinity of the plank boat area in California of the strikingly Polynesian-like mythological system of the Gabrieleño; the balsa of the whole area; the Mediterranean arrow release; and of the paddle and anvil pot-making technique of the upper Gulf of California. Even, for the sake of argument, conceding a verdict of "not proven" for Oceanic origins of these five traits, involving pottery, language, myth, boats, and arms, is it not, pending further investigation only fair to the diffusionist hypothesis, to emphasize the volume of parallels in the area; and to note that other parallels which, while not directly of Oceanic origin in this region, are nevertheless par-

allels in question, probably spread up from the south,—sandals, lime and herb mastication, boomerang, bull-roarer, quipu, mosaic featherwork; cotton; negative coloring (batik technique); and so on. Consideration might also have been given to Verril's find of a poi pounder and other artifacts of Polynesian type in prehistoric graves in the plank-boat area.

Anyway, I must ask, Does not the plank boat look like the camel's nose under the tent? Does not the form found among the Koreans and Ainu, and Lapps, seem, along with the Californian, to be marginal; and is it not the Ainu form, say, rather than the Polynesian, which Dr. Dixon should compare to the likewise marginal California form? Is not this a case where Dr. Dixon has refrained from lending the full force of his scholarship to a thesis which Americans are expected to look upon as a heresy to be given short shrift?

Yet another example, and one on which I have lately finished a paper[2] and on which I feel like speaking freely. Dr. Dixon too easily disposes of the lime and herb chewing problem. I will touch on the weakness in only one aspect of it, though the other aspects are as summarily dealt with. In America we are always warned to consider the cultural context of a trait. In treating of chewing of tobacco with lime in Alaska and British Columbia, why not inquire into the context? Where did the Haida get their chewing practice? Would they not have got it from the same source as their tobacco? There are no wild tobaccos north of California, so their species of tobacco and their tobacco horticulture must have come from the southern coast or plateau. Now, the species they used was *Nicotiana attenuata*, the species of the Southwest. Between southern California and British Columbia, species other than *attenuata* are used. Apparently, there has been a cultural breach, due to migrations perhaps, between say, the Tsimshian and Haida, and southern California. The intrusion of Wakashan culture and speech has been a large factor in creating this breach. It broke the continuity of Penutian speech, which includes Tsimshian and Yokuts (at northern and southern ends of the area of distribution).

So, all other evidence aside for the sake of argument, does it not seem that lime and herb chewing in Alaska came up from Mexico? If not, the weight of other parallels certainly throws the balance on

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[2] The Central American Origins of Northwest North American Culture. Anthropos, 1929–30 (in press).

the side of diffusion—and the weight of the other evidence Dr. Dixon must take into account.

Dr. Dixon denies actual chewing of tobacco in southern California, noting only its use as an emetic, and arguing that this use is a result of the influence of the jimsonweed cult. This is a very narrow convergence attack on the problem. A broader view dispels this attitude. The use of tobacco as an emetic, always, apparently, with lime, is a trait closely linked with tobacco chewing and found so associated in places as far apart as Ecuador, among the Natchez,[3] and in southern California. Dental blackening is another trait linked with not only tobacco and lime chewing, but coca and lime chewing, and betel-areca and lime chewing. Why not consider these linkages? As for the jimsonweed association of tobacco and lime chewing, Dr. Dixon could have observed that jimsonweed is a *Datura;* that the *Datura* is used as a drug from California and Virginia down into Peru (as well as in Asia) and that if use and cultivation of tobacco and the daturas are linked, they probably go back to a common origin in Central America.

And as for the problem of herbs and lime chewing as a whole, why throw out diffusion because the same herb is not used? The diffusion of smoking of herbs led the practice of smoking to employ a variety of herbs other than tobacco. Pituri, and areca, coca, and tobacco, and even the peppers,—betel and kava,—represent a geographical continuity in which one toxic plant has been substituted for another in the absence of that other, all chewed with lime or ashes (except kava), lime or ashes being everywhere available. Dental blackening and the use of emetics may be considered associated traits; perhaps also the use of daturas.

(3) So far I have dwelt upon two principal points in favor of a diffusionist explanation, both all but suppressed by Dr. Dixon. These are (1) their localization in and around the tropical Pacific; (2) the volume of the parallels and the intimacy of association among them.

The third and final point also underestimated by Dr. Dixon is the complexity,—or, shall we say, uniqueness, or abstruseness,—of the traits or of their composition. The crutch paddle considered by Dr. Dixon is too easily argued out of court on the ground of limitation of possibilities. Dr. Dixon should have undertaken the more difficult task of applying the test of limitation of possibilities to lime and herb

[3] The Chitimacha near-by apparently were tobacco chewers.

chewing, the zero concept, the balsa, the plank canoe, for example. The balsa would be an interesting test. But zero interests me more.

Behind the use of zero is the extremely abstruse concept of place value in numeration. So difficult to comprehend is the idea that even European mathematicians found it difficult to comprehend it and its use when it was introduced to Europe in the middle ages. It passes my credulity to think that the Incas or Mayas, clever as they were, independently reasoned it out without teachers. Perhaps they did,—but with all the other parallels hanging around the corner, I feel convinced that in all probability they did not. The Maya zero we have all heard about; that of the Incas recently came to light. In looking over Nordenskiöld's quipu diagram I note that he discovers not the use of a zero symbol so much as the use of place value for numerals. Zero is represented by the skipping of a knot,—that is, by nothing, by a vacant space.

As for the historical data on the zero problem, note that, widespread as the zero is in the Old World, it spread everywhere from India. Smith and Karpinski have traced it back in India. Its trail is lost on the road down into southern India. Its origin is unknown. Apparently it was invented in remoter southern India, about the beginning of our era. In America we may conceive of a common origin of the Maya and Peruvian zero concept. And, though perhaps this is of little significance, it seems likely that the Maya and the East India symbols for zero both were evolved from the symbol for 20.

(4) A final word about the matter of species of animals and plants in reference to the problem of Oceanic influences. Take cotton for example. Spinden has argued against Old to New World (or vice versa) diffusion of cotton culture on the ground of difference of species between the Old and New Worlds. So also in the case of the use of murex. As I intimate in the discussion of the peppers, coca, and tobacco, I cannot follow this sort of argument. What are species anyway? How many cotton species are there? Cottons are as much alike the world around as human races are, and the Old and New World varieties inbreed and are inbred as much and more than human races are. Under the influence of cotton cultivation radiating ultimately from India, the Africans took under cultivation the tree cotton, much more different from India cottons than American cottons are from India cottons. In herb or lime chewing, the problem was one of radical differentiation of family among toxic plants. In cottons and murex the problem is of insignificant variations.

A serious, unprejudiced, thorough investigation of cotton, with the ever present weight of so many other "convergences" also considered may open up the way to a clearer light on the problem of negative dyeing, gauze weaving, the loom, terraced agriculture, pottery, metallurgy. Eventually archaeological digging in India and Peru may shed light on the relative antiquity of cotton in the two areas, and perhaps, then, an American llama's nose may get under an Asiatic tent.

W. C. MacLeod

Weaving in South America

Re the article on the "Possible Middle American Origin of North-West Coast Weaving," appearing in the American Anthropologist, volume 31, no. 1, I beg to point out in connection with the diagram there illustrated:

(1) The warp reversed in manner shown in inset is common to *all* the hammocks woven on *square* hammock frames in the Guiana area, both among Arawak and Carib stocks, as well as in northern Brazil (certainly north of the Amazon) among the Wai-wai in connection with the weaving of the breech-clouts. See my Arts and Crafts, etc. (Rept. B.A.E., p. 386, fig. 199, Washington, 1924).

(2) The Guianas also constitute a district where cotton, etc. is twisted into yarns for weaving.

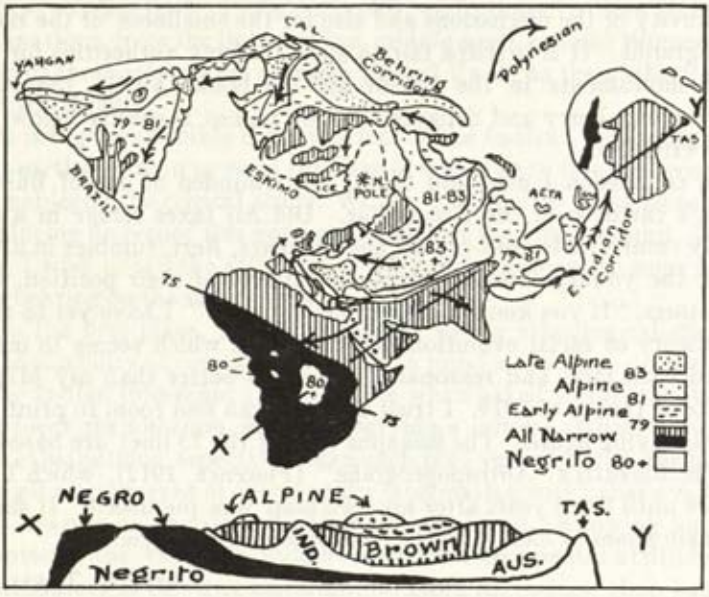
Walter E. Roth

A Rejoinder to Reviewers

I feel much gratified that my recent book, *Environment and Race*, has been thought worthy of some seven pages of review in the American Anthropologist. Living in Australia one had no opportunity of discussing the problems involved with fellow workers. Those who were at all interested in anthropology in 1924, when my book was written, confined their attention purely to the local aborigines. Partly for this reason I fear it contains a number of defects.

One or two points raised by Mr. Leighly may be discussed. First may I refer to the relation of the Papuans to the Australians? The orthodox view, I presume, is to treat them quite independently and to leave to the next century any attempt to consider which evolved last. But if Mr. Leighly at all appreciates my "Transport evolution" analogy (pp. 26-28) he will see that the *external position* of the

Papuans (thrust to the east of the main corridor from S. E. Asia) implies that they were inhabiting Papua before the Australians had left their Pre-Dravidian kin in Asia, and hence in all probability the Papuans evolved before the Australians. I fear, however, that he sees no parallel between the racial zones and the zones of Transport, in which case we have no common ground. As regards the unimportant references to Koeppen and Milham, perhaps my opinion as to their work in geography and meteorology is as good as that of



MAP 1. Salient features of the "Migration Zones and Strata" theory. Data of head-index (isokephs) after Biasutti. Below are generalized race strata along line XY. (Arrows show direction of migration.)

my critic. Why Mr. Leighly should object to my stating that the racial change in the white Australians is barely preceptible, I fail to understand. He surely does not deny the effect of the environment on Australian settlement, which is the subject of Part III.

I further disagree with the belief of some anthropologists that their research and their tentative conclusions should not be used as arguments in discussion of the great racial difficulties of the day. Who is to guide the publicist and statesman if the scientific worker

does not publish his studies specifically to help to solve national problems? Mr. Leighly assumes that I wrote the last paragraph of my book in jest. I regret that I expressed my very sincere convictions so that they could be interpreted in such a fashion.

A number of the criticisms of Mr. Handy are, I fear, justified. The book is built up of three separate studies, but I hoped that the *time element* linked them in a reasonable fashion. The first part deals with the past, the second with the present, the third with the future, settlement of the world. Lack of space and cost of printing account for the brevity of the discussions and also for the smallness of the racial photographs. It is perhaps fair to state that my authorities for the stone monuments in the Pacific are the books by St. Johnston, Codrington, Perry and Seligman, whose names I specify below the table criticised.

In conclusion I may add that I am reminded of one of Bairnsfather's cartoons of the Great War. Old Alf takes refuge in a not wholly comfortable shell-crater, and his mate, Bert, tumbles in after. When the younger soldier complains bitterly of their position, Old Alf retorts, "If you know a better 'ole, get to it." I have yet to read any theory of racial evolution and migration which seems to me to accord with facts and reasonable inferences better than my Migration-Zone theory of 1919. I trust that you can find room to print the accompanying figure. The isokephs (except the 75 line) are based on data in Biasutti's "Antropogeografia" (Florence, 1912), which I did not see until three years after my own map was published. It shows the main zones as clearly as the frontispiece in my book.

GRIFFITH TAYLOR

UNIVERSITY OF CHICAGO

REGARDING THE ORIGIN OF WISCONSIN EFFIGY MOUNDS

In a recent number of the AMERICAN ANTHROPOLOGIST (n.s., 30: 730), Miss Densmore contributes a Winnebago explanation of the effigy mounds of Wisconsin. According to her informants, certain effigy mounds near Galesville,

> . . . . were built by Winnebago and were refuges in time of war . . . . . A man's dream animal told him to make a mound in its likeness, and to hide inside it if he were in danger . . . . . There was space inside the mound for storage of food . . . . . The entrance was concealed so that no one could see it.

Miss Densmore asks if it is possible,

. . . . that skeletons found in the mounds, if not arranged as for burial, are the skeletons of persons who took refuge in such underground shelters.

Regarding the intaglio, she further asks,

Is it possible that these are effigy mounds that have caved in?

Reference is made to Radin's conclusions that the effigy mounds were clan-owned property marks (Paul Radin, The Winnebago Tribe. Bur. Am. Ethn., Ann. Rept., 37: 79, 1923), a conclusion likewise based on the statements of Winnebago informants. I have heard both of these explanations of effigy mounds, and other even less plausible explanations, from the lips of young, middle-aged, and old Winnebago. Some of these informants actually quoted Radin as the authority for their statements.

It is highly desirable that the ideas of the Indians, regarding artificial earthworks on or near the sites of which they live, be recorded and subjected to critical study. We are indebted to Miss Densmore for placing on record this new explanation of the effigy mound. However, I wish to call the attention of the general student to some other data bearing on the same subject.

In the first place, I wish to suggest to the ethnological student the advisability of constantly bearing in mind a tendency on the part of the Indian informant to rationalize when asked to explain this or that local phenomenon, and of observing a critical attitude towards such explanations, especially when each is at variance with the other, until all ready means of checking the information with other available facts bearing on the same problem are employed. Allowing for rare exceptions, the American Indian has neither the mental attitude nor the resources of the true historian; no more so, in fact, than has the average American of European descent. Even the aged among the Wisconsin Indians are, as a rule, satisfied that their forbears did not manufacture chipped-stone implements of any kind, and attribute such artifacts to the normal activities of such agents as earth-worms, beetles, and lightning. The selected Indian informant of this district, with few exceptions, knows less about the methods and products of pottery manufacture by ancestors of three generations back than the average American European knows about textile manufacturing by his great-grandmother, which is little indeed.

The above remarks are not intended to discredit the importance of ethnological observations regarding lost culture traits, but to emphasize the importance of a critical treatment of such observations,

and especially, where possible, the importance of comparing them with available archaeological data.

In this connection, it is no longer necessary to guess regarding the contents, or interior features, of effigy mounds. An imposing number of these structures, scattered over a state-wide area, have now been carefully excavated, resulting in extensive records covering many of the salient features of the Effigy Mound culture. No interior chambers, food caches, or other phenomena that could possibly be interpreted as the remains of such features are found in these mounds. Nor is there found any skeletal material arranged other than as for burial. The most common features in the mounds are definitely placed and arranged burials; some flexed in the flesh, others reburials of bundled bones. There is positive evidence that these burials are inclusive rather than intrusive, planned features of the original mound. Moreover, there is a considerable quantity of evidence to support the theory that the effigy mounds of Wisconsin are primarily burial mounds. The pottery of the effigy mound builders is consistently of a type which, if found occurring in the eastern Woodland area, would immediately be classified as Algonkin, essentially differing from that described for the Winnebago by Radin (op. cit., 119).

Regarding the intaglios, which are effigy-shaped depressions, it was my good fortune to have the opportunity to excavate a "panther" intaglio in 1927 (Milwaukee Publ. Mus. Bull., in preparation). I found conclusive proof that it was an artificially excavated pit, the earth from which had been carefully piled about the outer rims of the excavation. The pit was lined with artificially introduced white sand, over which there was only a thin layer of humus and rotting leaves. There was not the slightest indication that the pit had ever been covered in any manner.

It is not my purpose here to attempt to show that the Winnebago are not the authors of the effigy mounds of Wisconsin, but, rather, to call to the attention of the ethnologist that there is a considerable quantity of carefully collected archaeological data bearing directly upon this problem, which must be seriously taken into consideration before the question is disposed of on the basis of quite contradictory evidence obtained from living Indians, and that these data in no way tend to support any of the explanations of purpose and use advanced by Winnebago informants.

W. C. McKern

ANTHROPOLOGICAL NOTES AND NEWS

American Association of Physical Anthropologists

The recent meeting of Section H of the American Association for the Advancement of Science (Dec. 29-30, 1928), has resulted in an event of much importance to the future of Physical Anthropology in the United States and the neighboring countries. This event was the definite organization, on this occasion, of the American Association of Physical Anthropologists.

The need of such an organization has been felt increasingly for several years. An initial proposal for its realization was made in 1924 by Hrdlicka, but to some of the workers the time then did not seem to be quite ripe. Since then developments in this country in Physical Anthropology, in its research, personnel, publications, and its prospects, have steadily advanced; and it was felt more and more clearly that, as in the history of all other branches of science, the time had arrived when an organization of the workers in this line was becoming a necessity.

In view of these conditions Hrdlicka presented the whole matter once more before the well attended meeting of Section H, in New York, and it met with a favorable reception. As a result there met, following the session of Dec. 28, about 20 anthropologists and anatomists, and each of these individually and unreservedly expressed himself in favor of the founding of a special Association for Physical Anthropology. There was then elected a Committee of Organization with power to act, composed of Drs. Fay-Cooper Cole, Charles H. Danforth, George A. Dorsey, William K. Gregory, Ernest A. Hooton, Ales Hrdlicka, and Robert J. Terry; and this Committee, assembled after the final session of Section H, Dec. 29, adopted unanimously the following resolutions:

Resolved, I. That there should be, and hereby is, founded an organization of American and allied scientific men and women active or interested in physical anthropology, to be known as the American Association of Physical Anthropologists.

II. That the general object of this organization will be the promotion, by all legitimate means, of the interests and serviceability of physical anthropology.

Upon this all present, as constituent members of the new association, proceeded to the election of the officers; the results were: Chairman, Dr. Ales Hrdlicka; Secretary-Treasurer, Prof. Dudley J. Morton.

In the detailed organization it was decided to follow, in the essentials, the American Anthropological Association.

It was further decided that the new Association shall cooperate, to the limit of possibilities, with the American Anthropological Association; with Section H of the A. A. A. S.; and with The American Association of Anatomists.

A still further basic principle of the new organization will be the fullest possible support of the *American Journal of Physical Anthropology*, which will be its official medium.

The eight initial members were then charged with the preparation of a detailed platform of the new Association, the understanding being that its activities will be directed, in main, to the following objects:

1. To the promotion of contacts, of cooperation, and of service in this and other countries, with all branches of Anthropology; with the anatomists and physiologists; with the biologists; and with Medicine and Dentistry.
2. To the promotion, in the broadest sense, of research and publication in physical anthropology.
3. To the promotion of sound anthropological teaching in universities, colleges, medical schools, art institutes and all other establishments of learning where such instruction, in suitable forms, would be useful.
4. To the preparation of proper textbooks, charts and other aids to anthropological instruction.
5. To the promotion and harmonization of anthropometric instruction, and to that of standardization and production of anthropometric instruments in this country.
6. To the extension of standard methods of measuring, with proper metric instruments, into all colleges and other establishments where measurements of many subjects are being taken, such as institutions for children, institutions for special classes of defectives and abnormals, insurance companies, and the recruiting stations of the Army and Navy.
7. To the furtherance of the same methods, instruments, etc., in other countries.
8. To the development of Physical Anthropology as a well-organized branch of science in order to insure its greatest practical value and educational benefits for future generations.
9. To the popular dissemination of the results of scientific research in physical anthropology.
10. To the furthering and assisting, in our museums, universities, and colleges, of the best possible exhibits in human phylogeny, ontogeny, variation, and differentiation.

11. To the aid of advanced and worthy students to original research and field work.

12. To the eventual establishment, in the most favorable location, of the American Institute of Physical Anthropology, which would serve both as the home and library of the Association, and as the center of anthropometric instruction and of dissemination of anthropological knowledge.

All the above, it is understood, with special regard to the problems, needs, and progress of the people of the United States and neighboring countries.

The Association will consist of Active and Associate members. The condition of active membership will be sound original work in or closely related to physical anthropology. Associate members will be all such persons from collateral sciences, or at large, who may, through sympathy with the objects of the Association or a desire to benefit from its activities, wish to join its ranks; they will have the privilege to participate in the meetings of the Association, without voting.

The annual membership dues, for both Active and Associate members, are fixed at $2.00 per year. Applications for membership should be addressed to Professor D. J. Morton, Secretary-Treasurer, Department of Anatomy, College of Physicians and Surgeons, Columbia University, 630 W. 166 St., New York City.

A. HRDLICKA
Chairman A.A.P.A.

Leo Sternberg[1]

On August 14th, 1927, the most eminent of Russian ethnologists, Leo Sternberg, Professor at the University of Leningrad, Chief Ethnographer of the Museum for Ethnography, and Corresponding Member of the Academy of Sciences of the U. S. S. R., passed away in Duderhof near Leningrad.

Leo Sternberg was born in 1861. In his youth, immediately after completing his university studies in Odessa, he was arrested for participating in the Russian revolutionary movement and after serving a three years' jail sentence he was exiled to Saghalin for a period of ten years. Here, amidst the most distressing conditions of life and the greatest privations, surrounded by Gilyak and Ainu, he developed a live interest in the customs and beliefs of rude peoples. The remainder of his life was devoted to their investigation.

In 1897, after his return to Russia, he presented to the Academy of Sciences his comprehensive treatise "Contributions on the Language and Folklore of the Gilyak," which was published in the *Izwestija* of the Academy, 13:4, 1900. Since 1901 he was actively engaged at the Museum for Anthropology and Ethnography of the Academy of Sciences; and in 1915 he became Professor and Dean of the Ethnographic Faculty of the Geographical Institute, which was later combined with the University of Leningrad. At the same time he was chairman of the Siberian division of the Commission for the Investigation of the Peoples of the U. S. S. R. and the Jewish Historico-Ethnographic Society, founded with Professor W. Bogoras the Northern Faculty of the Oriental Institute of Leningrad for the enlightenment and education of the primitive populations of the Far East and Northern Russia, etc. Several times he took the most active part in the most varied congresses of the Old and New World, appearing for the last time in 1926 at the Third Pacific Congress at Tokyo, which he attended notwithstanding his undermined health.

Sternberg's significance for general ethnography and the history and development of Russian ethnography has a fourfold basis. First, he investigated the tribes of Eastern Sibera, especially the Gilyak, Oroche, Gold, and Ainu, who had been hardly at all studied in a scientific manner. Secondly, he extended and amplified the Academic Museum for Anthropology and Ethnography. Third, he founded

[1] Translated from the German.

an independent, hitherto unique, ethnographic school in the U. S. S. R., whose representatives are at present continuing his labors as university professors, museum directors, and investigators in the various sections of our vast Union. Finally, he created a whole series of original works, which constitute important contributions to theoretical, comparative ethnology.

Leo Sternberg was the first to collect texts of Gilyak folklore and translate them with ethnographic and linguistic annotations, thereby laying the foundations of Gilyak phonetics and morphology, as well as for the study of their social and religious life. He was the first to recognize the affinity of Gilyak with the Americanoid group, discovered classificatory kinship systems among the Gilyak and Tungus, investigated the sociological and spiritual culture of the Oroche and determined their origin and designation for themselves. He furnished exhaustive data on the peculiar Inau cult of the Ainu. His last major work was devoted to the Ainu problem. Here he attempted to prove, on the basis of extensive anthropological, archaeological, ethnographic, and linguistic materials that the Ainu had emigrated from Austronesia.

Leo Sternberg's comparative ethnographic researches mostly belong to the sphere of the history of religion and of genetic sociology and are distinguished by a wealth of facts and ideas. His essay on the Religion of the Gilyak in the *Archiv für Religionswissenschaft* (vol. 8, 1905) roused a great deal of interest in Europe and is often cited in technical literature. In two treatises on the Cult of Twins, *Sbornik of the Museum for Anthropology and Ethnography*, volumes 3 and 6, he interprets this cult and the correlated myths from the point of view of culture history by stressing the putative danger of twins to their own sex. In his substantial and valuable monograph on the eagle cult of Siberian tribes, which carefully collates and examines numerous evidences of the cult with relevant conceptions from ancient and modern times, he draws important conclusions bearing on the history of religion. Special problems he broaches and discusses in this paper cannot unfortunately be touched upon here.

The deepest and most significant product of the latest period in this sphere, however, is his "Divine Election in Primitive Religion." Originally a lecture at the Americanist Congress at Gothenburg, it assumed the proportions of a substantial essay embodying a wealth of subtle ideas and novel conjectures. It is a veritable treasure-trove of ethnographic parallels from all regions and epochs. It establishes

a general historical and psychological foundation for the phenomena of divine and sexual selection, for the varied forms of marriage with the deity, both as they occur in shamanism and in the higher religions.

Irrespective of his purely scientific writings, Sternberg did much for the diffusion of ethnographic knowledge among various classes of the Russian reading public. Under this head may be mentioned many articles in four Russian encyclopaedias about ethnographic, anthropological, and culture-historical topics, also articles in many periodicals. His best achievement in this line is doubtless his article on "Modern Ethnology" in the Moscow magazine *Etnografija*, no. 1, 1917, where the most recent achievements, currents, and methodological tendencies are succinctly but fascinatingly depicted.

It remains to mention that three university courses elaborated by Sternberg are on the level of modern science—the Introduction to Ethnography, the Development of Sociological Types, and the Development of Primitive Religion.

Thanks to Sternberg's far-reaching personal relations with Russian and foreign museums and individual scholars he succeeded in making extremely valuable contributions to the stock of museum collections. This holds especially for the South American and Siberian sections. He eagerly strove to extend the buildings of the Museum and to enrich it with collections from all over the world. In 1925 the building was enlarged to three times its size, all collections were installed anew, and a series of new divisions were opened, e.g., India and Indonesia. Sternberg rendered a great service to the Museum by inaugurating annual scientific expeditions to Siberia, Central Asia, the Caucasus, etc., which always resulted in rich accessions of specimens. He further established a special division for the Evolution and Typology of Culture, in which comparative series of analogous objects from the most diverse geographical areas were to be grouped according to culture-historical categories. Thus the Museum turned into a practical laboratory for the students of the Ethnographic Department as well as for every nascent investigator.

In his mental make-up and achievements Leo Sternberg was an outstanding personality of rich endowments. He harmoniously united the character of an enthusiastic revolutionary with that of a rigorous, sober scholar, a competent museum administrator, and a true pedagogue. Thanks to his candor, which recognized no compromise, whether in personal intercourse or society at large, he not infrequently met with resistance. Yet even those who failed to share his views

were obliged to admit that he was able to maintain his personal dignity and that of his beloved museum. His indefatigable activity and the whole of his rich and genius-tinctured personality will doubtless leave ineradicable traces in the history of Russian science and culture. His works will be rated as *têmata es aei* in ethnography.

EUGEN KAGAROFF

ANTHROPOLOGICAL SCHOLARSHIPS

THE Laboratory of Anthropology at Santa Fe announces the award of the following field-training scholarships for the summer of 1929:

Ethnology: Fred B. Kniffen, University of California; Robert A. McKennon, Harvard University; Gordon McGregor, Harvard University; Haviland S. Mekeel, University of Chicago; Maurice A. Mook, Northwestern University.

Linguistics: Harry Hoijer, University of Chicago; Berard Haile, Catholic University; Victor E. Riste, University of Washington; William H. Sassaman, University of Chicago.

Archaeology: Isabel T. Kelly, University of California; Eva M. Horner, University of Chicago; William B. Bowers, II, Harvard University; Ssu-Yung Liang, Harvard University; Frances E. Watkins, University of Denver.

Alternates have been appointed as follows: *Ethnology*; Vincent M. Petrullo, University of Pennsylvania; *Linguistics*, Robert B. Hitchman, University of Washington; *Archaeology*, Owen S. J. Albert, University of Chicago.

The scholarships are designed to enable properly qualified graduate students who are preparing themselves for professional careers in anthropology to supplement, by practical work in the field, the classroom and laboratory instruction which they receive at the universities. Recipients of scholarships will take part in the current investigations of experienced research men; they will have opportunity to become familiar with the use of modern field methods for the collection of data; they will gain experience in the interpretation of these data and in their application to anthropological problems, specific and general. It is planned to offer, year by year, scholarships for work in various branches of anthropology in various geographical areas.

The area for 1929 will be the southwestern part of the United States. Scholarships are offered for training in archaeology, ethnology

and linguistics. Scholars in archeology will be assigned to the excavations of Phillips Academy, Andover, at Pecos, N. M., directed by Dr. A. V. Kidder. Scholars in ethnology will take part in studies of the Walapai of Arizona, under direction of Professor A. L. Kroeber, of the University of California. Scholars in linguistics will accompany the field party of the University of Chicago, Professor E. Sapir in charge, to the Navaho. At the close of the field season scholars and investigators will meet at Pecos for a week of discussion and the correlation of results.

For the fourteen scholarships available there were received thirty-eight applications from ten universities. Of these, fifteen were for archaeology, eighteen for ethnology and five for linguistics; twenty-seven from men, eleven from women. The quality of the candidates was, in most cases, so high that great difficulty was encountered in making selection.

Certain principles were adhered to by the committee: (1) That as the scholarships are expressly designed for students who have lacked opportunity for work in the field, applications from persons who have had such opportunity should this year be refused. (2) That students who are only to receive their A.B. degree in June, 1929, should other things being equal, be ranked below those who have already had one or two years of graduate work. (3) That as there are at present open to women relatively few professional positions in anthropology, the number of scholarships granted to women should be limited. Furthermore, the conditions under which the investigations are being carried on during the summer of 1929 preclude the assignment of women to the ethnological and linguistic parties. Women therefore,were assigned only to the archaeological party, but it is hoped to arrange the field work in future years in such a way as to permit all properly qualified women students to have at least one season as a scholarship holder during the course of their graduate school work.

FAY-COOPER COLE,
R. B. DIXON,
A. V. KIDDER, *Chairman*

THE INSTITUTE FOR THE STUDY OF LAW AT THE JOHNS HOPKINS UNIVERSITY

The Institute for the Study of Law at the Johns Hopkins University is preparing, with a view to publishing, a survey of all studies

and research in or related to law now in progress or completed in 1928. The term "research in law" is to be interpreted in its broadest sense, so as to include all studies, writings, or investigations large or small. The object of this survey is to present a picture of the work of all groups whose studies are concerned directly or indirectly with any phase of law or involve the use of legal materials. It is believed that such a record of studies will serve to make them available to a greater number, and will help prevent duplication and overlapping of work in the future.

A questionnaire has been sent to faculties of the law schools, to faculties in economics, political science, sociology, and psychology of the universities in the Association of American Universities, as well as to organized research bureau foundations, and commissions. Those who have not received this questionnaire and are doing work which they believe should be included in this survey are requested to write to the Institute for the Study of Law of their work, and to suggest names of others whose work they believe should be included. As the report is to be completed in June an early reply is needed.

Paleolithic Discoveries in Northern Iraq

The British-American Archeological Expedition in northern Iraq, which is the joint undertaking of the Percy Sladen Fund (British) and the American School of Prehistoric Research, has just closed a most successful season. Miss Dorothy A. E. Garrod, leader of the expedition, has reported to Dr. George Grant MacCurdy, director of the American School of Prehistoric Research, the finding of numerous caves northeast of Bagdad in the region of Sulaimani.

The complete excavation of one cave at Larzi has yielded important results proving that the prehistoric race which lived on the eastern tributaries of Tigris River during the latter part of the Old Stone Age had a culture practically identical with that of the race living at the same time in central and western Europe—a culture known as Aurignacian, left by the race of Cro-Magnon.

The industrial remains at Larzi are not only typically Aurignacian but also very numerous. The flint implements are exactly comparable with those from south central France and the Danube valley in Austria; they do not, however, seem to have any close affinities with the contemporary Capsian industry of northern Africa. Another feature is that, near the top of the deposit, the industry grades off into the Mesolithic or Tardenoisian microlithic industry, without passing

through the European intermediate stage of the Paleolithic known as Solutrean and Magdalenian.

Through a cable dispatch just received, Dr. MacCurdy is also able to announce that the expedition has explored and partly excavated a great cave that was inhabited by the more primitive and much earlier Neandertal race. The flint implements are like those from the Mousterian caves of central and western Europe. The discoveries in northern Iraq are said to throw much new light on the unity and continuity of Old Stone Age cultures and races so far as both Europe and Asia are concerned and Dr. MacCurdy hopes that they may eventually help to elucidate the problem as to whether the prehistoric current was from east to west or the reverse.—*Science*

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DR. H. L. SHAPIRO, of the American Museum of Natural History, sailed from San Francisco to Tahiti on March 20th, 1929. Dr. Shapiro is to undertake a survey of various Polynesian groups under the joint auspices of the Bishop Museum in Honolulu and the American Museum of Natural History.

"PREHISTORIC MAN, His Industries, Inventions, Beliefs, Artistic Production" was the subject of a recent lecture given by Dr. Henry M. Ami, director of the Canadian School of Prehistory, before the Sigma Xi chapter of McGill University. The lecture was illustrated with views taken by the lecturer.—*Science*

An expedition from the Southwest Museum of Los Angeles, California, is seeking traces of the oldest Americans in Nevada and Eastern California. M. R. Harrington is in charge of the party.—*Museum News.*

ON THE OCCASION of his sixtieth birthday the State University of Moravia in Brno has conferred on Dr. Aleš Hrdlička, of the U. S. National Museum, the honorary title of "doctor of natural sciences." —*Science.*

THE UNIVERSITY OF CHICAGO PRESS announces a forthcoming volume on "Social Changes of 1928," edited by Professor W. F. Ogburn. The topics dealt with include: Inventions and Discoveries, Public Health and Medicine, Population, The Family, Race Relations.

AT A MEETING of the Section of Anthropology and Psychology of the New York Academy of Sciences, in conjunction with the Ameri-

can Ethnological Society, on March 25, Dr. Erich Schmidt gave a lecture on the Archaeology of the Hittite Country.

THE NINTH SUMMER TERM of the American School of Prehistoric Research, under the direction of Dr. George Grant MacCurdy, of Yale University, will open in London on July 1 and close on the continent early in September. The purpose of the school is to fit students to teach, to do field work and research in prehistory, and for museum positions. Undergraduates as well as graduate students and faculty members of universities and colleges are admitted.—*Science.*

A SURVEY OF THE INDIAN sites and monuments in the state of Pennsylvania is being undertaken by a committee of the Pennsylvania Federation of Historical Societies in cooperation with the Pennsylvania Historical Commission. The first active step following the preliminary survey is the engagement of Don A. Cadzow, formerly on the staff of the Museum of the American Indian, Heye Foundation in New York, to conduct an educational campaign. Mr. Cadzow's efforts will be directed largely to forestalling unscientific digging in unprotected sites now that the public has begun to realize the great number of places within the state where objects are likely to be found. —*Museum News.*

PROFESSOR A. L. KROEBER, chairman of the department of anthropology of the University of California, has been elected a fellow of the Royal Anthropological Institute of Great Britain and Ireland. —*Science.*

DR. MILO HELLMAN, associate in physical anthropology in the American Museum of Natural History and hitherto professor of comparative dental morphology, has been appointed professor of orthodontia and head of the department at the New York University College of Dentistry.—*Science.*

Dr. Edgar L. Hewett announces that the University of New Mexico has joined forces with the School of American Research of the Archaeological Institute of America and the State Museum of New Mexico in conducting field sessions during the summer of 1929. The advanced division will work from June 10 to July 20 in Chaco canyon, 50 miles south of Farmington. The general field division will work in Jemez canyon, July 29 to August 24. Attendance is limited in both divisions. One half may be residents of New Mexico, and one half non-

residents. The faculty includes H. B. Alexander, W. Bradfield, E. F. Castetter, K. M. Chapman, B. Cummings, J. P. Harrington, E. L. Hewett, F. W. Hodge, A. V. Kidder, J. L. Nusbaum, K. J. Saunders, M. R. Tanquist.

HUMAN BIOLOGY is the title of a new quarterly, published by Warwick York, Inc., Baltimore, Maryland. Professor Raymond Pearl is editor and the advisory board includes: Charles B. Davenport; E. M. East; Eugen Fischer; Ales Hrdlicka; H. Lundborg; Bronislaw Malinowski; D. Peyrony; P. Rivet; Adolph Schultz; John B. Watson; Clark Wissler. The price is $5.00 a year; single issues $1.50.

PROFESSOR EDGAR H. STURTEVANT has compiled an announcement of the Linguistic Institute, which will hold its second section from July 8th to August 16th, at New Haven, where Yale University has again placed dormitories, classrooms, and libraries at the disposal of participants. "The intention is to provide for students of linguistic science facilities similar to those afforded biologists at Woods Hole. Among the courses announced there are two by Professor G. O. Russell, of Ohio State University, on philological phonetics and experimental phonetics. Primitive languages are represented by a course on Tagalog and other Philippine languages by Professor F. R. Blake, of Johns Hopkins. The entire bulletin may be obtained by writing to the Linguistic Institute, Box 1849, Yale Station, New Haven.

THE NINTH INTERNATIONAL CONGRESS OF PSYCHOLOGY will be held at Yale University in New Haven, Connecticut, probably in August or September, 1929.

The officers of the Congress are as follows: President, J. McKeen Cattell of New York; Vice-president, James R. Angell of Yale University; Secretary, Edwin G. Boring of Harvard University; Treasurer, R. S. Woodworth of Columbia University; Foreign Secretary, Herbert S. Langfeld of Princeton University; Executive Secretary, Walter S. Hunter of Clark University; Chairman of Program Committee, Raymond Dodge of Yale University.

AT A MEETING held on February 8th and 9th, the Board of National Research Fellowships in the Biological Sciences reappointed Dr. F. E. Clements for the year 1929-1930.

THE ZEITSCHRIFT FÜR MORPHOLOGIE und Anthropologie, founded about thirty years ago by Gustav Schwalbe, is entering a new stage

under the editorship of Dr. Eugen Fischer, Professor of Anthropology at the University of Berlin, and director of the Kaiser Wilhelm Institute for Anthropology in Berlin-Dahlem. In a preface addressed to the readers the editor announces that more attention than ever will be given to the biological side of anthropology, with especial reference to problems of heredity. The price of the first issue of volume 27 is 18 M. The publishers are E. Schweizerbart'sche Verlags Buchhandlung (Erwin Nägele), Stuttgart.

At a Meeting of the New York Academy of Sciences on Monday April 22nd, Bessie Evans and May Garrettson Evans gave a lecture on Songs and Dances of the Pueblo Indians, before the Section of Anthropology and Psychology.

Dr. Knud Rasmussen, the Danish Arctic explorer, who is specially noted for his researches into Eskimo life and culture, is planning a new expedition, probably to start next year and going in the first instance to Alaska.—*Science*

Dr. Edgar L. Hewett, director of the San Diego museum since its foundation, tendered his resignation from the active directorship to the Museum Association at its recent annual meeting and was appointed director emeritus. Lyman Bryson, lecturer in anthropology at the State Teachers College and extension lecturer for the University of California, who has been associate director for the past year, was elected director.—*Science.*

Professor Leslie Spier, of the University of Oklahoma, is taking a leave of absence in order to visit the Gilbert and Ellice islands for the Bernice P. Bishop Museum. He is sailing from Seattle in August.

At the Annual Meeting of the National Academy of Sciences, April 22nd, Dr. A. Hrdlicka read a paper on *Measurements of 100 Members of the Academy and What they Show.*

Mr. N. C. Nelson gave a lecture entitled *Impressions of Chinese Culture*, on Monday, February 25, before the Section of Anthropology and Psychology of the New York Academy of Sciences, meeting in conjunction with the American Ethnological Society of New York.

Ales Hrdlicka, curator of physical anthropology in the U. S. National Museum, was elected president of the Washington Academy of Sciences at its annual meeting held on January 8.—*Museum News.*

A NEW COURSE in Indian lore for school children of San Diego has been offered by Melicent Humason Lee and an Indian assistant, under the auspices of the San Diego Museum. The subject is Indian basketry and the first talk was given in the New Mexico Building in Balboa Park on February 2.—*Museum News.*

THE ANNUAL REPORT of the Southwest Museum, Los Angeles, California, records the following gifts received during the past year: $35,000 obtained from the residuary of the Bridge estate, $10,000 from Dr. Munk, $10,000 from an anonymous donor, $20,000 from the late William R. Staats. Important collections received during the year included the George Wharton James library of western Americana, and the Hobart Boswell collection illustrating the pioneer stages of the motion picture industry.

A FRENCH FOLKLORE SOCIETY has been founded. An Englishman has been particularly influential in seeing the society established. This is Sir James Frazer. Through him the society started out with an anonymous gift from England of £1000. The rector of the University of Paris, M. Charléty, and Dr. Rivet, professor at the Natural History Museum, A. Morel of the Institut de France, the Duc de Broglie and Duchesse de La Rochefoucauld are among the prominent French persons deeply interested in the work. A quarterly bulletin is to be issued, and it is hoped permanent quarters will be acquired in a suitable mansion near the Carnavalet Museum.—*Christian Science Monitor.*

FATHER A. G. MORICE, O. M. I., 200 Austin Street, Winnipeg, Canada, has prepared a grammar and dictionary of the Carrier language, which is to be published if a sufficient number of subscriptions warrant printing. Orders will be accepted by the author at $10.00 a paper bound copy, $12.00 for cloth bound copy.

DR. WALTER E. ROTH, well-known to anthropologists for his researches in Australia and British Guiana, has been recently appointed curator of the Museum in Georgetown, British Guiana.

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ELEMENTS OF THE CULTURE OF THE CIRCUMPOLAR ZONE[1]

BY W. G. BOGORAS

THE Polar, or to put it more correctly, the Circumpolar zone, forms a compact ring of dry land encircling the terrestrial sphere, which is broken only at two points, the first being Bering strait, the second an opening of sea of much wider stretch along the line Greenland-Iceland-Norway. This second opening forms a passage from the Polar ocean into the Atlantic just as Bering strait forms a passage from the Polar into the Pacific.

On the whole, the Circumpolar zone in its complete extent is subject to similar conditions and so represents an excellent field for the comparative study of a culture, perhaps unique in the world. I may add that the culture of the Polar zone changes very slowly, being preserved in a very primitive state in the ice and the snows of the North as if it were frozen on purpose for such preservation. On the other hand, that culture is more or less uniform even in its variation. Severe conditions of the climate make tribes even of different origin assume the same inventions and appliances in the struggle for life. Thus we find here uniformity of culture and of general ways of adaptation to the natural conditions of the land.

The Circumpolar zone is divided by the Polar circle into two unequal parts: northward from the Polar circle extends the tundra, and southward from the Polar circle lies the forest

[1] Introduction to a university course on the culture of the Arctic and sub-Arctic zones.

border, that is, a belt of undersized trees no more than a hundred kilometres in breadth. This belt, from an ethnographical point of view, belongs to the Polar zone and forms a unit with the tundra. The inhabitants of the tundra, the reindeer, wild and domesticated, and also human hunters and reindeer breeders, leave the tundra for the winter and go to the protection of the forests.

Still further to the south, from sixty-five to sixty degrees of Northern latitude, extends a zone of dense forest which must be considered as sub-Polar or sub-Arctic, and the natural conditions of which form the transition from the Polar to the more temperate climate.

Northward from the tundra extends the ocean, which forms a special zone; we may call it, perhaps, ultra-Polar. In America, the Polar ocean, filled with a quantity of large islands and archipelagoes, presents a special cultural zone inhabited by the Eskimo. This zone has as a typical culture of human groups the hunting of sea mammals, of larger and smaller kind. The tundra, or as it is called in America, the "barren grounds," is actually barren and the scanty human groups inhabiting "barren grounds" have only a very precarious existence.

In Eurasia the relative importance of sea and land is wholly different. The Polar sea is actually important for man only in the far northeast, where the coast line is clearly cut out and sea game come close to the coast so that the hunting of seal and walrus is very well developed. Farther to the west the sea becomes shallow and the coast low and swampy; so it is mostly left uninhabited and only in certain points, more or less distant and isolated, do we find the northern populations coming to the sea for hunting. Thus, on the northern part of the peninsula of Yamal in Siberia and on White island, adjacent to the shore, there lives a branch of the Samoyed, walrus hunters and bear hunters, almost wholly unknown, which could not be included even in the last census of 1926. No scientist has visited these Samoyed. Professor Shitkoff in 1910 spent a week among them in the middle of August, but he had no time to go over to the northern shore of White island, where the hunting of sea

mammals actually takes place. According to some not very reliable information, the Samoyed must have skin canoes and even larger boats made of planks hewn of driftwood. This summer we sent there an expedition of three young scientists, Mr. V. N. Chernezov, Mr. S. M. Ratner, and Miss N. P. Kotovschikova. They were taken there by the state steamer and left for a year with ample provisions and scientific appliances. So, eventually, they will make a detailed description of this branch of the Samoyed.

Still further to the west hunting of sea mammals is performed in mid-ocean; also on Spitzbergen and on Nova Zembla, but this hunting is undertaken mostly by the Scandinavians, English, and Russians, with larger ships and with the expenditure of considerable capital.

On the other hand, the land part of the Circumpolar zone of Eurasia is developed more than in America and it is covered by a culture more ancient and more productive. The surface of land in the Polar zone of Eurasia is larger than that of America (not including islands) and represents about three-fifths of the whole surface of the zone.

The Antarctic zone, which represents for geographers a certain important unit, presents very little interest for the ethnographer, since it never had any population and up to the present time remains outside the range of human culture.

The whole stretch of the Circumpolar zone, from North Cape to Bering strait and from Bering strait to Greenland, presents similar natural conditions. These conditions may be divided into five groups which are mutually connected but nevertheless represent five different points of view. They are: first, cosmographical or astronomical; second, meteorological; third, geographical (geological); fourth, floral; fifth, faunal. The mutual interaction of these five groups forms the natural base upon which the culture of the Far North is constructed. I will try to give brief characteristics of these groups, one after another.

1. Cosmographical or astronomical conditions of the Polar zone are connected with the position of the earth on the ecliptic. According to this position, the north polar circle forms the southern border of the area which has in mid-summer the continuous

day and in mid-winter the continuous night. And so, for instance, on 68-70 degrees of North latitude, we have in the Polar zone three or four weeks of continuous night in the winter, and as many weeks of continuous sunshine in the summer. Therefore, the transition from night to day in spring and the growth of the daytime in the Polar zone is much more rapid and striking. Since the equinox is the same for all cosmographical zones, the growing of the day time from zero to twenty-four hours must go with much greater rapidity than in the south. In this way, after the twentieth of March the day grows as it were by leaps and in the middle of April the glow of the dawn shines throughout the night, and one may work and even read or write even at midnight. The snow, however, is not melted as yet, and the frost in the night is sharp enough. These conditions produce in the north the so-called "white spring," which is the first half of the spring and lasts much longer than the second half, the so-called "green spring." Daytime lasts sixteen, eighteen, twenty, twenty-two hours: the night, all ruddy from the glowing sky, eight, six, four, two hours. The snow melts in the mid-day sun but the currents of the water freeze again at midnight. The difference of the temperature is often +20°C −20°C. These daily changes in temperature work on the psychology of animals and men like a special tonic, awakening and irritating. Only after the awakening of the spring the living beings are ready for the surplus work and intensive sexual and emotional life of summer.

The second half of the spring, the "green spring," begins suddenly with the breaking of ice in the rivers in June and, in 69-70 degrees of North latitude, in July. It is accomplished in three days. Birds of passage come in masses; shoals of fish from the ocean enter the rivers; trees and bushes are budding and sprouting; and everything is green. So nature, the vegetable and animal life, pass from the white spring with its night frosts almost immediately into full summer. Summer comes like a sudden leap, like a favorable storm, like a yearly mutational period or some natural revolution.

2. Meteorological conditions are no less remarkable. While the cosmological conditions refer to degrees of northern latitude,

to the continuous day in summer and night in winter, meteorology deals with questions of the degree of frost, of the intensity of wind and winter storms, and also of the thickness of the ice sheet and the snow layer in the winter. The underground layer of the soil is on the whole always frozen, and large areas of this ever-frozen ground spread far southward even into the temperate zone. In the summer the ground thaws out but, even in the southern part of the Yakutsk province, only for three-quarters of a meter, and close to the Polar sea for half a meter or even less.

On the other hand, the ice sheet on the lakes and on the rivers is two meters thick or even more. When you want to pierce the ice that thick, for setting nets or simply for taking water, you have to cut with an ice pick a round funnel three meters in diameter. The working person will gradually sink down and then completely go under the surface of the ice; only the upper portion of his ice pick will be seen; and still he will have no water and the ice under his feet will be absolutely dry. Even when cut through, the water hole must be cleaned up and pierced anew twice a day, morning and evening, or else the ice sheet will close again and the hole will shut together at least for two feet in thickness.

Then, again, on account of the ever-frozen ground, the rivers begin to freeze not only from above but also from beneath. Very soon, the water flows as if encased in a round tube of ever-frozen material. The surface sheet of the ice is formed of small tablets, thin and brittle as the thinnest glass, but on the very bottom in the water begins to form the bottom-ice, the so-called *salo*, which has the shape and the consistency of half-dissolved snow. In this double manner the river freezes with the utmost rapidity. Shallow currents in the mountains in more quiet places freeze to the bottom. Then the water flows on the surface of the sheet, forming the so-called *nalhed* (ice surface water). This water is immediately covered with a new sheet of ice, bright and smooth as polished glass. So in January one may very well break down through this newly formed ice into the coldest water up to the waist and further.

The frost in January is sometimes −70°C. When a person spits

on the ground, the spittle falls down upon the snow like an arrow of ice. Breath comes out of the mouth with a peculiar rasping sound from the smallest particles of vapor freezing into sleet. A horse is surrounded with a thick cloud of its own breathing. A man's face, fingers, and toes are frost-bitten quite unawares. This happens twenty times in a single day after you have succeeded in rubbing them again into warmth.

The breaking of the ice on the large northern rivers has also some peculiar features. Quite suddenly, the ice sheet breaks into huge blocks obstructing the current. The water rises immediately. Blocked ice in all streams cuts away great pieces of the steeper banks, producing genuine excavations. Stretches of surface ground cave in, trees and all. So the breaking of the ice with subsequent blockings and risings of the water develops on a scale truly majestic and gigantic. River shores, from the upper currents down to the very mouth, are covered with masses of floating ice drifted ashore. Since rivers of northern Eurasia flow chiefly from the south northward, their shores down to the 70° of Northern latitude and even to the very ocean are covered with large supplies of driftwood, good for fuel and lumber. Practically speaking, the lower parts of the greater Siberian rivers, even in the middle of the tundra, are surrounded by the artificial protection of the forests.

Joint interaction of astronomical and meteorological agents brings forth a marked influence on various sides of human culture.

For instance, in the spring, during long, almost endless days, the upper surface of the snow thawing under the mid-day sun and freezing again in the night, gradually turns into a hard crust, the so-called *nast* in the local Russian dialect. This snow crust is of the highest importance for the conditions of spring hunting, of the so-called meat-bringing character: dog, man, and wolf may easily run upon the surface of the snow, especially man supporting himself upon skis. But heavier wild reindeer and elk break through into the inner, soft snow, cutting their legs against the sharp edges of the broken crust, and so they become helpless against their pursuers. The Tungus and the Yukaghir in the north, the Gold and the Samaghir in the Amur country, provide the

better part of their food lasting for a full quarter of a year by just this spring hunting of elk and reindeer on the hard snow crust.

3. Geographical and geological conditions refer to the configuration of the surface of the land and to the character of the ground. The northern part of the Polar zone presents the tundra, as indicated above. Most of the tundra is quite flat and damp, soaked with water like a very sponge, and having a covering of vegetation, chiefly of reindeer moss, which is a kind of lichen. Still there are other varieties of tundra covering the lower hills and even a part of the mountains. These hilly tundras are much drier than the flat country. The tundra stretches are interrupted in some places with rugged mountains, quite naked and desolate, which at certain points, come into the sea, forming huge capes. These capes serve as landmarks over the long extent of low, slimy, seashore. Such are, for instance, in Eurasia, North Cape and Cape Taimir, East Cape, Indian Point, etc.

Still, I must notice that all varieties of tundra and of barren mountains do not belong to special localities in the west or in the east. They are interchanging through the whole extent of the Polar circle, appearing again and again in Europe, in Asia, and in America, and I must indicate that some cultural phenomena appear in the same way spot-wise on the whole stretch of the Polar area; for instance, snow-goggles and a special ring for protecting the hand against the bow-string, etc., have various forms, but each of these forms appears again and again in localities separated from each other by hundreds and thousands of miles.

The influence of these geographical conditions on human culture is also very important. Let us take the question of communication. In winter, throughout the North, communication is carried on with sledges; in summer, the southern hilly part of the zone presents difficulties of communication almost insurmountable. The inhabitants, chiefly various branches of Tungus, may wander around only on reindeer-back or even afoot.

The northern part of the country, quite flat and covered with a maze of rivers and lakes, all having connection, makes walking on foot quite impossible. The usual means of communication is the canoe of varying make, a dugout or a combination of three

thin planks, less frequently a birchbark affair,—all these are propelled either by paddling or by special poles thrust into the bottom, which is usually shallow. The breaks between the waterways are narrow and damp. So the paddler is able simply to push along the wet grass from one watercourse into another. In this way it is possible to pass over from one fluvial system into another even without leaving one's canoe for a single moment. If you were to look on such tundra country in the summer from an aeroplane it would appear to be covered with an endless net of blue veins filled with water and combined into one system. You could perhaps make a journey from the Obi river to the Kolyma having on your feet only the so-called "dry land boots" which are utterly unfit for walking in the water, but you would not spoil your dry land boots because for over-night stopping you could pick out some convenient dry little place. In extra cases, you may take off your boots and wade through the damp grass bare-foot.

4. If we take up now the botanical conditions, we find them also exhibiting several variations. The tundra has a flora of its own. The forest border is of course very different, and the sub-Arctic dense forest is different from both. These three variations extend throughout the whole Polar zone. The tundra has chiefly the lichens and the genuine mosses, some tough sedge-grass and patches of undersized shrubs so rough that they can burn and serve as fuel without any drying. The forest border has more bushes and even a kind of scrub. Undersized trees with crooked trunks and boughs out of shape form islands which on the south join gradually without interruption. Of black wood species there are the birch, the alder, the aspen, the poplar, and several kinds of willow. Birch and willow, and of the conifers the cedar, assume a creeping form. The birch and willow have also some drooping forms with branches hanging down.

Of the conifers there are the larch and the pine, the spruce, and less frequently, the Siberian fir. The larch tree in the forest border quite frequently gets a crooked trunk bent into a kind of spiral, the so-called, in local Russian, Кренъ (*Kren*). The outer layer of that "kren" has a much harder consistency and may therefore be applied for various products.

The sub-Arctic forest has all the species mentioned above, but they are more stately and the forest much more dense than on the northern edge.

As to the animal species, the reindeer feeds on lichen, which is also called reindeer moss. The elk lives on the birch and the alder groves, feeding on leaves and bark. The squirrel requires conifers, since it feeds upon their cones. Even in the growths of the creeping cedar, which in English is called stone-pine, squirrel and sable fare quite well, the squirrel feeding on cedar cones and the sable on squirrel.

For man, the botanical conditions are of direct importance as to construction materials for huts and the fuel for heating them. The forest even on its border represents the best protection against the snow tempests raging in winter. The flat tundra is open to every winter tempest and travellers often are buried under the snow, in the literal sense of the word, as I had occasion personally to experience over and over again. We were buried in drifted snow for twenty-four and even thirty-six hours, after which we had to cut our way outward through the snow hardened by the wind like some solid marble. Dense forest of the more southern belt gives cover against the fiercest storm, and the snow in the forest lies soft and downy like a feather-bed. Therefore, the skis in the forest region are made of thin wooden planks, broad enough not to sink through the snow. Skis of this type are not good for the tundra. The hardened, uneven snow surface of the tundra requires a special shape of ski plaited of cord, the so-called "raven-claws." The natives say that skis of this shape leave on the snow traces like the tracks of raven claws, but more probably this name is connected with some variation of the raven myth so important in the folk-lore of the Bering region.

5. Zoological conditions of the North are as follows: Since the natural resources of the North from the human point of view are mostly of zoological character and the people live on an animal diet we must discuss one after another, first, sea game, mammals and fishes; second, land animals, wild and domesticated; and third, birds.

The northern zone is almost wholly unfit for agriculture, even

for the gardening and raising of vegetables. The principal form of the culture is either the hunting of wild animals or the raising of domesticated ones. Both forms of economics are based on faunal considerations. One deals with wild animals, and the other with domesticated. The difference from a general point of view is not very important, and the raising of animals is only a result and development of hunting of them. The breeding and the growth of animal life in the north, as elsewhere, is based first and last on the abundance of food. The northern zone is not very rich in the number and variety of species, but all the richer in the number of individuals of the same species and in the celerity of breeding and increasing of animal life. The abundance of animal life in the North in some cases is almost beyond imagination, surpassing the chances of the more southern latitudes. From the economical point of view, the animal supplies of the North are quite sufficient not only for the support of its inhabitants but also for export to southern regions more densely populated than the North.

What is the reason for the faunal abundance of the North? As yet we hardly know any answer to that question. In regard to the sea fauna, it is known that the Arctic seas abound with plancton, which forms the base and the staple food for all fishes not strictly carnivorous. The studies of Russian scientists in the White sea and in the nearest part of the Arctic ocean try to establish that part of the northern sea is far better supplied with plancton than the seas of more southern latitudes. In connection with this, fish are more abundant in the north. Moreover, innumerable sorts of fishes living in temperate and warm zones come over to the North and enter northern rivers in order to spawn and propagate. As far as I know, the great rivers of the South, the Amazon, Rio de la Plata, and Mississippi, having their own fish population, have not such masses of wandering fish entering their mouths from the ocean.

The same refers to the birds of passage. Numberless flocks of water fowl, of all kinds of species, come to the North even from the hemisphere across the Equator. According to the conditions of the climate, they may spend only four months in the North against eight months in the South. Nevertheless, the North is their

usual breeding place. Here they have their mating and nesting periods, and the short summer time suffices even for the growing up of the young who, after that, depart along with the older generation towards the South, which is wholly unknown to themselves. To be sure, all the Northern land is covered with bogs and watercourses and there is room enough for the breeding of the young. Nevertheless, this instinct of migration is very remarkable in the birds of passage. One must presume that the migration of birds, with all instincts and exertions referring thereto, is not exceedingly ancient. It could have originated only in the Quaternary period when the configuration of the mountains and the larger areas of land, also the distinctions of the climates, already existed on the same plan as at present. In the Tertiary period the birds of that time probably had no need to migrate northward. The climate of the terrestrial globe was more uniform and especially in the north it was moderate and even warm.

1. Most abundant of all sections of animal life in the North is the class of fishes. Sweet-water fishes also abound in the north. Such are for instance the pike and the burbot. Burbot are caught in such masses on the Kolyma and the Indighirka rivers in the time of early spring that the burbot livers cut out and frozen together form big loads carried across the country with dog teams and pack horses. I have seen caravans of pack horses carrying frozen burbot liver each in two rectangular blocks of fifty kilograms. But maritime species, namely the salmon, are still more abundant. The migratory salmon of the North may be divided into two large groups: salmon of the genus *Coregonus* belong to the Polar ocean, and enter the rivers such as the Kolyma, the Indighirka, the Yana, the Lena, the Yenissei, the Obi. Salmon of the genus *Oncorrhyncus* belong to the North Pacific ocean and enter the rivers beginning from the Anadyr down to the Amur. It is curious to note that Kolyma and Anadyr, the two great rivers of the northeast, which belong to the same ethnical and cultural area and the sources and headwaters of which meet together in the mountains, have fishes of essentially different genera. Kolyma has *Coregonus* species entering from the ocean, and some sweet-water species of *Oncorrhyncus*. Anadyr, on the

other hand, has *Oncorrhyncus* entering from the ocean and some species of *Coregonus* of the sweet-water branch. The species of *Coregonus* have white flesh, those of *Oncorrhyncus*, pink flesh. Both groups in the whole period of spawning do not care for any food and even do not care much for their own life. But *Oncorrhyncus* is much more reckless. In ascending the rivers upstream the fishes of these species perform feats truly acrobatic, since they leap in the more shallow places from stone to stone, wriggle on through damp grass, and in other places mount the waterfalls. Most of their shoals do not return to the ocean and they perish in the river soon after spawning.

White salmon of the Arctic ocean as a rule preserve their life after spawning and descend the stream back to the ocean, though being quite exhausted after the exertions of their sexual life.

According to these points of difference, the pink salmon of the Pacific must be more numerous than the white salmon of the North, and also much easier to catch. Their greater number makes for the great annual loss of life that forms one of the necessary links of their breeding process. After the spawning the pink salmon species, for instance the dog-salmon, changes so much that it is difficult to recognize it as the same kind of fish. Not only does its flesh become lean and tasteless, but its whole shape changes. Its jaws become crooked, forming a kind of beak, and the back assumes a form of hump, like the hunch salmon.

This fall salmon is very poor eating, even for the dogs. On the other hand, dogs in the Pacific as well as foxes, wolves and even sables and ermines, try to catch salmon directly in the water, when it passes on mad with the desire of spawning. Anadyr dogs, when sold to Kolyma people, in their first polar summer would wade into the water, trying all the time to catch some salmon. They would usually snatch some smaller piece of wood and then desist. It shows very clearly the difference in the way of catching pink salmon in the Pacific and white salmon in the Arctic. Northern salmon are not so abundant nor so reckless as to be caught out of the water by the very first dog.

On the other hand, on the rivers of the Pacific thousands of pink salmon, dead from exhaustion, are carried by the wind

directly to the shore and form ultimately strata of dead fish on the river shore, covered with the early snow of October. On these natural storehouses bears and foxes feed throughout the year; and the men take them for the food of their dogs.

Whole tribes and settlements on the shores of the larger rivers of Siberia live exclusively by fishing. This way of living makes the village and the house permanent and the people sedentary. On the other hand, the culture of these tribes is primitive, and psychically the people are passive. The struggle for life is not very fierce. Food is always extant. It is caught in a manner more or less primitive, for instance with fishing weirs, when large creels of willow are choked full with the best fish, or with long nets drawn across the river, which also regularly are white with fish caught in every mesh of the tressed bark or linen thread. Some Chuckchee and Koryak on the Pacific shore do their fishing with a short net pushed into the water by means of a long pole ten meters in length. Since such long poles are but seldom met, shorter pieces of wood are spliced into one single pole with much ingenuity and even with art. The net when being thrust into the water catches immediately about ten fat fishes five to seven pounds in weight. The fisherman draws the net back, takes the catch, and thrusts the net into its former position. In this manner he can get in twenty-four hours, without a boat, and standing on the shore, some two hundred or two hundred and fifty fishes—500-700 kilograms. This fishing work of course is quite exhausting and it is carried on only by the poorest of the natives. The method of such fishing is truly paleolithic, inasmuch as it presents almost a simple gathering of the natural supply of food.

A very important detail of the economic and political life in the north is represented by the fact that the Russian cossacks, hunters, and traders, a counterpart to the Spanish conquistadores, since they also have conquered these immense lands in quite a short almost incredible time, soon after that settled in the north just like fishermen. The first condition of life for them was an immovable house with a regular couch and regular heating. They were averse to wandering around the tundra with the herd of reindeer just as well as they have objected to the constant wandering of

cattle-breeding nomads. So the cossacks intermingled with the fishermen, took wives from among them, and assumed from the beginning their way of supporting life on fishing and hunting. Still, psychologically the hardy conquerors were wholly different from the passive and indolent northern fishermen. But since the women in the new settlements of these Russian creoles and half-breeds and Russified natives were of local origin, the economic and psychical ways of the natives were soon prevalent and the fierce energy of the Russian invaders was soon gone. If we compare the earlier reports of the cossacks with the Siberian *Voyevody* (governors) for instance from the fifties of the seventeenth century, with the reports of their immediate successors half a century ago, we find a very marked change. Early reports relate:

> We were seventeen, we descended the river looking for some source of fame and advantage to His Majesty the Czar, and then we found the native post. It was large and strongly fortified, full of armed men. We fought against them from morning to evening. And God gave us luck: we conquered. We have killed all the warriors and burned down the fort. We took captive women and children and took a multitude of costly furs and ready-made clothes.

In the later reports of the beginning of the eighteenth century, we read on the other hand:

> Our boats are small and the sails are weak. And we do not know how to build large ships, such as were constructed by our fathers.

The change in the psychology of the Russian settlers under the influence of the Russianized native fishermen is the real cause why the Russian parties of cossacks and soldiers in the eighteenth century could not subdue the fierce Chuckchee tribe. The party of Major Parlatsay in 1747 was utterly defeated and he was taken captive and tortured to death simply because the ancient warlike ardor was not there.

Up to the present the mutual relationship between the Russianized natives and the Chukchee reindeer breeders are quite peculiar. From the economic point of view the Chukchee, as the animal breeders, are of a higher stage than the fishermen of the Russian villages, while in other things the Russian and Russianized natives are much higher than the Chukchee. In this way the Russians who were and are the domineering race at the same time

were living like mendicants and parasites on the boons from the wealthy reindeer breeders of the tundra.

2. Hunting of sea mammals in contrast to fishing is practiced on the sea, often even amidst the open water, or on the brink of the ice fields ready to pass away, never by hand from the shore. The psychical character of the maritime hunters is quite different from that of the fishermen. Northern hunters are mobile, always on the alert, ready to go away into the open, given to wandering for many and many miles. The Maritime Chukchee and the Asiatic Eskimo used to go over to America from very ancient times. Even now they make quite long trips across the ocean. The Koryak are much more passive, but they are fishermen rather than sea mammal hunters.

The difference between the fishermen and hunters of sea mammals is expressed even in the choice of the site even on the sea coast. The settlements of fishermen are on the river shore, in the inner estuaries, or on the inland side of some adjacent island. The settlement of a hunter of sea mammals is established on the outer capes, on the windy side of an island, etc. It has all the time a chance for the sudden pursuit of a group of seals, or a big walrus or even a whale.

The species of sea mammals are more or less alike through the Polar ocean of Eurasia. Whale of various kinds and sizes, one or two with precious whalebone, others giving only meat and blubber, white whale and killer whale, and two varieties of walrus. Of seals, ground seal, *phoca barbata*, ribbon seal, *phoca fasciata;* and of smaller seals, *phoca greenlandica*, *phoca vitulina*, *phoca phoetida*, and *phoca haspida*. I could mention several names in Russian creole and native languages, but the trouble is that these names change from one district to another, being given at one time to one species, another time to another. The white polar bear is also to be included among the sea mammals. Of these the natives distinguish several varieties, one not very aggressive in meeting with man, another fierce and bloodthirsty. Sea-mammal hunting is combined with reindeer-breeding among the Chukchee and with fishing among the Koryak and Kamchadal.

Overland animals serve for hunting of a series of overland tribes among which are the Tungus in twelve groups.

Overland hunting represents two branches, one for meat consumption, referring to the herbivora, and another for the fur market, referring to the carnivora, including the smaller kinds such as sable, ermine, etc. Before the advent of the Russians, the hunting for meat prevailed; people did not know what to do with previous furs and other species, while they had no other food except the meat of the game.

The first place among the meat-supplying species belongs to the reindeer, wild as well as domesticated. Wild reindeer are on the constant decrease. The domesticated herds, notwithstanding the losses of the last ten years, still contain more than 2 1/2 million animals. The mutual attitude of wild and domesticated herds is more or less exclusive to each other. The last case of this refers to the middle of the nineteenth century when the Chukchee on the invitation of the chief officer of the Kolyma and receiving at last assurance that no harm should happen to them, moved with their herds westward even across the Kolyma river to the western tundra, and the herds of wild reindeer had to leave the pastures of that country and go elsewhere. Some of them migrated to the Anadyr. Most of them were dispersed and destroyed.

As a result the Yukaghir and the Chuvantzy tribes, who lived on the eastern affluents of the Kolyma and relied for their sustenance on yearly hunts of the numerous herds of wild reindeer in the spring, and in the fall, were suddenly deprived of their means of existence and perished by direct starvation. Some remnants of them emigrated to the lower Kolyma river and took to fishing. Those who stayed on the spot in some cases were driven even to cannibalism.

The other meat-supplying species is the huge elk of Siberia, now mostly exterminated. The last remnants of the former abundance are to be found in the southern course of the Kolyma river, and in the Valley of the Amur.

The brown bear in the forest land, the hare on the tundra, the mountain-sheep in mountainous regions, even squirrel, marmot,

and spermophillus, also serve for food. The Maritime Chukchee and the Asiatic Eskimo consume the meat of the polar fox, and the Reindeer Chukchee occasionally eat mice, but all these supplementary sources are but of small importance.

By the way, the hunting of sea mammals belongs to the first branch of meat-producing character. Meat, oil, and blubber,—these are the principal products of the hunting of sea mammals. Walrus hides and seal skins are used chiefly for the needs of the hunting people. Only the fur seal, the polar bear, and the very rare sea otter supply pelts that are marketable.

The second branch of the overland hunting developed only since the advent of Russian merchants and officers, or in the American part of the Polar zone with the advent of English, American, and Canadian traders.

Three hundred years ago the northern countries were teeming with costly sable and ermine. Now the hunting of such fur-bearing animals is greatly reduced. Squirrels and polar foxes alone go on breeding, thanks to their wide distribution and fecundity.

At all events, several groups of hunters in the north exist in a peculiar way. They cannot get enough meat from the meat-supplying species, so they live exclusively by hunting the fur-bearers, chiefly the squirrel. They sell the pelts, whichever they succeed in getting, and then buy some grain of the lowest quality which they grind by hand grindstone and make into unleavened cakes. So these hunters practically passed from their natural economic state to a condition in which exchange predominates. The Russian peasants of the neighborhood live in the condition of natural economics, for they consume the best part of their own harvest and sell only the surplus of the product.

I have tried to indicate five groups of natural conditions, one after another, and the human culture developed in these surroundings on the basis of the conditions as enumerated above. Man in the North lives wholly under the power of nature, and if we take three groups of cultural phenomena, the material, the spiritual, and the social culture, we notice that all of them are influenced with great force and strictness by several groups of conditions, mentioned above.

I will cite two examples, referring, respectively, to the material and the spiritual culture of the northern tribes.

The first is connected with the question of fuel. Fuel is scarce on the tundra and the inhabitants had to work out a method of heating without any fuel at all. The Chukchee, the Koryak, and the Asiatic Eskimo have their sleeping room heated chiefly by the accumulation of human natural heat, which can even be regulated by accepting new guests or, in case of excessive temperature, by trying to send away some who constitute the surplus. The Eskimo construct for heating purposes an underground house with an inner sleeping room, the protective walls of the underground room being made of earth and sod.

The Reindeer, and partly the Maritime, Chukchee construct their huts and the inner sleeping rooms from the best reindeer skins. This translation from one material into another reminds one of the Chukchee language which is also the transfer of the Eskimo morphology into some unknown linguistic elements of ancient Asia.

The second example refers to the spiritual culture. It deals with the folklore. Northern people of whatever race or culture stage, having little else to do throughout the endless nights of winter, fill their leisure with working out the elaborate schemes of stories adorned with the finest embroidery of imagination. That accounts for the development of folklore among the Northern tribes and even for the development of Scandinavian epics among the Norsemen in Iceland in the twelfth and thirteenth centuries.

With the Maritime Chukchee and Asiatic Eskimo the folklore develops in conditions of a different kind. These two tribes often even in the midst of winter, being short of stored provisions, must get their sustenance from the continuous search for seals. A fierce winter storm, keeping them at home sometimes for several days, may put them on the brink of starvation and what is still worse, deprive their lamps of the light-giving oil necessary for dispelling the oppressive darkness. And sometimes the best hunters will come out through the storm always in pairs, joined together with a long thong in order to feel always sure of the

mutual touch. The folk-tales are full of such desperate attempts when the people begin "to get lean in their marrow-bones." These stories are usually repeated at night, when the inmates are pent up within the sleeping room, and they are considered as the best incantations against the storm. The close of the tales is also an incantation of its own, "Wahó, yóočhin tínmûgan," "Oho, I killed the tempest!" By the way, stories related during the winter storms must refer chiefly to storms, to work against them the more efficiently. The connection of meteorological conditions with the evolution of folklore is quite clear.

Some of the old women happen to know so many tales that day after day they will be able for a month or more to present ever new subjects, intertwining together the subjects and plots with such great art, that no one would even notice the difference.

Out of these natural conditions the culture of the North has developed. Though we call it primitive, we must not compare it with the most primitive culture of some tropical tribes, such as the Botocudo or the Bushmen. These last tribes go around quite naked, have no house to speak of, and feed on anything that comes their way and which they can gather without much effort in the wood or on the prairie. Their economics belong to the earlier stage of the so-called collector type. They store no provisions, and notwithstanding the abundance and even the lavishness of natural supplies in the south, they live on somehow, passing from one spell of hunger to another, interspersed with a much shorter period of reveling in plenty.

Now in the Northern conditions, one cannot go on without clothes, house, and storage for the winter. Even primitive man must take care of his future, otherwise he will die. This is why the culture of the North is not only of a well developed type but even has a special development.

The Eskimo culture, which represents the best developed variation of the culture of the North, abounds in implements and accommodations of amazing fitness. Some of these were imitated not only by their nearest neighbors, far enough to the south, but even by the civilized part of humanity, such as the Russians and

Americans. The whaling harpoon is an Eskimo creation, but it was imitated by almost all the tribes which practise whaling.

In the classification of the cultural types of the North, we find some types of local origin, such as fishing, hunting, reindeer-breeding, and other types of a higher culture, which came over to the North in later times, brought over by immigrants from the south. I will start with the classification of the indigenous cultures.

As for implements and weapons with some few exceptions, the tools of the North are Neolithic. To be sure in the last hundred years some metal work and the art of weaving spread among the natives in imitation of the Russians, and in the Far East, of the Chinese. Still, even the shape of the tool or the weapon made of metal, curiously imitates the form of the stone or bone implements. For instance, the Reindeer Chukchee use instead of the axe a small hatchet, an actual tool of the Neolithic period. The local blacksmiths of Russian origin prepare such hatchets specially for Chukchee use. Nevertheless, most of the northern tribes have even some blacksmiths of their own, capable at least of mending the simplest iron implements. Some of these tribes still have an idea that the art of the blacksmith required skill and knowledge of no common kind. The Chukchee, for instance, in some tales borrowed from Russians described a young prince, the son of the King, as having a face as intelligent as a blacksmith's.

According to the chief pursuit bringing the means of life, the northern culture may be divided into several types. I must mention that notwithstanding their primitive character, the northern culture created two branches of animal breeding, the breeding of domesticated reindeer and that of driving dogs, peculiar to the northern zone. Within that zone, however, it is imitated from the native tribes by the most civilized immigrants of later arrival. The American settlers in Alaska imitated Alaskan Eskimo dog-driving and Siberian reindeer-breeding, which has prospered and increased at such an amazing rate.

Also in fishing and hunting, the northern natives have created various implements, afterwards imitated not only by later immigrants from the South, but also passed over to the neighboring people of more southern latitudes. Such is for instance the small

Siberian trap for ermine and other smaller game, which has spread through the whole temperate zone of eastern Eurasia down to the Bashkir and the Kirgiz. The same is the case with the larger striking trap for foxes, the deadfall for foxes and walrus, etc.

Moreover, we can see that in the economics of hunting the fur-bearing animals the northern natives of the so-called primitive tribes are the most circumspect in looking out for the future. While the Russian invaders from the south ruthlessly destroy the best cedar forests with their axes or careless fires, and exterminate the "green" squirrel when the "unripe" peltry is not fit for selling, the Tungus or Ostyak, when undisturbed by neighbors, will proceed with much more forethought, trying to leave some of the foxes and squirrels for his last days and even for his children.

I will only repeat one of the paragraphs of my memoir on the Conditions of Life of the Lesser Tribes of the North, presented in 1923 to the Central Executive Committee of the Soviets: The principal riches and resources of the North are not represented by the numberless shoals of fish nor by the endless droves of wild geese and swans, nor by herds of reindeer, wild and domesticated, and not even by the fields of coal or veins of gold to be brought into the mining work; the real riches of the Far North, the most important of all, are represented by the northern people, who are the only means and agents to work out profitably all the natural resources of the North and to bring them in touch with human culture. Without the northern tribes, the riches of the North will be left without use and without workers.

After these preliminary remarks, I will indicate the chief types of the Northern culture as the following:

1. Fishing.

2. Hunting, with two subdivisions: (a) Meat-providing branch; (b) Fur-providing branch.

The other subdivisions, according to areas of exploitation are: (1) Overland hunting; (2) Sea-mammal hunting.

Economic pursuits, as mentioned above, less frequently appear in the exclusive form, but oftener as combinations of two or three types, with one prevailing, or with two or three of equal importance.

So, for instance, the hunting of fur-bearing animals is combined either with fishing, or with overland meat-providing hunting, or with hunting sea-mammals. Some tribes combine everything,—fishing, overland meat-providing, hunting of fur-bearing animals, and hunting of sea-mammals. Such are the Maritime Koryak and the Gilyak. The Maritime Chukchee have very little fishing, since the Chukchee peninsula has no rivers for the fish to enter for spawning, and salmon do not go this way; and, of course, the inland Tungus or Yukaghir have no hunting of sea-mammals.

The third type refers to the higher cultural stage, since it deals with the breeding of domesticated animals, viz., reindeer.

Still the breeding of reindeer in all its ways and methods is so primitive as to rank on a level with hunting and fishing.

Moreover, in several cases, the reindeer-breeders, though economically better off, are in other respects even behind their fishing or hunting neighbors, who for instance practice various handicrafts and then exchange their artifacts for the produce of reindeer-breeding.

Reindeer-breeding also enters into combination with hunting and fishing. In northern Eurasia, as a general rule, the tribes of hunters do not wander afoot, but have some reindeer to supply the necessary means of locomotion. The Tungus hunter cannot very well do without riding reindeer. Reindeer mounts supply the Tungus with the means for wandering over immense areas, and only by means of the riding-reindeer could the Tungus spread over 10,000 kilometres in extent from the eastern affluents of the Obi river down to Kamchatka and Saghalien, and from 70° of Northern latitude in the tundra down to the south, beyond the Chinese border. On the other hand, extensive reindeer-breeding does not come very well into combination with fishing, because fishing presupposes a stay on the shores of lakes and rivers, which have not sufficient lichen pastures and are too much pestered by mosquitoes and reindeer flies. Extensive reindeer-breeding presupposes continuous wandering with the reindeer, while fishing is much more sedentary.

At the same time, the better half of the northern tribes include both types of pursuit practiced side by side, reindeer-breeding and fishing, or, with the Chukchee, hunting of sea-mammals. Some tribes are divided into two branches, the reindeer-breeding, who wander throughout the tundra, and the sedentary, dwelling close to the water and out of the water. The ways of life of both these branches are often not only different but even antagonistic, as with the Chukchee, where the driving dogs of the sedentary people represent the bitterest foe of the reindeer herds, and so the reindeer breeders cannot even come into the neighborhood of the Maritime villages.

Still, both parts of the tribe are conscious of their natural tie and consider themselves to be of the same tribe. They intermarry freely and in case of need act as one unit. It is open to question whether they represent one natural unit practising two pursuits of life, or two different units, who have brought out two different ways of life and then gradually blended.

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THE MATERIAL CULTURE OF SPANISH-INDIAN MEXICO

By ROBERT REDFIELD

THE material culture of present-day rural Mexico, in contrast to the non-material culture, preserves almost unmodified a large number of pre-Columbian traits. The small number of the Conquerors brought with them no great economic system with which to displace that already in operation among the Indians. They decapitated the aboriginal society, as it were, removing gods, priests, and calendars, but they left the machinery of everyday life; and indeed became themselves a part of it. Quite opposite to the situation among some other aboriginal groups that survive as an enclave of modern civilization, in rural Mexico an Indian worships the gods of the invader and uses his kinship terminology, but the materials and techniques of his practical life are often much the same as those of his ancestors.

Bandelier gave us a short account[1] of the material culture of Cholula, in the State of Puebla, and Starr has scattered notes[2] on the material culture of many villages in southern Mexico. I do not know of any systematic outline of the material culture of any one Mexican village. This is the excuse for publishing the following notes, which summarize some observations made in the course of an eight months' stay in Tepoztlan, State of Morelos, during 1926–27.[3] Tepoztlan is by no means an unusually conservative Indian community. It is almost entirely Indian in blood and bilingual in speech, but all Tepoztecans make trips to Cuernavaca, and not a few are familiar with Mexico City. It

[1] A. F. Bandelier, Report of an Archaeological Tour in Mexico in 1881. Paps. Arch. Inst. Am., Am. Ser., 2: 95–99, 120–152, 1884.

[2] Frederick Starr, Notes upon the Ethnography of Southern Mexico. Reprinted from vols. 8 and 9, Proc. Davenport Acad. Nat. Sci., 1900.

[3] Made possible by a fellowship granted by the Social Science Research Council.

represents the wide middle-ground of rural Mexican sophistication.

With the exception of ironworking, which soon made obsolete the Indian techniques in stone, bone, shell, and copper, most of the elements contributed to the material culture by the Spaniards supplement rather than supplant technical systems of the Indians. Pre-Columbian patterns persist especially in the house, in house furnishings, and in cookery. Here there are many contributions from European culture, but these remain of secondary importance. The old techniques survive also in transportation, but there the post-Columbian contributions are of much greater relative importance. Finally, clothing, especially that of the women, is an aspect of material culture where Indian elements have been almost entirely supplanted by European.

The house-group is the dwelling of a single family with accompanying outbuildings. As house sites are almost always walled off from the streets and as houses are rebuilt upon the rubble of earlier structures, the house, except near the central plaza, is usually above the level of the street. The house is always rectangular. The walls are most commonly of adobe; but may be of rough stones set in a mud mortar, or withes, wattle, or cornstalk. The roof, except where poverty prescribes mere thatching, is of tiles (a European improvement); the roofs are almost flat. There is ordinarily only one entrance to a room. Where there is more than one room, passage from one to another may most commonly be effected only by going outside and entering the single entrance of the adjoining room. Window openings, except in the more Europeanized houses near the plaza, are rare. Glass windows and screening are practically unknown. Floors are of dirt.

Where wealth or Spanish influence has been stronger, most particularly in buildings near the central plaza, the form of the house may be modified in one or more of the following respects: The rooms are grouped around a patio. A roofed corridor runs around the inside of this. Or, much more commonly, the single room is fronted by a roofed porch, built integral with the house. The roof of this porch is supported by columns; there may be

an arch or two. The roof may be peaked. The porch (*corredor*) and perhaps also the house, has a brick floor. There are several windows; some of these contain iron grilles. The walls are plastered and perhaps tinted.

However mean or however important, the house is ornamented with a number of flowering plants, usually potted in oil cans, and standing outside the house on a rack.

The tripartite house division into *sala*, kitchen and storehouse, emphasized by Bandelier[4] and well illustrated by Starr,[5] is not always clearly marked. Sometimes the kitchen is merely a flimsy lean-to against the house, or is in a corner of the *corredor*, or is even in a corner of the single room. But more often it is a separate room or even an entirely separate structure.

The storehouse (S., *troje*)[6] is practically always present, and is usually placed immediately in front of the dwelling. It occurs in three forms, all of which are probably of entirely pre-Columbian design. The *ohuatlapil* (N., *ohuatlapilli*) is most common. This is circular, about six feet high and of varying diameter; it is made of vertical cornstalks bound together with rope. It contains maize on the cob (S., *mazorca*). Also made to contain *mazorca* is the *cincolote* (N., *zincolohtli*). This is square, of poles laid horizontally, one pair upon another at right angles to the first until a structure is raised tall enough to contain the maize to be stored. The *cuezcomate* (N., *cuezcomatl*) is a vasiform granary, plastered inside and out with clay. In it is kept shelled corn.

Perhaps every fourth dwelling has a sweathouse (S., *temazcal*; N., *temazcalli*), well known as a part of the pre-Columbian house group. This is made of stone set in mortar. It is rectangular, approximately square, and about five feet high at the center. The roof is low-peaked. The one entrance is barely large enough to permit entrance of a man on hands and knees. Although occasionally now used merely to achieve cleanliness, its use, as in pre-Columbian times, is chiefly therapeutic.

[4] Op. cit., 129.

[5] Frederick Starr, Indians of Southern Mexico. An Ethnographic Album (Chicago, 1899), pls. 44, 45, 46, 47.

[6] "S." indicates term used in Spanish discourse, "N.," term used in Nahuat discourse.

These are all indigenous features. Although bees and turkeys were domesticated before the Conquest, it is not clear to what extent the beehive—a simple wooden box—and the fowl-house preserve pre-Columbian elements. The fowl-house (S., *gallinero*; N., *pizcalli*) is a part of nearly every domestic establishment (but in many homes some of the chickens perch on ladders in a corner of the dwelling). It is usually built of stone, to keep out marauding carnivores, and has about the size and form of the sweathouse, except that the roof is tiled. To protect a horse or burro a thatched or tiled roof is erected in a corner of the yard. Something in which to store water completes the house-group. This is either a plastered tank (S., *pila*) or a large jar (S., *tinaja*; N., *acomitl*), or merely an alcohol tin.

Neglecting for a moment the additional furnishings of the more urbanized and well-to-do, one may declare the domestic equipment within the house to be almost entirely pre-Columbian. The kitchen is the center of domestic activity and around it cluster most of the accessories. Four features are inevitably present in all houses, of whatever poverty or pretensions. These four features vary hardly at all in form or position,[7] and preserve, hardly modified at all, pre-Columbian form and function. These four are the hearth, the griddle, the grinding-stone, and the pot. The hearth (S., *tlequil*; N., *tlequilitl*) is sometimes no more than three stones set in a triangle to support the griddle; but more often it is of many stones, plastered, and horseshoe-shaped. Upon it fits the griddle (S., *comal*; N., *comalli*), a flat, circular tray, which occurs in only one diameter (about eighteen inches). Although griddles of iron are common in the cities, in Tepoztlan it is always of clay. When not in use the griddle stands on edge at the back of the *tlequil*. The three-legged grinding-stones (S., *metate*; N., *metlatl*) with long hand-stone (S., *metlapil*; N., *metlapilli*) are of the well known pattern. They are of andesite. The pot in which the maize is cooked (S., *olla de nixtamal*; N., *nexcomitl*) stands beside the hearth.

In some houses the *tlequil*, which burns wood, is supplemented

[7] Cf. Bandelier, op. cit., 138; Starr, Notes on the Ethnography . . . , 3.

by the brazier (S., *brasero*) of Spanish origin. This burns charcoal. It may be of iron and brought from the city, or it may be a homemade copy in stone and clay. Only a small part of cookery in Tepoztlan is done on the brazier.

Most of the other articles which contribute to culinary technique are Indian, not European. The small andesite mortar (S., *molcajete*; N., *molcaxitl*) and the pestle (S., *tejolote*; N., *texolotl*) are used chiefly for grinding chile. Two of the three common forms of basket are likewise pre-Columbian in general character. These are the forms without handles: the *chiquihuite* (N., *xiquihuitl*), which is stiff, as wide as it is deep, and of wickerwork and the *tompiate* (N., *tompiatl*), which is flexible, twice as deep as it is wide, and woven of soft reed. The other basket, which is of the shape of an ordinary European market basket, with a handle, has no Nahuatl name (it is always called *canasta*) and is apparently a form introduced by the Spaniards. Its principal use is in marketing; therefore it is carried only by women, and on the left arm under the *rebozo*. The whole forms a *canasta-rebozo* minor complex of post-Columbian development. The other two baskets are used for the storage and transport of food (the *chiquihuite* is also used to strain honey), and may be carried by either man or woman.

Mexican pottery has been much modified since the Conquest. Many forms are European, and the ware is in general inferior. Shell-decorated Cuernavaca pottery is common in Tepoztlan, and there are occasional pieces of glazed and painted Oaxaca ware. The ware in general use in cookery is the plain ware of Toluca. The pot (S., *olla*; N., *xoctli*) preserves the ancient form; the pitcher (S., *jarro*) and the saucer (S., *cazuela*) are more European than Indian and are mentioned by the Spanish names only.

Minor elements in the culinary paraphernalia are the shallow wooden boat-shaped mixing bowl (S., *batea*), the wooden spoon (S., *bateidor*), and the small, rectangular, handled fan (S., *aventador*) with which the fire is blown up. For picking fruit from trees a cage-like picker of cane, on the end of a long pole, is employed. This is called (S.) *canastilla* or (N.) *acatecomatl*.

Other house furnishings vary considerably with the wealth and education of the owner. Characteristically, however, the bed (S., *cama*; N., *tlapechtli*) is a mat (S., *petate*; N., *petlatl*) spread on the ground or on a low wooden platform. Often another aboriginal form of bed is used: splints of Mexican bambu (S., *otate*; N., *ohtlatl*) are stretched in both directions across a framework of low posts driven in the ground. Tables are common but often absent in poorer houses. The backed chair is not rare, but much commoner is the low, backless bench. Although occasionally reminiscent of the pre-Columbian *icpalli*, it nevertheless is generally European in form. No adult sleeps in a hammock, but babies are usually cradled in a flat swinging framework, which is homemade. This resembles other Indian cradle-frames, but bears the Taino name *hamaca*.

Certain domestic accessories of European origin have become firmly associated with the aboriginal elements and are always found in the house. Chief among these are the steel knife, the small iron kerosene flare (S., *candil*), the candle, and the alcohol tin (S., *bote*) in which water is carried and stored. Two of these tins are yoked together and swung over the shoulder. In this device (S., *aguantador*), of course European in character, water is hauled by the men. A woman carries only a single tin.

A domestic shrine is found in most houses. This may be no more than a printed or painted picture of a saint, but more commonly it is a carved and painted wooden figure, usually a Virgin or a Christ. This may be only a few inches high, or as much as six feet. Most are from early Colonial times. In front of this figure an incense burner (S., *sahumeria*; N., *popochcomitl*) is placed. This is of black glazed pottery. In it copal gum is burned. Flowers are also placed before the figure, in bottles or vases, and pictures of other saints are hung near the image. This shrine is the center of domestic worship and ritual. Candles are burned before it on feast days; here the infant Christ is "put to bed" on Christmas Eve and taken up on Candlemas; before this image are placed gifts brought on birthdays or those brought by a boy's parents during the negotiations leading to a marriage with a daughter of the house.

Any property not in use is kept on plain wooden shelves or in covered wooden chests. Extra clothing is hung on nails. Walls are frequently decorated with pictures cut from newspapers, with sentimental picture postcards, and with little clay toys and ornamental dishes brought from other villages.

This description of the domestic equipment relates to most of the houses in Tepoztlan. A conspicuous minority, however, as has already been indicated, enjoy elements of modern industrial civilization. A house of this limited class may possess a few china dishes, or a few glasses, some metal pans, perhaps a sideboard or a metal bed or even a phonograph. The sewing-machine alone, however, among modern machines, has become a part of the general Tepoztecan material culture; it is found in all parts of the village and in houses otherwise Indian in character.

Cookery[8] has been but slightly modified by European elements. The most important foodstuffs contributed by European culture are beef, pork, sugar, rice, chickens, eggs, and milk. Less important contributions are potatoes, lima beans, wheat flour, chickpeas, citrus fruits, and spices. The maize-squash-beans complex remains, however, the basis of cookery. These staples were and still are cooked with chiles and tomatoes. Honey is still used as a sweetening, but has been largely supplanted by cane sugar. Cinnamon has displaced the native vanilla. The apparatus of cookery and the accompanying techniques are almost untouched by European influence. Maize is boiled with lime and ground on the *metate* to a dough which is the basis of a variety of foods. Chief among these is the *tortilla* (N., *tlaxcalli*), the inevitable griddle-bread which accompanies every meal both as a food and as an eating utensil. The principal variations on the *tortilla* are forms to which shortening has been added (S., *itacates*, N., *itacatl*; S., *clacloyos*; N., *tlatloyos*; S., *gorditas*), and *tortillas* filled with chiles, beans, or other foods (*S.*, *memelitas*, N,. *tlaxcalmimilli*; S., *tacos*; S., *migajes*, N., *xalli*). These variations are devised to carry food away from the house or keep it edible

[8] The statement as to cookery is based on extensive materials collected by Margaret Park Redfield.

some time after preparation. The same dough, stirred in water and strained, forms the basis of gruels (S., *atoles*; N., *atolli*), which are flavored in several different ways. These were a daily food in pre-Columbian times, but in Tepoztlan today they do not constitute a regular part of the daily fare.[9] To the same dough fat is added, and sometimes other ingredients, to prepare *tamales* (N., *tamalli*), which are rolls of this dough boiled in corn husks. Although the sweetened *tamal* is prepared to sell at the nearest railway station, in Tepoztlan itself the *tamal* is never a part of the daily fare; but, as in ancient days, is eaten only at fiestas.

Another pre-Columbian food category of undiminished importance includes the *moles* (N., *molli*). These are highly spiced sauces served with pieces of boiled meat. The spices are ground in the *molcajete* or on the *metate*. There are three *moles*, two festal and one secular. The last is a relatively simple sauce, chiefly of chile, served with pork or beef. It is often eaten at breakfast. *Mole verde* is a more complex combination of elements, served usually with beef. It is never served without *tamales*, and only at fiestas celebrating a *santo*. *Mole poblano* (or "turkey mole," S., *mole de guajolote*; N., *huexolomolli*) in Tepoztlan may be made of as many as nineteen ingredients. It is always served with turkey and only on the occasion of very important fiestas, characteristically weddings and baptisms.

Another category, *tortas*, includes vegetables, potatoes, etc., which are ground, mixed with egg, fried, and served with chile. These represent an application of the aboriginal grinding- and chile-patterns to introduced foods.

The cultivated and purchased foods are supplemented with a number of wild vegetable foods and occasionally game.

It will be observed that a very few techniques of cookery are employed. Foods are boiled, fried, or toasted. In spite of the presence of the oven, used by bakers and pastrymakers, domestic food is never roasted or baked.

Three meals a day are generally eaten. *Tortillas* and beans

[9] As they do, for example, in Cholula. Bandelier, op. cit., 138.

are found at nearly every meal; often there is little or nothing else. Meat is most frequently added.

The commonest beverage is coffee, homegrown and toasted. Chocolate, the aboriginal drink, is everywhere known but its use is restricted by its cost. When made, it is beaten to a froth in the ancient manner. Milk is not rarely drunk, but usually sweetened with sugar or flavored with chocolate; it is almost never used as an ingredient in cookery. A variety of "teas" are made of native and also of introduced herbs and seeds. Commercial sugarcane alcohol is largely drunk by the men. The maguey does not flourish at this low altitude; therefore *pulque* (anciently *octli*) must be imported, and its use is confined largely to festal occasions.

The ancient male costume of the Aztecs, although modified according to the social position of the wearer, was composed of three principal garments: the *maxtlatl*, a belt or loin-cloth with the ends hanging down in front like an apron; the *tilmahtli*, a woven cape worn over the shoulders and knotted in front; and the *cactli*, sandals of leather or woven of maguey fiber. Of these three the first has entirely disappeared,[10] the second influenced the form and use of the modern *zarape*, while the third remains little changed today. For all articles of men's clothing worn today in Tepoztlan, Nahuatl terms are in use. The ancient term *tilmahtli* is applied to the *zarape*, and the sandals are still called *cactli* or *cuitlaxcactli* ("leather sandals"). The other terms are descriptive compositions, or are Spanish roots modified to suit Nahuatl linguistic patterns.

A man wears one or more shirts (S., *camisa*; N., *cotontli*) and over these, when the weather is colder or for better dress, a blouse (S., *blusa*; N., *panicotontli*). These, like the trousers, are made of cheap white cotton cloth bought in the local stores and are made up by the women. The blouse is buttonless; the lower ends tie together in front. For holiday attire the shirt may be pink or blue, or a colored vest (S., *chaleco*) may be added. Loose white trousers (S., *calzones*; N., *cahzon*) of the same material are

[10] It may possibly be worn by some in Tepoztlan, as it still is elsewhere in Mexico. Bandelier, op. cit., 121.

worn. These are wide at the waist; the sides are crossed in front and the trousers are held up by a cloth belt or sash (S., *faja* or *cenidor*; N., *teilpiloni*). A man often goes barefoot. The sandals are of the ancient pattern except that steer leather is used. A woman does not wear sandals except when travelling. The straw hat (S., *sombrero*; N., *cuatlayecahuilotl*), worn almost everywhere in Mexico, is of course of Spanish origin. A few styles are "correct" in Tepoztlan.

It remains to mention the *zarape*. Ramon Mena[11] derives the word from Nahuatl *tzalanpepechtli* (*tzalan*, interwoven, and *pepechtli*, thick blanket), a descriptive term applied by the Indians to the heavy blankets, often woven in with metal threads, carried by the conquerors and placed by them upon the ground when resting or sleeping. This blanket and the *tilmahtli* fused, culturally, and became the *zarape*. In Tepoztlan two forms are worn: the blanket form, wrapped around the shoulders and held together with one arm, and the poncho form,[12] in which the head passes through an opening in the center. The *zarape* is entirely masculine, but on unusually cold days a woman may borrow a *zarape* and wear it beneath her *rebozo*.

The *machete* (N., *tlateconi* or *tepoztlateconi*), the characteristic Mexican steel knife with the curved tip, is so generally carried that it may be mentioned as a part of the costume.

The woman's costume in Tepoztlan preserves fewer indigenous elements, although this is not the case in many other villages in southern Mexico. Before the Conquest it consisted of two principal garments: a loose blouse (*huipilli*), and a skirt (*cueitl*), consisting of a rectangular cloth wrapped around the lower part of the body. The *huipilli*, under that same name, is worn in many Indian communities south of Morelos, but not in Tepoztlan. In Tepoztlan the woman's costume is European in origin, and the names of the garments in Nahuatl discourse are Spanish, except those for the skirts, which are descriptive Nahuatl terms.

Over white cotton underdrawers (S., *pantelones*; N., *pante-*

[11] Ramon Mena, El Zarape. Anales del Museo Nacional de Arqeologia, Historia y Etnografia, epoca 5a, Tomo 1: 373 ff., 1925.

[12] This poncho is probably South American in origin.

lontin) is worn an underskirt (S., *enaguas adentro*; N., *cueiztactli*), usually also white, and over this a colored overskirt (S., *enaguas encima*; N., *cueipanill*). The skirts are ankle length, very full, and gored. A collarless shirt (S., *camisa*; N., *camisahtin*), tucked into the skirt, covers the upper part of the body. Over it is worn a blouse (S., *saco*; N., *sacohtin*), and over this usually an apron. This either includes an upper piece covering the chest, when it is called (S.) *babero*, (N.) *baberohtin*, or does not, when it is called (S.) *delantal*, (N.) *delantaltin*. Around the waist is wound a sash (S., *cenidor;* N., *zinidor*), dark blue or gray, about eight inches wide and six to ten feet long. This is the only garment of those here enumerated which is woven in Tepoztlan. Almost invariably there are earrings, often of gold (S., *aretes;* N., *areteztin*), and a short string of beads, most commonly red seeds (N., *corales;* N., *coraleztin*). Except when walking long distances, when sandals may be worn, or when in city dress which includes shoes, the feet are bare. The only over-garment is the *rebozo* (N., *payo*),[13] a sort of shawl worn over the head and upper body; one end is drawn across the breast and thrown back over the left shoulder. This is the characteristically Mexican garment worn almost everywhere and by every class except the highest. The *rebozo*, like the *zarape*, is a post-Conquest development, but unlike the *zarape* it has no Indian progenitor. It probably represents a cheaper and more practical modification of the Spanish *mantilla* by the working Indian woman; and it had already taken its form by the end of the sixteenth century.[14]

Many women possess, for Sunday costume, a one-piece dress of finer material. This is nearly always white, with a flounced skirt, and ornamented with pink or blue ribbons.

No women ever wears a hat except when a man's hat is worn for work in the fields or travelling in the sun. When sitting in the sun a woman may wind the *rebozo* on her head like a turban, but the real turban headdress frequently found in southern Mexico is absent. The hair is worn in two braids, or, particularly

[13] I do not know the etymology of this word.

[14] José de J. Nuñez y Dominguez, El Rebozo. Mexico: Departamento Editorial de la Direccion General de las Bellas Artes, 1917.

by girls and young women, in a single braid. No cosmetics are used except that at the Carnival talcum powder may be put on the face.

Two generations ago the prevailing woman's costume in Tepoztlan was of another sort, a sort which included more aboriginal elements. This costume still survives in Tepoztlan, where two or three old women still wear it; there are probably others in the neighboring hamlets. It consisted of two principal garments: a skirt (N., *pitzcueitl*), of homespun, white above the hip and black below, where it was pleated, and a white triangle of similar homespun worn over the head like a poncho with one corner hanging down the back. This latter garment is the *quechquemitl*. It is a probably indigenous garment worn by Indian women in central and northern Mexico.

These two garments were made locally on primitive looms. Today all textiles are imported either as readymade garments or as cloth to make up into clothing, except some of the women's belts which are still made locally.

The children's clothing reproduces that of the adults.

The aboriginal transportation system and that introduced by the Spaniards exist side by side in Tepoztlan, as they do nearly everywhere in Mexico. Burros, mules, horses, and oxen, with accompanying paraphernalia—saddles, bridles, lassos, yokes—are used in patterns substantially those of sixteenth century Spain. Only the wheel is not used in Tepoztlan, because the steepness and rockiness of the roads make its use impossible.

Nevertheless a very large part of transport takes place on human backs with the aid of aboriginal devices. Burdens are supported with the aid of the forehead tumpline (S., *mecapal;* N., *mecapalli*)which is sometimes assisted by another line across the chest. Articles are carried either in the *chiquihuite*, which is then bound to the *mecapal* by means of the *ayate* (N., *ayatl*),[15] a tough, coarse-woven cloth of maguey fiber, or else in the *huacal* (N., *huacalli*), a crate of rough-hewn sticks. Water is carried in a hollow gourd (S., *bule;* N., *atecomatl*), supported by a lacing of

[15] On the use of the *ayate* among the Otomi, see Starr, op. cit., 8.

leather thongs. Women, as has already been said, carry purchases or small belongings in the *canasta*, or occasionally in a long rectangular fiber bag (S., *bolsa*). Men never carry these, but use for the machete or other possessions a small flat square bag of vegetable fiber, the *morral* (S.)

Of musical instruments, recognized by the Tepoztecans as such, all are European: guitar, flute, saxophone, cornet, etc. Ritual music is sharply distinguished and ordinarily not called music. Of instruments employed for this purpose the horizontal wooden double-slotted drum (*teponaztli*) is entirely pre-Columbian. One of the two *teponaztlis* remaining in Tepoztlan has every appearance of being an actual pre-Columbian artifact. The *huehuetl*, the vertical drum with the skin head, which in Mexico is a commoner survival than the *teponaztli*, does not occur in Tepoztlan. The small flageolet (S., *chirimia*) which together with a small drum of European pattern is played on the roof of the church or chapel to signalize every sacred fiesta, as were once played on the *teocalli* the *tlapitsali*, *huehuetl* and *teponaztli*, is carved out of *zopilote* wood and is a modification of the ancient pattern under Spanish influence. In Nahuatl discourse it bears the ancient name, *tlapitsali*.

Local industries are few and almost all are European in character. Adobe bricks are made by anyone who builds a new house or repairs an old one; the simple technique is probably chiefly aboriginal. The twisting of ropes of maguey fiber is a domestic industry confined to a limited group of houses. This technique is European; a wooden wheel is used. The lime-burning done at the neighboring hamlet of San Andres is likewise European. Carpentering, ironworking, masonry, woodcarving, silverwork, shoemaking, and breadmaking are all in the hands of specialists; in each case the tools and techniques are European—the early priests were good teachers and the Indians good pupils.

Mena[16] declares that *zarapes* are made in Tepoztlan of tree cotton. I was unable to find any trace of such an industry. A large loom has recently been introduced by an educated young

[16] Op. cit., 382.

man for the weaving of shawls. The use of tree cotton (N., *cuahichcatl*) is, however, well understood, and occasionally thread is spun thereof by the use of pre-Columbian spindlewhorls (S., *malacate;* N., *malacatl*) which abound in Tepoztlan and are simply picked up in any yard and used. Even in the few surviving primitive looms, however, commercial thread is used. There are at least two of these looms still in operation in Tepoztlan. They are used only to weave women's belts. The structure and somewhat detailed nomenclature of this loom cannot find room for discussion here. The weft is set up on a framework (N., *tzatzaztin*) of ten short sticks driven into the ground. The upper end of the loom is fastened to a house or tree; the lower end is drawn tight with the backstrap (N., *analoni*).[17]

Of industries relying on special machinery there are two: the mill, to which is brought for grinding only a small part of the maize eaten in Tepoztlan,[18] and the mixing and bottling of soft drinks of carbonated water and artificial flavoring. Several men are occupied with this enterprise, and the product is largely consumed.

This fusion of Indian with Spanish features produces, it will readily be seen, three classes of culture traits: unaltered Indian elements; elements which have developed in Mexico from the impinging of Spanish features upon a homologous Indian pattern; and European elements transported intact to Mexico. These three classes are respectively represented, for example, in costume by the sandals, the *zarape*, and the trousers, and in agricultural tools by the pointed stick, the *coa*,[19] and the plow. But while a separation of Indian from European elements is of interest to the culture-historian, it is of no interest to the native of Tepoztlan.

[17] Mena says, and probably rightly, that the entire loom is called *analoni*. But my particular informants used the term for the backstrap only.

[18] There are three reasons why the mill has only a limited use. To many the slight cost is prohibitive. Husbands assert that the flavor of *tortillas* made of mill-ground *nixtamal* is very inferior. And finally to bring her maize regularly to the mill to the neglect of her *metate* lowers a woman in her neighbors' eyes.

[19] The *coa* is the flat iron hoe with the blade set parallel with the handle. It preserves the curved edge and the function (it is used to heap up earth around the maize) of the aboriginal *huictli*, but it is now made of iron and has probably somewhat changed its shape.

The integration of certain European elements with Indian features is complete. Although few introduced elements bear completely Nahuatl names[20] (the *machete* is one exception), the Tepoztecan is unconscious of any difference between these and pre-Columbian elements. He feels the same with regard to his sandals, which are almost wholly Indian in origin, as he does with regard to his white trousers, which are wholly European. The *machete* is as Mexican as the *petate*.

There is, however, a grouping of culture traits which corresponds to the prevailing attitude of the Tepoztecans themselves. So far as surviving Indian elements and as certain European elements are concerned, the integration is complete. The culture just described, involving elements of both cultural heritages, is that which is general throughout Tepoztlan. But not all of the imported traits found in Tepoztlan have entered into this general culture. Some traits of material culture occur in Tepoztlan particularly in houses near the central plaza, which are not a part of the general culture. Though perfectly familiar, they are possessed only by individuals more used to modern city customs, and are regarded by the majority of the population as exterior to common life. Features such as these have not entered into the culture because too expensive (brick floors; iron grilles) or because their general acceptance would involve radical changes in existing techniques (the fork). There is, therefore, a classification which corresponds with subjective categories, between the integrated Tepoztecan culture on the one hand, and secondary, exterior elements on the other. These exterior elements are thought of as attributes of city life, that is, of modern industrial civilization. They are brought down to Tepoztlan by people used to city ways. When a Tepoztecan goes to the city, he to a certain extent temporarily assumes the material culture of the metropolis. He has, not infrequently, a separate costume for city wear: dark

[20] In speaking Nahuatl one uses the Spanish word modified to fit Nahuatl phonetics and morphology. Mariano Rojas, a native of Tepoztlan, in his Manual de la Lengua Nahuatl (Mexico, 1927), lists Nahuatl names for many articles of European origin, but most of these, while intelligible, are the artificial constructs of a linguist, and few are in general use.

trousers, a dark hat, and shoes, worn only on visits to the city. This simple fact expresses the nature of the community of Tepoztlan: no longer a primitive tribal society nor yet an urbanized community, it must nevertheless be defined, as it tends to define itself, with reference to the worldwide city culture within which it is now included.

The following table lists some features of the material culture in columns representing the categories suggested.

General Tepoztecan Culture			Secondary Elements
Indian elements	*Mixed elements*	*Spanish elements*	
		Men's clothing	
Sandals	*Zarape*	Undergarments; shirt; trousers; vest; blouse, straw hat	Dark trousers; shoes; felt hat
		Women's clothing	
(*Quechquemitl; pitzcueitl*)		The *rebozo* and almost all other clothing	Shoes
		The house	
General form and materials; *temazcal;* granaries; turkeys		Tiled roofs; hinged doors; chickens; pigs	Balconies; brick floors; iron grilles.
	Water-tank; bee-hives		
		House furnishings	
Petate; otate bed; *tlequil;* olla; *metate; comal; molcajete; chiquihuite; tompiate*		Table; candles; oil-cans; water-carrier; *machete;* sewing machine	Brass bed; phonograph; oil lamp; forks
	Cazuelas; jarros; bateas; benches, stools		Backed chair; brazier
		Foods and stimulants	
Tortillas; moles; tamales; atoles;		Bananas and citrus fruits; sugar; spices;	Canned foods; beer

beans; maize; chile; squash; tomatoes, *pulque*	*Tortas*; tobacco	rice; lima beans; beef and pork; chickens and eggs; coffee; *aguardiente*	
		Agriculture	
Pointed stick	*Coa*	Plow	
		Transport	
Ayate; chiquihuite; mecapal; huacal: bule.		Horses; mules; burros; oxen.	
	Morrales.		
		Musical instruments	
Teponaztli	*Chirimia*	Guitar; cornet	Phonograph; violin
		Industries	
Weaving; adobe-making		Brick- and tile-making; ironworking; carpentering; shoemaking; breadmaking	Bottling drinks

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THE MORPHOLOGY AND FUNCTION OF MAGIC

A Comparative Study of Trobriand and Zande Ritual and Spells

By E. E. EVANS-PRITCHARD

Note. This paper contains preliminary results of an expedition to Central Africa, undertaken by the writer under the auspices of the Sudan government, in continuation of the work done by Professor and Mrs. Seligman in the years 1909–1910, 1911–1912, and 1921–1922. The work was assisted by grants from the Royal Society and the Laura Spelman Rockefeller fund. The communities studied were mainly those of the Azande in the Bahr-el-Ghazal province of the Anglo-Egyptian Sudan. The writer, a research student in the Department of Anthropology at the London School of Economics (University of London), remained among these natives for about 6 months in 1926–1927 and is now on a second expedition to the same district. This paper formed part of a thesis accepted for the degree of Ph.D. in the University of London.

The Use of the Comparative Method

A WORKING hypothesis should never be allowed to become a settled conviction until it has been tested and re-tested, but every first-hand investigation requires some theoretical view to start with. In the present attempt I shall have especially in view the entire range of magic in two societies.

Very little work has yet been accomplished by specialists in the field towards presenting a full descriptive and analytical account of magic. One cannot therefore make wide comparisons which would yield general principles based on an intensive study of many primitive communities. Moreover, the work which has been accomplished has been done mainly in Melanesia and the social incidence of magic in Melanesia appears to differ considerably from the social incidence of magic in Africa. This is due in general to the difference in form between the two types of society and in particular to the bias given by a strict association of magic with a definite social grouping which profoundly affects the structure and the functional occasions of the magic. I shall attempt to demonstrate in this paper that the principles of magic deduced from Melanesian data and formulated as general laws

for all societies have, in view of a study of African peoples, to be reformulated and possibly modified.

I shall show how this is so by a comparison between the magic of a Melanesian society described by Professor Malinowski and the magic of an African society investigated by myself. The Melanesian community is that of the Trobriand islands, a coral archipelago lying to the northeast of New Guinea. The African tribe is a section of the Azande nation which lives in the Bahr-el-Ghazal province of the Anglo-Egyptian Sudan. I shall build up my argument mainly on the data furnished by the Trobrianders and the Azande but shall draw upon any other societies of whose magic there is a good account to check my results.

In order to understand the argument it is necessary to know the sociological distribution and balance of these two societies and their main food-procuring activities. The Trobrianders live in villages which act together in communal undertakings such as agricultural labor, trading expeditions, warfare,, and public ceremonial. The villages are also largely political units, though the chief may rule over the wider area of a district. Many of these chiefs are little more than village headmen, others have great prestige in virtue of belonging to certain "families" of the four totemic clans. None wield great executive power. The four totemic clans are scattered but the "families" or sub-clans are localized. The Trobrianders are patrilocal and matrilineal, the girl going to live in her husband's village, but membership of the clan group and inheritance of wealth and rank are passed to a man's sister's son instead of to his own natural offspring. Girls are married from their father's home whilst boys as a rule return to their mother's village before marriage. The main economic activity of the Trobriander is the cultivation of his gardens. Fishing plays a great part in maintaining his food supply and is of far greater importance than hunting owing to the absence of mammalian fauna in these coral islands.[1]

The social organization of the Azande is as different from that of the Trobrianders as are the islands of the South Seas

[1] Seligman, The Melanesians of New Guinea, chap. 49, 1910. Malinowski, Argonauts of the Western Pacific, passim, 1922.

from the vast inland tracts of Central Africa. The Azande have no village life but live in homesteads widely separated from each other. In consequence they have fewer communal undertakings. Politically they are organized into tribes which stretch over an enormous area and are governed by one chief. The tribes are divided into a number of ill-defined sections each under the leadership of a chief's deputy. The chiefs all belong to one ruling class and exercise great power. There are a large number of totemic clans which are scattered all over the country and possess little social solidarity. The Azande are patrilocal and patrilineal. Girls live in the homesteads of their husbands and inheritance of wealth and rank pass from a man to his sons and brothers. Gardening forms the main work of a Zande. Hunting and the collection of edible termites are important activities, fishing contributing little to the food supply.

If we study any such institution as magic, religion, law, or economic life, we shall find that it takes on the mould of the society in which it has its place and function. Where the morphology of society differs as between the Trobrianders and the Azande we shall expect to find that the sociological rôle of magic amongst these two peoples differs accordingly.

Function of Magic

Professor Malinowski was the first writer to demonstrate clearly from a detailed study of one society wherein lies the function of magic.[2] He showed how magic filled a gap left by lack of knowledge in man's pragmatic pursuits, e.g., wind magic, and how it provided an alternative means of expression for thwarted human desires, e.g., black magic. His general conclusions as to the function of magic in society are fully borne out by a study of Zande data.

For example, the Zande uses magic to protect himself, his children, his agricultural and hunting activities from the malign

[2] Magic, Science and Religion, published in Science, Religion and Reality (ed. J. Needham), 1925. References will be to this paper when not stated otherwise. For the detailed facts on which Prof. Malinowski bases his views see Argonauts of the Western Pacific, chapters on Magic; Myth (Psyche Miniatures), 1926; Crime and Custom, 1926; and Sexual Life of Savages, 1929.

power of witchcraft. He uses productive magic to multiply his crops, to ensure success in netting game, in encouraging the termites to embark on their nuptial swarmings, in smelting and forging iron, in increasing the number of his subjects. He uses magic to give him confidence in love-making or in singing, to protect his property from theft and his wife from illicit intercourse. He consults the magic of the oracles to give him confidence before circumcision, before marriage, before building a new homestead. Magic plays its part in all the main biological and social occasions of a Zande's life. I could multiply examples, and an analysis of the social context of each would endorse Professor Malinowski's conclusions as to the psychological and sociological rôle of magic.

But suppose that a Trobriand Argonaut were to make an unusually long and perilous voyage, were to paddle his dug-out canoe two thousand miles up the placid and dreary waters of the Nile, were to make his way to Zandeland, were to learn the tongue of the Azande and enter into their customs, how would he find that their magic conforms to or differs from the principles of his own society?

He would find that Zande "white" magic, whether protective or productive in character, like his own is never looked upon as one of the forces of nature which can be utilized by man, but is regarded as a cherished cultural possession which derives its powers from man's abstinence and from his knowledge of tradition. He would find that the Azande, like his own people, believe magic to have come into the world with man and not to have been acquired by subsequent discovery in the world of nature. The Zande would reject as strongly as himself the idea of magic as a universal impersonal power as expressed in the concepts *mana* in Polynesia and *wakan* and *orenda* in North America.[3] Also neither the Trobriander nor the Zande consider magic to be a gift from the spirits of the dead.

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[3] I do not wish to state that these forces are conceived of as impersonal by the natives themselves, but that they have been described as such by ethnographers and theoretical writers, such as Marett, Preuss, Hubert and Mauss, Durkheim, and others.

The sex and food taboos which precede all acts of magic would conform to the tradition of the Trobriand visitor. Nor would he find anything in the rites of magic which would appear to him to be inconceivable or unreal. But where the Trobriander would be confused would be in noticing that whilst in structure Zande magic is similar to his own, it stresses some of its component parts which he regards as of less importance than others, whereas some of the parts upon which he lays the greatest stress in his island home are performed by the Zande with a shocking freedom and carelessness. In both societies all important acts of magic consist of the rite, the spell, the condition of the performer, and the tradition of the magic, but the emphasis placed on each by the two peoples is different.

The Spell

To peoples such as the Trobrianders and the Maori the spell is a rigid unalterable formula which is transmitted intact from generation to generation, and the slightest deviation from its traditional form would invalidate the magic.[4] The spell is "occult, handed over in magical filiation, known only to the practitioner." Knowledge of the magic is knowledge of the spell, the ritual centers round it, it is always the core of the magical performance (Malinowski, 68). Now to the Zande the spell is nearly always essential to the act of magic in all forms of "white" magic, but it is not stressed in the same way as in the Trobriand islands or in New Zealand. Indeed, the qualities of the spell in Zande magic are the direct opposite of those which we have been told characterize Trobriand magic. It is a saying rather than a formula, it is familiar, it is handed over without strict reference to genealogical ties, the knowledge of it is not confined to the practitioner.

I will give an example of owned Zande magic from my collection of texts. It is a typical hunting spell, which is pronounced over a pot in which the magical ingredients are being cooked in oil. The practitioner stirs the pot and says:—

[4] For Maori magic, see R. W. Firth's Primitive Economics of the New Zealand Maori (London: Routledge), 1929.

bingia	nga	mu	mi	ye	ka
(name of magic)	are	you	I	come	to

ra	ru	ware	mu	ti	na
cook	you	thus	you	fall	with

ana	fo	ri	mi	imi	mbaga
animals	for	me	I	kill	bushbuck

ana	dunduko	mi	ara	ru	ti
animals	all	I	cook	you	for

ana	mi	imi	ana	gbe
animals	I	kill	animals	much

"You are *bingia* magic, I come to cook you thus. You bring me animals. I kill bushbuck—all animals. I cook you on my behalf. I kill animals much."

This spell is not a set formula learnt by heart and repeated without variation by all who use the same magic, nor one which is handed down intact from generation to generation. It is a saying adapted to the purpose of the magic and uttered in the common form and phraseology of all Zande spells but it will vary in its word formation. The practitioner will change words on different occasions and different men will insert different details.

To make this variation in the spells quite clear I will give one more example, which embodies two texts given to me by the same informant on different occasions. There is an oil-bearing plant, a species of sesame, called *kpagu*, which yields a regular yearly crop to the Azande. The material used in this magic is a tall grass with a feather-like form of its branching stems, called *bingba*, and is known to everyone. It is a common grass which springs up on arable land and is used for thatching the roofs of the huts. Now a man who wishes to increase the yield of his *kpagu* will pluck some of these grass stems and hurling them like a dart will transfix the broad leaves of the oil-plant. The spell accompanying this action was given me in the first instance as follows:

kpagu	nga	mu	du	le	mu
(name of plant)	are	you	is	here	you

zunga	a zu	wa	kina	bingba
be	very fruitful	as	truly	(name of grass)

ni	dunga	he
with	many	it

"You are *kpagu* here, you be exceeding fruitful, indeed as *bingba*, with much fruit."

On a second occasion my informant gave me the spell for the same magic as follows:

bingba	nga	mu	sele
(name of grass)	are	you	oil

ida	ida	wa	kina	bingba
consent	very much	as	truly	(name of grass)

gi	kpagu	mu	zungu	gbe	ka	
my	(name of plant)		you be	fruitful	much	not

mo	kanga	ya
you	refuse	not

"*Bingba* are you, oil plant take very well, just like *bingba*. My *kpagu* be exceeding fruitful, do not refuse."

It will at once be seen by a comparison between these two spells that there is more difference than similarity in the wording. The sense is the same but we find that the words are so little part of a formula that in the first spell the plant is addressed, whereas in the second spell both the plant and its magic are called upon by name.

It is true that the example I have given is of an unowned type of magic and a type of magic which has no part in communal undertakings. As will be seen later, it is consequent upon my argument that the more strictly owned is magic and the more the occasion on which it is practised is of common interest, the more it will tend to become formulated, the less it will vary from traditional form. But I will return to a consideration of this point later.

Here it is possible to make a useful distinction between the "saying" spell and the "formula" spell. The psychological back-

ground of all magic demands that utterance shall accompany the rite if its function is to be performed but it does not determine the form of the utterance. The form of the spell is dependent upon social causes not to be found in a study of the magic itself save in relation to the whole society and culture in which it is practised.

The Material Element in Magic

But if the spell in Trobriand culture is the essential part of magic, what takes its place in Zande culture? In the morphology of Zande magic it is the material element in the magic which is occult and which is known only to the practitioner. Usually this consists of strange woods and rare roots. Indeed the Zande word for magic is *ngwa*, which generally means wood and only in special contexts refers to magic. There is an interesting linguistic comparison in the Trobriand islands, for there, on the contrary, the native uses the same word for spell and magic, generally *megwa*, the material element in the ritual being of minor importance.

That it is to the material component in the ritual and not to the spell that the Azande attach main importance can be shown from many of my field-work experiences, but it is more satisfactory to illustrate their opinion from their own stories. Many of these stories, about the Zande culture-hero Ture, centre around magical powers once possessed but now lost. In one of these stories a man, called Yangayma, possessed magical feathers which enabled him to fly after performing a ritual dance and chanting a song-spell:

yu	yangayma	gi	swe	ku	ba
(untranslatable)	(name of man)	these	feathers	of	father

ba	fu	yangayma
father	gave	(name of man)

"Yu Yangayma, these feathers of father, father gave Yangayama."

The culture-hero Ture stole these feathers and chanted the song-spell, substituting his name for that of their rightful owner: "Yu yu Ture, these feathers of father, father gave Ture." In stealing the feathers, however, Ture dropped one of them and when Yangayma found this he put it in his hat and singing the

spell as above he gave pursuit into the air and deprived Ture of all the stolen feathers so that the culture-hero fell to the ground and was killed.[5]

In another story Ture was walking with a man called Depago who possessed magic which enabled him to enter into the ground. When it began to rain he took some medicine from his horn where he kept it and wiped it on an ant-hill. On the ant-hill opening they both entered and Ture was amazed to see the fine village and the wealth of Depago under the ground. In order to leave the ant-hill Depago wiped some more of his magic on to the earth and said:

Depago Depago Depago		nzinginzingi	sende
(name of man)		muddy	earth
Depago	na	yera	ngalimo
(name of man)	is	cutting	deep
sende	nzinginzingi	sende	
earth	muddy	earth	

"Depago, Depago, Depago, quagmire, Depago is cutting a big pit, a quagmire."

As Ture was departing he stole some of the magical soot. He went home and persuaded all his wives, with the exception of his first wife Nanzagbe who knew his ways, to burn their huts and come and live with him under the ground. He went with his wives to an ant-hill and wiped some of the magic on the ground and said "Deture, Deture, Deture, a quagmire, Deture is cutting a big pit, a quagmire." The ant-hill opened and they entered only to find grass and they became very hungry. Meanwhile Nanzagbe went and told Depago what had happened and he came and rescued Ture and his wives.[6]

This story is in need of native commentary as it is not clear why Ture could not have got out of the ant-hill. Those natives whom I have questioned on this point have replied that he could not get out because he had not enough magical soot since he had foolishly wiped it all on the outside of the ant-hill.

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[5] See Plas and Lagae, Zande Grammar, 1921.

[6] See Rev. C. Gore's forthcoming Zande Grammar.

In yet another story Ture tries to copy someone whom he has seen putting out a bush fire by placing a magical fat on his head. But in this story we are distinctly told that Ture used a different fat so that his efforts ended in failure.

I could give other instances from the folk-lore of the Zande to illustrate the manner in which the importance of the magical substance itself is stressed more than other aspects of the performance, but these three will suffice. We have seen that in the first story it was the theft of the feathers which enabled Ture to fly and that it was the loss of these feathers which caused his subsequent fall, just as it was the finding of the one dropped feather which gave Yangayma power to pursue him from the earth. In the second story it was the theft of the magical soot by which Ture entered the ant-hill and its absence which prevented him from getting out again. In the third story it was the use of a secret fat which gave power over fire and it was Ture's attempt to control fire by a different fat which led to failure.

On these occasions Ture copied the spell correctly—I do not wish to underestimate its importance in the magical performance—but it was the loss of the material of the rite which made the act of magic invalid. This is the whole point of the stories.

Now just as we found that the emphasis placed on different elements of the magic in the Trobriand islands and in Zandeland has a parallel in different linguistic symbols, *ngwa* and *megwa*, we shall find a similar parallel between the significance of the stories given above and the significance of some Trobriand myths.

Once upon a time in these South Sea islands there lived a man Mokatuboda of the Lukuba clan with his three sisters and his younger brother Toweyre'i. Mokatuboda possessed the magic of the flying canoes and the myth describes his success in a trading expedition and the envy of the other natives whose canoes had to sail on the water whilst his flew through the air. Next year they cultivated their gardens. There was a terrible drought and the rain fell only on the garden of Mokatuboda because he made an evil magic of the rain. Angry and jealous, his brothers and maternal nephews killed him, believing that they had been taught the magic (i.e., the spells) and could use it on his decease. But

Mokatuboda had not taught them the real spells, neither the magic of the adze nor of the rain nor of the lashing creeper nor of the coconut oil nor of the staff. His younger brother Toweyre'i thought that he had already received all the magic but he had only part, and next year when they prepared to make a big trading expedition he discovered that by his fratricide he had deprived mankind of one of its most powerful cultural possessions, the magic of the flying canoe. The whole point of this story is that the magic was invalid because Mokatuboda had not taught all the spells to his brother.[7]

I shall leave the spell, to return to it later, and will draw attention to another profound difference between Trobriand and Zande magic.

Tradition

In the Trobriand islands "in the case of any important magic we invariably find the story accounting for its existence." "All important magic has its tradition and is buttressed by its myth." Do we find the same background of belief amongst the Azande?

Since all magic tends to create its own myth it would be indeed surprising if there were no tradition of a simple kind associated with Zande magic. I found that there is always a current tradition, a cycle of everyday myth encircling and generated by the magic.[8] When I asked a Zande how he knew that his magic was of any use he told me a story from his own experience or from that of his friends or neighbors. He told me how when gathering termites by night his friend had blown his magic elephant whistle and how soon afterwards they heard the tramping and trumpeting of the elephants and next morning saw their deep spoor in the moist earth. Another told me how he had always wished to be a fine singer but had never shown any ability in the art until a famous song leader gave him medicine to eat. Another told me how his brother, and a neighboring chief also, had a swollen penis and had become impotent because of the use of a certain type of "black" magic. Always there is this halo of rumor and wonder around magic of the Azande.

[7] Argonauts of the Western Pacific, 311 ff.

[8] See also Malinowski, ibid., 76–77.

We know well, for Goldenweiser[9] has shown us, how in our own society mag'c is always associated with wonder-working, with strange coincidences too numerous to be accounted for by chance, with the rumor of uncanny personal experience, with the borrowed plumes of eastern mysticism. "There is no faith without miracles."

But this current tradition, this everyday myth is loose and short-lived whether in Melanesia, Africa, or Europe, and can be easily distinguished from the set legend and socially inherited myth by its loose form, its restricted range, and its absence of longevity.

I did not find, save in rare instances, myth of this kind associated with Zande magic. Often magic has been taken over by the Azande from some stranger people, and they will tell you how they learnt it by making blood-brotherhood with the foreigner. If you press the native to tell you how man first became acquainted with any magic he will say that Mböli, the Supreme Being, gave it to him. Thus though the myth of Mböli forms the final background of belief for all ritual, there is no specific myth for each specific type of magic.

Occasionally, however, I have found amongst the Azande a specific myth accounting for the origin of a magic, or a legend, proving its potency. Thus the clan of the Amazungu have a myth telling how they obtained their magic for healing fractures. Into the clan was born a baby quite round like a pot. The bewildered father was instructed in a dream by Mböli to incinerate the child and to use the cinders to heal broken bones. I will give another example. The corporation of medicine-men possess powerful magic known only to the members of the corporation. That their magic is genuine is proved by legends which show how in the past great medicine-men performed remarkable feats through its medium. In the Golden Age of their magic the magician Rëpa, a primitive Moses, went with his chief to wage war beyond the great Uelle river of the Congo. On their return northwards the army found themselves with the enemy in their rear and the wide river to their front. In this crisis Rëpa threw some

[9] Goldenweiser, Early Civilization, 193 ff., 1921.

of his magic into the water so that the waters parted, leaving a dry channel of sand, on which they passed over to the other side. When the enemy pursued them into the centre of the river Rëpa, like his Hebrew prototype, closed the waters upon their fighting men.

Like Moses in the last story, his end was like the end of Elijah.

> Rëpa dances exceedingly the dance of the medicine-men. He rose on high. Then the bells say *wia wia wia wia*. He rose and rose and rose for ever on high. He went quite out of sight so that the eyes of men did not see him again. He dropped the bells from his hands. The bells kept on falling and falling and falling: they fell here to earth. They plunged and plunged to the earth right into the centre of an ant-hill so that no one saw them.

Many were the mighty deeds performed by Rëpa and his son Bokoparanga in virtue of their magic.

The myth of the Amazunga clan and the legends of the medicine-men are, however, quite exceptional. Generally I have failed to find any story accounting for the existence of magic. Just as it was possible to make a useful distinction between the saying and the formula in the rite of magic, so it is possible to make a similar analysis of the tradition of magic. The psychological function of magic demands a background of belief in its tradition, but it does not determine the form of these traditions. Whether they exist only as loose current tradition and short-lived everyday myths or whether they become set into the mould of a compact myth or legend, depends upon the place they occupy in each society, and upon their relation to other parts of the culture in which they exist.

I shall shortly return to a consideration of tradition and the place which this conclusion occupies in my argument. Absence of formulae and absence of specific myths are the two main characteristics which in Zandeland present a contrast with the magic of the Trobriand isles. There are smaller differences which will be noted in the following section.

The Rite, the Conditions of the Rite, the Conditions of the Performer

Were I to describe fully the ritual of several types of Zande magic, the reader would notice a laxity in the performance which

would horrify a Melanesian. He would find confusing variations in the sequence and in the procedure of the ritual. The slightest slip in the ceremonial, a minute omission in the performance of the rite, an insignificant change in its sequence, does not, as amongst many primitive peoples, the Trobrianders and the Maori for instance, invalidate the whole act of magic.

Nothing acts more strongly in conserving tradition and compelling conformity in ritual than the publicity of the performance. Amongst the Trobrianders some rites of magic

> are ceremonial and have to be attended by the whole community, all are public in that it is known when they are going to happen and anyone can attend them (p. 31).

Amongst the Azande there is very little ceremonial in magic. There are certainly no big public ceremonies which must or may be attended by others than the family of the man concerned or his friends or by a few old men. Privacy is characteristic of Zande magic.

Lack of conservative discipline in the performance of the rites has its counterpart in the lack of uniformity in the time during which a man must observe the sex and food taboos which accompany all magic. Though agreeing in the main, different practitioners will give one different time estimates and some will observe a wider range of food restrictions than others. There is also considerable laxity in the observation of the taboos. These are often neglected, though a practitioner would always say that they had been observed as they are supposed to be.

In Zande magic the taboos and the rites are subject to variation, the spell is diffuse and unformulated, the tradition is not standardized, the performance is neither public nor ceremonial; the whole act of magic is less rigidly defined and less amenable to set form than the magic acts of Melanesia.

Group Ownership of Magic

What then are the social causes which determine these differences between the ritual of the Trobriand islands and the ritual of the Azande of the Nile-Uelle divide? I think that they are to

be found in a comparative study of the ownership of magic in the two areas. In the Trobriands

> Magic tends in all its manifestations to become specialized, exclusive and departmental, and hereditary within a family or clan (p. 45).

Amongst the Azande magic is seldom specialized within or exclusive to a family or clan, but is spread widely amongst the community without reference to kindred ties.

If you ask a Zande whence he obtained his magic he will tell you that he received it from his father for it is handed from father to son like any other wealth; or he will tell you that he or his father bought the magic, for magic, being the property of an individual, can be bought and sold; or he will tell you that one of his friends told him about the magic out of comradeship, or that knowledge of that type of magic is possessed by everybody.

Trobriand magic presents a contrast in that in its most important systems, such as garden magic, fishing magic, the ritual of weather, rain, and sun, it must be transmitted through the binding custom of kinship which compels a man to hand over his knowledge of spells with his other property to the son of his sister. It is true that some magic can be bought, but its transference is always accompanied and restricted by social qualifications. Very little magic is unowned.

In this difference between Trobriand magic owned by the family or clan, not open to sale and purchase outside these groups, and Zande magic, owned by the individual and able to be transmitted beyond the restricted domain of genealogical or clan relationship, it is possible to see a solution to the problem of formulae and standardized tradition.

The formula is surety of undisputed ownership of magic and compels filiation of the magic in the family or clan, for the long set formula is a value which can only be handed over laboriously and slowly. But amongst the Azande magic is not generally associated with any social group, being diffused widely without reference to ties of relationship. Consequently there is no need for the formula which tends to restrict the use of the magic to the group already possessing it. Moreover, the core of the magic being not the spell but the material element, it is easily transferred

from one person to another. To the Trobriander the spell is the most important part of the magic, in a sense is the magic, because the formula keeps the magic in the group with which it is traditionally associated, whereas the Azande have no magical formulae, but only sayings, because magic is not generally associated with any social grouping. The formula is correlated with group ownership.

I attribute the emphasis placed upon tradition to the same social cause. The function of the myth is to project the facts of group ownership into the realms of belief, to provide a convincing sanction to the ownership. This is the rôle which it plays in the Trobriand islands, but as Zande magic is not associated exclusively with any section of the community there is no need for the myth as it would have no social function to fulfil.

If this explanation is correct, then in those exceptional cases in which Zande magic is associated with a social grouping it should also be associated with myth. This is what we do find, and I have already given examples from the clan of the Amazungu and the corporation of the medicine-men. Inversely the Trobriand "white" magic, which is not owned by any segment of society, should be found without a background of myth and is so found.

The conclusion drawn is that an utterance is an essential psychological accompaniment of all magical rites and that tradition is an essential sanction for their performance, but that these only crystallize into the set formula and standardized myth when the social mobility of the magic is restricted by its ownership being invested in the family or clan or some departmental grouping. Ownership is always a conservative and standardizing agent in society.

This thesis can be illustrated more widely than by the two areas from which my data have mainly been drawn, but I do not wish to make a compilation, for not only magical but all exceptional privileges invested in one class in society require the halo of myth. Thus amongst the Azande only those clans which are differentiated from the rest of the Zande totemic clans by a special social function have specific clan mythology. In some societies all the clans have differentiated social functions with

associated myths, as, for example, the Winnebago Indians.[10]

It will be found also that all important magic in any society is restricted in use to a few members of the community whether these few persons derive their credentials from membership of a family, kinship, or departmental grouping or not. By important magic I refer to all magic associated with those pursuits on which the life of the community depends; magic used in communal undertakings such as agriculture, fishing, hunting, trading expeditions; magic practised on behalf of the whole community such as the magic of rain and of the sun, magic to increase the totem animal or plant; magic used to reinforce some essential function of society such as government and leadership in war.

In the Trobriand islands all really important magic performances are carried out by men who have received their knowledge of the spells from their mother's brother according to the law of this matrilineal society. If a man passes on the spells to his own son, this latter may use them but may not teach them to another. Important magic is consequently restricted to a very few men who practise in virtue of membership of family or clan. To take another example, amongst the Kiwai Papuans,[11] a society in which group ownership of magic appears to be unknown and where knowledge of the rites and spells is common property, important communal activities such as house-building agricultural and fishing pursuits, and other collective acts of labor have their magic performed by one old man and one old woman who know the secret parts of the rites and whose death is a certain result of the performance.

Amongst the Azande there are only occasional communal activities in contrast to the Trobriand islanders or the Kiwai Papuans, but the stronger and more important medicines are known only to a few men.

Possible Results of Spread of Magic

If all the more important magic is in the hands of a few individuals in any society, the logical inference to be drawn is that

[10] Radin, The Winnebago Tribe. 37th Annual Report of the Bureau of American Ethnology, 1915–16.

[11] G. Landtman, Kiwai Papuans, passim, 1927.

the wider spread the magic the less important the social function it fulfils; the more the performance of magic becomes public property, the less social utility it possesses. This inference can be checked from observation.

Amongst the Trobrianders such magic as is known to all members of the community has very little social significance. The same is true of the Azande, amongst whom much magic is common property and much can be bought so cheaply that it is not even sought after by most men.

In a society such as this, where magic is not restricted in use to members of a group, but is characterized by its social nobility, it is possible to suggest tentatively that certain features in the domain of magic are due to the absence of exclusive ownership. I think that it is possible that the great extension of the magic of oracles, divination, and ordeal amongst the Azande and in many other parts of Africa in contrast to the little importance attached to them throughout Polynesia and Melanesia, may be attributed to the absence of hereditary ownership, set formulae, and standardized tradition. For it must be remembered that, although the object of oracles is to know about future events and not to produce or influence them, nevertheless it fulfils the same psychological function as other types of magic by giving man confidence in his social and economic undertakings. We have, therefore, various types of magic fulfilling the same function. However, in the present state of my researches into Zande customs I do not wish to stress this point too much.

This same phenomenon, this reduplication of rôle in many types of Zande magic, is seen in the special associations for the practice of magic (secret societies). Insofar as I have investigated these associations I have found that the purpose of their magic is already covered by other types of magic. The spread and popularity of these societies may, I believe, be accounted for by the need to systematize and stabilize magic by affiliating its use to an association and by this means enhancing its social utility. In these societies the knowledge of the magic is restricted to the leader of the society. However, the secret societies at present found in Zandeland are of recent introduction. Generally they

are of easy access, short-lived, and replaced by other associations of a like nature.

Creation of New Magic

Not only have all the secret societies of the Azande of the Bahr-el-Ghazal entered from across the Congo border, but many hunting and other medicines are learnt from the Baka, Mundu, Avokaiya, and Moro peoples to the East, the Pambia to the West, the Bongo and Bellanda to the North, the Mangbettu, Amade, Abarambo to the South. Medicines have also been incorporated into Zande culture from the many peoples who now call themselves Azande, but who a generation ago spoke their own language and had their own distinctive customs. The territorial spread of magic is quick and far-reaching. In at least one instance the Azande have borrowed magic from even the distant and hostile Dinka tribes. The Azande find in the magic of their neighbors a constant source of new and powerful medicine.

Nor do I think that all Zande magic is of great age. We have already noted that all Zande magic has its current tradition, its halo of rumor, mystery, and wonder, the birthplace in all societies from which springs transmitted tradition, set legend, and standardized myth, stabilized by group ownership and handed over by the customary procedure of kinship, or other social machinery. However, in saying that magic creates its own mythology the problem has been simplified. Does not belief create magic? Often a native will tell you, for example, that a certain man has powerful magic to kill leopards. If you ask your informant what magic is possessed by the hunter, he will say that he does not know, but that he must own some magic or he would not be so successful in killing leopards.

Actual achievement is demanded of the man who wishes to sell his magic. The fate of unsuccessful magicians, especially rainmakers in many parts of the world, is evidence of this demand. But the production of rain is a supposed and not an actual achievement. Amongst the Moro of the Yei river in the Southern Sudan it is only when a man becomes renowned as a hunter that he

plants medicine roots at the side of his hut and becomes a practitioner.[12]

It would be a barren discussion whether the myth follows the practice of the magic in all cases or whether sometimes the practice of the magic springs out of current tradition. The rite of magic and the myth always interlace and shape each other. I only wish to suggest that new magic is constantly being created, and that it is created by successful men influenced by the rumors of magic which attend their success, and that whilst magic gives men confidence in their undertakings, it also represents a record of man's actual achievement. Primitive man is not a romantic but a practical hard-headed being, even in his magic, and there is no magic to attempt the impossible.

Functional Occasions of Magic

So far I have endeavored to show by correlations how the morphology of magic amongst the Trobrianders and the Azande is determined by the social structure of the two societies. The same is true of the functional occasions of magic. This cannot be demonstrated at length, as it would then be necessary to describe fully the occasions of use and the specific function of all magic in both communities. Moreover the statement is so obvious in simpler instances that it hardly requires demonstration. The Zande has no canoe magic because he has no canoes. The Trobriander has no magic of iron-forging because he lives in a stone age.

The problem becomes more complicated when we consider the sociological aspects of magic. It is clear that the communal garden magic of the Trobrianders is absent from Zande life because the Azande do not cultivate their gardens by joint labor.

It is more difficult to see why the Trobriand chief uses magic as part of his machinery of government, whereas the Zande chief does not use this weapon of chastisement, but this difference can readily be understood when the position of the chief is known in both societies. The Trobriand chief was unable to exercise great executive power as may readily be judged from the almost entire absence of corporal punishment, whereas the mutilations and exe-

[12] From my unpublished notes.

cutions inflicted on their subjects by the Zande chiefs are one of the many signs of their real power. The Zande chief, therefore, had little need of magic to enforce his rule.

On the other hand, the Azande move their homesteads freely over the countryside and a chief who has angered his people may lose his subjects. Also a young chief anxious to conquer or acquire new territory by peaceful means has to rely entirely upon his popularity to attract followers. Hence we find a system of magic for attracting dependents.

Magic used in communal undertakings such as we find in the Trobriands, in garden work, in trading expeditions, in building canoes, and in other forms of economic enterprise has no counterpart in Zande life. This is because there is a lack of cohesion in Zande social life, solidarity either due to close aggregation of dwellings or good means of communication, being absent. Thus while magic amongst the Kiwai Papuans or the Trobrianders is often associated with village activities, this cannot be so amongst the Azande because there are no villages.

Also amongst the Azande we do not find the institution of magic associated, save in one instance, with the clan. This is because the clans have little solidarity. Political functions are in the hands of a class and the clans also lack the cohesion which localization would give them. For magic is an important social institution, and for it to be orientated after a group, that group must have solidarity without which it cannot exercise important social functions.

Summary and Conclusions

I set out at the commencement of this paper to show that the social incidence of magic in Melanesia differs from the social incidence of magic in Africa and that this difference affects the structure and functional occasions of the magic. I have attempted to do this by a comparison between the data of the Trobriand islands and the data of the Azande of the Nile-Uelle divide. I explained how the Trobriander and the Zande regarded magic not as a force of nature, but as a cultural heritage, not as something discovered but as something co-existent in time with man, not as a vague impersonal power but as a tangible weapon of culture,

not activated by the spirits of the dead but deriving its power from the knowledge of tradition and the abstinence of living men.

I then analyzed the structure of magic in these two societies and showed how the spell amongst the Trobrianders is a standardized formula whilst amongst the Azande it is only a saying adapted to the purpose of the magic and accompanying the rite. I concluded that the psychological purpose of magic is not served unless an utterance is made in conjunction with the rite, but that the crystallization of the utterance into a standardized formula is determined by the affiliation of the magic with a group through the institution of ownership.

The analysis of magic in the two societies showed also that amongst the Trobrianders myth, like the spell, is a standardized formula, a set story transmitted intact to the succeeding generation by the social mechanism of kinship, whilst among the Azande magic generates only a loose current myth and everyday tradition, save in exceptional instances in which the magic is owned by a restricted social grouping and a stereotyped and permanent element of culture takes the place of the ephemeral mythology. For here again I concluded that the psychological purpose of magic is not served unless the ritual has a background of belief in mythology, a halo of stories about its wonder-working powers, but that the crystallization of these stories into standardized myth is determined by the affiliation of the magic with a group through the institution of ownership.

I suggested that any section of society enjoying special privileges, whether magical or otherwise, produces its own mythology, the function of the myth being to give sanction to the possession of the exclusive privileges.

I suggested that important magic, that is, magic which plays its rôle in large communal undertakings or is practised on behalf of the whole community or reinforces an essential function of society such as war or government, is always to be found in the hands of a few men. I gave some examples to support this view. Since all important magic is in the hands of a few individuals the more it becomes spread among the members of the community at large, the more it loses its importance and social utility. This gives

rise to the creation of new magic, magical redundancy, and an attempt to stabilize the magic through new groups or associations.

I have described how today magic is taken over by one people from another. This is one way in which new magic comes into being, but it is also created by individuals and I have discussed the manner of its birth.

In the earlier part of my paper I attempted to show that the form of magic depends upon the structure of society as a whole, and at the end I indicated that the functional occasions of magic are also determined by the social structure. Examples were given to show how the occasion on which magic is used, the social activities with which it is correlated, and the groups after which it is orientated differ with differences of social structure.

It is one of the aims of social anthropology to interpret all differences in the form of a typical social institution by reference to difference in social structure. In this paper I have attempted to show that differences in the form of the institution of magic, in particular between two societies, can be explained by showing the variation in social structure between these societies.

By the method of correlation we attempted to show that the formalization of the components of magic rites depends on the factor of ownership. It may be asked why magic is owned by the kin or clan groups in the Trobriand isles and not amongst the Azande. The answer is that in the Trobriands these groups have important social and economic functions to carry out which we do not find associated with the same groups amongst the Azande. Now since the rôle of magic is to enable these social and economic processes to be carried out, it is naturally associated with the groups fulfilling these functions. The purpose of this paper was to show how such an association affects the form of the magic.

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RITUAL PARALLELS IN PUEBLO AND PLAINS CULTURES, WITH A SPECIAL REFERENCE TO THE PAWNEE[1]

By ELSIE CLEWS PARSONS

NOW and again the Pueblo student may have asked himself whether certain Pueblo traits do not carry a suggestion of Plains culture. The fetich bundles of the western pueblos, the behavior of the Clown societies, the tribal societies of the Hopi, the chiefly police system of the Tanoans, the directional corn-named groups of Isleta, the scalp dance of Zuñi, the summer camp of Taos, herein are to be found various aspects of Plains life. Yet the ritual emphasis, the ceremonial complexes, the social values at large, of the Pueblos vary so much from those of the Plains tribes that suggestions of parallelism must have been lightly dismissed, at least so I presume, as they have rarely found a way into print. Now I propose to take these parallels more seriously, so that we may at least have them clearly in mind in the reconstruction of tribal histories.

Ritual objects.—The term fetich-bundle applies to the *tiponi* of the Hopi, the *mi'le* of Zuñi, the *iyetiko* (*iariko*[2]) of the Keres. All these consist of a hollowed ear of corn filled with various seeds and girt with feathers, cotton, beads, and arrowpoints. It is the Mother and is the most sacred of altar properties. Its possession is a warrant for chieftaincy among the Hopi where it descends in the maternal family in charge of the ceremony. At Zuñi, curiously enough, the corresponding ceremonial groups, the rain priesthoods, where office also descends in the maternal family, have no corn fetiches, only the curing societies are possessed of them. The Zuñi curing societies show Keresan influence, and wherever the Keresan medicine society has spread, as at Isleta and among the Tewa, we may expect to find the Corn Mothers, even when the record is scant or missing. The Mothers may be renewed at the

[1] Read at the meeting of the American Anthropological Association, Dec. 28, 1928.

[2] *Honani* (Acoma).

ceremonies when they are to be brought out, but there is no distinctive renewal ritual as that for the Plains bundles. Offerings are made to the Mothers, but in the form of sprinkling corn meal upon them (as well as upon other sacrosanct objects) so that the appearance of the sacrifice is different from that of the Plains.

As part of the bundle complex we may consider other sacrosanct objects which are unwrapped and set out on Pueblo altars—the bird skins on the Hopi altar, and the sticks representing deceased society members, and on Hopi and other altars stones of curious formation and arrowpoints and blades all of which might have come out of any Plains bundle. The stones and points tend to be individual property in the nature of amulet. Probably every Pueblo ceremonialist has his own little bundle or bag of sacrosanct things which he contributes to the altar with which he is associated. The befeathered cylinder worn on the head of the warrior (Hopi-Zuñi) is in the nature of a bundle, for it contains objects taken from the enemy or other medicine.

Comparable are the anthropomorphic fetiches of the Pueblo Clown societies, perhaps the image of the Hopi Sand Altar Virgin, with the images used in the Sun dance. I do not include here the images or dolls of the kachina cult, as I impute them, together with the elaborately carved altar pieces, to Spanish influence. The friars took pains to teach the art of carving.[3]

Sacrosanct sticks are used by the Clown societies as sticks of office—the chief of the Ne'wekwe of Zuñi has such a baton; the Kurena of the Keres carry a rattle-stick, a crook with olivella shells, as does the Mother of the kachina (Hopi). The crook stick is used by the kachina dance announcer at Zuñi.[4] Of a different type is the "chief's stick" carried by a few chiefly kachina among the Hopi and by members of the tribal societies. These sticks are flat with feather or skin pendant from each end, very similar to sticks fashioned by war societies of the Plains. The canes of office of the Pueblo (Zuñi) war chiefs are in form Spanish but this use of pseudo-fetichistic sticks may be pre-Spanish.

[3] See The Memorial of Fray Alonso de Benavides, 33, 1630. Chicago. 1916.

[4] Parsons, Winter and Summer Dance Series in Zuñi in 1918. Univ. Calif. Publ. Am. Arch. Ethn., 17: 180–181, 1922.

Certain types of Pueblo prayer-sticks, I venture to say, have been influenced by the feathered lances, straight and crooked, of the Plains. I have in mind the crook stick with the cotton string drawn from the tip of the crook to the straight part of the stick (used by the Pekwin of Zuñi, by all the Jemez societies, by the Hopi youth at his first Winter Solstice ceremony), also the common Hopi type called *hotomni* where the pendant feathers are fastened equidistant down the length of the stick. The concept of prayer-stick as miniature weapon occurs, we know, among the Pueblos, in the miniature bow and arrow and war club.

Headdress, mask, and sacred paint.—The Buffalo headdress of the Plains Buffalo dance is in use in all the pueblos, and presumably the Buffalo headdress passed into the composition of the kachina mask of the horned type at Zuñi and elsewhere. Antlered headdresses are worn also in dances by both Plains and Pueblo tribes. Two of the Hopi tribal societies, Horns and Agaves, wear elaborate antlered headdress. In some of the Plains societies animal masks are in use as well as headdress, by the society chiefs, a restricted use which suggests that of the mask in the Keresan-Zuñi curing society which is worn only at initiations or in grave cases of curing. Besides the animal masks among the Plains there are clown masks. These clown or burlesque masks are in vogue among the western pueblos, where they are in the keeping of the Clown societies (Ne'wekwe at Zuñi,[5] Wöwöchimtu on First Mesa). These masks, both Plains and Pueblo, seem to me to be of a European type, but into that question of provenience I may not go at present nor into the question of the degree in which the Spanish mask may have influenced masks of the kachina type.[6] More pronounced than masking in the clown groups, apart from the Koyemshi, is facial pigmentation. (Note the black and white painting of the Kossa, Koshare, and Ne'wekwe, and the stripes on the face of Bitsitsi and of the Hopi Singers.) Face and body pigmentation has a sacrosanct character among the Pueblos

[5] Note their use, too, by the lewekwe or stick-swallowing society (M. C. Stevenson, The Zuñi Indians, 23rd Ann. Rept. Bur. Am. Ethn., 471, 477, 1901–2).

[6] See Spanish Elements in the Kachina Cult of the Pueblos. Proceedings of the 23rd International Congress of Americanists, 1928 (in proof).

as it may have among the Plains, e. g., on ceremonial shield or tipi or in the painting of initiates in the Sun dance. Before the kachina mask is put on, a black stripe is painted over the bridge of the nose and under the eyes of the impersonator, and until the body paint is washed off an impersonator, he remains taboo or sacred, *teshkwi* in Zuñi term.

Ritual: Where convenient, the kachina impersonator bathes in the river. Ritual bath or headwash is a very frequent performance among the Pueblos, where the sweat bath of the Plains and of the Navaho, did not take.[7] But the object of both river and sweat bath is ritual purification. Head-washing, to be sure, which in the western pueblos accompanies all forms of naming and initiation, is without any at least explicit purifying meaning, and may be ascribed in part, no doubt, to the Friars, who gave such great weight to the rite of baptism.

The rite of incensing among the Pueblos seems to be also one of mixed sources, Spanish as well as Indian. Puffing smoke on sacrosanct objects such as masks and altar fetiches looks European, whereas fumigating a patient or the property of a deceased person looks Indian. Probably the two practices should be considered as quite distinctive rites. The Plains practice of offering the pipe to a spirit or as a form of initiation to a man is again a distinctive rite, the Pueblo equivalent of which is sending a cigarette to a kachina group to invite them to dance or asking for anything ceremonial with tobacco or including a cigarette partly smoked, with other prayer offerings. In this connection, the ritual use of sage and of cedar by both Plains and Pueblos may be noted, for ritual smudge (Plains and Pueblo), for emetic (cedar, Pueblo), for medicine, for prayer-stick offering (sage, Pueblo, particularly Hopi).

Prayer-stick or feathers is outstanding in Pueblo ritual, and even more ubiquitous than the offering of feathers is that of meal. The lack of these sacrificial types among the Plains gives a different cast to their ritual of sacrifice. However food offerings other than meal are made by the Pueblos, deposited in the open or, on

[7] There is a reference to its former use at Isleta.

eating, crumbled indoors, bits are dropped on the ground, just as the Kiowa, for example, at meal time would hold up a bit of their meat to the Sun and then bury it. The Pueblo rite of fasting from food or drink while engaged in ceremonial enterprise is somewhat comparable with that of the Plains rite, more particularly in connection with the Sun dance. The Plains variety of fasting to get supernatural experience is not found among the Pueblos, although now and again one gets hints in the folk-tales that ritual abstinence is to provoke the compassion of the spirits quite as among the Plains.[8]

What has been called by Plains students the *iruska* complex of rites—enduring boiling water, fire-handling, stick-swallowing, jugglery at large—is to be found in various fragments among the Pueblos. Stirring boiling water without being burned occurs as a rite in the initiation into the Winter chieftaincy of the Tewa. (It occurs well integrated or rationalized—can heat hurt Winter or Ice men?).[9] Fire play is ritual of several societies at Zuñi[10] and of the Keresan Fire society, with which societies stick-swallowing is also associated. Reviving the dead, which is a Plains shaman trick or tradition, also figures in Pueblo tradition. The ability to go great distances, by flying or otherwise, and to see from a distance is imputed to Keresan and Isletan[11] as well as to Plains shamans. Among the Pueblos, however, these powers do not come distinctively through the spirits, more particularly through supernatural animals, although the power of flight was

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[8] The theme, by the way, of the neglected or persecuted little boy "who knows something," i.e., has supernatural power, occurs quite commonly in Pueblo tales. Study of the distribution of this theme from the southwest to the northwest through Siberia to Jerusalem and into Europe and back into the Southwest were of interest.

[9] Compare, too, the Pueblo tale of the youth who puts on the coat of ice to endure the test of fire.

[10] At initiation ceremonial of the Uhuhukwe of Zuñi, Hehea kachina are chased with firebrands (The Zuñi Indians, 526), in a way reminiscent of the Fire dance of the Navaho. Hehea (Keresan, Heluta) is Tonenili of the Navaho. He has traits in common with Coyote (Stephen was told that the Navaho Fire dance was a dramatization of the Plains-Pueblo myth of fire-stealing by Coyote). Is there a possible etymological connection between *heluta* and *iruska*?

[11] These are outstanding attributes of the Fathers at Isleta. In this connection note the flights of the nun, Maria de Jesus, to the Pueblos. Benavides, 59, 276.

described to Father Dumarest as due to Eagle.[12] The powers to hunt and to cure, however, derive very generally among the Pueblos from Mountain Lion and from Bear. In the tales the individual in distress gets help from Spider-woman who gives "medicines," which may be compared in a way with the help from guardian spirits among the Plains. Among the Hopi there are shrines to Spider-woman, but they are not visited by the individual on his own account. Individual supernatural experience is not sought by the Pueblos. As Dr. Bunzel has been pointing out, individualistic experience of no kind is sought by them. The differentiation here between Pueblos and Plains may be well seen in the seeking of omens by the Pueblos as against the Plains seeking of visions or of supernatural helpers.[13] The Zuñi war chief was expected to go at night to the River and listen for sounds, propitious and unpropitious. The celebrant of the Hopi Water serpent ceremony has also to listen at the spring for sounds, the Antelopes[14] spend a night at the spring for good visions, and in some instances the depositor of prayer-sticks is told to withdraw after placing his sticks and later return to observe their position. Such omens are for the use of the groups at large, not for the individual seeker. Consequently the ritual messenger reports them to his society There is no such secretiveness about individualistic supernatural experience as is seen among the Plains. But not all supernatural experience is individualistic among the Plains. There is shamanistic organization, particularly with animal mentors or patrons, and this type is a character, too, of the early *iruska* complex, parallel parts of which we noted among the Pueblos.

Along lines of ceremonial organization, however, it is in the organization for war that Pueblo-Plains parallels are to be looked for.

Now the matter of the Pueblo organization for war is excessively problematic, it is obsolete and besides it has been peculiarly

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[12] Notes on Cochiti, New Mexico. Mem. Am. Anthr. Assoc., 6: 212, 1919.

[13] Elements of the vision = guardian spirit complex are present among the Pueblos, as Dr. Benedict writes (The Concept of the Guardian Spirit in North America, Mem. Am. Anthr. Assoc., 29: 40, 1923), even if the guardian spirit itself is lacking.

[14] See below.

subject to Spanish influence. Early in the eighteenth century there was imposed upon the Pueblos by royal edict a secular governmental organization of governor and lieutenant and sheriffs or captains. These groups became the executives or mouthpieces for the ceremonialists who remained the real sources of authority. However, these Hispanicised groups of officers took over, I surmise, some of the functions of the old war or police groups, at least whenever these became extinct. To what extent the present Outside chiefs or war captains of the Keres and Tewa are Pueblo or Spanish, defies analysis. They are appointed as secular officers with the governor and his lieutenants, but they safeguard the ceremonies against intruders including witches, they maintain ceremonial conformity, and they make systematic prayer-stick offerings. The bow priesthood at Zuñi and the *kalektaka* group of the Hopi appear to represent the earlier pre-Spanish type of organization. At Taos and Isleta a third policing type is seen in the chiefs or little chiefs, younger men who are attached to the governor, possibly as a modernized or Hispanic form of the Plains police or *akichita* societies.

Of these police or military societies, more archaic parallels are to be seen in some of the Hopi societies—more particularly in the tribal societies, Tataukyamu (Singers)[15] and Wöwöchimtu (Old men),[16] Agaves, and Horns. These are the four societies into one of which every youth is initiated. All four have particular paints and headdresses. There is a rule against going in front of the Wöwöchimtu, on pain of twisting sickness, which would have to be treated by the society chief, and the woman member of the associated woman's society, the Mamzrau, would have her mouth twisted, if she absented herself from the ceremonials.[17] The functions of the Agaves and Horns are those of scout and guard; they do not dance. The Singers and Wöwöchimtu have

[15] So translated by Voth. Stephen sees a possible etymology from a term meaning to carry on the back, as are the novices.

[16] This, too, is an approximate, but more certain, etymology. In the Plains societies which are not graded by age, there is a tendency for the older men to go into one society (Lowie, Anthrop. Pap. Mus. Nat. Hist., 11:904). This may once have occurred among the Hopi.

[17] Stephen's Journal in Ms.

dance steps and songs, of which some are of a phallic or obscene character, as is their clownish behavior. There are no women in these four societies, but the women societies are associated with the men's, conceptually and in actual behavior.

Then there are the Snake and Antelope societies. The Snakes were warriors, according to Hopi tradition. When they went on the war trail, they carried battle axe and club, not spear or bow and arrow.

> They knew no fear and marched up to the enemy and seized him by the throat, like a snake, and knocked him on the head with axe or club.[18]

The Antelopes were old men who remained in the kiva singing and praying while the Snakes were fighting. In Snake-Antelope ceremonial many details corroborate this tradition of sometime military character.

The out-and-out clown groups of First Mesa of which two out of the three are known to be borrowed from Zuñi and the Tewa; the Zuñi clowns—Ne'wekwe (and their affiliated society, the Shi'wanakwe) and Koyemshi; the moiety clown groups of Isleta—Black Eyes and Red Eyes or Gophers; the Koshare and Kurena of the Keres, the Kossa of the Tewa; the Tabösh and Tsunta tabösh of Jemez; the Black Eyes of Taos and Picuris—all these have various traits of the Plains military societies: inverted speech or talking backwards, foolhardiness[19] (more particularly in eating), stalking a stray creature, dog or chicken (instead of buffalo), showing mock fear, initiating by trespass, and inspiring fear. Their Plains-like fetiches, sacrosanct sticks, and pigmentation we have already mentioned. The representative of the supernatural patron of the Ne'wekwe carries a whistle as well as a baton and in his ceremony walks with arms crossed on his chest, an eagle feather in each hand. His face is striped in white. Wrapped in his blanket, he strides through the on-lookers at the Molawia ceremony the very picture of a Plains high chief.

Bitsitsi is a representative of Paiyetemu (Youth, in Keresan), the Sun youth. (A Ne'wekwe sometimes comes out to play with

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[18] Stephen's Journal in Ms

[19] Cf. Lowie, 960–1.

the sun painted on his back.)[20] As a kachina the Sun is also represented. By both Pueblos and Plains the Sun is greatly regarded. In Tewa-Zuñi tale the Sun appears as a handsome man to his sons, the war gods, or to the neglected little boy, giving them a desirable outfit and, in the latter case, an admirable name, a vision of which the conceptualism seems strikingly Plains-like. In Pueblo tale the Sun's sons, the war gods, are associated, more or less obscurely, with the Morning Star, and the Pleiades and Orion have a distinct war association among the Hopi. These constellations are observed very generally by the Pueblos, and counted among the supernaturals. Lightning is a Pueblo supernatural, although at times Lightning like the Rainbow seems to be rather an attribute of the Rain or Storm spirits than a separate entity. Wind is a malevolent spirit throughout the Pueblos, and particularised among the Hopi and Tewa as a mean old woman. Mountain ogres or cannibalistic giants figure among both Pueblos and Plains. Distinctively Pueblo are the Rain or Cloud spirits with their varying association with the Dead and with the chiefs of the Directions, and the Mothers of the Underworld, the Corn mothers. At first sight the character of Plains religion seems far more pantheistic than that of Pueblo religion. But when we consider such collective pantheistic terms as Kopishtaiya (Keres) and Kayé (Tewa) and when we realize how almost any creature, human or animal, as well as the anthropomorphically cosmic, can find a place among the kachina, the impression of this differentiation loses weight.

The Spirits, the behavior of ceremonial groups, rites and ritual objects—in these particulars we have been finding our parallels, without note of the ceremonial organization at large or the ceremonial calendar. Along these lines there is little to compare, in the first case because ceremonial organization as a whole is naturally closely bound up with the general social organization which between Pueblo and Plains tribes differs considerably,—maternal clan, paternal moiety, and town chieftaincies giving a character to the Pueblos which is generally lacking in the Plains,—in the second case because the calendar of an agricultural people con-

[20] Winter and Summer Dance Series in Zuñi, 194.

cerned primarily with season, weather, and crops naturally varies from calendars determined by hunters and warriors.

With an outstandingly agricultural tribe in the Plains area, the Pawnee, parallels in calendar and organization appear, so strikingly indeed that I should like to conclude our discussion with a special comparison of Pueblo and Pawnee ceremonialism.

As at Zuñi, there is a marked distinction among the Pawnee between the medicine or curing societies and the societies possessed of a rain bundle which is referred to as "rain-storm wrapped up" and consists of two decorated ears of corn,[21] known, in Pueblo fashion, as the mother of the people. These are white ears with glumes or tasseled tips, perfectly kernelled,[22] with the first section of the stem left on.[23] In each bundle society there are four leaders or chiefs whose position is hereditary; presumably through the maternal line they are the descendants of the first keepers of the bundle.[24] The chiefs of the society choose the members, within limitations, from kindred of the deceased members, a method of selection not unknown to the Hopi and the people of Jemez. The chief of the society is the keeper of the ritual and the bundle, although actually the keeper is the wife, often the sister, of the chief, again a marked Hopi and Zuñi feature.

There is a Pueblo-like hierarchic council, consisting of the chiefs of the four main bundles, and these chiefs rotate in the office of supreme chief, each chief holding office for a half year,[25] reminding us of the terms of office of the Winter Man and the Summer Man of the Tewa. Each of the four paramount Pawnee chiefs selects a warrior who in turn selects three police, men with clubs. These positions of warrior and police are life long. Again

[21] G. A. Dorsey, The Pawnee, 49, 93. Pub. Carnegie Institution, 1906; see also Murie and Wissler, in Ms., p. 234.

[22] Were a grain lost, the Mother would cry. Compare the Cochiti story of the sacrosanct ear that were a grain lost could not speak. (Notes on Cochiti, New Mexico, 231–232.)

[23] Murie and Wissler, 255, 266.

[24] Ib., 157.

[25] Murie and Wissler, 145. The terms are determined by the first appearance of certain stars—approximately February 1 and September 1. Cf. the relations between the Tewa Town chiefs and the stars. Parsons, Tewa Social Organization. Mem. Am. Anthr. Assoc., No. 36 (in press).

we are reminded of certain relations between the secular and ceremonial officers of the Pueblos. The crier for the Pawnee priest[26] recalls the Zuñi and Hopi crier.

The Pawnee medicine-men derive their powers from living creatures, and in their processions the medicine-men costume themselves to represent their animal mentors[27]—Pueblo traits.

There are two Pawnee medicine lodges, West and East. In each bundle society there are north and south moieties, the north side leading in winter ceremonies, the south side, in summer,[28] a seasonal division bringing to mind that of the Tewa and of Taos.

The Pawnee bundle rituals form an annual series, beginning with the planting and ending with the harvest, i.e., there is a ceremonial calendar which may be compared, if only loosely, with the Pueblo calendar, although the outstanding Pawnee ceremony is typically Plains, for it occurs at the first thunder in the spring when the lance paraphernalia are renewed. Possibly the early spring pre-planting ceremonies of field cleansing or exorcism by the Pueblo war or clown societies are corresponding performances. Phallic or fertility practices attach to both Pueblo and Pawnee [29] war groups. Specifically the spring to autumn bundle rituals may be compared with the summer rain retreats of Zuñi or Jemez.

Pueblo-like offerings of eagle feathers and of beads are made by the Pawnee and offerings may be thrown into water, into the river, or into a certain pool in a crater cone;[30] and there are several references to what I take to be prayer-sticks[31] or prayer-feathers,[32]

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[26] G. A. Dorsey, Traditions of the Skidi Pawnee. Mem. Am. Folk-Lore Society, 8: 336, 1904.

[27] In one of the tales the chief priest dresses himself to represent the god. The Pawnee, 29.

[28] Murie and Wissler, 145.

[29] Murie and Wissler, 125.

[30] Grinnell, 119, 134, 359.

[31] The Pawnee, 29, 54, 55; J. R. Murie, Pawnee Indian Societies (Anthrop. Pap. Mus. Nat. Hist., 11: 628.) In war, ritual offerings of tobacco, blue beads, etc., are fastened to willow sticks, measured from the tip of the middle finger to the shoulder, pointed at the butt, decorated and stained red. These sticks are "planted" in the different directions, with prayer. (Murie and Wissler, 95, 315, 390, 423.)

[32] The Pawnee, 98.

and downy red feathers are worn in the hair.[33] Other ritual traits in common with Pueblo ritual are for the most part among the general Plains rites we have already surveyed as common to the Pueblos also: jugglery; spear or arrow swallowing;[34] fire-walking; ceremonial continence before such shamanistic feats; clowns;[35] an anthropomorphic image in the war bundle;[36] food offering (corn) into fire;[37] burying food offerings in the four directions;[38] exorcism by fumigation;[39] blowing smoke to the corn fetich or other fetich;[40] offering smoke in the six directions, to the gods or to deceased medicine men;[41] smoking in sign of agreeing to or accepting a proposal. To these we may add: spitting medicine; the use of arrowpoint in curing or exorcism; dancing before the doors of leading men who make presents; ritual continence, fasting, and bathing.[42]

Special[42a] Pueblo similarities occur in the use of a water monster (serpent) image;[43] sky stones (Pueblo thunder or lightning stones or points); tying the penis in ritual (a Zuñi Koyemshi practice); painting the face of the warrior with vertical parallels, two on each cheek;[44] breathing on the sacrosanct;[45] tree conservation ritual;[46] the occurrence of a ceremonial lodge under water;[47] foot-racing with the one overtaking snatching at the fetich;[48] giving the newsbringer a smoke before hearing his news;[49] new fire ritual.

[33] Murie and Wissler, 98.
[34] Ib., 589
[35] Dressed as wolves; compare Isleta and Taos practice.
[36] Murie and Wissler, 119.
[37] Ib., 101.
[38] Traditions of the Skidi Pawnee, 47.
[39] The Pawnee, 79; Murie and Wissler, 87, 97–8, 239.
[40] Traditions of the Skidi Pawnee, 56; The Pawnee, 83; Murie and Wissler, 239.
[41] Murie and Wissler, 96–7, 520.
[42] Ib., 529.
[42a] I do not mean exclusive. A study of the distribution of Indian ritual such as is promised us by Dr. Cole is indispensable to delimiting comparisons between any groups.
[43] Ib., 515.
[44] Ib., 117, 313, 418.
[45] Ib., 213, 270, 491.
[46] Ib., 509.
[47] Ib., 508.
[48] Ib., 238. [49] Ib., 242.

The Pawnee pantheon is divided much as is the Pueblo into the power-giving animals and the cosmic supernaturals. There are the Earth or Corn Mother, the rain gods, Clouds, Wind, Thunder, and the Stars, Morning Star and Evening Star being of high rank.[50] As among the Pueblos, Morning Star is associated with the War cult.[51] Some of the gods are world quarter gods or gods of the directions.[52] The animals, wildcat, bear, mountain lion, wolf, represent gods of the world quarters.[53] It is notable that the buffalo, as the deer, etc., among the Pueblos, are supposed, if properly addressed, to let themselves be slaughtered for the good of the people.[54] The animals are associated with the doctors, the cosmic spirits with the priests[55]—as at Zuñi.

In the Pawnee origin myth it is notable that the rain bundles, which quite in the Pueblo vernacular are said to be "handed down," have been carried from the Southwest from whence the people came,[56] i. e., the origin myth is a migration myth, again a Pueblo feature. In the seventeenth century the Pawnee raided for horses into the Pueblo area, but long before that, prior to their northeasterly migrations, may they not have been in closer and more pacific contact with the Pueblos? At any rate when the cultivation of maize was acquired by the Pawnee it carried ideology and ritualism similar to the Pueblo. Here, possibly, in a maize complex of ritual together with technique, the Southwest imparted its culture on a more notable scale than Kroeber has allowed for in his last masterly contribution to the discussion of the distribution of cultural traits in North America.[57]

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[50] Sun and Moon are of minor importance, the star cult is preeminent. The preeminence of Sun in the Pueblo pantheon is a striking differentiation.

[51] We may note that he has a little brother. (Murie and Wissler, 306).

[52] Traditions of the Skidi Pawnee, 47; The Pawnee, 14.

[53] The Pawnee, 72, n. 1.

[54] Ib., 104, n. 1.

[55] Murie and Wissler, 497.

[56] Grinnell, 352.

[57] Native Culture of the Southwest. Univ. Calif. Publ. Am. Arch. Ethn., vol. 23, no. 9, 1928.

THE SERPENT IN AFRICAN BELIEF AND CUSTOM

By WILFRID D. HAMBLY

THIS subject involves the preliminary difficulty of selection and definition of terms. A survey of the literature dealing with the serpent in relation to human beliefs and practices, reveals a vague and inconsistent use of the word "worship." The majority of writers have shown themselves willing to gather under this heading almost any form of cult or superstition relating to the serpent. Archaeological evidence, showing the serpent in architectural and ceramic design has led to unwarranted suppositions respecting the magico-religious significance of the designs. The difficulty of supplying a rigid and logical definition of an act of worship is indisputable. But in practice confusion of thought may be avoided by using the word only in connection with certain beliefs and acts. These might reasonably include ideas of a superhuman being, a priesthood, provision of a special house or locality, also the employment of sacrifice and ritual procedure. The word "cult" may be used to designate beliefs and acts, whose nature is less clearly defined than is the case with concepts and ceremonies surrounding an act of worship. In a third category are a large and miscellaneous assortment of superstitions. These include a use of the fat of snakes for making medicines, wearing of amulets to guard against snake bite, magical means, other than amuletic, of curing snake bite or becoming immune to the poison.

The subject of serpent worship has suffered from hasty generalizations and a lack of detailed treatment. Consequently there has been assumption of similarities and identities where they do not exist. With regard to Africa, Frobenius has published a map purporting to give a distributional survey of beliefs centering round the serpent. In the absence of all but the scantiest information accompanying the map, it is impossible to use, evaluate, or criticize the representation.

All the data relating to serpent beliefs in Africa may be conveniently arranged under the following headings:

Python worship
Rainbow-guardian-snakes and rain
The birth-snake and fecundity
Snake-souls, reincarnation, transmigration, totemism
Immunity, snake-medicine, general superstitions

After the data have been collected under these headings, most of which fall into several sub-headings, a number of problems present themselves. Prominent among these is the possibility of external origin.

If the origin of African snake beliefs is thought not to be indigenous, there arise a number of queries relating to a possible internal origin. These comprise:

Zoological evidence which might give rise to the beliefs in question
Similarities of python worship in the East and West of the continent and the possibility of their common origin
Association, if any, between python worship and other snake beliefs
Geographical distribution, and linkage of snake-beliefs with other cultural elements.

The word "totemism" is not, perhaps, quite justifiable in connection with African snake beliefs. In the so-called totemism there is usually nothing more than the acceptance of the snake as a clan badge, belief in transmigration of souls into snakes, refusal to eat the snake, and a general respect for the reptile.

The study of python worship may well begin with the account given in Bosman's *Description of the Gulf of Guinée* (1700). Speaking of Whydah snake worshippers, he says,

> Their principal god is a certain sort of snake which professes the chief rank among their gods. They esteem the serpent their extreme good and general bliss.

The narrator then describes the homage of the people and their king; the invocation of the snake in times of war and drought; and the nature of the priesthood. With regard to the latter Bosman says:

> I am of opinion that the roguish priests sweep all the offerings to themselves, and doubtless make merry with them.

On the whole this account is well substantiated by many subsequent observers, who have left reports too long for detailed

comparison. Burton (1864) described the snake temple at Whydah. This observer saw a native bring back a wandering python to the temple. Before raising the reptile the man dusted his forehead as if groveling before a king. In former times death was the penalty for accidentally killing a python, and a fine was imposed for merely meeting the creature. The narrative of Skertchley (1874) agrees with that of Burton. According to this writer, a child touched by a python is claimed for the priesthood, which exacts from the parents fees for maintenance and tuition. Ellis (1890) carefully explains that the python contains the spirit of a god of wisdom, bliss, and benefaction. A native who meets a python has to say, "You are my father and my mother, be propitious to me." Ellis mentions 2000 wives of the python god who are secretly married to the priests. In wild orgies in connection with festivals for worshiping the python these women dance themselves into hysteria. In addition to other ceremonies there is a special occasion for a procession round the town, at which time all people have to remain indoors without watching the python bearers. Leonard, writing in 1906, says that ophiolatry is to be found all over the Niger delta. The pythons formerly at Benin symbolized the war god Ogidia, a name which is likewise employed at Brass. At times the spirit of the god takes possession of the priest who then speaks in a dialect of Old Calabar. To some extent the priest induces this possession by lying in the mud of the river and starving himself for seven days. Very seldom is a human being attacked by a python, but when this occurs no person other than the priest may effect a rescue.

Talbot (1912), Thomas (1914), and Basden (1921) have all reported on what may be described as very strong cults of the python. The evidence of these writers strongly suggests that practices and beliefs prevailing in Nigeria are residual from a one-time flourishing python worship.

A survey of Africa in search of python worship is negative until the region of Lake Victoria Nyanza is reached. Accounts of python worship in Uganda have been supplied by Canon J. Roscoe who spent twenty-five years in this region. His contributions to the subject are dated 1909 and 1923.

Worship of the python is confined almost entirely to one clan, in Budu, south Uganda. The temple, like those of Whydah, is a large conical hut built of poles and thatched with grass. On one side of the building is the place of the snake and his guardian, a woman who is required to remain celibate. Over a log and a stool, a bark cloth is stretched for the python to lie upon. In one side of the building is a circular hole so that the python is free to go to the banks of the river, where it feeds on tethered animals. In addition to this diet the python is fed daily on milk from sacred cows which are kept on an adjacent island. The python is supposed to give success in fishing because he has power over the river and all that is in it. Worship is at new moon, at which time childless men and women petition for offspring. For seven days all work is stopped in the vicinity of the temple when a time has been arranged for the ceremonies. A priest, whose office is hereditary, drinks from the bowl of the python, then takes a draught of beer. The spirit of the python goes into the medium, who wriggles on the floor like a snake, uttering strange sounds, and talking in a language which has to be interpreted to the worshipers. When the medium is in a state of coma an interpreter explains to the people what they must do in order to realize their desires. If children are born to the supplicants, they must bring an offering to the python. The Bahima and Banyankole believe that their royal dead enter pythons, which enjoy immunity in a special reservation. At one time the kings of Uganda used to send messengers to ask the sacred python to grant children to the royal house. In East Africa, as in the West, these are many scattered beliefs which suggest themselves as survivals of a more widespread cult.

In all essential points the python worship of the East and the West are the same, and a perusal of the accounts leads to belief that the origins are not independent. Against this it may be urged that, in the first place, the python is likely to attract attention anywhere. The idea of an indwelling spirit, also the formation of a priesthood with ecstatic dancing are factors which might, and do, readily arise in connection with all kinds of adoration. The value of the resemblances, numbering at least ten, lies

in the fact that they all occur together in each of the python-worshipping centers.

Knowledge of racial migrations in Africa points to the probability that python worship passed across the continent from East to West. There is not a fragment of evidence to suggest that the Hamites or Semites brought python worship with them, though perhaps it is possible to show the probability that these immigrant waves brought other snake beliefs which are now accepted as typically African. The most reasonable suggestion is that python worship is indigenous to the early Negroes of Uganda, and that the migration was of a racial character. Forms of python worship are found in their fullest structure and activity at both ends of a known migratory line. The terminus of the Congo forest line of the migration is in Loango, where snake beliefs and practices are strong, though there is no python worship. The Dinka, living a third of the way across from East to West, encourage pythons to live in their huts. According to Schweinfurth, the reptiles used to be fed, respected, and called by name. Python worship is most perfect in detail in Uganda, its hypothetical point of origin. The keeping of sacred cows for supplying milk to the python looks like a Hamitic addition. It is a fact that when the Negroes, who were driven westward by racial pressure, had passed across the continent, they were fifteen degrees, or thereabout, north of the equator, that is to the north of Dahomey, Ashanti, and Nigeria. Owing to pressure from the Fulani and Haussa, these Negroes had to move southward into coast regions of the area from Liberia to the mouth of the Niger. It is precisely in these regions that python worship, cults, and superstitions are found in greatest strength and abundance today. The python itself has a distribution, in many species, from the south of the Sahara to Natal. There is no zoological factor which determines the present location of python worship in these centers.

The rainbow snake, often guardian monster of wells, has a wide distribution that cannot be correlated with any particular area and type of culture. There is, however, the general impression that the predatory snake monster of African folklore owes something to Semitic influence. This impression becomes stronger during the perusal of Robertson Smith's *Religion of the Semites*,

though it has to be admitted that Arabian stories of jinn-possessed snakes bear only a general resemblance to similar African tales. In view of extensive Semitic migrations in Africa, the assumption of some connection between the folklore of Semites and Negroes is justified. Demonstration of the connection is a difficult matter, for on a careful analysis of stories the reader has to admit that the resemblance rests on a few simple generic ideas. The "ring" of the stories is the same. If one should decide that African concepts of rainbow-snake monsters of a predatory kind have been derived from Semitic sources, there is the difficulty of explaining the rainbow-snakes which are a staple belief of the aborigines of Australia. The brilliant colors of many snakes, combined with their hibernation and reappearance after the first rains, might suggest a ready and spontaneous development of rainbow-snake myths. The existence of pythons over twenty feet long is no doubt sufficient to suggest a fable of snake monsters, even to the most obtuse Negro.

The worship of pythons in Africa is fundamentally a fertility cult, and there is a possibility that ideas of the birth snake, which announces conception by visiting a hut, are a bye-product from dissolution of a pristine python worship. Hesitation is justifiable between this opinion and the idea that the birth-snake is a variant of the snake-ancestor-visitor concept, which is definitely Hamitic in distribution. On the whole, the idea of the snake visitor announcing a conception, is nearer to the ancestral-snake-visitor concept than it is to any other belief.

A survey of the data relating to transformations and reincarnations falls into the following categories:

Reincarnation in snakes. Of gods and demons.
Of kings and chiefs.
Of commoners, including women and children.

Transformation into snakes during life:
A living man can turn himself into a snake.
A living man can send his soul into a snake.
A man can command a snake to do his will.
A man may turn another person into a snake which will then obey him.

Ideas concerning immunity from snakes fall into four main categories:

1. Inherited power over snakes. This is a family asset. Immunity through membership of a secret society having a snake as its emblem. Immunity as a result of training which includes inoculation.
2. Treatment of snake bite by methods both rational and magical.
3. The wearing of charms against snake bite.
4. The use of snake's fat, snake's skin, or pulverized snake as a cure for the bite.

Such a grouping of beliefs does not represent so many cleanly cut divisions, each having a definite geographical distribution. On the contrary, the categories are valuable only as a means of giving some order and precision to what appears, on first reading, to be an inextricable confusion of concepts. On the whole there is no good reason for thinking that these beliefs and practices result from the breaking down of a well ordered python worship. Ideas of transformation and reincarnation are common the world over, so also are the medicinal uses of parts of animals, and the treatment of wounds by magical methods of a homeopathic kind. In both civilization and savagery certain men have good control, knowledge of, and power over animals. It would be a fascinating theoretical belief which regarded men who claim immunity from snake bite as representatives of the priestly stock who used to take charge of the snake temples. As a rule the python, a non-poisonous snake, is the inhabitant of temples; though there are here and there sacred groves in which poisonous snakes are kept. It is just possible that men who claim that their power and immunity are hereditary are of the old priestly lineage.

A quest for some extraneous source of African python worship and other cults and superstitions is on the whole negative. A belief in the influence of Semitic folklore on African stories of guardian snakes, rainbow snakes, and predatory snake monsters embodying demons, has already been expressed. In addition to this the folklore of Irania and Armenia leaves the impression that the East African idea of the ancestral snake visiting the house is a Hamitic importation. Southeastern Asia is regarded as the home of Hamito-Semitic peoples, and for this region Ananikian has some information bearing on the problem. Common to East Africa and the hypothetical home of the Hamites is the idea of a snake ancestor visiting the house. Such a caller has to

be fed with milk, or bad luck will follow. What are now folklore tales in Irania and Armenia are current practices and beliefs in a region stretching from Lake Rudolf to Natal. The Zulu have always held tenaciously to this belief of the snake ancestor visiting the kraal. Zulu invasion passed from South to North over country which, ex-hypothesi, was in acceptance of the snake-ancestor-visitor idea, communicated by the passage of Hamites from North to South. This suggestion of a spread and reflux of the concept would account for its firm establishment from the Suk to the Zulu.

So persistent have been the claims that serpent worship, tattooing, and many other factors have originated in and spread from Egypt, that it is natural to examine the snake-beliefs of ancient Egypt somewhat closely. Theoretically the prevalence of well defined snake-worship in Egypt should have had its influence on African beliefs. Is this the case? With some persistence I examined the claim that tattooing originated in Egypt, but found the evidence of tattooing in ancient Egypt to be far too slender to support any such hypothesis. With the claims made in regard to snake worship I have fared little better.

Sayce has stated that there is a general Egyptian present-day belief in the divine character of the serpent. Superstition still says that as a serpent grows old wings protrude from the body. There are also legends of fire-spitting serpents. A boatman related that he had lost the sight of one eye through an attack from one of these monsters. Here there is an interesting contact of zoological fact and fable. A kind of spitting cobra is found as far north as Assuan, and it is more than likely that the man met his misfortune in this way. Loveridge and others have recently given convincing evidence that the spitting cobra aims at the face, and the result may be severe inflammation. The snake-guardian of the house is reported to be an Egyptian present-day belief. Lucas, 1714, described a wonder-working serpent of Egypt, which was revered by the inhabitants.

Several Egyptologists have extracted from the Book of the Dead and other documents, a considerable amount of information respecting the presence of snake-beliefs in early dynastic

Egypt, and later. In the volumes *Ancient Records of Egypt*, Breasted has given many references to the Uraeus. "Dreadful is thy serpent crest among them," "I mixed for them ointment for their serpent crests," and many similar references, make the reader willing to accept Petrie's opinion that the uraeus symbolized royal power, divine life, judgment, life giving, and knowledge. The serpent Nehebka was one of the forty-two judges of the dead, and, according to the Book of the Dead, this serpent points out the way to the underworld. Amulets in serpent form were numerous. The sun god is generally represented with the head of a sparrow-hawk. On the top of the head is a disk representing the sun, and around this is the fire-spitting serpent, which destroys the sun's enemies. Isis is represented as a serpent, and to accommodate himself to her Osiris takes serpent form.

The song in praise of Ra illustrates the well established idea of the serpent as a fiend. "Thou passeth through the heights of heaven; thy heart swelleth with joy. The serpent fiend has fallen; his arms are cut off; the knife hath cut asunder his joints." A vignette from the papyrus of Ani shows Ani, clad in white, spearing the serpent fiend. The papyrus of Nu has a section on the repulsing of serpents and worms. The serpent is mentioned among secret names connected with magical practices. Ermann gives a translation which reads:

> As a preventive against witches, cut off the head and wings of a large scarabaeus beetle. Cook these parts in serpent's fat and drink the mixture.

Lexa has published translations of Pyramid Texts, one of which contains a formula for protection against serpents, and another to be used for directing serpents against an enemy.

These ideas of the serpent in Egypt are far too general to serve as a basis of comparison with those of Negro Africa or any other region. Still less will the snake-concepts of Egypt serve to bolster up a theory that the origin of snake worship was in Egypt. What is there of a specific kind to correlate in any way with the python worship of East and West Africa?

If, however, the problem is approached from a zoological point of view, there is good ground for believing that any of the

beliefs allied with the serpent might easily arise repeatedly and independently. The main points bearing on the structure and habits of snakes may be conveniently summarized under the following headings:

Quick noiseless movements which make the reptile appear and disappear.
The habit of living near graves, hollow trees, old walls, and ant hills.
Enormous size and crushing power of the python.
The bites of poisonous snakes have a quick, and to the native mind, magical mode of operating.
Darting out of a forked tongue.
Often brilliant colors and color phases.
The viviparous snakes bring forth large broods. The python lays a large number of eggs.
Two headed snakes are of two kinds. There are those which are so called because of the slender head and a habit of raising the tail when disturbed. More rarely there is an anatomical malformation which causes the snake to have two heads which bifurcate at the cervical vertebrae. Hibernation during cold and drought. Snakes reappear with the seasonal rain; they swim well, and pythons may be seen in forest pools.
The habit of hissing and spreading a hood.
Peculiar growths such as cephalic protuberances and spinal ridges. These have been exaggerated in cave paintings and folklore stories.
Some snakes have a quadruple penis. All snakes have a double penis. Withdrawal is by invagination, therefore copulation is a lengthy process.
The habit of spitting venom.
Peculiar method of swallowing, during which the epiglottis is protruded in tubular form. Thus breathing is possible, when to all appearances the reptile should be suffocated.

If these points relating to structure and habit are borne in mind in relation to rainbow snakes and rainmaking, fecundity and phallicism, reincarnation, and snake monsters, there must follow the feeling that there is no imperative need to search in Egypt or elsewhere for the genesis of African snake beliefs.

Lack of space has forbidden detailed discussion, but this will probably appear in book form with an adequate bibliography. The details here given, combined with the general impression of the evidence as a whole, give an orderly sequence of ideas to what has been a heterogeneous collection of beliefs, usually spoken of as snake worship. Perhaps the nature of the subject, which is very ancient and complex, makes it inevitable that the investigator should be left with certain clear general impressions, rather than a number of points, each of which is capable of complete

demonstration. The most important items arising from the inquiry are:

1. African snake-beliefs are logically classified into, python worship, ideas of fecundity, phallicism, and productiveness generally. Further, there is a reincarnation-transformation-totemic complex of ideas. The rainbow-snake and guardian-monster myths form a class of ideas. There is a series of beliefs centering round concepts of immunity from, and power over snakes.

2. Examination of African python worship, in relation to snake cults from other parts of the world, provides no proof that Africa received these beliefs and practices from outside her own borders. The evidence is strongly in favor of an indigenous and ancient origin of python worship. Some other beliefs are of possible Asiatic origin; these may have entered Africa through Hamitic and Semitic agency.

3. The habits, habitats, and anatomical structure of snakes is such as to encourage (1) and (2). Within the African continent itself migration of ideas has played a part. This is probably true with regard to python worship; the ancestral snake visiting the home; and the myths of rainbow snakes and snake monsters. There is fairly easy communication from East to West along the north of the forest zone, with more facile transit still down the east coast. Snake beliefs are fundamentally concerned with transmigration, reincarnation, and fecundity. They have therefore a dynamic force in all grades of society, because the concepts are concerned with what is elementary and basic.

4. There is nothing more than a superficial resemblance between the snake-beliefs of ancient Egypt and those of Negro Africa.

5. There is a strong probability that the Hamitic invaders introduced the idea of the ancestral snake visiting the home. The concept was further strengthened by a northerly reflux of Zulu peoples. Arabian influence must be allowed for in African folklore relating to snake-monsters tenanted by jinns. The snake which announces a conception is in some way generically connected with the ancestral snake visitor, but the two beliefs are not identical.

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BIBLIOGRAPHY

(Quoted in order of occurrence in the text.)

BOSMAN, W. Description of the Gulf of Guinée (Utrecht, 1705).

BURTON, R. F. A Mission to the King of Dahomey (London, 1864), 2: 93.

SKERTCHLEY, J. A. Dahomey As It Is (London, 1874), 55.

ELLIS, A. B. The Ewe-Speaking Peoples of the Slave Coast (London, 1890), 54, 60–63; and other works by this author.

LEONARD, A. G. The Lower Niger and Its Tribes (London, 1906), 329.

TALBOT, P. A. In The Shadow of the Bush (London, 1912). Life in Southern Nigeria (London, 1923). The People of Southern Nigeria (Oxford, 1926).

THOMAS, N. W. Anthropological Report of the Ibo-Speaking Peoples of Nigeria (London, 1914), part 1: 46; part 4: 22, 29.

BASDEN, G. T. Among the Ibos of Nigeria (London, 1921), 217.

ROSCOE, J. The Banyankole (Cambridge, 1923), 61. The Bakitara (Cambridge, 1923), 42, 44. J.R.A.I., 39: 189, 1909. Man, No. 57, 1909. J.R.A.I., 37: 102, 1907.

SMITH, ROBERTSON. Lectures on Religion of the Semites (London, 1901), 120, 133, 168.

BROWN, A. R. Rainbow Snake Myths of Australia. J.R.A.I., 56: 19, 1926.

ANINAKIAN, M. H. Mythology of All Races (Boston, 1925), 57: 73.

HAMBLY, W. D. The History of Tattooing and Its Significance (London, 1925).

SAYCE, A. H. Serpent Worship in Ancient and Modern Egypt. Contemporary Review, October, 1893.

LOVERIDGE, A. Notes on Snakes and Snake Bites in East Africa. Bull. Antiquarian Inst. of Am. Phil., 11: 106, 1928.

BREASTED, J. H. Ancient Records of Egypt (Chicago, 1907).

LEXA, F. La Magie dans L'Egypte Antique (Paris, 1925), tome 2: 1.

SCHMIDT, K. P. Herpetology of the Belgian Congo. Am. Mus. Nat. Hist., v. 49, art. 1, July, 1923.

THE REIGN OF HUEMAC

Translated from the Aztec Text of "The Annals of Quauhtitlan."

By B. L. WHORF

HUEMAC appears to have been a ruler of the Toltecs and their allies in the period just preceding the breaking up of the Toltec power and the disappearance of this people from the page of history. By some students of the subject he is considered to be the same personage as Quetzalcoatl, but seen through an account composed under quite different political and religious influences and handed down separately from those channels and influences that bring to us the stories connected with the more familiar name.

At all events the figure of Huemac, through the curdled gloom that enshrouds his portion of time and space, glimmers toward us with enough of historicity and significance, both from what is told of him and from the general importance of his period, to be of distinct interest to the student of ancient America. Much has been written about Quetzalcoatl; very little about Huemac. The writer, whose interests lie more in linguistics, especially Nahuatlan linguistics, than in the history which is sometimes accessible only through such studies, had his attention first directed toward Huemac when H. J. Spinden, on learning that he was able to read Aztec, suggested that he translate a hitherto untranslated scrap of ancient manuscript that appeared to deal with the Toltecs. A full account of this translation is now in preparation for publication.[1] Suffice it to say that this ancient text made mention of Huemac, and that for information to be collated therewith reference was had to the "Annals of Quauhtitlan." This Aztec

[1] To be published in the Proceedings of the Twenty-Third Session of the International Congress of Americanists, as a paper read before the Congress at its twenty-third session at New York, Sept. 17–22, 1928, entitled "An Aztec Account of the Period of the Toltec Decline."

document had already been published in the *Anales del Museo Nacional de México*, Tomo 3, printed in 1886, accompanied by two Spanish translations, the earlier one by Faustino Galicia Chimalpopoca, and a later one by Gumesindo Mendoza and Felipe Sánchez Solís. The Aztec MS had once been, according to one account, in the library of the College of San Gregorio; according to another, in that of the College of San Pedro y San Pablo. Both accounts agree that it got lost at the time of the expulsion of the Jesuits and after various vicissitudes turned up again and was placed in the library of the National Museum of Mexico, where presumably it still reposes. The name "Annals of Quauhtitlan" was given it by José F. Ramírez, Curator of the National Museum, because it seemed to be the work of an annalist who was mainly concerned with the chronicles of that city but whose records took in other places and went back to the time of the Toltecs. Some notes on these annals have been made by Spinden, looking toward reduction of the Aztec dates therein to the Christian era.

No translation from the Aztec text directly into English had ever been made. The writer set out to make such a translation, not indeed of the entire Annals, but of the portions most significant for the history of the Toltec period. Now the translation of ancient Aztec MSS, written as they are in cramped, crowded, and antique minuscules, beset with flourishes, unpunctuated, abounding in abbreviations, with words run together and phrases spelled by ear, is almost as much a problem in palaeography as in linguistics. It soon became evident that, although I was dealing with a printed text and not a MS, I had to face a problem of this sort. The printed version represented a corrupted text or a poorly written one, so that a necessary part of translation was correcting this text, restoring insofar as possible the probable intended original, and setting up this restored text in a modern manner, with the aid which punctuation, hyphenation, and proper spacing give toward exposing the analysis and syntax, so that the text could be readily confronted and compared with its translation.

Fortunately most of the errors in the printed text were of the

crudest sort, absurdly obvious. A study of the types of mistake represented in them proved helpful in the clearing up of subtler difficulties. To be sure, such textual criticism ought to be done direct from the MS wherever possible. But here it was impossible. Moreover, a poorly written MS cannot relieve us of the necessity of inductively piecing together probabilities. On the whole, the problem did not appear difficult enough to require the aid of the MS, being mainly a matter of correcting obvious errors. In the notes to the translation I give the exact text of the printed version in the *Anales del Museo Nacional* wherever it shows any material difference from my corrected version, together with what would appear to be the correct form and remarks where called for. Most of the corrections will be self-explanatory to Nahuatl scholars.

The result of this process of criticism and translation was a rendering that continually differed on minor points and sometimes on major ones from those of my two predecessors in the field. But as these again differed from each other, and as I have made mine more close and literal than theirs, with a view to having it correspond line for line with the Aztec, I feel that the rendering here presented is the most authentic to date.

The first date in the Annals is a Ce Acatl or One Reed year. The backward count makes this 635 A.D. It is mentioned as the year when the Chichimecs left Chicomoztoc or Seven Caves and when the year-count, the day-count, and the count by twenties were carefully done by Oxomoco, an old man, and Cipactonal, an old woman. Later on the text says that the Chichimecs suffered greatly for "*in caxtol-poal xihuitl ipan ei-poalli on naui*," "fifteen-score years upon three-score and four," 364 years, before they reached the city of Quauhtitlan in Ce Acatl, A.D. 687. If these "sufferings" mean their experiences since leaving Chicomoztoc the departure therefrom is pushed back to 323 A.D. With the year Ce Tochtli or One Rabbit, A.D. 726, the Toltecs are first mentioned; their year-count begins with this year, with this year also it is considered that four Suns or ages of the world have been completed, and the fifth age known as the Ollin age begins. The annalist here digresses; he recalls that the creation of the world

was supposed to have begun in the year One Rabbit and ended on "the day of Quetzalcoatl," the day Seven Wind.[2] This is the first mention of Quetzalcoatl in the Annals. The annalist then lists the five Suns, called the Water, Jaguar, Rain, Wind, and Ollin Suns, with remarks on each, and returns to his chronicle.

In the year One Flint, 752, the Toltecs set up a king, Mixcoamazatzin, who began the Toltec kingdom. In Ce Acatl, 843, Quetzalcoatl is born, and the annalist applies to him the designation of "Ce Acatl Quetzalcoatl." The annals then deal at some length with the life of Quetzalcoatl, interrupting the account here and there with brief notices of the local affairs of Quauhtitlan. In Two Rabbit Quetzalcoatl goes to a place called Tollantzinco and spends four years in building operations, erecting the famous building called the *huapalcalli* and a bridge that led to the Huastec country. In Five House the Toltec detain him in the country and make him their king and priest.

The year Two Reed "contained a report" (or so I tentatively translate) that *Quetzalcoatl to-piltzin* (our lord) had died, and yet the annals say that in this same year *to-piltzin in ce-acatl Quetzalcoatl* built a fourfold group of buildings where he and others prayed and fasted, conducted skilled work in precious stones and held religious rites. Some note is made of the nature of their cult; it was of a celestial and astronomical character, with stellar and solar deities and sacrifices of snakes, birds, and butterflies. Emphasis is placed on Quetzalcoatl's knowledge of the Ommeyocan, the nine celestial intervals (*Chiconauh-nepanihuan*) and his ability to converse with heavenly beings. His wealth also is recounted, and his beginning to build a great temple with "serpent-pillars" (*coa-tlaquetzalli*), which he never finished.

And now there enters the narrative the class of beings called *tlatlacatecolo* or demons,[3] who from now will play an important part

[2] Or, the day Seven Reed. The printed text of the Annals says "7 ecatl," which would ordinarily be taken to mean "7 eecatl," or 7 Wind, the common modern spelling being "ehecatl"; but which again might be an error for "7 acatl," or 7 Reed. It would seem that it is more likely to have been the day 7 Acatl that was associated with Quetzalcoatl. Spinden, in his recent "Maya Inscriptions Dealing with Venus and the Moon," p. 56, cites the Codex Telleriano-Remensis in support of this view.

[3] *tlacatecolotl*, demon, devil; plural *tlacatecolome* or *tlatlacatecolo*.

therein. This term, in the Annals of Quauhtitlan, seems to be used in two meanings that sometimes blend. *First*, a class of gods, or beings that later were worshipped as gods, of whom the most important seems to be Tezcatlipoca, whose cult is of that ferocious type with its insistence on human sacrifice that we are wont to think of as typically Aztec, and is in contest with the milder religion represented by Quetzalcoatl. *Second*, various peoples, evidently barbarous tribes, who are making inroads into the Toltec country, who are somehow closely related to the *tlatlacatecolo* of the first sort, or demon-gods, and evidently adhere to their cult. The demon-gods try to win over Quetzalcoatl to the practice of human sacrifice, but Quetzalcoatl refuses, for, says the chronicle "he greatly loved his subjects," and so his sacrifices continue to be of snakes, birds, and butterflies. The *tlatlacatecolo* then adopt a policy of mockery and ridicule with the object of tormenting Quetzalcoatl and eventually forcing him to flee, in which they at last succeed. The narrative is here followed by a short year-count leading up to another Ce Acatl, in which is recorded the death of Quetzalcoatl at Tlillan Tlapallan and his succession on the throne of Tollan by Matlacxochitl. Then the narrative goes back and relates the events leading up to his death, with the trickery of Tezcatlipoca narrated at length and in detail; also the circumstances of his death, which is by suicide on a burning pyre, of his ashes rising, of the entrance of his soul into heaven and his return as the morning-star *Tlauizcalpan teuctli*.

Against this background Huemac appears. His birth is not mentioned, but his accession to the throne of Tollan occurs in a year Nine Rabbit, which by the backward year-count of the annals from a known date would seem to be 994 A.D. but which is probably 1098 A.D.[4] in line with Spinden's statement that two

[4] Or still more probably 1150 A.D. allowing for still a third interpolated cycle. The writer reached this conclusion after a later conference with Spinden and after studying his recently published "Maya Inscriptions Dealing with Venus and the Moon." This assumption accords well with the events related in the Annals. The important era-year 1 Tecpatl, mentioned by Spinden on page 55 of the aforesaid work is on this assumption the 1 Tecpatl which occurs sixteen years after Huemac's elevation to the throne and is passed over in the Annals without notice. The first notice after this year is that of 7 Tochtli, "therein was instituted the sacrifice of the god-impersona-

cycles were interpolated into the Annals subsequent or previous to this date. But little space is spent on historical narration between the death of Quetzalcoatl and the accession of Huemac, though a count of ninety-nine years is recorded in that interval. I believe it is Spinden's view that the events recorded of Huemac and of Quetzalcoatl, insofar as they are historical, relate to one and the same person, and that they happened about the time assigned in the Annals to Huemac. It would seem that in the disorder of the subsequent times, that tendency which resulted in deifying him also resulted in forgetting a good deal of the purely human side of him, whereas some picture of this human side of him may have been preserved by the very ones who would not accept him as a god. Along with deification may have gone the projection of his figure back into a more legendary period, a time which was more distinctly a time when the gods walked among men. Perhaps his figure may have fused into and transfigured that of some older Feathered-Serpent god. And if the figure of the hero-god is decked in all the trappings of legend, resplendent with the gold and silver, the turquoise and chalchihuitl and precious birds of Nahua myth, if it is in short too bright, so also is that of King Huemac too dark. It is like a mass of bitter dregs from which everything pleasant or favorable has been strained away. We read of no building operations, no conquests, no achievements—of nothing but reverses, defections, backslidings and terrible deeds—and between the lines of a heroic but losing struggle to save something, some last remnant, of a country and a religion. This tale of Huemac is stark tragedy.

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tor." The later 1 Tecpatl, when the Toltec nation was going to pieces and about which the Annals have so much to say, is then the year 1220 A.D. This again accords with the events related. This appears to be the 1 Tecpatl year recorded in the above-mentioned scrap of Toltec historical MS translated by the writer.

Around this time the Mayan Books of Chilam Balam, especially that of Mani (v. *The Maya Chronicles*, D. G. Brinton), record numerous Nahua names in but slightly altered Maya form; e.g., in 1159 by Brinton's figuring, Chichen Itza was depopulated by warriors bearing such Nahua names as Cinteotl (Ah Zinteyut Chan), Tzontecontli, Tlaxcalli, Pantemitl, Itzcoatl, and Cacaltecatl.

Note. The spelling of Aztec used herein is that of Rémi Siméon's "Dictionnaire de la Langue Nahuatl," except that the character ç is not used, being replaced by z.

Corrected Aztec Text[5]	*Translation*
1. 9 tochtli.	Nine Rabbit.
2. In ipan in 9 tochtli, ipan mo-miquili	In Nine Rabbit, therein died
3. in Tollan tlatoani Tlilcoatzin;	Tollan's King, Tlilcoatzin;
4. auh niman mo-tlatoca-tlali in Huemac.	and thenwas enthroned Huemac.
5. I-tlatoca-toca on mo-chiuh Atecpanecatl,	His royal fame was achieved on the Atecpaneca,[6]
6. ca cenca miec in toloca	for very much history
7. cecni amoxpan mo-caquiz.	elsewhere in books will be heard of him.
8. Ca in iquac mo-tlatoca-tlali,	For upon his being made king,
9. quinno iquac mo-cihuauati	afterward when he married
10. conmo-cihuauati i-toca Coacueye.	he took a wife named Coacueye.
11. Mo-cihua-cuepque in qu-izcali	The women had turned and revived
12. tlacatecolotl	(the cult of) the demon-gods
13. oncan i-tocayocan Coacueyecan,	there in her namesake-place, Coacueyecan,
14. oncan chanecatca in i-toca Coacue ce,	where abode the Coacue-named one,
15. ciyacatl mo-chiuh inic patlauac i-cuitlapan.	represented with sleeves spread out in back.
16. Auh in omo-chiuh inin,	And these things being done,
17. niman c-ana-to in Xicococ tlanamacac catca,	then he went and got one who was a merchant of Xicoco,
18. in i-toca Quauhtli.	by the name of Quauhtli.
19. Niman in ya yeuatl	Then, as this one proceeded
20. i-petlapan i-cpalpan on mo-tlali-co in Quetzalcoatl,	to have Quetzalcoatl set up on carpet and throne,
21. ye yeuatl conm-ixiptlayoti Quetzalcoatl.	therefore this same one was made the representative of Quetzalcoatl.
22. On mo-chihua-co in Tollan	It came to pass that in Tollan
23. yeuatl teopixcati-co con-patlac in Huemac	Huemac replaced in the priesthood that one,
24. aca a-Quetzalcoatia,	any one, who did not Quetzalcoatl-ize (adopt or observe the Quetzalcoatl cult or religion),

[5] Based on pp. 24–29 of Anales de Cuauhtitlan, compiladas por J. F. Ramírez, Anales del Museo Nacional de México, 3, Appendix, 1885.

[6] Perhaps the name of a tribe, or it may mean ("those not of the palace").

25. in iquac ic am-auilti-to, ic amo cayaua-to in-cihua tlatlacatecolo,
26. in tech-acic yeuantin in tlacatecolotl yaotl.
27. Ihui, in m-itoa, Tezcatlipoca,
28. in Tzapotlan nenca;
29. ompa ualla inic qu-iztlacaui-co Huemac
30. in omo-cihua-cuepque in tech-acic.
31. Niman ye qui-cauh in Quetzalcoatia,
32. om-ito, ic ye con-patlac in Quauhtli.
33. 10 acatl, 11 tecpatl, 12 calli, 13 tochtli, 1 a, 2 te, 3 c, 4 to, 5 a, 6 te, 7 c, 8 to, 9 a, 10 te, 11 c, 12 to, 13 a, lte, 2 c, 3 to, 4 a, 5 te, 6 c, 7 tochtli.
34. Ipan tzintic in tlaca-teteuh mictiliztli.
35. Ipan in mo-chiuh chicome tochtli,
36. ipan in mo-chiuh in
37. cenca uei mayanaliztli, in m-itoa
38. mo-chicon-tochilique in Tolteca.
39. Catca chicon-xiuh mayanaliztli,
40. ic oncani in cenca ye tla-tolinia, ye tla-tlatia mayanaliztli,
41. niman icancan in tlatlacatecolo
41. quim-itlanque in i-tlazo-pilhuan,
43. temoa ompa quin-caua-to,
44. in Xochiquetzalli Apan ihuan Huitzcoc ihuan Xicoc,
45. inic ica mo-xtlaua-to pipiltzintin.
46. Yancuican ompa tzintic
47. in tlaca-teteuh mictiliztli
48. in omo-chiuhti-manca.

whereupon the women of the barbarians ("demons") could not go forth to sport and jest,
which brought upon us those barbarians as an enemy.
There went forth, it is said, Tezcatlipoca,
who in Tzapotlan was idling;
thence he came to seduce Huemac

because women had been turned away upon arriving among us.
Then whosoever desisted from worshipping according to Quetzalcoatl, it was said, thereupon he replaced that one by Quauhtli.
Twenty-three years pass, and the twenty-fourth is Seven Rabbit.

Therein was instituted the sacrifice of the god-impersonator.[7]
As for what took place in Seven Rabbit,
what took place therein was
a very great famine, which, it is said,
pressed seven times upon the Toltecs.
It was a seven-year famine,

so that, as undergoers whom the famine so greatly afflicted, so consumed,
the barbarians then arose
and made petition with their own children
seeking further to be rid of them,
at Xochiquetzalli Apan and Huitzco and Xico,
to pay with them the sacrifice of little children.
An innovation was thence instituted
the sacrifice of the god-impersonator
which was performed on every hand

[7] The well-known Mexican rite.

49. 8 acatl, 9 te, 10 c, 11 to, 12 acatl.

Four years pass, and the fifth is Twelve Reed.

50. Ipan in mo-miquili in tlatoani
51. Quauhtitlan, in toca Tzihuac-papalotzin;
52. 42 in tlatocatiti-catca.

Therein died the chief
at Quauhtitlan, he named Tzihuac-papalotzin;
forty-two years had he been governing.

53. 13 tecpatl.
54. Ipan in xihuitl in mo-tlatoca-tlali in cihuapilli
55. in Quauhtitlan qui-pachoaya altepetl.
56. in i-toca Iztacxilotzin.
57. Ompa i-tlalicatqui i-zaca-cal i-zaca-cal (dittogr.) manca
58. in izqui itlan atla ompa itlan.

Thirteen Flint.
In which year it was that a woman was made chief
so that she ruled the city of Quauhtitlan,
her name being Iztacxilotzin.
From there her company of settlers spread out its straw huts
in many places where there was water.

59. Catca miequintin cihuapipiltin
60. in quim-mauiztiliaya
61. ica in Chichimeca in quimo-cuitlauiaya.

There were many noblewomen
whom they much respected
with Chichimecs who took care of them.

62. I calli, 2 to, 3 a, 4 te, 5 c, 6 to, 7 a, 8 te, 9 c, 10 to, 11 acatl.
63. Ipan in xihuitl in mo-miquili in cihuapilli Iztacxilotzin,
64. matlac xihuitl on ce in tlatocat.
65. Auh niman con-patlac onmo-tlatoca-tlali Eztlaquencatzin.

Ten years pass and the eleventh is Eleven Reed.
In which year it was that the lady Iztacxilotzin died,
having governed ten years and one.
And then Eztlaquencatzin was made chief in her place.

66. Oncan in Techichco yancuican qui-man i-zaca-cal, in i-tecpan-cal;
67. oncan cal tzinti
68. inic oncan manca tlatoca-calli.

There in Techichco he laid out anew his palace with its straw huts;

there he established his house
so that there was spread out there a royal estate.

69. 12 tecpatl, 13 c, 1 to, 2 a, 3 te, 4 c, 5 to, 6 a, 7 te, 8 c, 9 to, 10 a, 11 te, 12 c, 13 to, 1 acatl.

Fifteen years pass and the sixteenth is One Reed.

70. Ipan in quizque Xicco in Chalca in tla-tzintiani;
71. Acapol, i-cihuauh Tetzcotzin, in-pilhuan Chalcotzin, Chalcapol.

In which the founders of Chalca left Xicco;
Acapol, his wife Tetzcotzin, and their children Chalcotzin and Chalcapol.

72. 2 tecpatl, 3 c, 4 to, 5 a, 6 te, 7 c, 8 tochtli.

Six years pass and the seventh is Eight Rabbit.

73. Ipan in xihuitl in cenca miec tetzauitl
74. mo-chiuhti-manca Tollan,

In which year it was that very many awful things
were done all around in Tollan,

75. auh no iquac ipan in xihuitl
and also in the time of which year it was
76. oncan aci-co in tlatlacatecolo,
that the barbarians came to arrive there,
77. in m-itoaya Ixcuiname cihua,
they of the so-called "Ixcuina women,"
78. auh in yuhca in-tlatol hue-huetque con-itoa:
and of whom thus the old men's story goes:
79. in ic uallaque Cuextlampa in quiza-co,
that as they came from the Huastec land which they were leaving,
80. auh in ompa m-itoa Cuextecatl in chocaya;
and that as they spoke, over there, to the weeping Huastecs;
81. in oncan quin-nonotzque in-malhuan
there they informed their captives
82. quim-acique Cuextlanca ica yoliuh tlamachtique, in quim-ilhuique;
they had seized from Huastec land where they used to live happily, saying to them;
83. "Ca ye ti-ui in Tollan amoca
"For already we journey to Tollan with you
84. tlaltech t-acizque;
to attain unto the country;[8]
85. amoca t-ilhui-chihuazque,
we shall make holiday with you,
86. ca ayaic tlaca calhuia teuantin;
yet never by daily feasting, not we!
87. tic-peualti-tihue tamech-min-azque!"
—we are preparing to shoot arrows into you!"
88. In oqui-cacque in-malhuan,
As their captives heard it,
89. niman ic chocaque, tlaocoxque;
then they wept bitterly over it;
90. oncan tzintic inin tla-cacaliliztli
there commenced those arrow-slaughters
91. inic ilhui-chihuitiloya in Ix-cuiname,
with which festivals were celebrated by the Ixcuinas,
92. in iquac m-itoaya izcali.
at which time, it is said, they revived them.
93. 9 acatl.
Nine Reed.
94. Ipan in neci-co Tollan in Ix-cuiname,
Therein it was that the Ixcuinas first appeared in Tollan,
95. ica tlaltech aci-co in in-malhuan omentin,
reaching the country with two of their captives,
96. in quin-cacalique.
whom they slew with arrows.
97. Auh in tlatlacatecolo in cihua
And if the women were barbarous
98. diablome in im-oquichhuan catca
their men were *diablos*
99. in im-malhuan Cuexteca;
to their Huastec captives;
100. oncan yancuican tzintic
there commenced anew
101. in tla-cacaliliztli.
the arrow-slaughter.

[8] This is the passage which Brasseur de Bourbourg thought meant "we are going to couple the earth with you," and has since been cited in support of an alleged rite of "coupling the earth." But *tlaltech aci* is only a slight variant of an extremely common expression for arriving at a place, *tlal aci*.

102.	10 tecpatl, 11 c, 12 to, 13 acatl.	Three years pass and the fourth is Thirteen Reed.
103.	In iquac miec mo-chiuhti-catca tetzauitl in Tollan;	When many awful things were being done in Tollan;
104.	niman ompa peuh in yaoyotl	then and thenceforth began the war
105.	in qui-tzinti in tlacatecolotl yaotl;	that the barbarian enemy had started,
106.	ompa in m-itoa Nextlalpan	yonder in Nextlalpan, they say,
107.	quim-ixnamicque in Tolteca.	they fought the Toltecs.
108.	Auh in otla-ma-to,	And as capturing went on,
109.	niman no oncan peuh in tlaca-mictiliztli	then and there began a human sacrifice
101.	in quin-mictique im-malhuan Tolteca.	in which the Toltecs killed their captives.
111.	In tzalan, in nepantla,	While in the meantime, in the interval,
112.	izati-nenca in tlacatecolotl yaotl,	the barbarian enemy lived on the alert,
113.	inic uel oncan queni	so that everywhere, indeed,
114.	tlauiltiti-nenca inic tlaca mic-tizque.	they went about stained red to kill men.
115.	Auh niman oncan tzintic	And then and there was instituted
116.	on peualti in tlaca xipeualiztli.	and begun the custom of flaying people.
117.	Iquac in on ica manaya Tex-calpan,	At a time when they were ranged about by Texcalpan,
118.	oncan yancuican;	there a new thing happened;
119.	cetlacatl cihuatl Otomitl	a certain Otomi woman
120.	tla-cemanaya in atoyac;	was proceeding to the river;
121.	oncan con-an, in qui-xipeuh,	there someone caught her and flayed her
122.	niman con-aqui in euatl,	then put on the skin—
123.	in i-toca Xiuhcozcatl, Tolteca.	—he was a Toltec called Xiuhcozcatl.
124.	Yancuican oncan tzintic	The innovation was there founded
125.	in to-tec euatl qui-m-aquiaya;	of dressing in the inside of some one's skin;
126.	quin uel mochi oncan o-tzintic	after it was quite thoroughly instituted there
127.	in ixquich tlaca mictiliztli o-catca.	complete human sacrifice existed.
128.	Ca m-itoa mo-teneua	For it is said and related
129.	ca in oqui-mac, in oqui-matia-yani,	that when one took a captive, or was intending to do so,
130.	in achtopa Quetzalcoatl catca,	formerly when Quetzalcoatl lived
131.	in mo-tocayotia "ce acatl,"	who bore the title of "One Reed"[9]

[9] The year of Quetzalcoatl's birth, and a title given him elsewhere in the Annals of Quauhtitlan.

132. zanniman aye qui-nec in tlaca mictiliztli.	then no one wanted human sacrifice.
133. Ca quin oncan in ipan in iquac	It is after that, in the time when
134. tlatocatiti-catca Huemac	Huemac was reigning
135. mochi tzintic in omo-chihuaya	that all began to do
136. qui-tzintique in tlacatecolome,	what the barbarians had started,
137. tel cecni om-amayoti om-icuilo	as moreover elsewhere is charted and written
138. ompa mo-caquiz.	and further on will be heard.
139. Ce tecpatl.	One Flint.
140. Ipan in xihuitl xitinque in Tolteca catca;	In which year the Toltec nation was going to pieces;
141. ipan mo-chiuh in Huemac iquac tlatocatiya.	it befell Huemac while he was ruling.
142. Auh inic yaque, inic olin pequiza-co Cincoc.	And thereupon they went, thereupon they dashed away hurriedly to Cinco.
143. Auh in oncan Cincoc, oncan qui-micti i-tlaca-teteuh in Huemac;	And while at Cinco, there Huemac slew his god-impersonator;
144. ic mo-xtlauh i-toca catca Cecoatl.	with him sacrifice was paid to the one called Cecoatl.
145. Auh oncan oztoc calaquiz nequiya	And there he sought to enter a cave
146. in oncan otlipan Tlamazcatzinco,	while on the road to Tlamazcatzinco,
147. amo uelit.	but could not.
148. Niman ualleuac quiza-co oncan	So then he came out and departed to the place where
149. m-ixiuh i-cihuauh in Huemac	Huemac's wife gave birth to
150. i-toca Quauhnene;	him named Quauhnene;
151. itocayotilo in axcan Quauhnenec.	it (this place) is now called Quauhnenec.
152. Auh niman ualleuac quiza-co Teocompa,	And then he came forth and departed for Teocompa (place of the giant barrel-cactus, *Echinocactus* sp.)
153. oncan icpac in teocomitl	where around the giant cactus
154. mo-quetz in tlacatecolotl yaotl.	the barbarian enemy had taken their stand.
155. Oncan quin-cennotz in i-cnihuan, quim-ilhui,	There he called together his allies, saying to them,
156. "Ximo-tlalican, in an no-cnihuan,	"Stay, O my friends,
157. ma ceuiani in Tolteca;	let Toltecs be calm;
158. amo an-yazque in an no-cnihuan."	you will not go, O my friends."
159. Auh in onca quin-centlali.	And whom he had he assembled.

160. In ic 1 Icnotlacatl, ic 2 Tzinmacatl, ic 3 Acxoquauitli, ic 4 Tzonquaye, ic 5 Xiuhcozcatl, ic 6 Ozomateuhtli, ic 7 Tlachquiyauitl-Teuhtli, ic 8 Huetl, ic 9 Tecolteuhtli, ic 10 Quauhtli, ic 11 Aztaxoch, ic 12 Oztamamal, ic 13 Icnotlacatlinan,

First Icnotlacatl, second Tzinmacatl, etc.

(Note that Xiuhcozcatl and Quauhtli have been mentioned before.)

161. ihuan milli quin-tiuh,
162. in zan mo-tolinia i-cnihuan tlacatecolo,
163. in oncan quin-centlali ueicampan.
164. Auh in o-yaque Tolteca,
165. niman quim-on-euiti in i-cnihuan tlacatecolotl
166. ompa qui-tlali-co in Xaltocan.
167. Quim-ilhui in Icnotlacatl
168. ihuan mochintin amo amatlamatizque:
169. "Xic-ilnamiquican inic otitlatequipanoque Tollan,
170. yuh on qui-chiuhtiazque mochipan.
171. Cenca teuatl, in ti Icnotlacatl,
172. ma t-a-tlama (t).
173. Intla x-a-tlamatican,
174. namech-quequeloz, namech-popoloz.
175. Maxtla, in Tolteca tepec chanecatca,
176. omentini-chpoc-pochhuan, Quetzalquen, Quetzalxilotl;
177. chalchiuh tepetlacalco in quinpiaya.
178. Oncan ic quin-cocoa pilhuantin;
179. o-ontenque in quin-tlacatilique
180. in-ixiptlauan in tlaquame.
181. Auh noyuh nic-quequelo
187. in Oztotempan tlapiaya Quauhtliztoc
183. ihuan in Atzompan tlapiaya Quauhtlica;
184. neuatl niquin-popolo."

and their vassals came after,
merely harassing the allies of the barbarian,
which he (the barbarian) had assembled there in the highlands.
And as the Toltecs proceeded,
then the barbarian roused his allies

and forthwith beset Xaltocan.
He (Huemac) said to Icnotlacatl
and to all without book-wisdom:

"Remember how we have worked for Tollan,
as one should always do.

As for thee, O Icnotlacatl,
may it be that thou hast not dealt deceitfully.
And if ye (O people) be not wise,
I shall come to shame in you, I shall utterly lose you.
Behold Maxtla, who dwelt in the Toltec mountains,
and his two maiden daughters, Quetzalquen and Quetzalxilotl;
in a jewelled cloister he kept them.

Yet there they sickened with childbirth;
they came to full term and brought forth
the likenesses of *tlaquatls* (a certain little animal).
And even so did I come to shame by
the way Quauhtliztoc kept Oztotempan
and Quauhtlica kept Atzompan;

even I have utterly lost them."

185. Auh in oquim-on-euiti i-cnihuan tlacatecolotl yaotl in ompa Xaltocan,
And as the barbarian enemy roused up his allies there at Xaltocan,

186. inic quim-on-tlali-to,
thereupon he stationed them,

187. tlanican tlatepotzco quim-ontecac in ompa Xaltocan.
he laid them in the low ground there behind Xaltocan.

188. Auh in Tolteca niman yaque quiza-to Coatliyopan,
And the Toltecs then proceeded to leave Coatliyopan,

189. quiza-to Atepocatlalpan, quiza-to Tepetlayacac,
to leave Atepocatlalpan, to leave Tepetlayacac,

190. quiza-to ueue Quauhtitlan,
to leave Old Quauhtitlan,

191. oc oncan con-chixque in Tamazolac chanecatca,
where furthermore they waited for one living in Tamazolac

192. in oncan tlapiaya, in i-toca Atonal.
who kept the place there, and whose name was Atonal.

193. Niman no teuan quin-uicac in im-maceualhuan.
Then also their servants (or, subjects) accompanied them.

194. Niman om-euaque in Tolteca quiza-to Nepopoalco, Temacpalco, Acatitlan, Tenamitliyacac, Azcapotzalco, Tetlolincan,
Then the Toltecs arose and departed from Nepopoalco, Temapalco, Acatitlan, Tenamitliyacac, Azcapotzalco, and Tetlolincan

195. iquac tlatocati Tzihuactlatonac in oncan,
while Tzihuactlatonac ruled there,

196. oncan quin-cauhque omentin Tolteca ueuetque,
where they left two Toltec elders,

197. Xochiololtzin, Coyotzin;
Xochiololtzin and Coyotzin;

198. teocuitla comalli con-macaque in tlatoani
a golden platter they gave to the local chief

199. inic oncan itlan omo-tlalique.
so that they could settle down there.

200. Niman yaque in Tolteca quiza-to Chapoltepec, Huitzilopochco, Colhuacan,
Then the Toltecs proceeded to leave Chapoltepec, Huitzilopochco, and Colhuacan,

201. quiza-to Tlapechhuacan, Quauhtenco.
to leave Tlapechhuacan and Quauhtenco.

202. Auh in o-yaque o-calacque altepetl
And as they went on and entered cities

203. ipan cequintin mo-tlalique;
they settled in some;

204. Cholollan, Teohuacan, Cozcatlan, Nonoalco, Teotliillan, Coaixtlauacan, Tamazolac, Copilco, Topillan, Ayotlan, Mazatlan,
Cholula, Teohuacan (Teotihuacan?) Cozcatlan, Nonoalco, Teotililan, Coaixtlauacan, Tamazolac, Copilco, Topillan, Ayotlan, Mazatlan,

205. inic nohuian Anauaca tlalli
so that all over the Anahuac land

206. ipan mo-tlali-to in axcan ompa onocque.
they settled in places that still lie there.

207. Auh in ipan ce tecpatl no iquac
And in One Flint was likewise the time when

208. cem-ohui qui-tocaque in Colhuaque,
209. auh tla-yacantiya in-tlatocauh i-toca Nauhyotzin.
210. 2 calli, 3 to, 4 a, 5 te, 6 c, 7 tochtli.
211. Ipan in mo-micti in Huemac
212. in oncan Chapoltepec cencalco.
213. Ipan in 7 tochtli xihuitl,
214. ipan tlami-co in in-xiuh Tolteca.
215. Chicon-xihuitl in nohuian quiztinemi-to
216. in Nauacan (?) tepeuacan
217. inic ompa mo-tecac in mo-tla-tlali-to.
218. Inic onoca Tolteca & . . . .
219. . . . . xihuitl ipan CCCIX.
220. Auh in ipan 7 tochtli xihuitl,
221. ipan in yeuatl Huemac mo-micti-co,
222. mo-quechm(at)elonioncan motl-auelpolo,
223. in oncan Chapoltepec oztoc.
224. Achtopa chocac, tlaocox,
225. in iquac aocaque quim-itta Tolteca,
226. in o icampa tlanque.
227. Niman omo-micti.

the Colhuacans followed him (Huemac?) all the way,
and their chief named Nauhyotzin was the leader.
Five years pass and the sixth is Seven Rabbit.
In which Huemac killed himself
while with a family of Chapoltepec.
In the year Seven Rabbit,
therein the years of the Toltecs came to an end.
For seven years, everywhere they went on emigrating
from the Nahua (?) land of origin
so that further on they laid themselves down to become established.
So that the Toltecs were laid low . . . . (evidently some portion is missing here)
. . . . years in 309.
And in the year Seven Rabbit,
therein Huemac himself came to kill himself,
strangling himself there in his despair,
there in a cave of Chapoltepec.
First he wept in bitterness of heart
as he saw that the Toltecs were no more,
that at last they had ended.
Then he killed himself.

NOTES

Line	Printed text published in Anales del Museo Nacional.	Revised text showing correct or probable intended form, and remarks.
7.	mocaquez.	mo-caquiz.
10.	comnocihuahuati.	conmo-cihuauati.
11.	mocihuaquetzqui.	mo-cihua-cuepque. Rendered probable by the fact that this unusual compound occurs again. The second time it was correctly copied, the first appearance was corrupted. The influential error was probably the mistaking of the MS *p* for *tz*, which as written in the old MSS, often with *t* uncrossed, resembles a *p*. Then under the impression that the stem intended was *quetz* the copyist may have changed a written *cu* to *qu*.
11–12	quizcalli tlacatecolt.	qu-izcali tlacatecolotl.
15.	yn icpatlahuac.	inic patlauac.
16.	omochiuhnin.	omo-chiuh inin ('nin).

17. Tlenamacac. tlanamacac.

19–20. niayehuatl ypetlapan ic palpan onmotlallico. in ('n) ya yeuatl i-petlapan i-cpalpan on mo-tlali-co.

23–24. yn huemacacca Quetzalcoatia. in Huemac aca a-Quetzalcoatia. Here *a* has been mistaken for *c* (a common error) so that *acaa* has become *acca*. We have here a denominative verb from a proper name,—"Quetzalcoatl-ize," the general sense of which can be gathered from the context.

31. yequicahu. ye qui-cauh. *Ye* is here the pronoun he, that one, he who; not the adverb so, already.

34. tlacatetemictiliztli. tlaca-teteuh mictiliztli. This first appearance of the word is corrupted, but when it recurs it is spelled correctly—*"tlacateteuh mictiliztli."*

38. mochicontochuique. mo-chicon-tochilique. This error probably came about by mistaking *li* in the MS for *v* (*u*), often written with a flourish. The reverse mistake occurs below—*ixali* for *ixcui*. The verb is more often found reduplicated—*totochilia, urgeo, incito*, Biondelli (Sahagun).

40. yconcani. ic oncani—*nomen agentis* of *onca*, be there.

41. ycancan. icancan—probably an unusual past tense form of the irregular verb *ica—icac*, stand.

43. temac. temoa—*a* for *o* and *c* for *a*.

44. xochique tzalyyapan. Xochiquetzalli Apan—name of a place.

48. omochiuh timanca. omo-chiuhti-manca.

57. ytlalicatqui. i-tlalicatqui or i-tlalicatque. A collective or plural *nomen agentis* in *qui* or *que* from *tlali-ca*, probably in sense "to be settling."

57. yzcacal yçacacalmanca. i-zaca-cal manca. Dittography occurred and then the first "yçacacal" was misunderstood and corrupted.

58. yzquitlanatla. izqui itlan ('tlan) atla. The last word means place where there is water.

74. mochiuh tzimanca. mo-chiuhti-manca. Probably a flourish after *t* was mistaken for *z*.

77. yxcuinanme. Ixcuiname. Evidently a plural proper noun denoting a tribe.

80–81. ychocayau. in chocaya in ('n). *In* was often written *ỹ*, and the *tilde* sometimes got omitted.

82. Cuextlan quicayol yuh. Cuextlanca (Cuextlanc') ica yoliuh.

83–84. amocatlaltechtacizque. amoca tlaltech t-acizque. The first word means "with you," the second "to the land," the third "we shall arrive" (or, "attain").

85. amoca tiluhichihuazque. amoca t-ilhui-chihuazque. The compound verb means "make (*chihua*) holiday (*ilhui-tl*)."

86. caaya yc. ca ayaic.

86. tlacacclihua. tlaca calhuia. (*calhuia*, eat roasted maize; *tlaca-tli*, day).

90. yn yntlacacaliliztli. inin tla-cacaliliztli. From the stem seen in *tla-cacalli, "cosa flechada o asaeteada"* (Molina).

94. yxalinanme. Ixcuiname. *C* of original copied as *a*, *vi* of original as *li*.

96. quin cacalque. quin-cacalique. The verb *cacalia* from which comes *tlacacali-liz-tli*; itself from the verb-stem *caca* seen in *tla-caca-l-li*, basic meaning probably enter, penetrate, pierce.

111. yn Tzalan. in tzalan—followed by the typical accompanying synonym of Aztec literary style—*in nepantla*.

112. ycatinenca izati-nenca. *Içati*, stem of *içati-ca* "estar despierto," *içat-eua*, "despertar y levantarse de priesa" —cedilla omitted from *c*.

113–4. quenitlahuiltitinenca. queni tlauiltiti-nenca or quen ne-tlauiltiti-nenca. *Tlauiltia* here is probably the applicative corresponding to *tlauia*, *tla*, "almagrar algo," and the meaning could also be "flushed, inflamed"—"o pararse bermejo y encendido el rostro." Since the use is probably reflexive, the morphologically correct form may be that with prefix *ne-*.

120. tlacimaya. tla-cemanaya—the syllable *an* having been skipped—"continuar, o perseverar hasta el cabo."

122. yn nehuatl. in euatl—the skin.

125. quimaquiayaya. quim-aquiaya. (dittography).

129–30. ynocymac ynocymatiayan yn achto paquetzalcoatl. in oqui-mac, in oqui-matiayani 'n achtopa Quetzalcoatl.

133. Caquinoncanin. Ca quin oncan in.

135. mochitzintic. mochi tzintic.

142. ollinpequizaco. olin pe-quiza-co. *Olin* is the stem of the verb *olinia*, move, agitate, modifying the following verb *pequiza*, which is not in the dictionaries. It would seem to be the verb *quiza*, leave, go forth, compounded with the not uncommon radical element *pe*, start, spring, begin, impel, etc., imparting a sense of impetuous movement to *quiza*.

157. mazahuiyan yn Tolteca. ma ceuiani 'n Tolteca. Optative of *ceuia* be calm, quiet, etc.

161. millequintiu. milli quin-tiuh. *Quin*, after; *milli*, estate, "heredad," here used in the sense of a chief's retainers or vassals.

169. yn icoti tlatequipanoque. inic otitla-tequipanoque.

172. matatlama. ma t-a-tlama (t). Preterite 2nd pers. sing. of *tlamati*, be wise, skilled, cunning, also be deceitful, impose upon—with negative *a-* and optative particle *ma*. *A-* here negates the bad sense of *tlamati*.

173. yn tlaxatlamatican. intla x-a-tlamatican. The speaker turns from Icnotlacatl to the others and addresses them in the conditional imperative 2nd pers. plural; now using *tlamati*, though still with the negative, in the good sense. There is evidently a play on this word.

177. Chalchiuh Tepetlacalco. chalchiuh tepetlacalco. I translate as a common noun somewhat figuratively used—a "jewelled" retreat in which the two girls were secluded.

179. oonteme. o-ontenque. Preterite of *temi*, be full,

complete, etc., with the perfective *on*. Either written *oontence* (*c* for modern *qu* is common) and then *nc* taken for *m*, or *u* omitted and *nq* taken for *m* with flourish, or written *temc* and *c* taken for *e*.

179–80. quin tlacatilique nixiptlahuan. quin-tlacatilique 'n-ixiptlauan, or 'ni-'xiptlauan.

187. tlanican Tlatepotzco quimontecao. tlanican tla-tepotzco quim-on-tecac.

188. coatly yopan. Coatliyopan—a place.

198. Teociutlacomalli. teocuitla comalli.

205. anahuacatlali. Anauaca tlalli.

208. ceymohui. cem-ohui—"all the way."

212. cincalco. cencalco—*cencalli*, family.

216 yn Ahuacan tepehuacan. in Nauacan te-peuacan—the last from *peua*, begin.

217. yn iccompa motecao. inic ompa mo-tecac.

218. yn iconocatoteca. inic onoca Tolteca—the text is evidently fragmentary for a space here.

221. temacmomictico. Huemac (in the original text probably written *vemac*) mo-micti-co.

222. moquechmeloni. mo-quechmateloni. Two letters were skipped. Present participle reflexive of *quechmateloa*.

225. aocuque. Probably a plural form, *aocaque*, of *aocac*, "no esta ya aqui."

226. oycampa tlanque. o icampa tlanque. The particle of the perfect tense *o* separated from the verb; adverb *icampa*, behind, after, in the sense of "after everything, at the end, at last."

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THE SOCIÉTÉ CONGO OF THE ILE Á GONAVE

By ROBERT BURNETT HALL

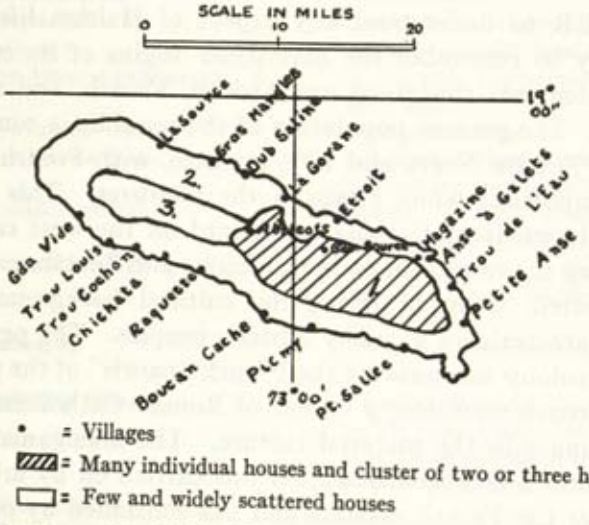
Introduction

IN ORDER to understand any aspect of Haitian life, it is necessary to remember the diversified origins of its culture. The chief elements concerned are African, French, and American Indian. The present population of the republic is composed of about 90% pure Negro and 10% mulatto, with French blood the most important white strain in the mixtures. This Negro stock was drawn from Gambia southward on the west coast of Africa and up the east coast to Mozambique and Zanzibar. There are represented, then, in Haiti, the cultural background and physical characteristics of many African peoples. The period of the French colony accounts for the French "paotis" of the people, a certain French tradition, a veneer of Roman Catholicism, and marked changes in the material culture. The amalgamation of the slaves into a homogeneous mass was carried on by arbitrary means under the French masters and has continued by optional selection since. The Indians left but little of their blood, due to the efficient methods of extermination employed by the Spaniards. They did, however, leave the chief crops and some of the agricultural practices of today.

The Ile á Gonave offers an excellent field of study to those interested in primitive society or in African inheritances among New World Negroes. Two natural features distinguish this island from the rest of the Republic of Haiti. The first is isolation and the second is the paucity of water. (See map 1.)

The extreme isolation of the island is in part due to location and in part to the inaccessible nature of its coasts. The Ile á Gonave lies well out in the great Gulf of Gonave midway between the two mountainous peninsulas of the mainland. The routes which connect the mainland with the world pass by Gonave but never touch it. The only connections with the outside are made

by the irregular trips of the small native fishing and trading boats. Throughout its history, the repelling nature of the coast lines has proved an isolating factor. At the immediate water edge, either sea-cliffs or rank growths of mangrove present themselves. Landing along those shores marked by cliffs is nearly impossible, and beyond them barren rocky slopes extend inland. By using



Map 1. Gonave Island. (1) Most densely populated and productive. High and rainy. Most springs and waterholes average planting per family from 5–10 carreaux. (2) Thorn forest and unproductive. Fishing villages comprise almost only settlement. Fresh water usually secured by boat from springs near coast. (3) Sparsely settled but extensively cultivated. Water brought overland for considerable distances. Average plantings from 30–40 carreaux. Yields low due to aridity.

boats of very shallow draught, an occasional hole in the mangrove barrier may be used to advantage. Behind the mangrove thicket stretches a sterile saline flat of considerable width, which swarms either with mosquitoes or sandflies, depending upon the season. Behind this, the thorn forest occupies the lower slopes and is exceedingly difficult to penetrate. Giant "jiggers" add to the general discomfort of the thorn forest.

The Ile á Gonave is an asymmetric anticline, rising above a slightly submerged limestone platform which is genetically related

to the alluvial plains of the main island just east of it.[1] All of the surface rock of the island is of a more or less porous limestone. The entire development of minor land forms and drainage features is that of a karst area. There are no through flowing streams and but a few surface exposures of intermittent streams. There are but two or three springs which carry water all the year. A half dozen small springs flow for part of the year. An equal number of large water-holes have some water in them throughout years of normal precipitation. At two points near the shore, fresh water bubbles up in the sea. These sources constitute the only supplies of water available for domestic use and stock watering. Rainfall is low and erratic. The northwest peninsula of the mainland cuts off the moisture-bearing trades, while the southwest peninsula stands as a barrier to the winds of the Caribbean storms. The hills of Gonave are too low to cause much cooling of the atmosphere in themselves. The average annual rainfall, along the coast, is probably about 25 inches. This may increase to 40 inches on the higher interior lands. However, individual years depart widely from the average. 1923 and 1924 are said to have been without rain. In late August of 1926 the author encountered about five inches in one week along the coast.

There have been no artifacts discovered on the island to tell of an Indian occupation. The ceramic remains and the sites so common on the main island seem to be entirely lacking. The clay figurines which make up an important part of the modern voodoo doctor's paraphernalia are imported from the mainland. Probably, the island of Gonave has been more diligently worked in this respect than any other part of the republic, due to the fact that Lieutenant F. E. Wirkus, Gendarmerie d'Haiti, has been governor of the island for over four years and has searched it from end to end. This man has located numerous Indian sites and acquired an interesting collection of artifacts during his years on the main island.

However, following the murder of the Indian Queen Anacoana

[1] W. P. Woodring, J. S. Brown, and W. S. Burbank, The Geology of the Republic of Haiti (Port au Prince, 1924). Pp. 418–422 contain the first and probably the only geological or otherwise scientific work done on Gonave to that date.

by the Spaniards in 1504, many of her followers are said to have fled to Gonave.[2] It is probable that the Indians took refuge in whatever isolated and otherwise undesirable spot the whites did not want. On the mainland they fled to the higher mountains and the small island in the Lake Enriquilo. Soon these were joined by other refugees. The runaway or "maroon" Negroes followed the practice of the Indians and occupied whatever land would most likely leave them unchanged by contact with Europeans. They often escaped the moment of landing or dived overboard as the ship sighted land.

The French paid no attention to the island and knew practically nothing of it. Even the well-informed geographer and historian of the colonial period, Moreau de St. Mery, merely mentions its existence.[3]

Since the establishment of the republic the island has proved a place of refuge or banishment for political offenders. In recent years there has been an immigration of landless peasants from adjacent sections of the mainland.

As a result of this individual history there has been little contact with Europeans and there is little if any white blood represented in the population of the island. The social and economic development has been more closely allied to African elements than on the main island.

The Société Congo

Probably the most interesting example of this sort is the Société Congo. This name is applied to the very interesting secret societies which dominate economic and social life on the Ile á Gonave. In the pages to follow, numerous extracts will be included, as notes, which appear to have a bearing upon the origins of these societies.

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[2] B. Ardouin, Geographie de L'Ile D'Haiti, 26. Eds. 1832, 1856 and 1864. (Port au Prince.) Dantes Fortunat, Nouvelle Geographie de L'Ile D'Haiti, 408 (Port au Prince, 1888).

[3] M. L. E. Morcau de St. Mery, Description topographique, physique, civile, politique et historique de la partie française de l'isle Saint-Domingue, 2: 527 f. (Philadelphia, 1797–1798).

These societies bear individual names and operate separately. In fact there is no central organization and the term Société Congo only designates the kind of society.[4] The purpose of these organizations is fourfold. First, they are cooperative labor groups; second, the members are afforded protection; third, they are mutual benefit societies; and fourth, they provide social entertainment. Two other functions are performed by these groups—disciplinary and religious. Through disciplinary measures within the organization, the members are sometimes compelled to act in accordance with civil law. This aspect can not always be relied upon, but is at times used for the collection of debts and similar offices.[5] The societies were not organized for religious purposes and ordinarily do not harbor religious ceremony. However, Voodooism, which is the deep seated religion of the mass, sometimes dominates the latter part of meetings which have been held for purely social purposes.

Each society has its own music, songs, dances, insignia, costumes, archives, and ceremonies.[6] Each society is open to men and women on an equal basis. There are no age or sex limitations.[7]

[4] J. H. Driberg, The Lango: A Nilotic Tribe of Uganda, 97, 1923: "These groups or associations for cultivation are more or less permanent and are called 'wangtich.' '*PurKongo*' is the term used when there are fifteen or twenty assistants. Work begins at dawn and ceases at sunset. The laborers work individually without apportioning tasks, and the reward consists of liberal supplies of beer drunk at the owner's village at the end of the day." P. 405, "Pur" (means) cultivation. P. 388, "Kongo" (means) beer. It seems possible that the term Congo, as used in connection with the Société Congo and the Dansé Congo of the West Indies and its African counterpart, may have been derived from this source rather than being a geographical or cultural designation.

[5] Hutton Webster, Primitive Secret Societies, 116, 1908. This author speaks of the Egbo society as being an efficient means of debt collection, which was sometimes used by European traders. On Gonave the society is used to aid in the collection of taxes and other legitimate indebtedness. The medical officer of the Occupation Force has also employed the society to compel a badly diseased member to report for treatment.

[6] Charles Partridge, Cross River Natives, 214, 1905. "Every society or club has its own costumes, insignia, music, dances and songs." P. Amaury Talbot, In the Shadow of the Bush (London, 1912). In speaking of Egbo among the Ekoi people this author states: "Each grade (division) has its particular dances and tunes" (p. 44).

[7] Hutton Webster, Primitive Secret Societies, 122. "True Egbo is for men only. But there is an affiliated society of free women—but it is subordinate. 'Idiong' or 'Idion,' an Old Calabar Society is open only to women and Egbo members.—'Lubuku' (society) of the tribes of the Lulua River allows general admission of women on the

The one prohibiting factor is inability to do a day's work. Each group is ruled by an elaborate array of officers.[8] In fact, as the number of members in any one society is limited to approximately the number of working days in the month there is almost an office per person. However, only the senior officer receives anything but glory from his or her incumbency.

The Société Congo is not confined within the Republic of Haiti to the Island of Gonave alone. A more or less similar institution bearing the same title is found in the mountains of the southwestern peninsula. There are likewise other organizations to be found upon the mainland which perform one or more of the functions of the Société Congo. Some of these organizations will be described in a later publication. However, in no part of the republic have the societies been so strongly developed or have they taken on so many individual characteristics as in the island of Gonave. This is doubtless a result of the fact that such an organization finds greater offices to perform under the peculiar natural and cultural conditions of Gonave.

We have already noted the low and erratic rainfall and the karst character of the country. The rainfall of the tropical wet and dry climates is everywhere exacting for the agriculturist. Add to this that the underlying rock material of the area absorbs the limited precipitation with extreme rapidity, and the problem becomes acute. Clearing, planting, harvesting, in fact, every detail of agriculture must be done on schedule.[9] The poor soil and rainfall conditions of Gonave and the primitive semi-milpa methods employed do not encourage large yields. In consequence, considerable areas of land are necessary for the support of the

same status as men.—'Ndembo' of the upper Congo admits men, women and all ages freely."

[8] P. Amaury Talbot, The Peoples of Southern Nigeria, 3: 763, 1926. "There is a kind of farmer's institution known as Owe, which, among Oyos, somewhat resembles a benefit club; it is a system by which a man can call upon others to come to help him in any big work, such as clearing a new piece of bush.—In Egba-land the Owe appears to be a properly organized guild *under a president and officers.*"

[9] A. Werner, British Central Africa, 184, 1906. Referring to the peoples of the Shire districts, also with a tropical wet and dry climate "Hoeing and weeding are sometimes got through more quickly, when time is pressing—as when the first rains have fallen—by means of a 'bee'."

family. Furthermore, land is to be had in plenty, for Gonave is still a frontier. The problem of clearing thirty or more acres of tropical vegetation is impossible for one man. By the time he is ready to plant, the first acres cleared will be brush-covered again. The planting, too, of such an area could scarcely be completed in the time necessitated by weather conditions. Furthermore, the average individual owns but one tool. In order to clear and plant, he will need at different times a machete, a hoe, an axe, or a crowbar. Within the society there are several of each of these tools. There is a marked tendency, often advised by the chief officers of the organization, toward the specialization of production by individuals. The peasant with a tract of coarse textured soil may produce only yams and "patats." One with compact soils specializes in legumes. Others will produce chiefly manioc, or malanga, or native cotton. Those, with land in the moist bottoms of sinkholes or solution valleys are likely to produce chiefly plantains. All differences can be ironed out later by barter within the society. Each crop has different dates of planting, cultivating, and harvesting, so that an admirable distribution of the labor results. The work of the society is largely planned for the year and directed throughout by the senior officer so that considerable unity of purpose is found. The efficiency of the societies is easily seen when the gardens of members are compared with those of individual farmers.

Another condition which has encouraged the rise of the societies has been the condition of government. The island of Gonave has been a football for Haitian politicians. Throughout the history of the republic, it has been held as a concession by one or a group of political favorites then in power. The only interest which the concessionaire has held in the island is to exploit it to the limit. Heavy taxes have been made heavier by the greed of the local tax collector. Peasants have been forcibly removed from the hut and garden which they have worked for several years to improve, only to have it given to some favorite of the local official. There has been no more, if as much, protection of life and property on Gonave than on the mainland. "Caco" bands have roamed and pillaged the countryside. Then, too, the "Hounga" man

(witch-doctor) is often a menace to individuals.[10] The unity of the society is an efficient method of combating these evils and does so with great success.

Every member of the society is assured proper burial and burial ceremonies. This is an important function in the mind of all Haitians. Weddings or rather "placements" are duly celebrated by the same body. In case of sickness or inability, due to old age, the society assists where necessary in providing food. In some cases, the society forcibly intervenes to compel a member to do things for the welfare of the individual concerned. Under the harsh conditions of life encountered on Gonave, such assistance goes a long way toward the mitigating of suffering.

Almost the entire social life of the members is found within the society. During working hours singing, drinking, and general good fellowship prevails. It is certain that more labor per man is obtained with these stimuli than would ever be the case otherwise.[11] Meals and liquid refreshments are served by the host at the end of each day's work. Frequently a barbecue and dance are held that night by the member whose field has been worked. The celebration of Saints' days, funerals, "placements," and other events keep the program of social engagements full.

What has been said so far applies in general to all of the societies which bear the general title of Société Congo. We will now consider in detail the organization and activities of one particular society which the author had opportunity to study rather closely.

The "Model de Paris"

The society, "Model de Paris," functions in the Section Grande Sources which lies in the interior upland of the southern

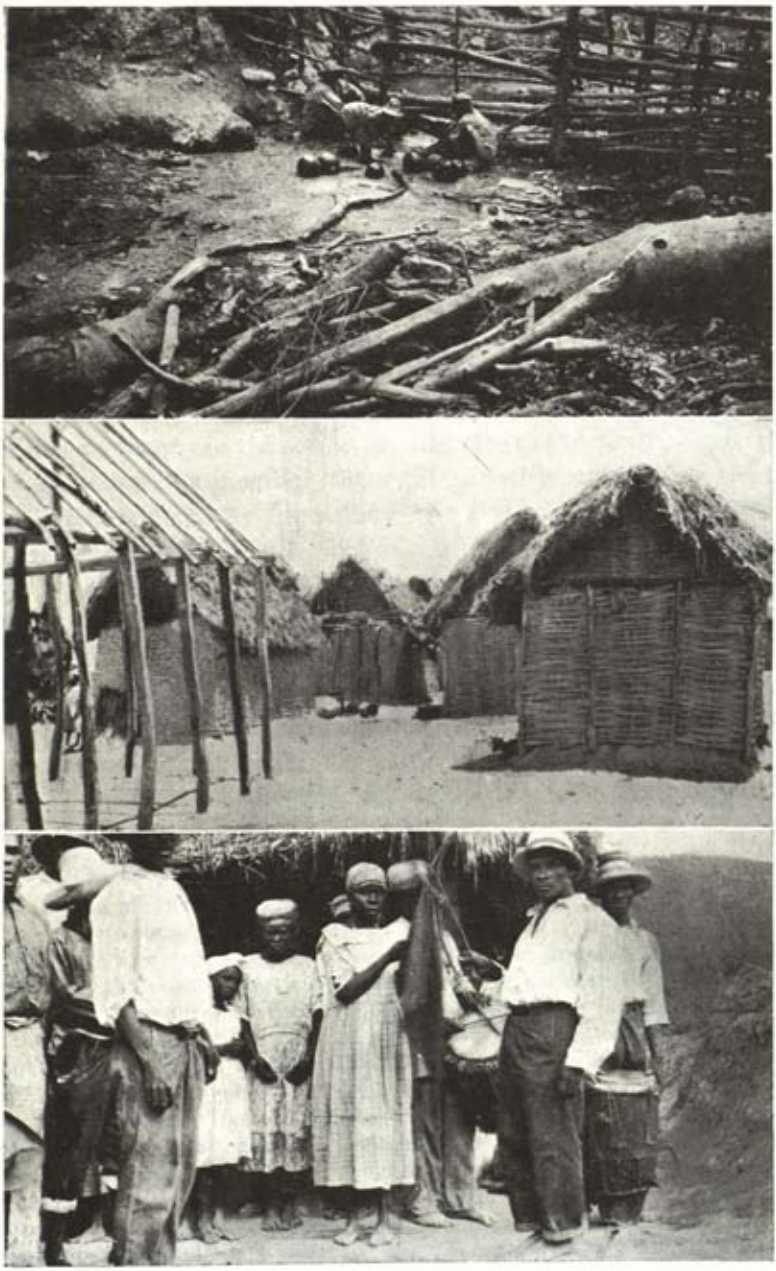
[10] John H. Weeks, Among the Primitive Bakongo (London, 1914). "The 'raison d'etre' for the Congo secret societies is lost in the dim and distant past. It may be that they were started to hold in check some tyrannical chiefs or to give mutual protection to members from the exactions of an upstart class of nobles or to afford protection against charges of witchcraft and the evil designs of witches—or they may have been organized to render aid to their members in their travels about the country for trade or other purposes.

[11] J. H. Driberg, The Lango: A Nilotic Tribe of Uganda, 97. In speaking of the "wangtich" agricultural societies, the author states: "Hard work and long hours are expected—and ungrudgingly accorded, with the result that cultivation by this semi-communal method far exceeds the possibilities of individual work."

The "Model de Paris" ready for the day's work.

The Queen of the "Model de Paris."

The President and two of the society's members
in ceremonial attire.



Filling gourds at the spring at Anse á Galet.

A part of the village of Anse á Galet.

The "Reine de le Drapeau" (front center), the "Sergeant d'Armes" (right front), the two drummers (right rear), and other members of the society.

portion of Gonave. This organization is possibly the strongest on the island and is one of the oldest. It is said to have a recorded history of more than a half century. However, it differs but little in organization and function from other branches of the Société Congo in the same general vicinity. In fact, the woman who "rules" this particular organization also heads two other similar societies. It was largely through her friendliness that the more intimate details herein included were made available.

The membership of the "Model de Paris" is limited by its constitution to twenty-nine members. This number is generally maintained, as membership is highly desired by persons not belonging to such an organization. There is a long waiting list. When a vacancy in the society occurs, due to the death, departure, or expulsion of a member, the applicant with seniority on the list is first considered by the society. At a very dignified and formal meeting, vote is taken by ballot. If not more than one member vetoes the applicant that member must state, before the entire society, his reasons for disapproval. If these reasons are considered as serious by the other members, the applicant is not accepted. If two or more members object, the name is dropped. In either case, the applicant is formally notified that "no vacancies exist." He can not again enter his name until one year has elapsed.

The officers of the "Model de Paris" with their respective duties follow:

1. "*Reine.*"—The chief officer of the "Model de Paris" is La Reine. In fact, in all of the societies the chief officer bears the rank of emperor or queen, depending upon the sex. In case the society is headed by a man there is also a queen, but she has no particular powers. If, as in many societies, the chief officer is a woman, no male member bears the title of emperor. The duties of the chief officer are complex. On that incumbent devolves the responsibility for all action and a considerable portion of the policy of the society. In the "Model de Paris" the queen personally keeps the archives, which consist of names of active members and a record of past members. It is her duty to see that each member does his or her work and in turn receives the benefits of the society. It is she, who, with the advice of the society, plans the year's campaign. She must then see that the plans are carried to fruition. This includes the allocation of crop production and the temporal distribution of labor. Through her each member is notified each evening where and when to appear the following day and what the nature of the work is to be. Through her all orders for disciplinary action and all

invitations for social events are issued. These invitations have the full weight of an order and any disobedience of them is subject to drastic punishment. The responsibility of seeing that every deceased member is given a decent burial devolves upon the queen. In such cases, the society is called together and each member is assessed by her. The order of ceremony is her responsibility, the actual operation is directed by the Division de Société. The ceremony involves a great deal of mourning, singing, dancing, and drinking. The society goes about the immediate countryside in single file with each member wearing the formal insignia or costume of his office.[12] The cross and the Saints are much in evidence, as are the paraphernalia of the Papa and Mama Loi. In fact there is no differentiation between the two creeds. There is but one religion—an indefinable compromise. When a member becomes ill, each member of the society is ordered in turn to furnish food and take care of the disabled person's livestock and other immediate demands.[13] When any member becomes involved in difficulties with the local officials the queen intervenes on the application of the unfortunate and arranges a settlement. In return for these arduous duties, La Reine is well repaid. She is exempt from all manual labor and receives two full days' work on her property. She is the only officer who receives any material gain. As the particular queen in question also "rules" the "Fleur de St. Rose" and the "Fleur de St. Andrew" she receives six days of labor and so maintains the largest and best cared for garden on the island. She is also accorded many honors. On her approach, the tomtoms give four ruffles, the flag is lowered, all members stand at attention, and the machetes are brought to the position of "Present sabres." This rule applies whether the society be at work, at the dance, or at court. Various other formal courtesies are given, such as the persistent use of her title in conversation, standing at attention when speaking to her, and passing her the first cup of rum or the first helping of food.

Her influence in the community is great. She is respected and loved by all. The gardens of the members of her societies are the best tended of any on the island. Her advice is sought on many personal matters and frequently followed. She is referred to affectionately as "Te (petite) Menin" (little ruler) in spite of the fact that she weighs 250 pounds or more.

2. "*President.*"—The presidency of the society usually devolves upon some elderly member, whose wisdom and wealth are well recognized. He stands as first adviser to the chief officer and takes her place when she is absent. He is accorded much respect and the formality of his title.

3. "*President de Confidence.*"—He is the vice-president of the society. He, too, is an adviser and takes the president's office when that dignitary is absent.

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[12] Partridge, op. cit., 215. "When a member dies, the other members sing and dance at his funeral obsequies. . . . . The 'mourners' paint and adorn their bodies, and drink as much gin and palm-wine as they can get, and spend hour after hour—sometimes the whole night—in 'dancing' about town in single file."

[13] Partridge, op. cit., 111. "When an old member is too old or too sick to find food for himself, the club (Egbo) does it for him."

4. *"Chef de Société."*—This officer is chosen as the ablest agriculturist. He directs the operations of the society in the field.

5. *"Division de Société."*—This officer is in reality the drill master. He is responsible for the instruction of the society in all its formalities. When the queen or an important civil official approaches, he gives the order of attention, sound drums, and present arms.

6. *"Reine de le drapeau."*—This officer is the color bearer. She is responsible for the society's flag. When the society is at work or in session, the flag must be exposed for all outsiders to see. She carries the flag to all meetings of the society and observes the formalities pertaining to it.

7. *"Sergent d'armes."*—This officer advises offenders to appear for trial and stands to the right of the accused during the trial. He also does the "sword work" (with a machete) at all ceremonies.[14]

8. *"Conseils."*—Two "conseils" are among the officers of the society. Any member brought up for trial may choose one of these as attorney for the defense. The other then becomes the attorney of the prosecution.[15]

9. *Miscellaneous officers.*—The "Model de Paris" had three drummers at the time of investigation. Two of these men were exempt from manual labor in the field but their presence was always required. They follow the workers and beat their "tomtoms" continuously. The third drummer functions only at purely social events. These officers have no semblance of permanency and accrue to those members with the greatest talent.

One person is designated to properly kill the animal paid as a fine by an offending member. Another is the master of the barbecue. Almost any office will from time to time have an assistant. All offices bear some dignity and every member holds some office from time to time.

The Responsibilities of Membership

As the Société Congo is primarily a cooperative agricultural organization the responsibility of membership is largely related to agricultural matters. In fact, many members leave the immediate community and even the island to engage in other activities during the dry season. During this or any other absence, all property is left under the protection of the society. The dark red flag is placed above the peak of the absentee's roof and signifies that any trespasser will be answerable to the society.[16] The society only operates in full force during the crop season, which extends

[14] The titles of certain officers, the commands of the "sergent d'armes" and drill movements of the society are closely related to the French military.

[15] The title "conseil," the duties of that officer, and the court proceeding are doubtessly due to French rather than African influences.

[16] Hutton Webster, op. cit., 116. "Calabar people who find it necessary to be absent on a journey, place their property under the protection of 'Egbo,' by fastening the badge of the society to their homes."

from the middle of February to the first week in September. Each member receives one day's work by the entire society on his property and a definite system of rotation is practiced.[17] Each member then knows when to prepare for the group on his property and where he is supposed to report for work on the following day. In spite of this system the queen issues invitations to each member every evening, stating not only the place but also the time and the type of work. A number of things may happen to change the rotation temporarily. Any member is privileged to sell his day of work to the one who follows him. The established price is 50 centimes de gourde (10¢) per worker. The seller saves the price of entertaining the group and the purchaser receives two consecutive days of work. Illness, inclement weather, etc., may temporarily halt the proceedings, but the rotation is never broken.

A member may purchase the right to membership without working and still receive his days of work from the society as well as all the other benefits. This is done by paying each member 50 centimes de gourde a month. Members of this sort are rare and usually old men with some money, who are considered solid citizens of the community. Non-members may arrange with the queen for the employment of all or part of the society during the off-season. The rate again is 50 centimes per worker per day.

A Day in the Field

The society meets at early morning in order to accomplish as much work as possible before the intense tropical heat becomes too pronounced. The "Reine de la drapeaux" posts the society's flag of plain dark red, at some conspicuous point on the nearby trail. The "Chef de Société" divides the workers into two lines, sees that tools are properly distributed, and gives instructions for the day's work. The drummers sound the signal to begin and keep up a rhythmic beat as the tools of the workers glisten in the early morning sun. Before many moments, a voice joins tune with

[17] Duncan R. Mackenzie, The Spirit-Ridden Konde, 118 f., 1925. "Working parties are often formed for the hoeing, *the group spending one day in each garden*, and being fed by the owner in each case. When a headsman's garden is being done, beer is provided, and the chief usually kills an ox when he has a party hoeing for him."

the drums. When the solo is finished the entire society joins in the chorus. It is usually an old song and well known to all. The drums beat incessantly and the tools rise and fall in unison with it. Every now and then, someone sings out and the group joins in the chorus. Many of the songs are extremely lewd. New verses are often created but the tunes do not change. Always it is the solo followed by the chorus.[18] The music of the drums and the tunes and words of the songs are usually enough to inform anyone acquainted with the island as to just what society is at work.[19] The drums especially can be heard at great distance.

The owner of the property has been arranging for days for this event. Now he moves down the line passing out drinks of "taffia." Before long everyone is feeling the effects of the raw liquor and songs become lustier and lewder. Shouts of laughter follow the creation of an unusual verse. The workers call in a high voice to peasants along the trails. The whole event is hugely enjoyed.[20]

About eleven o'clock, the drummers sound the order for rest and the society gathers in the shade of the host's hut. A meal of yams and millet cakes or congo beans and cassava bread is served. The "taffia" container is always in evidence and the neighborhood resounds with laughter and shrill voices.

At about two o'clock work begins again and the performance of the morning is repeated. By four-thirty or five the "Chef de Société" usually signals the drummers to sound quitting time, if this has not been done by the host.

The evening meal is then served. This is much more elaborate

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[18] J. H. Driberg, op.cit., 129. " . . . . Every now and then one will get up and sing, sometimes an old song, sometimes an improvisation, but always whether old or new, the rest join readily in the chorus.—They (the songs) always consist of a solo or recitative and a chorus.—Songs of an indelicate nature are not unusual."

[19] P. Amaury Talbot, In the Shadow of the Bush, 413, 1912 (referring to the Ekoi people): "All clubs have different tunes and peculiar ways of beating the drums, so that even at a distance it is easy to tell which of the many societies is holding a celebration."

[20] A. Werner, op. cit., 184. "The owner invites all his neighbors, men and women, and prepares large quantities of beer, with which they regale themselves after a hard morning's work. Sometimes, the pots are carried out to the garden and the party consumes refreshments there. Each person has a certain piece of ground allotted to him or her—'a roe to hoe' and the work is got through with singing and mirth."

than the noon meal and contains a number of dishes. Some meat or fish is usually included and wheat flour biscuits are occasionally served as dessert. The "taffia" is served in greater quantities. Sometimes the host issues an invitation to the group to remain for a dance that night. Before the group breaks up the "Division de Société" lines the workers up and the "Chef" asks them if they are satisfied with the treatment they have received. They all answer together either to the affirmative or negative. The "Chef" then asks the host if he is satisfied with the amount and quality of work done.[21] He answers and gives his reasons for the answer. In case of a negative answer in either case, the queen is called and both arguments are heard. If the host has been lax in affording food and drink he is fined and pays in more food and drink. If the society is found to be in the wrong they return for a while on the following Saturday and complete the work. Between two and three carreaux (one carreau is equal to 3.10 acres) is considered a good day's clearing or planting. When both sides are satisfied the meeting ends by a dipping of the flag to the host.

The majority of cases referred to the court are for not heeding the "invitation" to work. Should a member fail to appear, a red flag is placed on the roof of his house. This usually takes place early the following Saturday morning and means that the member is under arrest. He is not permitted to leave his hut or talk to anyone until the court assembles in his yard that afternoon.[22] The Queen, President, and "Chef" act as judges and the attorneys for the defense and prosecution present their angles of the case to the whole society. The judges present their decision to the society for approval, which is almost always given.

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[21] J. H. Driberg, op. cit., 97. "Only in case of extreme poverty or when famine has consumed all supplies does a man cultivate unaided. Assistance is normally procured from his friends and neighbors in return for food and drink after the day's work, and the extent of assistance thus procurable is conditioned by the size of the reward, *regularized by custom, and designated by standard terminology.*"

[22] C. F. Schlenker, A Collection of Temme Traditions, Fables, and Proverbs, xiii, 1861. "The Temmes who have the 'Purrah' institution use the same method to give notice of the excommunication of an individual who has fallen under the displeasure of the society. A stick to which are fastened some leaves of grass, placed in the offender's yard, is a warning that he is not to leave his farm or have anything to do with anyone until the ban is removed." Quoted from note 6, Webster, op. cit., 116.

If the accused cannot prove sickness or some other complete alibi he is sure to be convicted. When brought to trial he is said to be "burned."[23] If found guilty a red handkerchief is tied about his arm above the elbow. Then the queen selects the largest and fattest hog or goat which the member owns and it is killed "against"[24] him. A barbecue and a dance follow. The victim is compelled to furnish the drinks immediately upon conviction and thereafter until the party terminates. This it usually does not do until well into Sunday. The entire society, however, turns up at the man's hut at some later date and works free for him for a part of a day to help offset the cost of the food and drink which they have consumed at his expense.

For more serious offenses, expulsion from the society is the common penalty. It is said by non-members that bodily torture and even death are meted out to those who betray the society or commit serious offenses against it. This the author believes to be mere gossip. However, in the long protracted dances and drinking festivities, voodooism probably enters and crimes may be committed in the name of religion. Again, however, the author believes such incidents to be exceedingly rare.

Conclusion

The Société Congo is primarily a cooperative agricultural society. It has, in addition, social, protective, and benevolent functions. In its organization and operation, influences of American Indian, French, and African cultures can be seen. Adjustments to local conditions can also be noted.

The crops produced—notably the yam, cotton, cassava, and maize—are inherited from the Indian, as is the semi-milpa system of agriculture. The French contribution is chiefly in language,

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[23] G. Cyril Claridge, Wild Bush Tribes of Tropical Africa, 201, 1922. "The poor fellow was what the natives call '*burnt*.' To court he had to go, where he listened to an eloquent indictment against himself before paying the penalty (the price of a pig)."

[24] Charles Partridge, op. cit., 111. In describing the Egbo societies of the Obubura Hill district, the author quotes a member as saying: "In the old time, if we wanted any young man to join, and he refused, our chief went into town and killed a goat 'against' him and he had to pay its value to the owner. A cow was shot 'against' a member for disobedience."

religion, and tradition, all of which temper the whole. The celebration of Saints' days and the names and even the functions of some of the officers are examples of this influence. The temporal distribution of activities, methods of agriculture, and the relation of the organization to society at large result in part only from the natural and cultural environment of Gonave.

The organization and origins of the Société Congo appear to be primarily African. Not that any one African secret society can be found which will present an exact duplicate but rather the society, like the people of Haiti, is a composite drawn from many parts of the African continent.

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THE SO-CALLED "HOMINY-HOLES" OF KENTUCKY

By W. S. WEBB and W. D. FUNKHOUSER

EVIDENCES of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes. The holes are often two or three feet deep, generally six or seven inches in diameter at the top and gradually narrower toward the bottom. They are usually bored straight downward in the face of the cliff or in an exposed ledge or fallen boulder not far from the overhanging roof which provided the shelter. That they were an absolute necessity to the dwellers in these shelters and that they were constantly used is proved by the fact that it is very unusual to find a true rock shelter in the particular region described without one, and the additional fact that where a long series of shelters are found along the face of a single cliff, there are generally one or two and sometimes several holes in front of each shelter. In such cases one of the holes will be very deep, perhaps so deep that it could no longer easily be emptied, another will be shallower, and perhaps one or two others just started. The pestles are usually of limestone, from six inches to a foot or more in length, two or three inches in diameter, roughly cone-shaped, broad, flat and flanged at one end and rounded at the other, and sometimes marked with ridges or grooves. The lips of the holes are also occasionally grooved or roundly notched. There seems to be no question but that this represents a primitive type of grinding mill which, so far as we are aware, has not been commonly found in this country

nor carefully described in previous archaeological reports from this part of the Mississippi valley.

Geographical Distribution

So far as we have been able to learn, the sites of these hominy-holes are limited to that part of Kentucky which is drained by the Green river and its tributaries. We have traced them through Hardin, Breckinridge, Grayson, and Hart counties along the streams emptying into Rough creek and Nolin river, both of which are tributaries of Green river, and have records of them in Ohio, Muhlenberg, and Logan counties, all of which are in the Green river drainage area. We have yet to secure a record of a hominy-hole from any other part of the state. It would be rather interesting if the distribution proved to be limited to this particular region, as now seems to be the case, and to represent the habit of a single group of people living along this one watercourse. We have previously reported hominy-holes (*Ancient Life in Kentucky*, 144–46, 1928) from a number of localities in this area and, in fact, were able to bring to the University of Kentucky a single huge sandstone boulder containing such a hole from Hart county, after bringing it down the side of the cliff, dragging it a mile or more over a creek bed, and carrying it twenty miles on a wagon over extremely bad roads to the nearest railroad, but only recently have we been impressed with the apparent definite and limited distribution.

Topography

The Kentucky cliffs abound in overhanging walls of rock, beneath which shelter is easily obtainable. These shelters are locally known as "rock-houses" and were undoubtedly used as habitations in prehistoric times. Within the shelters are often found graves and beneath them, at the foot of the cliffs, large kitchen-middens, sometimes so extensive and so full of bones and other organic matter, that the farmers of the neighborhood haul the material away and spread it over the fields to enrich the land, a purpose to which it is well adapted.

The region under discussion lies partly in the so-called "Knobs" and partly in the cavernous limestone area of the state. In the

Knobs the geological outcrops are largely in the Chester series and the cliffs and overhanging ledges occur along the canyon walls of streams where the water has cut a gorge and has eroded the softer strata of the sandstone to form the pockets or caverns; in the latter, the streams are largely underground and form the "lost rivers" and subterranean waters for which the region is famous. Here the shelters are in the sides of old valleys or above large sinks. The country is very rough and the shelters, due to more recent erosions, are often almost inaccessible. The region is largely unproductive and is thinly settled. Travel is extremely difficult since the dirt roads are impassable in wet weather and the cliffs can be reached from the nearest highway only on horseback. It sometimes happens, too, that strangers are not welcomed, since the ravines beneath the cliffs may shelter other industries than those of prehistoric tribes who used the hominy-holes, and it is not always good policy to insist on extended explorations. However, the authors have usually been able, by assurance that they were deaf, dumb, and blind to everything but hominy-holes while in the gorges, and that they promptly lost their memory afterward (an assurance which, needless to say, has always been religiously observed) to locate the sites and make measurements and photographs.

Special Sites

The authors have recently made a short survey trip into parts of Hardin and Breckinridge counties and are able to report the following definite sites of hominy-holes which have not been previously recorded. Due to the fact that it rained almost continuously during the entire trip, the conditions for photography in the dark rock shelters were extremely poor but the photographs here reproduced will, it is believed, give a fair idea of the appearance of the hominy-holes and their environments.

1. Hardin county. Nine miles southwest of Vine Grove. On farm of Hugh Yates.

A line of cliffs averaging about 90 feet in height extends for over a mile in a rough northeast by southwest curve across this area. They stand above a broad depression, 775 feet above sea level, in which are several ponds. The outcrop is Cypress sandstone. Two shelters are found in this cliff.

The first is large and faces due east. The floor is of made dirt which has been excavated to a depth of nearly fifteen feet without reaching a rock bottom and the dirt has been spread over the surrounding fields for fertilizer. This made dirt contains a large amount of ashes and animal bones and in it were found fifteen or more human skeletons and many hundred artifacts. The authors secured a large number of the artifacts and one human skull. The owner of the property had agreed to save the other skeletons and had brought the bones to the house and piled them behind the wood-box in the kitchen. Immediately, however, his wife's rheumatism became so bad that he removed the bones from the house and plowed them under between the corn rows. (We were not able to learn whether or not the rheumatism at once improved.)

The hominy-hole in this shelter is in a ledge which projects about 2 feet from the northeast wall. The hole measured 8x7 inches in diameter at the top and is 2½ feet deep.

The second shelter on this site is less than a hundred yards from the first, around a bend of the cliff, and faces southeast. This is a smaller shelter and the rock floor is covered by only a few inches of dirt. The hominy-hole is on the floor, 5 feet from the back of the shelter. This hole is 7 inches in diameter at the top and 26½ inches deep.

2. Hardin county. At Solway, 16 miles southwest of Elizabethtown. On farm of Henry Aubrey.

A line of low cliffs, averaging 40 to 50 feet high, extends in a north and south direction for several miles across this region. At this particular site the land slopes gradually from the cliffs to a small stream which proved an excellent collecting ground for water snakes.

The hominy-hole is in the top of a large sandstone boulder, 32 feet directly east from the base of the cliff. The boulder measures 15½x19 feet in diameter and is 4 feet high. The hole is 7½ inches in diameter at the top and is 2 feet 3 inches deep.

3. Hardin county. One mile due north of Solway. On farm of Noel E. Cundiff.

The cliffs here extend roughly east and west and are very high. The shelter is large and crescent-shaped and faces south.

The hominy-hole is in a partly exposed sandstone boulder 4 feet from the back wall of the shelter and 50 feet from the stream bed below. The hole is 6 inches in diameter at the top and is 2 feet deep.

4. Hardin county. At "Cow Cliff," 4 miles southwest of Howe's valley.

A series of high cliffs extending in a general northeast by southwest direction contain a number of fine rock shelters from which on a previous expedition the authors secured many artifacts and found large amounts of ashes, broken pottery, and animal bones. These shelters are extensive and show evidences of long habitation.

In the largest of these shelters, which faces northwest, are two hominy-holes in sandstone boulders lying side by side. The larger of these boulders measures 27 feet in maximum circumference and the hole is 8x7 inches in diameter and 2 feet deep.

The second hole is in a larger, flatter, lower boulder, which is only partly exposed. This hole apparently represents only the beginning of the grinding process since, although it is 8 inches in diameter, it is only 5 inches deep.

5. Hardin county. One and one-fourth miles southwest of Cow Cliff. On farm of Hendrix Cundiff.

In many respects this is the most interesting site we have ever examined, since three hominy-holes are to be found in the top of an enormous boulder and the edges of the holes are deeply grooved, the possible cause of which will be discussed later.

The shelter, which is a large one, is situated high up in the face of a short, high cliff extending northeast by southwest, with the exposed face towards the northwest. The shelter itself faces almost due north.

The boulder which contains the holes stands 7 feet above the present level of the dirt floor and measures 24½ feet in circumference. The holes are in the top of the boulder and are of different sizes. The largest is 6½ inches in diameter and is 2 feet 5 inches deep; the next is 6 inches in diameter and 2 feet 3 inches deep; the smallest is 4½ inches in diameter and 8½ inches deep.

6. Breckinridge county. At the Nebo schoolhouse in the town of Dyer, 10 miles east of Garfield. On farm of C. D. Powell.

A line of low cliffs, not more than 20 to 30 feet in average height, and extending for only about three hundred yards, contains several shallow rock shelters. The cliffs extend east and west and the shelters open toward the north.

One shelter, which varies from 4 to 6 feet in height and is 17 feet deep, contains a hominy-hole in the floor a few inches from the back wall. The hole is 7 inches in diameter and 2 feet deep. A broken limestone pestle was found in the bottom of the hole. This pestle may have been used as a plug to raise the bottom. This shelter is protected in front by a large boulder, so that entrance is afforded only at the sides, around the boulder.

We have the record of another hole which was formerly located 75 yards due east of this shelter but which has recently been destroyed. This hole was a larger and deeper one and marked the corner of the lands of W. A. Allen, C. D. Powell, and the Nebo school. An old deed made this "Indian Hole" the corner of a boundary line.

7. Breckinridge county. Three hundred yards east of the Constantine Hill Mill Pike, 3 miles southeast of Constantine. On farm of Bill Skeeter.

These cliffs are on a tributary of Rough creek, about 4 miles below Williams' Mill. The country is very rough and in the wet weather in which the site was visited the approach was very difficult. There are four large hominy-holes in a ledge beneath the cliff, which are plainly visible from a higher ledge on the opposite side. High water and other obstacles prevented measurements and photographs.

8. Hardin county. Six miles southwest of Howe's valley on the Salt River road. On farm of Sam M. McGuffin. Locally known as the "Deer Cave Cliff."

In a long line of cliffs about 600 yards west of the road is a fine shelter,

50 feet deep and 150 feet across. The overhand which forms the roof of the shelter is a stream valley and a small waterfall flows over it.

The hominy-hole is in an exposed ledge, which is level with the floor on one side and 2 feet high on the other. The hole is 5 inches in diameter and 1 foot, 2 inches deep. A stone plug was found in the bottom of the hole.

9. Hardin county. Three and one-half miles south of Howe's valley. On farm of J. W. Love.

A series of cliffs running roughly east and west contain a number of good shelters on the south face. The largest of these shelters, which is 30 feet deep, 120 feet long, and 40 feet high, contains two hominy-holes, both on the sloping rock floor. Both holes when visited were entirely hidden beneath a luxuriant growth of poison ivy.

The larger hole measured 11½x8½ inches in diameter at the top and was 2 feet deep. The smaller hole was 7 feet, 8 inches east of the other and higher up on the slope. It measured 5x4 inches in diameter and 13½ inches deep.

Probable Method of Grinding

There are to be found in Kentucky, in considerable number, four types of stone pestles as shown in plate 58. Three of these types, *a*, *b*, and *c*, are common to all parts of the State, except the region under discussion. They are, however, not found under cliffs and rock shelters or in association with hominy-holes. These forms may be described briefly as (a) bell-shaped pestles, to be used in grinding in a lap-stone mortar; (b) short, cylindrical pestles, also used in hand mortars, and (c) specialized ellipsoidal river pebbles, to be used on rubbing stones. All of these pestles show the result of use, the grinding process producing a smooth surface on the base of the bell pestle, on both ends of the cylindrical form, and on the oval surface of the pestles used on the rubbing stone. These forms were therefore used to *grind* grain by sliding or rolling over the surface of the mortar. Plate 58*d* is the only type of pestle found in association with the hominy-holes. The specimen figured was taken at a depth of seven feet from a trench about the base of the large boulder having a hominy-hole in its top, under Cow Cliff, Hardin county, as previously described. This pestle was near the original floor level of the rock shelter, resting on sandstone. Sassafras growing on the sides of the cliff had sent its roots some twenty feet along the old floor of the sandstone shelter and had wrapped themselves about the pestle, which is of limestone. They had thus etched their

pattern on its surface. However, quite enough of the original artifact remains to indicate that this type of pestle is quite different in use from the ordinary bell-shaped pestle used for grinding in mortars.

The usual bell-shaped pestle is smooth on the base (the result of grinding) and generally rough on the handle. This hominy-hole pestle shows great wear over the pointed end and shaft and is rougher on the base. A careful investigation shows that every pestle found in association with hominy-holes is bell-shaped, and worn by use on the point. This very strongly suggests that they were used in these hominy-holes, pointed end down. If so used, they crushed the grain not by grinding in the hole, but by percussion, being raised and allowed to fall. Thus is offered a simple explanation of how the hominy-hole was originally made and kept roughly conical in form and why it gets much deeper instead of larger with continued used. In general the diameter at the top is about the same (7 inches), no matter whether the hole be one foot or three feet deep. In fact many holes are found so deep that it must have been inconvenient to remove the meal after grinding. This might necessitate the starting of a new hole. As previously stated, holes an arm-length deep are often found in the immediate vicinity of smaller and newer holes—often in the same boulder. This would seem to indicate that the hole was worn deeper by continued percussion, the grain cracked by the impact, rather than by true grinding. It is apparent that an old hole would be more efficient in preventing the scattering of the material ground than a very shallow new hole, if the percussion method was used.

It would therefore seem natural that primitive man here would use a hole as long as possible and would thus defer the time of starting a new hole in a given locality. When a hole became too deep to be convenient, it is quite natural that in some cases he would fit a plug in the bottom of the hole thus to raise the level of the bottom and make it possible to continue the use of this hole rather than start a new one. In seeking a plug for this purpose he would require a tight-fitting plug, hard enough to stand the blows of a limestone pestle. It would be natural to

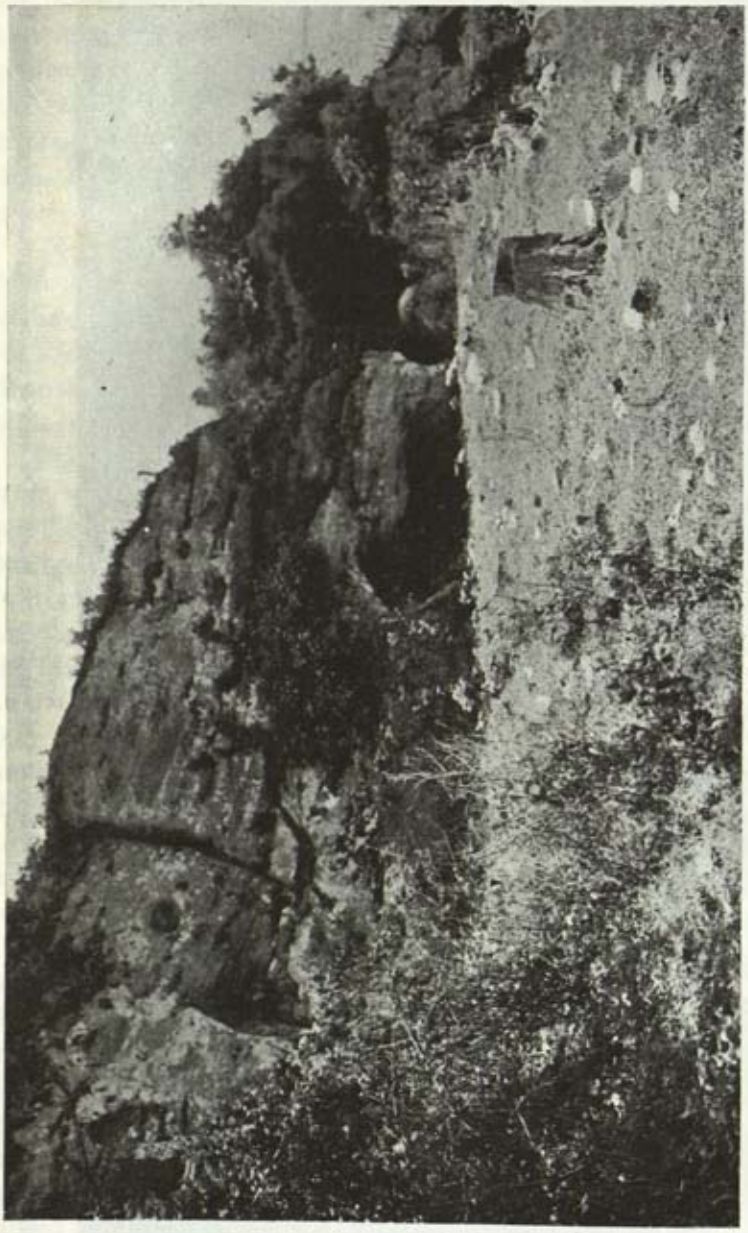
use for this purpose a portion of a limestone pestle, which having been previously used (and probably broken) in the hole, would probably make a good fit, and would be as hard or harder than the sandstone about it. This seems to be the explanation of the finding by the authors of a number of hominy-holes, each quite deep, containing a plug of limestone at the bottom, the plug having clearly the appearance of a broken section of pestle (see pl. 47).

The bell-shaped pestles under the cliffs near hominy-holes are from five to eight inches long. This would necessitate their attachment to a handle or shaft some three feet or more in length for use in the deeper holes. These pestles all show a concave depression in the base and in general one or more flattened sections on the rim of the bell, as if for attachment to such a handle.

Under the Cundiff Cliff previously referred to there is a large boulder somewhat higher than a man, in the top of which are three hominy-holes. On the outer rim of this boulder there has been cut in the hard surface, a score or more of nearly vertical furrows, each about two inches in diameter, and extending from the top of the boulder over the rim and down the side where the furrow fades out. These grooves are about two inches deep at the deepest part. If from their position we may assume that they were made in the process of use of the hominy-hole, the process of grinding by percussion must offer an explanation of their production. It is well known that primitive man was well acquainted with the forces of elasticity and made use of them in setting snares, and in the bow. If he could have bent down a young sapling growing near this boulder, or used the limb of an overhanging tree, the pestle and its shaft might have been attached and caused to move up and down by pulling the tree down and allowing it to spring upward. Such a simple mechanism would not have been beyond the ability of the primitive dwellers under these cliffs, and such a device would easily account for the grooves on the side of the boulder, as in order to pull down the tree limb it would be quite natural to attach to it a rope of grass, leather, or perhaps a wild grape vine, and as the pestle was caused to work up and down, this rope dragging over the edge of the boulder would saw out the furrows as found. While it may

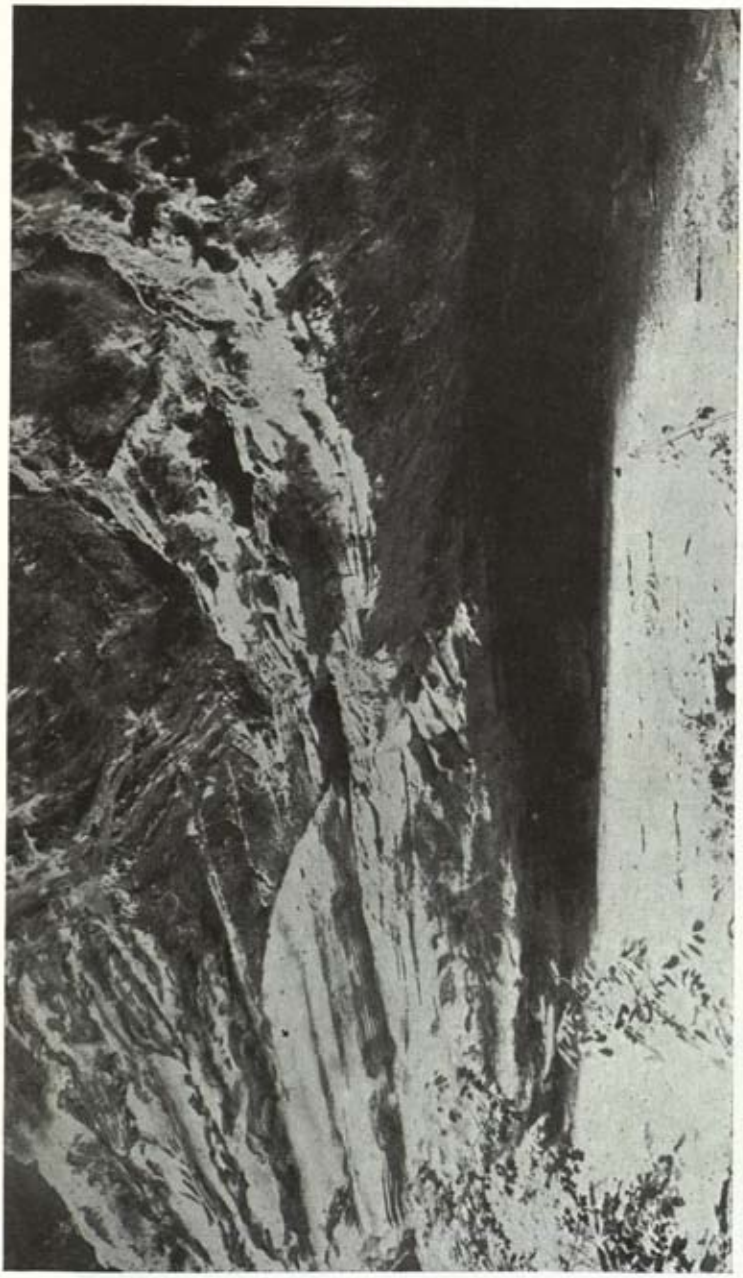
Kentucky Cliffs

Outcrops of Cypress sandstone in Hardin county in which shelters are found. The boulder in the foreground contains a hominy hole.



Rock Shelters

Showing entrances to shelters in a line of low cliffs. In one of these shelters was found the hominy-hole shown in plate 5.



Characteristic Rock Shelter
A thin waterfall pours over the cliff at the left of the photograph.

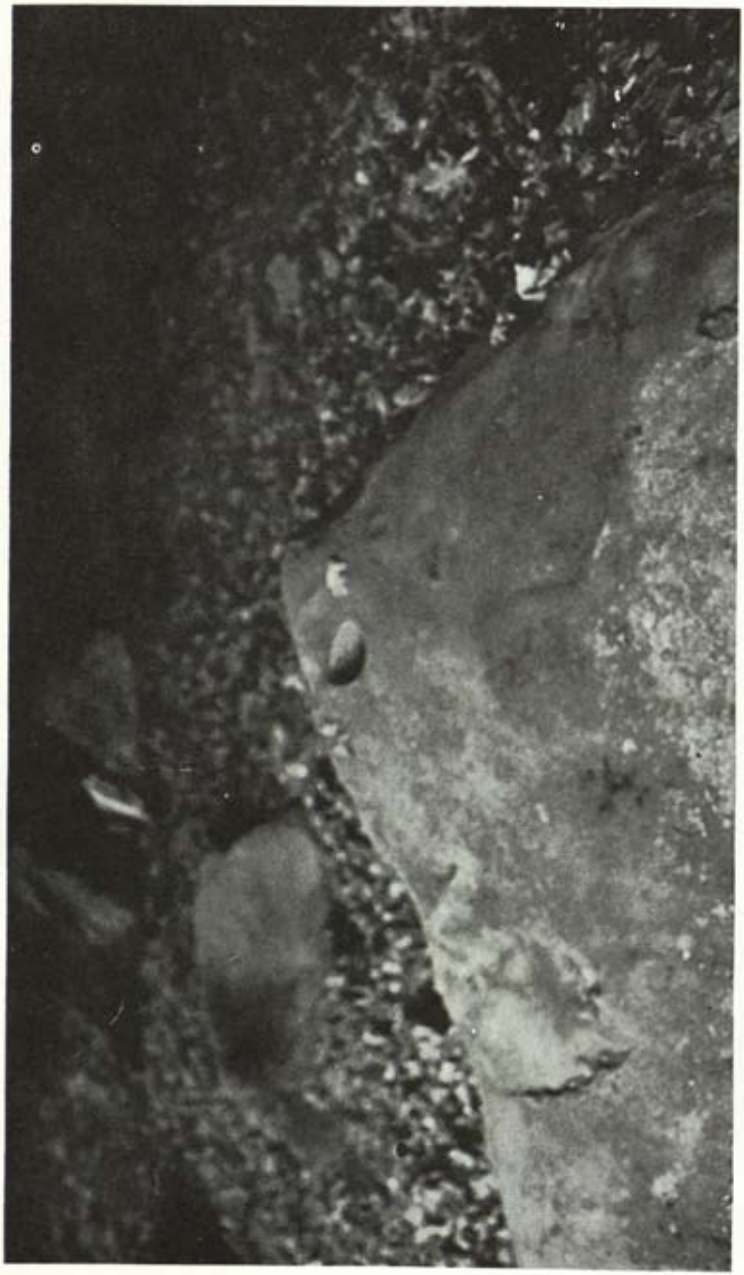
A Typical Hominy-Hole
Made in the top of a sandstone boulder.

Inside a Rock Shelter
Showing a hominy-hole near the back wall and beside it a pestle found in the hole.

Mouth of a Hominy-Hole

These holes are usually six or seven inches in diameter at the top and two or three feet deep.

A Boulder Hominy-Hole
A characteristic boulder with the hominy-hole in the top.



A Fine Specimen

The boulder in which this hole is situated was the largest discovered.

Showing Depth of Hole
The arm inserted in the hole gives an idea of its depth.

A Ledge Hole

This hominy-hole is in a low ledge near the back wall of the shelter.

Old and New Hominy-Holes

The small boy has a stick in the larger hole; the other hole is to the right and slightly higher than the older one.

Twin Hominy-Holes
In neighboring boulders under a cliff.

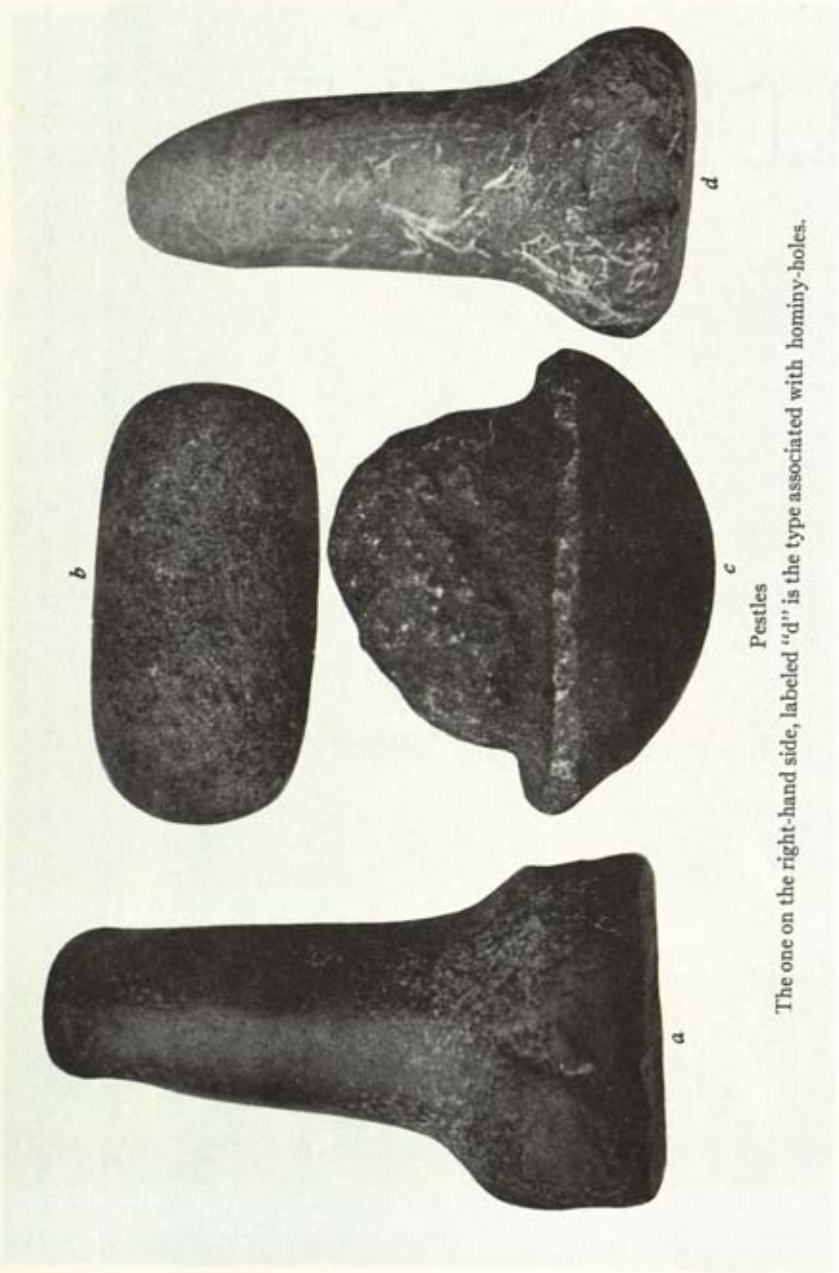
A Floor Hole
Hominy-hole in the floor of a rock shelter.

A Deep Hole

The bottom of the hole can barely be reached by the tips of the fingers.

A Giant Mill

The human figure shows the comparative height of the boulder. Three hominy-holes are in the top of the boulder and the edges of the rock next to the holes are grooved.



Pestles

The one on the right-hand side, labeled "d" is the type associated with hominy-holes.

not be positively proven that this method was actually employed, there seems nothing in the position of the holes, the grooves, or the boulder which would interfere with the employment of such a process.

In conclusion, from the investigation of these hominy-holes and the pestles associated with them, the authors believe that here is to be found a unique method of grinding by percussion, using a bell-shaped pestle, point downward, in the hominy-hole. So far as is known no such method of grinding has been previously reported from outside the tributaries of the Green river. Whether or not this method of grinding may be one of the distinguishing characteristics of a distinct culture, or only a local variation of the well-known lap stone mortar, remains yet to be determined.

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KINSHIP ORIGINS IN THE LIGHT OF SOME DISTRIBUTIONS [1]

By ALEXANDER LESSER

The Omaha and Crow type-systems of kinship nomenclature have a striking distribution in North America. Attention has been called to some aspects of their distribution by Spier,[2] Lowie,[3] and Gifford[4]; certain points of contrast and similarity of the types were earlier remarked on by Kohler[5] and Rivers.[6] In a previous paper I discussed the distribution of these types among Siouan tribes, and their correlation there with differences in form of social organization, and with some special customs that seemed related to the differences of both kinship and organization.[7] The general distribution of the two types was brought into the discussion at that time only incidentally, to see in how far it would support certain conclusions which the Siouan phenomena implied. Here I want to consider more broadly the implications of the general distributions of these two clear-cut types of kinship terminology; and to summarize the limitations these set on certain interpretations of the systems.

First, as to a definition of what is meant by the Omaha and Crow types. Spier, in his *Distribution of Kinship Systems in North America*, has taken the nomenclature of the cross-cousins as the demarcating feature.[8] This is certainly justifiable for purposes of classification, but from the standpoint here taken, viz., that we

[1] Read at the joint session of the American Anthropological Association and the American Folk-Lore Society, New York, December 29, 1928.

[2] Spier, 73–74.

[3] Lowie, (1) 124–125, 142, 149–159, 173; (2) 236–238; (4) 294–296, 300; (5) 341; and Hopi MS, American Museum of Natural History.

[4] Gifford, (2) 247–255; (5) 187–189.

[5] Kohler, 252, 268–303.

[6] Rivers, (2) 53–54.

[7] Some Aspects of Siouan Kinship. Proceedings of the 23rd International Congress of Americanists.

[8] Spier, 72.

are dealing with "systems," it is necessary to show that the differences found in the nomenclature of the cross-cousins are indicative functions of genuinely systematic differences. Personally I think that in this case they are, so that rather than dwell on the cross-cousin terminology itself, I shall attempt to define briefly the systematic features which are at the basis of the cousin terminology.

In both the Omaha and Crow types,[9] as they occur among Siouan tribes, parallel cousins are siblings: that is, the children of two brothers, or of two sisters, are "brothers" and "sisters" to each other. This is the familiar Dakota principle, undoubtedly related to levirate and sororate marriage. Not so the children of brother and sister; in both Omaha and Crow types these are radically distinguished.

In the Omaha case the distinction flows from a conceptual identification of the father's sister, the female ego, and the brother's daughter, as "sisters." This identity does not appear terminologically in the system as actually used by the Omaha and related groups:[10] ego, a female, actually calls by "sister" terms only her elder and younger sisters and parallel female cousins; and there are special terms for father's sister or "aunt," and brother's daughter or "niece." Nevertheless, the extensions of the system both in consanguinities and affinities make it clear that to ego a female, both the father's sister and brother's daughter *function* as "sisters." Whether this implies that the identity of functioning is later than the systematic nomenclature is beside the present point. That there is such actual identification is reinforced by the known presence of the custom of wife's-brother's-daughter marriage, an extension of the more common sororate marriage, which equates the "niece" with her "aunt," or better, with her "aunt's" sister. Logically it is this identification or kinship equality of "aunt" and "niece" which illuminates the other features of the system. On the father's side, since the father's sister

[9] For the sake of brevity I have attempted here to define these systems by their essential features, and have avoided details so far as possible; these were discussed more fully in *Some Aspects of Siouan Kinship*.

[10] But see the system of the Vandau of Portuguese Southeast Africa. Boas, 44

is a "sister" to ego a female, ego's cross-cousins become as a sister's children: thus they are her "sons" and "daughters"; in the same way, to ego a male the cross-cousins on the father's side become as a sister's children, or "nephews" and "nieces." On the mother's side, which merely reverses the relationship, since the mother's brother's daughter is a "sister" to ego's mother, she is a "mother" to ego, following the usual classificatory extensions of the Dakota type; and in this way the brother of that "mother" is a "mother's brother" to ego, viz., he holds the same relation to ego that his father did. It is in this way that "uncle-hood" to ego descends indefinitely in the male line from the mother's brother: the grouping of the mother's brother and all his male descendants through males in one term seems logically to be a function of the kinship equality of a woman, her father's sister, and her brother's daughter.

In Crow kinship the features which define the type are the exact converse of the Omaha features: not only can they be referred to the converse identification of "uncle" and "nephew," but the system as in use among the Crow and Hidatsa actually identifies these terminologically: the mother's brother is an "elder brother" and the sister's son a "younger brother." Thus on the mother's side, since the mother's brother is a "brother," the cross-cousins become for both ego male and ego female, as a brother's children, in this case "sons" and "daughters" to ego regardless of ego's sex. On the father's side, by reversing the relationship, since the father's sister's son is a "brother" to ego's father, he is a "father" to ego, following the usual classificatory extensions of the Dakota type; and in this way the sister of that "father" is a "father's sister" or "aunt" to ego, viz., she holds the same relation to ego that her mother did. Thus in the Crow type "aunt-hood" to ego descends ad infinitum in the female line from the father's sister; and it seems to me that the grouping in one term of the father's sister and all her female descendants through females is logically a function of the kinship identification of a man, his mother's brother, and his sister's son.

The distribution of the Omaha type in North America in-

cludes:[11] among Siouan tribes the Winnebago, the Thegiha group of Omaha, Ponka, Osage, Kansa, and Quapaw, and the Tciwere group of Iowa, Oto, and Missouri;[12] the Yuchi;[13] the Shawnee, and of the central Algonquian tribes: the Menomini, Sauk and Fox, Kickapoo, Potawatomie, and the Miami group of Miami, Peoria, Kaskaskia, Piankashaw, and Wea.[14] In central California the Omaha system occurs for Miwok, Pomo, Wintun, and Yokuts tribes over a continuous area centering around the Miwok.[15] Outside of North America the Omaha type-system appears to be present among the Nandi of East Africa,[16] and several Bantu groups of Southeast Africa.[17] For lack of adequate data on intervening groups, I prefer to consider these African cases as forming one area in relation to the argument. Geographically, then, we have two American areas for the Omaha type, a Plains-Woodlands and a Californian, and an African.

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[11] Summarized, Spier, 73; I have added the Yuchi and the Potawatomie.

[12] Morgan, (2) 293–382, nos. 18–24; Radin, 128–134; J. O. Dorsey, (1) 252–255; Fletcher, 313–318; Skinner, (6) 735-738, 766–769; author's field notes on kinship of Osage, Kansa, Quapaw, Winnebago, Iowa.

[13] G. Wagner, field notes.

[14] Morgan, op. cit., nos. 45–52, 54, 55; Skinner, (5) 32–34; W. Jones; L. Bloomfield, MS of Menomini terms; personal information from Dr. T. Michelson; author's field notes on kinship of Sauk and Fox, Kickapoo, Piankashaw, Potawatomie, Shawnee.

[15] Miwok groups: Southern, Central, Northern, Lake; Pomo groups: Southeastern, Eastern, Central, Northern, Southwestern; Wintun groups: Southeastern, Southwestern, Central, Northern; Yokuts groups: Tachi, Gashowu, Chuckchansi. Gifford, (2) 81–111.

[16] Hollis, 92–94.

[17] Junod, 1:223–274, and tables, 1:496–503 (Thonga, Tonga, Chopi); Boas (Vandau of Portugese Southeast Africa).

The Thonga case deserves brief comment. The Omaha features appear to a striking extent, but in affinity extensions there are conflicting characteristics apparently related to husband's-sister's-son marriage, which we should expect with the Crow type (see below), and even to cross-cousin marriage. These complications do not appear in the schedule for the neighboring Chopi, or in the case of the Vandau.

The Vandau system is definitely of the Omaha type: the father's sister and brother's daughter are termed "sisters"; paralleling for the Omaha type the Crow variant of the Crow type. The mother's brother and his male descendants in the male line are grouped by one term, in this case the "grandfather" term; which parallels the Choctaw, Chickasaw, Creek variation of the Crow type, where it is the "grandmother" term rather than the special "father's sister" term of the Crow, which groups the father's sister and all her female descendants through females.

The Crow system, judging from the presence of essential features, appears in North America[18] for the Crow, Hidatsa, and Mandan;[19] the Tlingit and Haida;[20] the Southern Pomo and Wappo;[21] the Hopi, Zuñi, Tanoan Hano, and Keresan Laguna;[22] and the Choctaw, Chickasaw, Creek, Cherokee, and Timucua.[23] Outside North America the system appears in the Banks islands, Melanesia.[24] Geographically we can refer this distribution to six areas: in North America a Plains, a Northwest, a Californian, a Southwest, and a Southeast, and outside America, a Melanesian.

These distribution phenomena are interesting, first of all, from the standpoint of interpretation on the basis of independent origin and diffusion. Obviously the appearance of the Omaha type in at least three independent areas, and the Crow type in six—or, allowing for relations between Southeast and Southwest, and between Caddoan tribes and the Hidatsa, in four—makes it rather inevitable that these systems have originated independently a number of times. On the other hand, the distribution of the types *within* the areas enumerated points just as certainly to diffusion within the area as the explanatory principle. This is rather striking commentary on the fact that these two types of explanation are not contradictory and mutually exclusive, but rather are *functional aspects of distributional phenomena*. It is only after boundaries have been drawn that opposition between independent origin and diffusion is of methodological consequence, and then only in relation to the boundaries or limits set up.

The fact is, then, that in any one of the independent areas enumerated for these type-systems of kinship, there has been

[18] Summarized, Spier, 73–74; I have omitted the Yuchi, who have an Omaha system, and the Pawnee, because of conflicting features, and have added the Zuñi.

[19] Morgan, (2) 293–382, nos. 25–27; Lowie, (7) 11–15, 26–42, 56–74; Lowie, (8) 207–212.

[20] Swanton, (1) 62–66; Swanton, (5) 424–426; Durloch.

[21] Gifford, (2) 113–118.

[22] Lowie, MS on Hopi kinship, American Museum of Natural History; Kroeber, (4) 51–83; Freire-Marreco; Parsons, (2) 147–171.

[23] Morgan, op. cit., nos. 28–33; Swanton, (7) 80–91; Swanton, (3) 362–371; Swanton, (8).

[24] Rivers, (1) 1:20–50, especially 26–32.

diffusion within the area; but, on the other hand, the system must have originated therein at least once, and independently of the other areas wherein it appears. This consideration opens the way to an attempt to delineate some correlates of these kinship systems which may be causes of the original appearance of the system in an isolated area.

Two apparent extremes have in modern times been taken on the determinants of kinship terminologies. Rivers has stressed rigorous causation through sociological factors;[25] while Kroeber early denied that such influences were paramount and maintained that kinship terms were linguistic and psychological phenomena, to be understood in the light of certain basic categories or distinctions.[26] I think re-examination of these positions will show that they are not unalterably opposed on essentials. Rivers considered as sociological factors forms of marriage, special functions of specific relatives, and in general, forms of social organization. A form of marriage, as for example that between a man and his mother's brother's wife, can be viewed from two angles: the social angle, as the obligation that a man marry his uncle's wife on the death of his uncle, or the psychic angle, that a man and his nephew are equated kin, viz., that they are psychologically identified as equally close in relationship. This is not stretching a point, for, given matrilocal residence, a man and his sister's son are of the same household. Kroeber, in his analysis of Zuñi terminology, has urged the importance of absolute age-differences as a factor which seems to override other logical principles of Zuñi kinship.[27] Certainly age can be held to be either a sociological or psychological factor. Elsewhere in the same treatment Professor Kroeber discusses Lowie's correlation of Hopi kinship features with clan exogamy, and emphasizes that unilaterality of descent is a preferable explanation.[28] Kroeber further says: "The basic condition would thus be that in which a woman would be felt to be a very different thing from a man in relationship."[28] If I understand Professor Kroeber's meaning, his

[25] Rivers, (2).
[26] Kroeber, (2); Kroeber, (1) 385–396.
[27] Kroeber, (4) 53, 55, 59, 79. [28] Kroeber, (4) 86.

intention is to make this psychologic distinction basic to the principle of unilateral descent. But, on the other hand, interpreting unilateral descent as a sociological factor could hardly be denied legitimacy.

It seems to me, therefore, that the chief difference between these interpretations is one of emphasis. Rivers in his emphasis is primarily insisting that psychological identifications follow, or follow from, customary identifications in behavior patterns,[29] while Professor Kroeber is emphasizing that psychological identifications are processes which precede the formation of behavior patterns. I doubt that either Rivers or Professor Kroeber means to deny that both situations have occurred: that actually there is an interaction, so that behavior may lead thought in a certain direction, and in the same way that thought may direct behavior.

Since such an interaction is psychologically probable, the emphasis on either aspect as causal or basic to the exclusion of the other, is likely to become a more or less subjective interpretation; for in any given case it is practically impossible to demonstrate that either the psychic or social aspect has actually preceded the other in time. In the remarks that follow reference at a given point to the social or psychological aspect of a relation should be understood as a matter of convenience of reference.

In the light of the distributions enumerated, determinants of the Omaha and Crow systems can be sought by identifying their interrelations in a given area with other aspects of social life; and by examination of in how far these re-occur in other areas of distribution of the system. Interrelation in one area cannot establish causal connection by itself; but if this interrelation occurs elsewhere independently, it becomes probable that a functional relation is present which can be used as a working hypothesis.

Among Siouan tribes correlates of the Omaha and Crow systems are apparent.[30]

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[29] See for example, Rivers, (2) 10, 24, 92.

[30] In *Some Aspects of Siouan Kinship* I discussed these systems among the Siouan tribes in relation to the apparently correlated organization and customs, and attempted to show on the basis of the internal evidence of the systems, that there was a functional relation between customs, organization, and kinship systems.

The Omaha type-system in its distribution coincides with the area of the chief type of Siouan social organization: that of a division of the tribe into two exogamous moieties, each with subsidiary gentes and sub-gentes,[31] with descent in the paternal line.[32] The Siouan tribes with such organization include the Winnebago, the Central and Southern Siouans; for the Quapaw, Oto, Iowa, and Missouri the exact nomenclature of the dual divisions has been lost, but it is probable that these groups paralleled their immediate Siouan congeners in this feature. Post-marital residence is specifically stated to be patrilocal for the Omaha, Ponka, and Iowa;[33] while there are suggestions of what may be matrilocal residence for the Osage and Kansa,[34] but these may refer to the temporary matrilocal residence with more permanent patrilocal emphasis which is reported for the Winnebago.[35] Only Speck's evidence would deliberately contradict this possibility.[36] Wife's-brother's-daughter marriage as a general custom is noted for the Winnebago, Omaha, and Ponka.[37] This marriage seems highly probable for the other groups in this Siouan distribution; information is nowhere negative, but absent.

The distribution of the Omaha type-system, as we saw, includes in the Plains-Woodlands area the Central Algonquian tribes and the Shawnee. All of these tribes, viz., the Sauk and Fox, Kickapoo, Potawatomie, Menomini, and the Miami group, as well as the Shawnee, are organized into exogamous gentes, with

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[31] Radin, 181–190; J. O. Dorsey, (1) 219 ff., 255–257; J. O. Dorsey, (2) 213–215, 226–241; Fletcher, 41–69; Skinner, (2) 193–195; Skinner, (6) 683, 728–735, 762–766, 799–800; La Flesche, 127.

[32] Radin, 185, 192; J. O. Dorsey, (1) 325; Fletcher, 139, 325; Skinner, (6) 799; Skinner, (2) 193.

[33] J. O. Dorsey, (1) 259–261; Fletcher, 324–325; Skinner, (2) 251; Skinner, (6) 738–739.

[34] Speck, (3) 167–168; La Flesche, 129–130; J. O. Dorsey, (2) 232; Skinner, (6) 771.

[35] Radin, 138–139.

[36] Speck, op. cit., claims that the Osage husband upon marriage succeeds at once to the place of his father-in-law as head of the family, and takes over the property of his parents-in-law.

[37] Radin, 138; J. O. Dorsey, (1) 255, 261; J. O. Dorsey, (2) 244; Fletcher, 326; author's field notes on Winnebago.

patrilineal descent.[38] The Sauk and Fox, Kickapoo, and Potawatomie, have, independently of the gentes organization, a dual division of the community, which while it suggests the moiety organization of the Siouan tribes, is among these Algonquian groups a ceremonial division, the White-paint and Black-paint people, without marriage functions, membership in which is not determined unilaterally by birth; instead the offspring of a family are alternated, the first child, regardless of sex, belonging to the division selected by the child's father, the second child then necessarily becoming a member of the other division.[39] Residence among the Sauk, Fox, and Kickapoo is in general a matter of choice on the part of the couple, after temporary service of the groom with his wife's parents; if there is a preference or emphasis, it is toward patrilocal residence.[40] The Menomini and Potawatomie are apparently definitely patrilocal.[41] Wife's-brother's-daughter marriage occurs often among the Sauk and Fox, and Kickapoo;[42] information is lacking for the other tribes.

The Yuchi, with an Omaha system, are apparently an exception, as they are organized into about twenty clans, which are exogamic, and in which membership is traced matrilineally.[43] However, we know with reasonable certainty, from linguistic and other evidence, that the Yuchi in relatively recent times were in closer contact with Siouan tribes farther north. They have today two men's societies, of great importance in their social organization, which include all the men of the tribe, and in which membership descends strictly from father to son.[44] There can be

[38] *Sauk and Fox:* Skinner, (4) 11–14; Hewitt in Hodge, 2: 478; Forsyth in Blair, 2: 210; Jones in Hodge, 1: 473; Michelson, 691. *Kickapoo:* W. Jones, 335; Jones in Hodge, 1: 685. *Potawatomie:* Morgan, (1) 171; Mooney and Hewitt in Hodge, 2: 291. *Menomini:* Hoffman, 39–44; Skinner, (5) 8–19; Skinner, (1) 563; Skinner, (3) 46–49. *Miami:* Morgan, (1) 172. *Shawnee:* Drake, (2) 17–19; Morgan, (1) 168.

[39] Michelson, 692–693; Marston in Blair, 2: 156; Forsyth in Blair, 2: 193; Drake, (1) 31–32; Skinner, (4) 12; Skinner, (1) 563.

[40] Marston in Blair, 2: 166–167; Forsyth in Blair, 2: 214; Drake, (1) 35; W. Jones, 333.

[41] Skinner, (3) 55; Keating, 1: 111.

[42] Author's field notes.

[43] Speck, (2) 68 ff.

[44] Ibid., 68, 74.

little doubt that the matrilineal emphasis is due to their long association with Muskhogean tribes; there has even been a tendency to take over Creek kinship usages, witness the use of the father's sister term reported by Speck.[45] Post-marital residence among the Yuchi might be either matrilocal or patrilocal; it was patrilocal, or rather the husband's own residence, when he married more than one wife.[46]

Turning to the Crow type-system, in its central or Plains distribution, we find it limited to three Siouan tribes, the Crow, Hidatsa, and Mandan. This coincides with the appearance among Siouan tribes of matrilineal, exogamic organization. The Crow clans are grouped into loose phratries, the Mandan and Hidatsa into moieties.[47] Neither the phratries of the Crow, nor the moieties of the Mandan and Hidatsa, are the primary exogamic groups; but in all three tribes the clan is the marriage-regulating unit.[48] Post-marital residence is stated for the Hidatsa as definitely matrilocal, especially "if the husband is a young man taking his first wife."[49] Lowie, however, says this matrilocal residence was a temporary arrangement and claims there was no absolute rule.[50] The Mandan were matrilocal, although such matrilocal residence might cease later in married life when the husband was in a position to establish his own home.[51] Residence among the Crow is apparently patrilocal for a short time after marriage.[52] As regards special marriage uses, it would seem logical that we should find correlated with the presence of the kinship-type which is converse to the Omaha, a converse type of marriage to that of the wife's-brother's-daughter. This would be marriage to the husband's sister's-son. We have no specific information on the presence or absence of such marriage among the Mandan, Hidatsa, and Crow, but as I have elsewhere remarked, the functioning of husband's-

[45] Ibid., 69.
[46] Ibid., 95–96.
[47] Lowie, (8) 186–189; Lowie, (7) 53, 9–11, 19–21.
[48] Lowie, (8) 193–196; Lowie, (7) 53, 8, 21.
[49] Matthews, 52.
[50] Lowie, (7) 46.
[51] Wied, 349, 351.
[52] Lowie, (8) 223.

sister's-son marriage would be obscured among these tribes by the fact that a man and his sister's son are actually "brothers" terminologically; hence this type of marriage would be apparently only junior levirate marriage. Levirate actually occurs for these tribes.[53] Furthermore, husband's-sister's-son marriage has been specifically mentioned for the Skidi Pawnee,[54] who, as elsewhere noted, have a Crow type-system complicated by other features. It may be through the mediacy of the Arikara, an offshoot of the Skidi Pawnee, that the Crow type-system itself has reached the Hidatsa, in which case it would not be unlikely that husband's-sister's-son marriage has diffused along with it.

It seems to me, on the basis of these distributions in the Plains and Woodlands, that we have a strong case for correlation, on the one hand of the Omaha type kinship system with patrilineal, exogamic organization, patrilocal residence, and wife's-brother's-daughter marriage, and on the other, of the Crow type system of kinship with matrilineal, exogamic organization, matrilocal residence, and possibly husband's-sister's-son marriage. It is of importance, then, to note for other areas of distribution of these types, what form of social organization, what emphasis in descent and residence, and what special forms of marriage appear.

In the Californian area of the Omaha type, six of the groups with the kinship system are organized into exogamic moieties, mainly those in the center of the area. These are the Central, Southern, and Northern Miwok, and the Tachi, Gashowu, and Chuckchansi.[55] All of these groups reckoned descent patrilineally. Of the other Californian groups with the kinship system, the Wintun are patrilineal,[56] while descent among the Pomo tribes is veiled in some contradictions. We have statements of a patrilineal emphasis in the succession to the chieftaincy, in family ties within the household, in the handing down of names, and in land inheritance.[57] On the other hand, we have flatly contradictory

[53] Lowie, (7) 47, 74.

[54] G. A. Dorsey, 73–74.

[55] Gifford, (3) 292, 293; Gifford, (5) 139–140; Gifford, (4) 389; Gifford, (2) 250–252; Merriam; Kroeber, (3) 453, 593; Powers, 352, 371.

[56] McKern, 238.

[57] Kroeber, (3) 251; Gifford, (1) 298, 304; Gifford, (1) 379; Gifford, (6) 83–84.

statements, making the emphasis, particularly in the succession to the chieftaincy, and inheritance of names, matrilineal.[58] Perhaps a fair summary of the situation would be that chieftainship was preferably hereditary in the male line, but limited by the actual availability of the candidate. Furthermore since chiefs would probably be to some extent included in the group mentioned by Loeb as usually marrying outside of the village,[59] the matrilocal residence which seems indisputably in vogue for intervillage unions[60] would seem to imply that the chief's successor be chosen from relatives in his own village, in this way, in many cases, from his sister's children. In the matter of residence rules after marriage, the Miwok are patrilocal, the Wintun temporarily matrilocal but more permanently patrilocal, while the Yokuts tribes are apparently matrilocal.[61] In the case of the Pomo, Kroeber and Loeb make the locality of residence a matter of choice on the part of the couple,[62] while Gifford demonstrates clearly that the native theory, which favors patrilocal residence, is substantiated for intra-village marriages by the composition of households, but that intervillage marriages are predominantly matrilocal.[63] Finally, wife's-brother's-daughter marriage has been established for the Miwok,[64] although it is there complicated by a more recent development from it of cross-cousin marriage. In addition to the Central Miwok case, wife's-brother's-daughter marriage has been enumerated for only three other Californian groups with the Omaha type-system, the Southeastern Pomo, Central Pomo, and Northern Pomo.[65] The evidence for this marriage from other groups seems nowhere negative, but absent.

In the African area of the Omaha type, the Nandi are organized in exogamic gentes, descent and inheritance are patrilineal, and

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[58] Barrett, 15; Gifford, (1) 336–337, 339, 340–341, 343–346; Loeb, 235, 238, 245, 258, 265.

[59] Loeb, 279.

[60] Gifford, (1) 323.

[61] Gifford, (4) 390; Powers, 354, 238; McKern, 238; Kroeber, (3) 493; Powers, 382.

[62] Kroeber, (3) 255; Loeb, 279, 283.

[63] Gifford, (1) 321, 323, 302–303.

[64] Gifford, (5) 182 ff.

[65] Gifford, (2) 247.

post-marital residence is patrilocal.[66] There are no statements specifically of wife's-brother's-daughter marriage. In Southeast Africa the Thonga tribes are organized in patrilineal, exogamic gentes, and residence after marriage is patrilocal.[67] Wife's-brother's-daughter marriage is customary among Thonga, Tonga, and Chopi.[68] The Vandau are organized in patrilineal, exogamic sibs, and post-marital residence is patrilocal.[69] For the Vandau there is no specific statement of wife's-brother's-daughter marriage, but the situation here is parallel to the case of the Crow, viz., since a woman's brother's daughter is terminologically her "sister," wife's-brother's-daughter marriage would be apparently only sororate marriage. Such sororate marriage occurs among the Vandau, on the death of the wife.[69]

Summing up the facts of this distribution, it would appear that the most consistent correlate of the Omaha system is unilateral descent in the male line: except for the Pomo and Yuchi cases, this correlate would hold universally. Exogamic organization appears very widely as a correlate; it is universal in two of the three areas, and strongly developed in the third, where, however, about half of the groups with the kinship system, viz., the Pomo and Wintun groups particularly, lack exogamy. Post-marital residence is predominantly patrilocal; the chief exceptions are the Yokuts tribes, the Pomo in their intervillage marriages, and possibly the Osage. In general, though, it should be said that the information on residence rules is rather uneven, so that it is hard to weight this factor. Finally, marriage to the wife's-brother's-daughter appears widely in all three areas; for the Plains and California areas, notably at the probable centers of cultural influence. This marriage would probably appear more widespread with more specific information.

Extending our survey of the distribution of the Crow kinship-type for the appearance of correlated traits, we find that in the Northwest area the Tlingit and Haida are both organized into two

[66] Hollis, 4–6, 60–64, 72–73.
[67] Junod, 1: 14 ff., 112–113, 121, 356 ff.
[68] Ibid., 228, 290–292.
[69] Boas, 49.

exogamic moieties, or as Swanton calls them "clans," with descent in the maternal line.[70] For the Tlingit, exceptionally, there is a smaller third group which intermarries freely with the two large moieties. Post-marital residence among the Tlingit, is variously stated to be matrilocal at the option of the son-in-law, a matter of free choice on the part of the couple, or patrilocal.[71] Among the Haida, residence is matrilocal during the betrothal of a man;[72] or, as elsewhere stated, a man lives with his wife's parents until the death of his uncle, when he takes possession of his uncle's house and property.[73] Perhaps among both Tlingit and Haida rank and property considerations play considerable part in determining the "choice" of the couple. Among the Haida father's-sister's-daughter, or cross-cousin marriage occurs; and husband's-sister's-son marriage occurs widely among both Tlingit[74] and Haida.[75] This is especially remarked in connection with the succession to chieftainship, whether it be town-chief, family-chief, or household-chief; apparently the normal heir is the sister's son, who inherits the wife together with house, office, and property. It is even claimed that among the Tlingit the nephew is obliged to give up his own wife, if she prefers it under the circumstances, but must marry his uncle's widow, who has a prior claim.[76]

In the Californian area of the Crow type, descent was matrilinear for the Southern Pomo, and probably so for the Wappo.[77] Exogamic organization is absent, and no specific information is available on residence rules and special marriage uses; if we are to judge from the Pomo evidence for other groups, as above outlined, the Southern Pomo are probably matrilocal.

In the Southwest area, all the groups with the Crow type-system, viz., Hopi, Zuñi, Hano, Laguna, are organized basically

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[70] Swanton, (5) 398 ff., 423; Swanton, (1) 11, 62.

[71] Krause, 220; Dall, 415; Swanton, (5) 428; Knapp and Childe, 83–84.

[72] Swanton, (1) 50–51.

[73] Harrison, 77, 111.

[74] Krause, 221; Veniaminoff in Dall, 416; Knapp and Childe, 60–61; L. F. Jones, 129–130.

[75] Swanton, (6) 332; Swanton, (1) 70; Harrison, 56–57.

[76] Knapp and Childe, 60–61.

[77] Kroeber, (3) 250–251.

in matrilineal, exogamic clans.[78] All emphatically stress matrilocal residence; in fact, house ownership is exclusively in the hands of the women, and the homes are inherited in the female line.[79] However, it should be noted that exceptional cases of patrilocal residence are recorded for Zuñi and Laguna.[80] I find no specific information on the presence or absence of husband's-sister's-son marriage among these groups. This would be the more interesting in view of the reported absence of levirate and sororate marriage among the pueblos.[81] There are suggestions of cross-cousin marriage at Laguna, Zuñi, and Hano,[82] but the evidence in no case rests on recorded marriages. The earlier reference to practise of the marriage among the Hopi villages has since been disproved by Lowie.[83]

In the Southeast, of the groups with the Crow system, the Choctaw and Chickasaw are similarly organized in two exogamous moieties, subdivided into smaller clan groups, with descent in the maternal line.[84] The Creek tribes have a matrilineal clan organization, but it is not the single clan which is always the exogamic unit; nevertheless, as Swanton puts it, no clan is endogamous.[85] In addition, the Creek are divided into two moieties, which seem ceremonial divisions primarily, and do not regulate marriage.[86] The Cherokee are organized into exogamous clans with matrilineal descent.[87] The Timucua probably were organized

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[78] Hough, 36–37, 127; Parsons, (1) 284; Stevenson, 291–292; Kroeber, (4) 91 ff.; Freire-Marreco, 269; Parsons, (2) 206. Cf. on Hopi, Lowie, MS., American Museum of Natural History.

[79] Hough, 37, 127; Voth, 245; Stevenson, 291, 293, 305; Kroeber, (4) 89–90; Freire-Marreco, 269; Parsons, (2) 175–176.

[80] Kroeber, (4) 105; Parsons, (2) 176.

[81] Lowie, (1) 149; Kroeber, (4) 90; Parsons, (3) 257; an exceptional occurrence of sororate is mentioned for Laguna. Parsons, (2) 206.

[82] Parsons, (2) 196–197; Kroeber, (4) 67; Freire-Marreco, 286.

[83] Lowie, Hopi MS., American Museum of Natural History, in reference to Freire-Marreco, 286.

[84] Swanton, (2) 60–61; Gatschet, 1: 95–97, 104–105; Swanton, (7) 695; Bushnell, 16; Morgan, (1) 166–167.

[85] Swanton, (4) 594–598; Swanton, (7) 114, 166 ff.; Gatschet, 1: 153–155; Speck, (1) 114–115; MacCauley, 496, 507–508.

[86] Swanton, (7) 156 ff., 165, 167, 695.

[87] Mooney, 212–213; Morgan, (1) 168.

in matrilineal exogamous clans grouped in phratries.[88] Post-marital residence among the Creek, Choctaw, Chickasaw, and Timucua was matrilocal.[89] Apparently patrilocal residence occurred occasionally among the Creek,[90] but the normal mode of residence, as outlined by Swanton, was for the father-in-law to build a home for his daughter near his own residence, and it was to this matrilocal residence that the son-in-law came; it was definitely owned by the wife.[91] I find no specific statements on locality of residence among the Cherokee. In the matter of husband's-sister's-son marriage information for all these Southeastern groups is wanting, although the basic levirate and sororate marriages from which this would be an extension, occur throughout the area.[92]

In the Banks islands, Melanesia, we find correlated with the Crow type-system, an exogamous moiety organization with matrilineal descent, and marriage to the husband's-sister's-son.[93] Here, however, residence is apparently patrilocal throughout the area, so much so that Rivers is led on this basis to deny any relation between matrilocal residence and matrilineal descent.[94]

Summing up this distribution, we find that unilateral descent through the mother is a universal correlate of the Crow type-system of kinship. Exogamic organization occurs as a correlate throughout five of the six areas; it is lacking among the two Californian groups. Post-marital residence is predominantly matrilocal; the chief exception to this generalization would be the anomalous situation in Melanesia. But again the evidence on residence is very uneven. Marriage to the husband's-sister's-son occurs throughout two areas; and it is probably more widespread.

Evidently we can say without question that the Omaha and Crow schemes are associated respectively with unilateral descent through the father and through the mother. While it would seem probable from the evidence that residence rules play a large part

[88] Swanton, (3) 369–371; Swanton, (7) 695; Mooney in Hodge, 2: 753.

[89] Swanton, (7) 79, 170–171, 375; Speck, (1) 117; MacCauley, 495; Bushnell, 27; Cushman, 498; Swanton in Lowie, (6) 31.

[90] Speck, (1) 117.

[91] Swanton, op. cit.

[92] Swanton, (7) 368 ff.

[93] Rivers, (1) 1: 20 ff., especially 48–49.

[94] Ibid., 2: 126.

in producing the descent emphases, the data are not specific enough in all cases to permit adequate analysis of the force of such factors. The question of the weight to be assigned preferential marriages in molding both the kinship and social organization must still remain open, but the facts enumerated seem to me to suggest that they may prove fundamental; this view is the more favorable because we have nowhere in reference to either of these systems a definite statement denying the presence of the marriages which seem reasonable correlates, but merely the absence of comment. I have elsewhere urged that given some emphasis of the order of a specific residence rule, the wife's-brother's-daughter in the case of patrilocal residence, and the husband's-sister's-son in the case of matrilocal residence, are of the same household as the wife and husband respectively;[95] so that it would be a natural extension of sororate and levirate respectively for them to be substituted for the wife's sister or the husband's brother. Whether kinship terminology to express such usages must follow from the custom is another matter. To a great extent this would probably depend on the numerical preponderance of such marriages. It is not enough that a marriage is possible, or that it occurs now and then; if it is to be a determining factor, it must obviously be dominant over other factors of a like order, that is, it must be the preferred or obligatory form of behavior. Granted such conditions, and it is here that our data are most incomplete, I think it would follow that kinship terminology would adjust itself to behavior.

As regards the relation of exogamic groupings to these kinship-types, it would appear from the California evidence on both Omaha and Crow systems, that the kinship schemes appear without organized exogamic structures. This would make it probable that the systems with their descent emphases are favorable conditions to the appearance of definite exogamic organizations, rather than that the full development of the kinship system is a reflection of the social organization.[96] The evidence on the Crow type would favor this interpretation more than that on the Omaha. It is a plausible hypothesis that the kinship systems of Californian groups with Omaha schemes and without exogamic organiza-

[95] See also Lowie's remarks, (3) 40. [96] Lowie, (3) 29.

tions have appeared there as a result of diffusion from the more central groups who have exogamy. In the case of the Southern Pomo and Wappo, however, we have the Crow system without exogamy, in a completely isolated area.

The apparent absence of exogamy in some cases in our distributions is open also to another interpretation. In general we call exogamic groups only such groups as are organized and named: very often this involves adding to our concept of the group, totemic, religious, or ceremonial meanings which may be wholly secondary to the group functions as a sociological unit. Australian data indicate this clearly, where we find in contiguous areas marriage classes identified with totemic groups, as among the Urabunna, or specifically dissociated from them, as among the Arunta.[97] And, taking the matter from another angle, in the case of the Mardudhunera of Western Australia, Brown has shown that while superficially their social organization resembles that of the Kariera as a four-class system, analysis shows that actually there must be groupings of kin present which make it of the eight-class form.[98] Apparently these groups have not attained conscious social recognition, and have not been named. Hence, I should urge that a kinship system, particularly of such types as here discussed, may actually group kin so that sibs are implicit in the social life of the people before they are made explicit.[99] Some principle of naming, diffused perhaps from other groups, may be the immediate determinant of the formal recognition of such groupings.

Concluding, the argument here presented is that the distributions of two types of kinship systems point to their repeated independent origins, and to their diffusions, or the diffusions of their determinants, within limited areas. These types are often correlated with special customs of residence and marriage, with specific descent emphases and with exogamic organization, so that it is possible we are dealing in such cases with a functionally interrelated complex. The evidence seems strong enough to justify

[97] Spencer and Gillen, 59, 60; and 34, 557. [98] Brown, 185–188.

[99] See in this connection, and in reference to the Pomo and Wintun tribes who lack exogamy, McKern; and Loeb, 266, 279, 398–399.

consideration of some causal interrelation of these features as a working hypothesis, and to favor special inquiry for the presence of these features in specific cases. As a specific result, it seems likely that these exogamic organizations have followed the kinship classifications of these types in time, rather than preceded them.

There is no evidence here for conclusions about the origins of exogamic organization in general; save evidence which strengthens the thesis that such organizations have probably originated independently in a variety of ways, of which we have here considered only two. Different cases of social organization may involve different origins, and where it is possible to identify causal complexes which may be related to origins, the outer form of the organization should not be treated in comparisons as an independent cultural unit, divorced from the interrelated features.

PUBLICATIONS REFERRED TO*

BARRETT, S. A. Ethno-geography of the Pomo and neighboring Indians. UCP, 6: 1–332.
BLAIR, E. H. Indian tribes of the upper Mississippi Valley and region of the Great Lakes. 1912. 2 v.
BOAS, F. Das Verwandtschaftssystem der Vandau. Zeit. f. Ethnologie, 54: 41–51.
BROWN, A. R. Three tribes of Western Australia. JRAI, 43: 143–194.
BUSHNELL, D. I. Choctaw of Bayou Lacomb. Bulletin 48 BAE.
CUSHMAN, H. B. History of the Choctaw, Chickasaw and Natchez Indians. 1899.
DALL, W. H. Alaska and its resources. 1870.
DORSEY, G. A. Social organization of the Skidi Pawnee. ProCA, 15. 2: 71–78.
DORSEY, J. O. (1) Omaha sociology. 3rd Annual Report, BAE, 207–380.
(2) Siouan sociology. 15th Annual Report, BAE, 213–244.
DRAKE, B. (1) Life and adventures of Black Hawk. 1846.
(2) Life of Tecumseh and his brother the Prophet. 1858.
DURLOCH, T. M. Relationship systems of the Tlingit, Haida and Tsimshian. Publications of American Ethnological Society, v. 11, 1928.
FLETCHER, A. C. and F. LA FLESCHE. Omaha tribe. 27th Annual Report, BAE, 15–654.

* *Abbreviations:*

AA	American Anthropologist, new series.
BAE	Bureau of American Ethnology.
HAV	Holmes Anniversary Volume, 1916.
MAAA	Memoirs, American Anthropological Association.
PAMNH	Anthropological Papers, American Museum of Natural History.
ProCA	Proceedings of International Congresses of Americanists.
UCP	University of California Publications in American Archaeology and Ethnology.
UPM	University of Pennsylvania, Museum.
JRAI	Journal of the Royal Anthropological Institute.

FREIRE-MARRECO, B. Tewa kinship terms from the pueblo of Hano, Arizona. AA, 16: 269–287.
GATSCHET, A. S. Migration legend of the Creek Indians, 2 v. 1884, 1888.
GIFFORD, E. W. (1) Clear Lake Pomo society. UCP, 18: 287–290.
(2) Californian kinship terminologies. UCP, 81: 1–285.
(3) Dichotomous social organization in south central California. UCP, 11 291–296.
(4) Miwok lineages and the political unit in aboriginal California. AA, 28: 389–401.
(5) Miwok moieties. UCP, 12: 139–194.
(6) Pomo lands on Clear Lake. UCP, 20: 77–92.
HARRISON, C. Ancient warriors of the North Pacific. 1925.
HODGE, F. W., ed. Handbook of the Indians north of Mexico. Bulletin 30, BAE (2 parts).
HOFFMAN, W. J. The Menomini Indians. 14th Annual Report, BAE, 1: 11–308.
HOLLIS, A. C. The Nandi. 1909.
HOUGH, W. The Hopi Indians. 1915.
JONES, L. F. A study of the Thlingets of Alaska. 1914.
JONES, W. Kickapoo ethnological notes. AA, 15: 332–335.
JUNOD, H. A. Life of a South African tribe. 1927. 2 v.
KEATING, W. H. Narrative of an expedition to the source of St. Peter's River. London, 1825. 2 v.
KNAPP, F and R. L. CHILDE. The Thlinkets of southeastern Alaska. 1896.
KOHLER, J. Zur Urgeschichte der Ehe. Zeit. f. vergleichende Rechtswissenschaft, 12: 187–353, 1897.
KRAUSE, A. Die Tlinkit-Indianer. 1885.
KROEBER, A. L. (1) California kinship systems. UCP, 12: 339–396.
(2) Classificatory systems of relationship. JRAI, 39: 77–84.
(3) Handbook of the Indians of California. Bulletin 78, BAE.
(4) Zuñi kin and clan. PAMNH, 18: 39–204.
LA FLESCHE, F. Osage marriage customs. AA, 14: 127–130.
LOEB, E. M. Pomo folkways. UCP, 19: 149–405.
LOWIE, R. H. (1) Culture and ethnology, 1917.
(2) Exogamy and classificatory systems of relationship. AA, 17: 223–239.
(3) Family and sib. AA, 21: 28–40.
(4) Historical and sociological interpretations of kinship terminologies. HAV, 293–300.
(5) Kinship systems of the Crow and Hidatsa. ProCA, 19: 340–343.
(6) Matrilineal complex. UCP, 16: 29–45.
(7) Notes on the social organization and customs of the Mandan, Hidatsa and Crow Indians. PAMNH, 21: 1–99.
(8) Social life of the Crow Indians. PAMNH, 12: 179–248.
MACCAULEY, C. Seminole Indians of Florida. 5th Annual Report, BAE, 471–531.
MATTHEWS, W. Ethnography and philology of the Hidatsa Indians. U. S. Geological and Geographical Survey, misc. pub., 7, 1877.
MERRIAM, C. H. Totemism in California. AA, 10: 558–562.
MCKERN, W. C. Functional families of the Patwin. UCP, 13: 235–258.
MICHELSON, T. Notes on the social organization of the Fox Indians. AA, 15: 691–693.
MOONEY, J. Myths of the Cherokee. 19 Annual Report, BAE, 5–548.

MORGAN, L. H. (1) Ancient society. 1877.
(2) Systems of consanguinity and affinity of the human family. Smithsonian Contributions to Knowledge. 1871.
PARSONS, E. C. (1) Contributions to Hopi history. Oraibi in 1920. AA, 24: 283–294.
(2) Laguna genealogies. PAMNH, 19: 133–282.
(3) Notes on Zuñi. MAAA, 4: 151–327.
POWERS, S. Tribes of California. Smithsonian Contributions to North American Ethnology, v. 3.
RADIN, P. Winnebago tribe. 37th Annual Report, BAE, 35–550.
RIVERS, W. H. R. (1) History of Melanesian society. 1914. 2 v.
(2) Kinship and social organization. 1914.
SKINNER, A. (1) Comparative sketch of the Menomini. AA, 13: 551–565.
(2) Ethnology of the Iowa Indians. Bulletin, Public Museum, City of Milwaukee, 5: 181–354.
(3) Material culture of the Menomini. Indian Notes and Monographs, misc. ser., no. 20.
(4) Observations on the ethnology of the Sauk Indians. Bulletin, Public Museum, City of Milwaukee, 5: 1–57.
(5) Social life and ceremonial bundles of the Menomini Indians. PAMNH, 13: 1–165.
(6) Societies of the Iowa, Kansa and Ponca Indians. PAMNH, 11, 679–801.
SPECK, F. G. (1) Creek Indians of Taskigi town. MAAA, 1: 99–164.
(2) Ethnology of the Yuchi Indians. UPM Anthr. Pub., 1: 1–154.
(3) Notes on the ethnology of the Osage Indians. UPM Transactions, 2: 159–177.
SPENCER, B. and GILLEN, F. J. Native tribes of Central Australia. 1899.
SPIER, L. Distribution of kinship systems in North America. University of Washington Publications in Anthropology, 1: 69–88.
STEVENSON, M. C. Zuñi Indians. 23rd Annual Report, BAE, 5–608.
SWANTON, J. R. (1) Contributions to the ethnology of the Haida. Memoirs of the American Museum of Natural History, 5: 1–300.
(2) An early account of the Choctaw Indians. MAAA, 5: 53–72.
(3) Early history of the Creek Indians and their neighbors. Bulletin 73, BAE.
(4) A foreword on the social organization of the Creek Indians. AA, 14: 593–599.
(5) Social conditions, beliefs and linguistic relationship of the Tlingit Indians. 26th Annual Report, BAE, 391–485.
(6) Social organization of the Haida. ProCA, 13: 327–334.
(7) Social organization and usages of the Indians of the Creek confederacy; *and* Aboriginal culture of the Southeast. 42nd Annual Report, BAE, 23–472; 673–726.
(8) Terms of relationship in Timucua. HAV, 451–463.
VOTH, H. R. Oraibi marriage customs. AA, 2: 238–246.
WIED, Prince zu. A. P. Maximilian. Travels in the interior of North America, translated from the German by H. E. LLOYD. London, 1843.

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PREHISTORIC POTTERY PIGMENTS IN THE SOUTHWEST

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Introduction

IN THE prehistoric days of the Southwest, the people fashioned their household articles after patterns handed down from generation to generation; in fact, so conservative were they that each of their different schools of art extended over a comparatively large area. As in historic art, there were developments and changes in each school; these came through the new ideas of some master potter or simply through natural organic growth and decay. When the archaeologist digs up a piece of pottery, his first effort is to classify it according to culture area, then to place it in its chronological sequence. It has long been realized that movements and developments of peoples may well be traced through a study of their pottery; the relative chronology of pottery types and of cultures may be determined through cross finds of whole vessels or even of potsherds that have been traded out of their own areas. Hitherto, only the designs, the colors, and the pastes of pottery have been considered to any extent in this study; I would suggest that the difference in types of prehistoric paints as discovered through simple physical and chemical tests or through more complete analyses presents a field of study offering new discoveries. It has been found that the types of paints used in a given locality were consistent and so provide a dependable basis of comparison with the paints of other wares. Up to the present time there has been little scientific investigation of these American prehistoric paints, though in 1911 Louis Franchet printed a comprehensive study of paints and pottery other than American in *Céramique Primitive*.

For the more comprehensive chemical tests the paint must be removed from the sherds in some way so that little of the sherd itself comes off with the paint. Because of the exceeding thinness

of most paint coatings, such a removal is difficult, and as the simple tests were found to be practical in almost every case, the longer chemical tests need be used for only the manganese paint, for which we have found no shorter test, or as a check if the result of any simple test is doubted. Because the black paint presents a much wider range of differences than the other colors, it has been found to be the most valuable for the study of culture areas and influences. Of the four colors commonly used in pottery decoration —red, white, buff, and black—all but the black are mineral paints. Both vegetal and mineral paints and combinations of the two were used to produce black.

Before one may make a detailed study of the paint materials, something must be understood of the process of making pottery, of the application of the paints, and of the firing. These processes noticeably affect the colors of most of the paints used by both the modern and the ancient Pueblo Indians. That the modern process of preparing the clay probably closely parallels the ancient is indicated by the marked general resemblance in pastes of modern and ancient wares, although in composition the different classes of both the modern and ancient pottery may differ noticeably.

The lower part of a vessel is often molded in a pottery bowl or in a large sherd saved for the purpose, although I have seen pieces of modern Hopi ware that show the unmistakable imprint of a modern pan upon their lower portions; verily the Indian will be civilized! The bases of some pieces of prehistoric ware were molded in baskets; imprints of the rim or of a few coils are occasionally found three or four inches from the base of the vessel. Pottery vessels or sherds were probably used for base molds of other pieces then as now. Upon the clay base the potter builds up the rest of the piece by coiling long ropes or fillets of clay around and around upon themselves. This coiling process, used by the ancient as well as by the modern potters of the Southwest, insures a symmetry rivaling that obtained through the use of the wheel by the early potters of Europe. Hand modeling could scarcely reach such perfection. Vessels in which the coils were not obliterated show that in this type, at least, no base mold was used; the entire piece was built up by coiling.

The coiling leaves the surface rough; the woman smooths it with a small paddle cut from a piece of gourd rind or with a wooden paddle that is slightly larger. In those wares on which no slip was used, as the ancient San Juan massed black-on-white and the modern Hopi, this smoothing is prolonged until a thin emulsion of the finest particles of clay comes to the surface and so fills in the pores that the appearance of a slip is produced. After the smoothing, the Hopi woman allows the pottery to dry somewhat and then rubs it down with a piece of white sandstone. In slipped ware, the slip is now applied and dried, and the vessel is given a final polish with a waterworn pebble; unslipped ware is similarly polished. The woman mixes her pigments in a small stone metate or in a more modern cup and applies them with homemade brushes of yucca fiber. Prehistoric artists used paint slates, tablets, or stone cups as well as metates for grinding and mixing their colors.

After the colors have dried for a few hours, and the modern Hopi finds the oven of the white man's stove most efficient for this process, a number of the completed vessels are stacked and fired in an outdoor oven of slabs of dried sheep dung; the same material was used for fuel. The cracks of the oven are filled with small pieces of the dung, so that a red heat may be obtained, a temperature that will burn the pottery to almost the hardness of porcelain. Firing lasts for only about an hour. Little of the ancient pottery was of as fine clay or as well burned as the modern Hopi ware except for that massed black-on-white ware that is characteristic of the San Juan and particularly of Kitsil and Betatakin ruins in the Segi canyon. Underburning gives a bad color and weakens the vessel; overburning discolors the pigments and the clay. Before the Spaniards brought sheep and cattle into this country wood and perhaps a little coal was used for fuel, and open fires or ovens of stone slabs leaned together must have been used.

Yellow, Red, and White Pigments

The firing changes the colors of many of the pigments and makes them permanent. The white clay that the Hopi use for the walls of their pottery turns to cream or even to buff in firing and

may become orange if overfired. This is due to a slight content of yellow iron oxide in the clay. The yellow ochre, limonite, ($2Fe_2O_32H_2O$), is ground and used for the walls of their red ware and for any red designs on the light ware; upon firing, the yellow iron oxide changes to red iron oxide, ($2Fe_2O_3$), with a deep brownish red color. The modern Hopi do not slip their vessels; the high polish produced by patient rubbing with a smooth pebble produces a background which so simulates a slip that it is usually mistaken for one. The same yellow clay was used for the slip of the Little Colorado black-on-red ware, and in a less pure form and color, for the exterior of the Middle Gila polychrome vessels and for the great amount of undecorated red ware found all through the Southwest. Guthe reports that the orange-red slip used on the bases and on the interior of olla lips at New Mexico pueblos is of a mustard yellow shade until fired. This yellow iron oxide burns to a lighter red than that used by the Hopi, and unlike the Hopi, these people use a red iron oxide wash for their dark red slipped decorated ware. Equal amounts of rock temper and white clay are mixed with water and are made into cakes which are dried and stored away. When needed for use, these cakes are broken up and enough is put into water to give it a milky opaque appearance. To this is added an indefinite amount of the red clay, the amount depending upon the shade desired. Stevenson, speaking of the Zuñi, wrote,

> The materials used to produce the red or brown colors is a yellowish impure clay, colored from oxide of iron; indeed it is mainly clay, but contains some sand and a very small amount of carbonate of lime [It] is generally found in a hard, stony condition and is ground in a small stone mortar . . . . and is mixed with water so as to form a thin solution.

The Hopi claim to use no red clays or pigments except for body paints. Oval pats of clay mixed with ground hematite to produce a deep red body paint were found in Turkey Hill ruin, near Flagstaff. The clay was added to give thickness to the paint. These pats had been bored with a transverse hole so that a string might be run through them for suspension.

Dead white or grayish white clays were used for the white paint, and, containing no oxide of iron, did not change color in firing. Stevenson found modern Pueblo Indians using

a fine white calcareous earth, consisting mainly of ground feldspar with a small proportion of mica.

The material used for white paints may have varied somewhat among the tribes but must always have been some mineral free from iron oxides. Kaolin clay was probably the most commonly used.

Black paints have hitherto been the subject of some conjecture. Carbon paints containing no silica would immediately burn off; graphite is much too rare for general use as a paint. The balls of carbon which are occasionally found in ruins were intended for body decoration and not for pottery; such material could not have been made permanently adherent.

In 1903 Hough spoke of the black paint of the Little Colorado region—

> the basis of which is iron ore, but the secret of its mixing, whether with alkaline salts or resin, is lost, ...

The present study of black paints, which has thrown some light upon that secret, has been carried on through chemical tests made of the prehistoric paints. The data so secured were correlated with those from similar tests of modern Pueblo pottery paints. The results indicated that in their pottery decoration, as in many other fields, these descendants of the prehistoric peoples have carried on the traditions and customs of their ancestors and that an examination of the materials and of the preparation of the modern paints might be expected to furnish those connecting links of fact that are not apparent in a deductive study. The apparent constancy of a paint type in an area in one or more periods led to an investigation of the relationships between culture areas as indicated by the change in paint areas in different periods.

Types and Tests of Black Pigments

On the basis of tests made the black paints used on prehistoric pottery may be divided into four main classes:

1. Plain carbon similar to soot or lamp black, applied by smudging. (Not a true paint.)
2. Carbon protected by a thin, adherent, transparent film of an easily fusible silicate. This is the vegetal extract paint.

3. Carbon protected by the silicate, with the addition of red iron oxide (Fe_2O_3), or yellow iron oxide) $2Fe_2O_32H_2O$), which burns to Fe_2O_3.

4. Paint containing chiefly some manganese oxide, (MnO_2), (Mn_3O_4), or (MnOOH).

Type 1. *Smudge.*—For some years it was thought that those vessels showing a satiny black interior had been treated with a glaze paint and that those with rough, dull black interiors had been covered with dull paint. Test 1 indicates that these pieces were smudged black by the same method as that used by the women of San Ildefonso. After the vessel is fired it is filled with smoldering organic material and kept warm upon the coals. This treatment deposited carbon around the particles of clay of the slip or of the polished surface where there was no slip. In some cases the darkened film of clay is thin; with longer subjection to the smoldering matter, carbon was driven halfway through, or, rarely, entirely through the walls of the vessel. The dull or shiny appearance of the finished surface is due to the relative amounts of polishing the surface receives before firing.

Cushing describes a slightly different process which would produce the same smudged effect. Vessels

> while still hot from a preliminary burning, if coated externally with the mucilaginous juice of green cactus, internally with pinon gum or pitch, and fired a second or even a third time with resinous wood-fuel, are rendered absolutely fire-proof, semi-glazed with a black gloss inside, and wonderfully durable.

The gum and juice when heated in a slow fire would deposit carbon around the clay particles of the slip just as when the vessel was filled with organic material and heated.

In an open draft muffle or with an oxygen torch, heat the sherd to redness and maintain that approximate temperature for two or three minutes. If the torch is used, the flame must be moved over the sherd so that plenty of oxygen may reach the surface. Carbon deposited by smudging will burn out, leaving the clay its original color. The depth to which the carbon has penetrated will determine the length of time it will require for burning out.

Paint which is purely vegetal in composition and which has not burned onto the pottery would also burn off, but such paints

are very rare, the black paint used by the modern Pima and Papago being the only type I have found to burn off, and some of these people claim that they use the commercial paint. Differentiation between paints and smudges in such cases is not difficult. Smudges can only be applied in large undefined areas or over an entire surface; only paints may be applied in areas decorated with designs. An examination of a cross-section of the wall of the vessel will indicate whether smudge, which penetrates the wall, or paint, which scarcely sinks into the surface has been used. In testing, the temperature to which a sherd is subjected must not be high enough for the surface to become fused.

If the black paint gives no reaction to test 1, it should be tested for type 2 or 3 paint.

Types 2 and 3 (Carbon; Carbon and Iron).—The carbon paint of type 2 was applied as a vegetal extract. Type 3 consisted of a similar solution, to which was added iron oxide. In both types the carbon was protected by a silica film or incipient glaze.

The silica film of these types of paint must not be confused with any heavy glaze which covers the surface of a pigment. It is rather a very thin coating which surrounds individual particles or groups of particles of carbon and which, in testing, must be removed by treatment with hydrofluoric acid before the carbon may be burned out. This film protected their paint during firing. Occasionally a white crystallization of the glaze material may be seen along the edges of bands of black paint.

In a study of prehistoric paints, it is obvious that although the physical and chemical properties of the paints used might be ascertained, there is no possible way of discovering how the paints were prepared, or, in the case of black paint, in what form the carbon was applied. After proving by test, however, that the black paint of the Hopi corresponds exactly to type 3 of the prehistoric paints, a collection of Hopi paint materials was made, together with information concerning their preparation. It will be noted that the only difference between paints of types 2 and 3 is the presence of iron oxide in the latter. Thus, a study of Hopi black paint before the iron oxide is added may be expected to explain type 2.

Walpi and Hano on the First Mesa are the only Hopi pueblos in which pottery is made. Some of the specimens of paint ingredients obtained came from Humisi of Walpi; the others, and corroborative evidence concerning their preparation, were given by Nampeo, most famous potter of Hano. Humisi is Hopi; Nampeo is Tewa, but the methods of their art are exactly alike.

A small bushy plant of the genus *Sophia*, one of the Mustard family, springs up on the Hopi reservation in the fall, grows to about eight inches high during the winter, breaks into yellow blossoms in the spring, and dies in April. The women pull up the little plants about March, dry them, and store them for the future. When black paint is to be made, the plants are boiled in water for several hours, the fibrous parts are removed, and the solution is again boiled until it becomes black, thick, and syrupy. The thick fluid is poured into corn husks to dry and harden. Several days are required for this hardening, but the Zuñi, who use the Guaco or Bee plant, *Cleome serrulata* or *integrefolia*, prepare it similarly, and claim that the paint is better if left to harden for several months before using. Some Zuñi boil their liquid several times so that it is quite thick when it is poured out on a board to dry in the sun. The hard cakes so produced may be kept for an indefinite period.

A small amount of this hard black material, "no matter how small," they assured me, is dissolved in a little water on a tiny metate or in a stone paint grinder. Both Hopi and Zuñi rub a small block of hematite over the stone until enough iron oxide is ground off to make the solution about as thick as gravy. The paint is applied to the pottery with brushes made by shredding out the fibers of one end of a piece of yucca leaf about three inches long. Brushes vary in thickness according to the size of the line for which they are intended.

Different species of the *Cleome* and of the Mustard are common throughout the Southwest and were probably used where those mentioned here were not indigenous.

In considering paint of type 2, the analysis would be of only the plant extract, for the paint consisted of this dissolved in water with no addition of other matter. The extract analyzed as follows:

Volatile and combustible	71 5%
Ash	28 .5%

The volatile matter consists of various combinations of carbon, hydrogen, oxygen, and nitrogen.

Partial analysis of ash:

Silica (SiO_2)	8 .2%
Alumina (AlO_3)	4 .2
Iron oxide (Fe_2O_3)	7 .2
Lime (CaO)	9 .5
Magnesia (MgO)	1 .1
Alkalies (K_2O) and (Na_2O)	32 .5

Considerable of carbon dioxide, (CO_2) combined with the alkalies and the lime is also present.

The chemical analyses given in this paper were done by F. G. Hawley, Chief Chemist of the International Smelter, Miami, Arizona. Mr. Hawley is likewise responsible for some of the tests which are here given.

It is apparent that this vegetal extract contains two widely different substances, the carbonaceous matter, which is composed principally of carbon and hydrogen and thus obviously entirely combustible, and the mineral matter which burns to ash. The principal constituents of this ash are sodium carbonate and potassium carbonate; both are alkalies which act alike in these paint reactions. Minor constituents of the ash are silica and lime.

Alkali carbonates are among the few mineral substances that will melt at a fairly low temperature. The pottery clay is predominantly silica and contains a little soluble alkali. In type 3, the iron oxide contains silica as an impurity, which being finely ground, is easily available. The silicates and the carbonates melt to form a silicate film over the carbon, a film too thin to actually warrant being called a glaze. It is transparent and leaves the black appearance of the carbon, which will not be burned out if the vessel is kept surrounded with burning fuel which will exclude the oxygen during the time the film flows over and around those particles.

If this vegetal paint is heated in air, all of the carbonaceous matter burns out, but when oxygen is excluded, the hydrogen

combined with a definite amount of the carbon volatilizes; the rest of the carbon is left as a black residue, which, after it is protected by the silicate film, will not burn off even with excess air. The only exception is the occasional slow burning off of carbon when oxygen diffuses through the film. This, in type 3, leaves a reddish brown color from the iron oxide residue. Black-on-white ware is sometimes found with the paint black on one side of the vessel and burned to a light brown on the other. Occasionally a vessel is seen in which all of the paint has been burned to red brown. In the firing process, the film of fusible silicate aids considerably in sintering the carbon or the carbon and iron oxide of the paint to the slip and so prevents any possible washing or rubbing off. Red iron oxide paints also contain silica and alkalies and so in firing sinter to the clay of the vessel and become permanent, but white paint, which contains only a trace of alkalies, is sometimes easily removed.

Test 2

With a platinum or a glass rod or even with a splinter of wood, apply a drop of hydrofluoric acid (HF) to a cold sherd and allow it to trickle across the paint. If the acid is absorbed before the end of ten seconds, apply a second drop in the same place and in similar manner. In from 30 to 45 seconds or after the acid is all dried or absorbed, place the piece in an open draft muffle and ignite to a red heat for about five minutes. Remove from the muffle and examine when cold; the color changes in cooling. If an oxygen torch is being used for the tests, do not heat the sherd while even slightly damp, for the heated acid will give the pottery a reddish brown tint that makes accurate observations impossible. Applying the acid to a warm sherd is to be avoided for the same reason. If the paint tested was composed of carbon protected with a thin layer of silicate, type 2, the acid will have liberated the carbon from the silica, and the black will have burned entirely off or will have left only a shadowy gray streak. The gray may be due to the paint which penetrated the surface and so has not been affected by the heat or acid.

Test 2 is practical for common use in distinguishing carbon

paints of type 2, but for a final test for carbon in any doubtful paint, a chemical test using an asperator may be resorted to.

Hydrofluoric acid is an almost universal solvent, but it will not attack carbon. When applied to the pottery, it would, if strong enough and left for enough time, dissolve not only the silica film of the paint, but also any iron oxide in the paint or slip, and even the whole sherd. Hence, it is necessary to limit the amount used and the time it is allowed to be in contact with the paint. Practice rather than any rule is the only way of obtaining good results, especially on new types of pottery. Used as directed, the HF attacks the fine clay of the surface and dissolves it so that it may be easily washed or rubbed off. The necessary limiting of HF will frequently prevent its action on paint that has penetrated below the surface.

Test 3. Iron and Carbon

If the paint is composed of carbon and iron oxide, protected by the silica film, the carbon will be burned out by test 2, but the iron will be left as a reddish brown stain on the surface.

Porous ware will quickly absorb the acid, so that two applications are often necessary. Some surfaces, as that of the Kayenta polychrome, are quickly eaten away by the acid, so that nothing is left to be tested. In treating these, the acid must be made to trickle across quickly and drop off at the side or be washed off with a light jet of water. Hard surfaces and thick paint coats, especially those of the black-on-red wares, require long acid treatment, ranging from two to six applications. Should there be oil on the sherd in amounts enough to prevent the HF from wetting it, the oil should be driven off through gentle heating.

Although this test is simple and gives good results on black-on-white wares, it sometimes fails on black-on-red. If the black paint of a red sherd gives no reaction to test 3, it is probably due to one of two causes. The paint may be of type 4, containing manganese, which must be determined through other chemical tests, or the red iron oxide of type 3 paint may have been changed to black iron oxide, or magnetite, during the original firing of the vessel. Magnetite remains on the sherd after the carbon has been burned

out, but as it is black in itself, we cannot determine whether the paint contains the black iron oxide or the magnetite until it is chemically tested. The polychrome of the Kayenta region is the only ware so far discovered to be decorated with paint consisting principally of manganese oxide, although some others have been found to contain some manganese as an impurity in the red iron oxide paint.

For a final test for iron and for the manganese test the paint must be removed from the sherds by acid.

Select a sherd on which there is a 1/4 to 1/2 inch mass of black paint. Warm slightly. Moisten with two or three drops equal parts HF and HCl and leave for one or two minutes. Add one or two drops more of HCl. This will have loosened the paint so that it may be rinsed into a porcelain dish. Rub the remaining streak of disintegrated paint with a glass rod to loosen the particles still adhering and rinse into the same dish. Keep amount of water used at a minimum.

Test 3a. Iron

To the paint removed by the above method, add two to eight drops HCl and two drops of sulphuric acid, (H_2SO_4). Boil to dense fumes of sulphuric. (Only the two drops of H_2SO_4 will be left in the vessel and dense white smoke will rise from it.) Add one teaspoonful of water and agitate until dissolved. Pour 1/3 of the solution into a test-tube or beaker and add two or three drops HCl and about 100 mg. potassium ferrocyanide ($K_2Fe(CN)_6$). A resulting strong blue color indicates iron. As all pottery contains some iron, and as it is usually especially plentiful in the slip, the depth of the color obtained must be taken into consideration. If carbon was present in the paint, it will be seen as minute black particles floating in the solution until the sulphuric acid begins to fume.

Test 4. Manganese

Pour remainder of paint solution not used in test for iron into a test tube. Add to it an equal amount of nitric acid (HNO_3) and from 100 to 300 mg. sodium bismuthate. The solution must

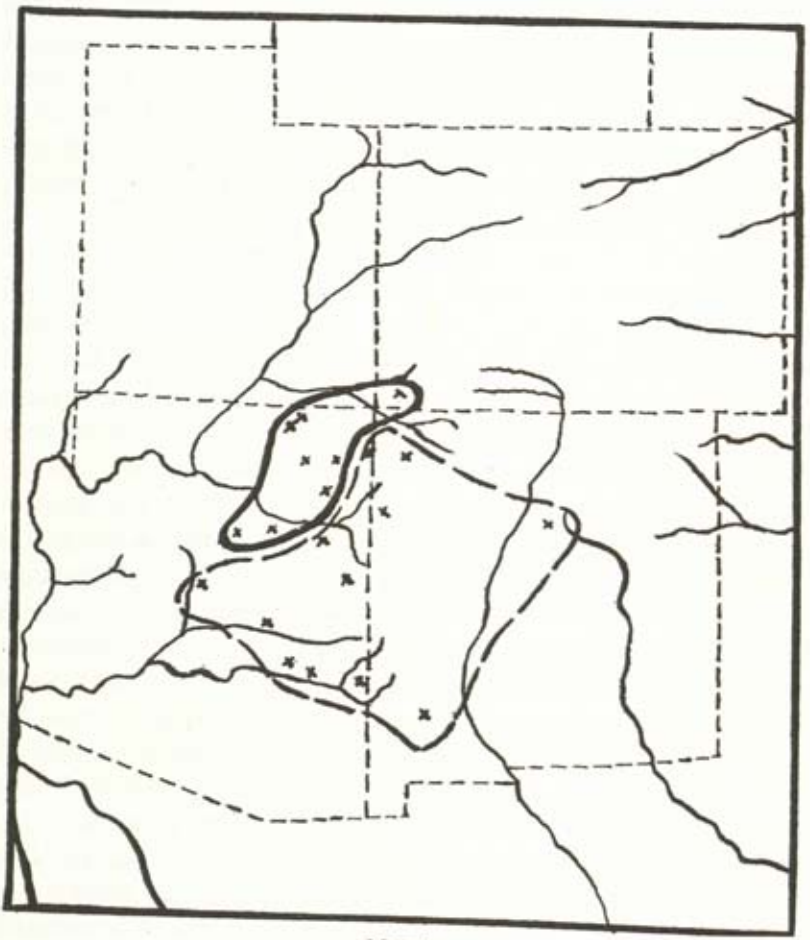
not be warm. A resulting purple color indicates the presence of Mn.

Conclusion

From the table it will be seen that carbon paint was developed in the San Juan in the early stages of pottery making, for it is found on the crude black-on-white ware made by the people of the circular pit houses. Carbon paint was used on black-on-white ware in this area, with the exception of Chaco canyon, to the end of the late prehistoric pueblo period. If carbon paint was the type for this area, why do we find manganese paint used on the Kayenta polychrome? This might seem to indicate a lack of constancy in paint types, but further consideration will furnish a reason that at present seems more plausible. After firing, the yellow clay used for the polychrome ware has not the hard porcelain texture noticeable in the white clay of this region. This yellow clay was very soft and friable and would not take a high polish; neither would it provide a surface firm enough to take and preserve a carbon paint. When applied to the porous surface, the plant extract would sink into the pores and would not be well enough protected by the silicate film to withstand firing; the carbon would soon be burned out. It could have taken but few trials to convince the people of this, and, not being used to the more resistant carbon and iron paint used by their neighbors of the Little Colorado, they probably tried dark clays and minerals until they found that one which would be permanent on the friable clay. Manganese occurs in black nodules and also in the dark clays around the edges of ponds, streams, and marshy lands. It would be natural to try this material early in their search, and, finding it suitable for their needs, they adopted it for their polychrome pottery but adhered to their old, more easily obtainable vegetal extract for the black-on-white ware on the hard surface of which it adhered well.

Over just what area the earliest black-on-white paint extended has not been determined as yet, but it covered the general San Juan area with the exception of Chaco canyon and the Lucachuca mountains, from where the Vandal Cave material was gathered.

Both of these districts come into that great southern and eastern area which used iron and carbon combined in their paint during the whole period of prehistoric pottery making. The circumference of this area stretched out or receded as the influence of its people increased or decreased.



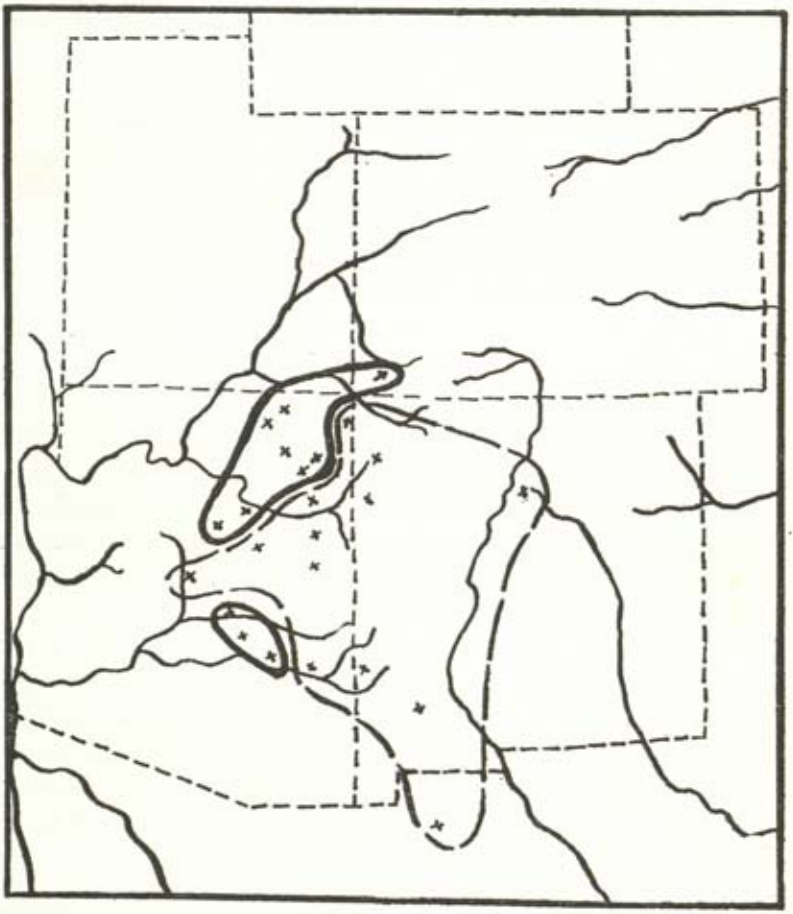
MAP 1

Before the great days of Cliff Palace or of Pueblo Bonito, while Kitsil and Betatakin and other great pueblos of the San Juan were still in their early stages, making the wide line black-on-white ware that came in at the beginning of the great Pueblo

period, and when Tularosa black-on-white was the type ware for the Middle as well as for the Upper Gila, carbon paint seems to have been used from Mesa Verdé to Kayenta, at Flagstaff, and in the Jeddito valley and Hopi country. Iron paint was used at Pecos, Pueblo Bonito, in the Little Colorado valley, in the White mountains of Arizona, in the Verde valley, in the Roosevelt district and in those adjacent regions north of the Gila river between San Carlos and Gila bend, which region may be designated as the Middle Gila, in the Upper Gila and Tularosa, and on the Mimbres (see map 1). On this map and following, dotted lines indicate iron-plus-carbon paint area, and unbroken lines indicate carbon paint area. It will be noticed that these sites from which sherds were tested, when plotted on a map readily divide themselves into two great areas, each of which used one of the two main types of black paint. This distribution seems to have remained unchanged until some time after the massed black-on-white was developed in the San Juan. The next period, following closely on the first, shows a new type of ware in the northern section of the Middle Gila; the Little Colorado influence had come south and Little Colorado black-on-red ware was introduced. As type 3 paint had already been used on the Tularosa black-on-white ware, however, the new influence did not affect the paint distribution as plotted on map 1.

The first important change in paint areas came with a new pottery development in the Roosevelt district of the Middle Gila, which would seem to indicate the strength and far-reaching influence of the carbon paint area at that time. This is the period of the early Middle Gila polychrome, that black-on-white-on-red ware which seems to be the result of a combination of the black-on-red and the black-on-white hitherto predominant in this area. The new polychrome ware was characteristically decorated with dual-quadrate designs, those designs in which there are usually four large individual triangular duplicate design areas arranged around a simplified swastika, so that the center of the bowl is left undecorated. There are variations to the design arrangements. These characteristics and the use of carbon paint here seem to be a sure reflection of northern influence (see map 2).

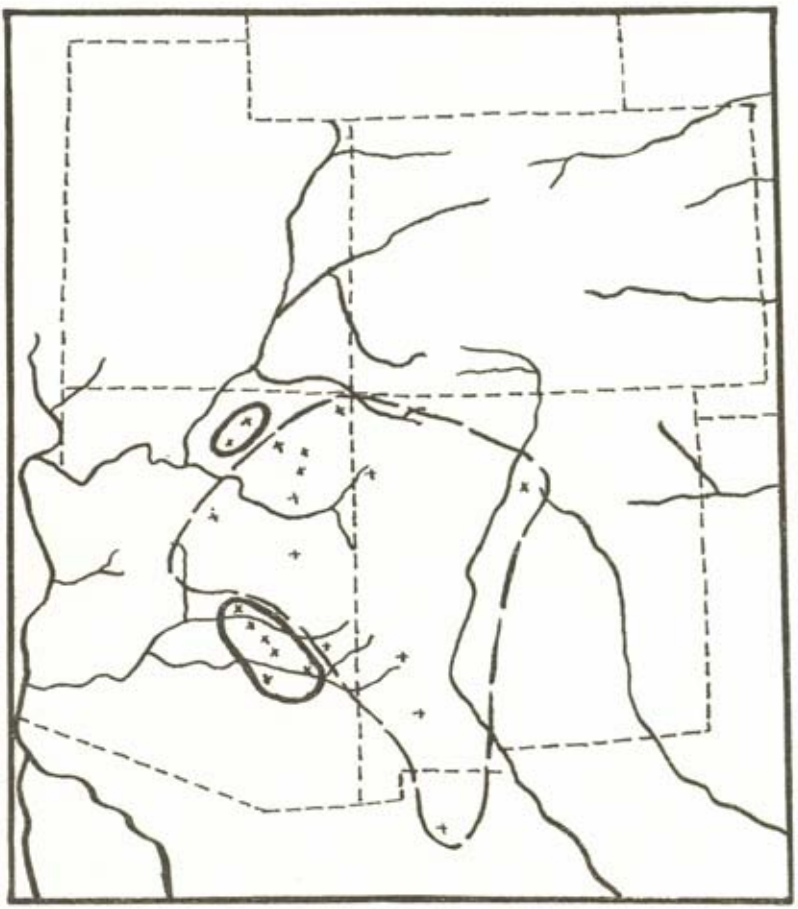
Soon after the birth of this early Middle Gila polychrome ware came the decay of Pueblo Bonito, and slightly later of Cliff Palace. This period marked the beginning of the decline of the carbon paint area, and, as we might expect, the iron paint began to expand into what had been the carbon paint districts. Little



MAP 2

Colorado influence stretched out into the Jeddito valley and the Hopi country on the north, to Flagstaff on the west, and to Casas Grandes, Chihuahua on the south. Except at Casas Grandes, Little Colorado black-on-red ware which was decorated with type 3 paint replaced the old San Juan black-on-white (see map 3).

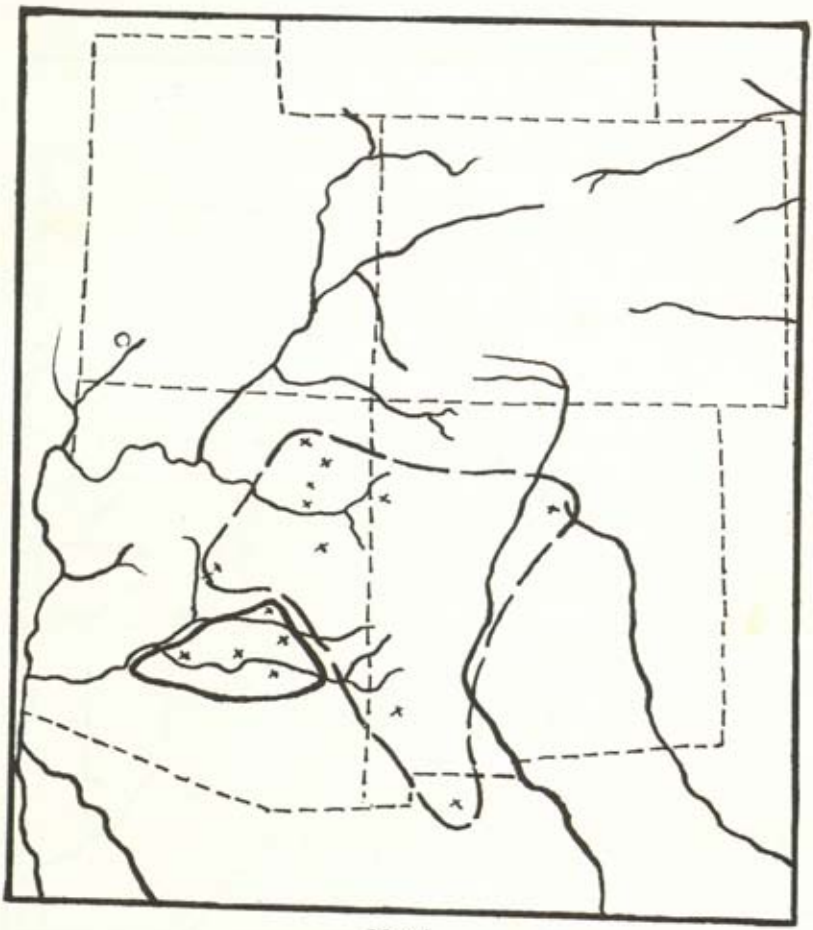
The final abandonment of the great pueblos of the Kayenta section of the San Juan came soon after and marked the last use of carbon paint in the north. The vegetal extract paint was still used on the late Middle Gila polychrome, the commonly known degenerate ware which grew out of the early Middle Gila poly-



MAP 3

chrome. The late polychrome spread west to Phoenix and on to Gila bend, and south to Casa Grande, in both of which districts the red-on-buff characteristic of the southern Middle Gila area had been predominant. On the Middle Gila carbon paint was used

until the end of the prehistoric Pueblo period. The iron paint area had been shrunk somewhat by the loss of Pueblo Bonito, but in the main it occupied much the same area as previously (see map 4).



MAP 4

After the northern carbon paint area had entirely disappeared, Jeddito yellow ware became popular in the Jeddito valley and in the Hopi district; glazes C and D were developed in the Little Colorado country, and glazes I, II, and III were used at Pecos. Now the Middle Gila culture, last to use carbon paint, disap-

peared. It has been debated whether Sikyatki ware belongs to a very late prehistoric or an early historic period, but at Sikyatki and throughout the Jeddito section iron paint lasted on to the end. Pecos made glazes IV, V, and VI and then was no more. Zuñi used glazes E and F even into modern times but now has gone back to the old dull paints. Thus we find iron paint lasting on into the present period in the pueblos of the Hopi in Arizona and in the villages of the Zuñi and other Pueblo Indians in New Mexico.

In time there must be changes and addition to this brief history of pottery paint and to the summary of cultural expansions and influences as indicated to an important extent by a study of paints. As every evidence would indicate that in their use of paint materials they were even more conservative than in their selection of designs, the testing of an adequate number of representative sherds might be expected to fill in many details in the movements and influences of a people. In the work already done, the type of paint used in each pueblo from which pottery was tested was plotted with pins on a large map, so that areas were even more evident than they seem on a small map where it was only possible to use crosses to indicate districts, not individual pueblos. Obtaining sufficient sherds of the earliest types of wares to determine whether carbon or iron paint was the first to originate, or whether each originated at about the same time in different areas, has been impossible as yet, but after such material is available new light may be shed on some of the perplexing problems of the earliest pottery makers of the Southwest.

TABLE OF BLACK PAINTS

Carbon Paint Area

AREAS	WARES TESTED	PAINT TYPE
San Juan—circular pit house	Black-on-white	2
Kayenta	Massed black-on-white	2
	Kayenta polychrome	4
	Wide line black-on-white (early)	2
Segi canyon		
Kitsil	Massed black-on-white	2
	Wide line black-on-white	2
	Kayenta polychrome	4
Betatakin	Massed black-on-white	2
	Wide line black-on-white	2
	Kayenta polychrome	4
Red lake	Wide line black-on-white	2
	Kayenta polychrome	4
Nietsie canyon	Massed black-on-white	2
	Kayenta polychrome	4
Mesa Verde		
Cliff Palace	Black-on-white	2
Flagstaff		
Turkey Hill ruin	Black-on-white	2
	Plain red, black interior	1
Elden ruin	Black-on-white	2
	Plain red, black interior	1
Old Caves Acropolis*	Black-on-white	2
Ruin 1 mile S. E. of Winona	Black-on-white	2
	Plain red, black interior	1
Young's Creek ruin 1	Black-on-white	2
	Plain red, black interior	1
Young's Creek ruin 2	Black-on-white	2
Oraibi, early*	Massed black-on-white	2
Jeddito valley		
Sikyatki	Massed black-on-white	2
Kokopinyama	Black-on-white	2
Lululongturqui	Black-on-white	2
Kawaikuh	Massed black-on-white	2
Biddahoochee	Black-on-white	2

* Sites marked with an asterisk will be found in both tables.

Carbon Paint Area (Continued)

Areas	Wares Tested	Paint Type
Middle Gila		
Miami-Globe district		
Hairpin ruin*	Early Middle Gila polychrome	2
	Late Middle Gila poly	2
	Plain red, black interior	1
Hilltop House*	Little Colorado black-on-red	2
	Early Middle Gila poly	2
	Plain red, black interior	1
	Corrugated, black interior	1
Beed Mountain House	Late Middle Gila poly	2
	Plain red, black interior	1
	Corrugated, black interior	1
Healey Terrace	Late Middle Gila poly	2
	Plain red, black interior	1
Sunburnt Ranch-I	Late Middle Gila poly	2
Togetsoge	Late Middle Gila poly	2
	Plain red, black interior	1
Casa Grande	Late Middle Gila poly	2
	Plain red, black interior	1
San Carlos Bird ruin	Late Middle Gila poly	2
	Plain red, black interior	1
	Little Colorado black-on-red	2
Roosevelt district	Early Middle Gila poly	2
	Late Middle Gila poly	2
	Corrugated, black int.	1
	Plain red, black int.	1
Tonto Cliff Dwellings	Late Middle Gila poly	2

Iron plus Carbon Paint Area

Areas	Wares Tested	Paint Type
Little Colorado area		
White Mountains		
Saw Mill	Black-on-white	3
	Corrugated, black int.	1
Silver Creek valley		
Forestdale	Black-on-white	3
	Little Col. black-on-red	3
Shumway	Little Col. black-on-red	3
	Jeddito yellow	3
Showlow	Little Col. black-on-red	3
	Black-on-white	3
	Corrugated, black int.	1
Snowflake	Little Col. black-on-red	3
	Black-on-white	3
Linden		
Pottery hill	Little Col. black-on-red	3
	Black-on-white	3
	Corrugated, black int.	1
Chaves pass	Little Col. black-on-red	3
	Jeddito yellow	3
Little Colorado valley		
Hawikuh	Black-on-white	3
Puerco	Black-on-white	3
St. John's		
Tucker ruin	Little Col. black-on-red	3
	Black-on-white	3
	Jeddito yellow	3
	Plain red, black int.	1
Petrified Forest		
Canyon Butte Wash	Little Colorado black-on-red	3
	Black-on-white	3
	Corrugated, black int.	1
	Plain red, black int.	1
Stone Axe ruin	Jeddito yellow	3
McDonald's canyon	Black-on-white	3
	Little Col. black-on-red	3
Chaco canyon		
Pueblo Bonito	Early black-on-white	3
	Black-on-white	3
Jeddito valley		
Sikyatki	Little Col. black-on-red	3

Iron plus Carbon Paint Area (Continued)

Areas	Wares Tested	Paint Type
	Jeddito yellow	3
	Sikyatki ware	3
Kokopinyama	Little Col. black-on-red	3
	Jeddito yellow	3
Lululonturqui	Jeddito yellow	3
	Little Col. black-on-red	3
Kawaikuh		
	Sikyatki ware	3
	Jeddito yellow	3
Awatobi	Little Col. black-on-red	3
	Jeddito yellow	3
	Sikyatki ware	3
Oraibi	Little Col. black-on-red	3
	Jeddito yellow	3
	Sikyatki ware	3
Verde valley		
Clemenceau		
Sugar Loaf mountain	Little Col. black-on-red	3
	Black-on-white	3
	Jeddito yellow	3
Montezuma's castle	Little Colorado black-on-red	3
	Jeddito yellow	3
Ridge ruin	Jeddito yellow	3
Middle Gila		
Miami—Globe district		
Hilltop House*	Little Col. black-on-red	3
	Tularosa black-on-white	3
	Plain red, black int.	1
	Corrugated, black int.	1
Black-on-White ruin	Tularosa black-on-white	3
	Little Col. black-on-red	3
Sunburnt Ranch ruin	Tularosa black-on-white	3
Roosevelt district*		
Numerous ruins	Tularosa black-on-white	3
	Little Col. black-on-red	3
	Plain red, black int.	1
	Corrugated, black int	1
San Carlos		
Bird ruin*	Little Col. black-on-red	3
	Tularosa black-on-white	3
	Red on smudged black, buff exterior	1

Iron plus Carbon Paint Area (Concluded)

AREAS	WARES TESTED	PAINT TYPE
Upper Gila	Tularosa black-on-white	3
	Little Col. black-on-red	3
	Plain red, black int.	1
Bylas	Tularosa black-on-white	3
	Little Col. black-on-red	3
	Corrugated, black int.	1
Mimbres	Black-on-white	3
Casas Grandes, Chihuahua	Polychrome	3

ARIZONA STATE MUSEUM,
UNIVERSITY OF ARIZONA

MAGNITUDE OF DISTRIBUTION, CENTRIFUGAL SPREAD, AND CENTRIPETAL ELABORATION OF CULTURE TRAITS

By WILSON D. WALLIS

1. Magnitude of Distribution of Culture Traits as a Criterion of Age

SOME ethnologists assume that the magnitude of distribution of a culture trait is an index of its age, though few state the principle in the form in which they imply it. Thus, the fact that the making of fire is known in every tribe is said to indicate the great antiquity of fire-making, and the widespread use of stone implements by primitive man is considered an indication of their great age. Widely distributed stories or plots carry the same implication:

> If the myth be one which encounters us in every quarter, nay in every obscure nook of the globe, we may plausibly regard it as ancient.[1]

In the realm of material culture the same principle is assumed to hold:

> The natural conclusion would be that the more widely distributed spur [on Eskimo harpoons] is by far the older form and the restricted screw is the more recent.[2]
>
> In general the larger the area of distribution, the older we may judge the trait to be.[3]

Certainly in many instances the age of a trait is correlated with the magnitude of its distribution, yet instances to the contrary are so numerous that one must doubt the validity of using distribution as a criterion of age. In the higher cultures the opportunity for the spread of traits is greater than among primitive

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[1] Andrew Lang, Myth, Ritual, and Religion.

[2] Clark Wissler, Harpoons and Darts in the Stefansson Collection. Anthr. Pap. Am. Mus. Nat. Hist., 14: 443, 1916.

[3] Ruth Benedict, The Concept of the Guardian Spirit in North America. Mem. Am. Anthr. Assoc., 29: 62, 1923.

peoples, but the conditions are probably not essentially different, and the rapid diffusion of traits in civilization has a prototype in the slow percolation in savagery. However that may be, inference of the development of traits in non-historical cultures must be based on the known culture development in some other area, primitive or advanced, or facts cannot check fancy. In order, therefore, to test the validity of magnitude of distribution as an index to age, we selected at random traits referred to in chapters 2, 4, 9, and 21 of James H. Breasted, *Ancient Times* (Boston, 1916). The random selection yielded the following: bronze, mud-brick huts, irrigation canals, phalanx, split wheat, plough, wheel, use of the horse, battering ram, coinage, concept of last judgment, cuneiform writing, town walls, market place, settlements, roofs, metal, migrations, families, carts, business, merchants, books—in all, twenty-three. The relative distribution of the first three, bronze, mud-brick huts, and irrigation canals, does not remain constant. By about 3000 B.C. mud-brick huts and irrigation canals were more widely distributed than bronze; but by 100 B.C. the distribution of bronze over the Mediterranean and contiguous areas was greater than the distribution of mud-brick huts or irrigation canals; and a similar statement applies to the next three traits of material culture—split wheat, the plough, and the wheel. In the early centuries of the Bronze age the distribution of split wheat about the Mediterranean area, including the Swiss Lake Dwellings, was more extensive than that of either the plough or the wheel. Subsequently, however, the area of distribution of split wheat was less than that of either the plough or the wheel. The plough is probably older, and at one time was more widely distributed than the wheel, but by the beginning of the Christian era the wheel was more widely distributed. The next three features, likewise, namely, use of the horse, battering ram, coinage, vary in relative distribution during successive centuries.

In these instances, therefore, age can be inferred from distribution only if inference is made at the proper historical moment. But only when history is available can the proper moment for inference be known, and in the absence of history inference of age

is as likely to be erroneous as correct. The earliest traits have the first opportunities to spread, but frequently later traits outdistance them. When this occurs—and it occurs frequently—the more recent traits become the more widely distributed. Indeed, when changes are taking place, inevitably some more recent traits become more widely distributed than some older ones. The assumption that distribution is an index of age is based on the implicit assumption that, other things being equal, the more widely distributed trait is the older, since culture traits have a tendency to spread from place of origin to contiguous regions. But other things are not equal, being, on the contrary, at times egregiously unequal. Differences in culture areas must be taken into account. One culture is ready for the trait and accepts it; another is unprepared, and rejects it. There is a specific dynamic in the respective culture traits which insures their distribution in unequal degree. Agriculture, for example, may spread with greater rapidity than does ceramics or basketry, canoes may be adopted with greater readiness than is dog transportation, or, of course, conversely, depending on a number of factors. The Ghost Dance religion of aboriginal North America spreads rapidly over an area in which no other trait is so widely distributed, though we know that almost all other traits in the area are older.

Objection may be made that analogy with Western culture is misleading, since diffusion proceeds more rapidly in civilization than in savagery. But, with the important exception of contacts at a distance, in civilization there is mainly merely an intensification of the factors at work in savagery, rather than the introduction of new ones. Fads spread rapidly in civilization, but they spread in savagery also. Though the barrier of language is greater in savagery, it is not insurmountable, and culture influences break through. The savage is slow to perceive the utility of a new device; in time, however, if it is not too far removed from his culture setting, he perceives it. In civilization, likewise, receptivity varies: witness the distribution of the telephone, spreading more rapidly in America than in Europe, more rapidly in the commercial districts than in the non-commercial, and more rapidly in countries in which science has made headway than in those

in which it is undeveloped. And, if one cannot make inferences based on diffusion in civilization, where facts can check inference, then there are no data from which to make inferences. There has been, too, a curious failure to appreciate the fact that the spread of a trait presupposes the existence of older traits in the areas into which the new trait travels. A trait can spread only through culture areas, and the traits which compose these respective cultures are, of necessity, older than the introduced trait; that is, they are of greater age within those areas than is the introduced trait. Thus, when tobacco spreads into new areas it is more recent there than the traits which comprise the respective cultures at the time of its introduction and possibly it is more recent than other traits in the area from which it has come. Indeed, whenever a trait spreads rapidly this must be the case. The diffusion of a trait, therefore, implies that numerous traits which are not so widely distributed are older. To the extent that this is true, the widely distributed trait is of necessity more recent than those traits which constitute the respective cultures which it penetrates. Only on the supposition that the widely diffused trait is more persistent than those amid which it finds lodgment can it be supposed that magnitude of distribution is positively correlated with the age of the trait; and if all traits are included, probably wide distribution indicates recency rather than antiquity.[4]

In his work on *Primitive Art* Professor Boas characterizes some of the reconstructions which identify extent of distribution with age as "untenable." The principle that the more widely distributed traits are the older is correct if properly used, he says, but it must not be used incorrectly. This seems to be equivalent to stating that it is true when it is true, and false when it is false, but gives us no inkling of when it is true and when it is false. Boas adduces the fact that the use of stone is more widely distributed than the use of metals, and suggests that other data of

[4] Because of their special bearing on this argument I have taken the liberty of repeating in the above paragraphs a point which I made previously in an article on Diffusion as a Criterion of Age, published in this journal (27: 91–99, 1925). See also Roland B. Dixon, The Building of Cultures, 70–75, New York, 1928.

prehistoric archaeology show a similar positive correlation of magnitude of distribution with age.

The data of prehistoric archaeology prove that some of these universal achievements go back to paleolithic times. Stone implements, fire, and ornaments are found in that period. Pottery and agriculture, which are less universally distributed, appear later. Metals, the use of which is still more limited in space, are found still later. Recent attempts have been made to raise to a general principle this point of view which, with due caution, may be applied here and there. Herbert Spinden in his reconstruction of American prehistoric chronology, Alfred Kroeber in his analysis of cultural forms of the Pacific coast, and quite recently Clark Wissler have built up, founded on this principle, a system of historic sequences that appear to me as quite untenable. That widely distributed cultural traits develop special forms in each particular area is a truism that does not require any proof. That these local developments may be arranged in a chronological series, that those of the most limited distribution are the youngest, is only partially true. It is not difficult to find phenomena that center in a certain region and dwindle down at the outskirts, but it is not true that these invariably arise on an ancient substratum. The converse is often true, that an idea emanating from a center [from the periphery?] is diffused over a wide area. Neither may the origin always be looked for in the area of the strongest development. In the same way as we find animals surviving and flourishing in regions far distant from the locality in which they developed, so cultural traits may be transferred and find their highest expression in regions far away from their origin. The bronze castings of Benin; the wood carvings of New Zealand; the bronze work of ancient Scandinavia; the giant stone work of Easter Island; the early cultural development of Ireland and its influences over Europe are examples of this kind.[5]

A comparison of the distribution of eolithic implements with paleolithic is scarcely apposite, for the human workmanship of the former is problematical and we know very little about their total distribution, and, indeed, very little about the total distribution of paleolithic implements. With regard to neolithic implements, however, we are on surer ground. Here the facts do not confirm the "principle." Even in the Old World, so far as the data are available, neolithic implements are more widely distributed than paleolithic implements and in the New World there are only neolithic implements. Thus, taking the whole of the available data, neolithic implements are more widely spread than paleolithic. The first metal to be utilized is copper, and then bronze; yet in prehistoric times copper was not as widely diffused

[5] Franz Boas, Primitive Art, preface. Oslo, 1927.

in the Old World as was bronze. Indeed, in most areas of the Old World in which both copper and bronze are found, bronze preceded copper, and therefore, at an early stage in its development it was more widely distributed than the older copper. There is reason to suppose, too, that in the higher civilizations of the New World the working of copper preceded the working of bronze; yet in those portions of the New World in which this is assumed to have been the case, bronze is as widely distributed as is smelted copper; for outside of these higher cultures there was no smelting of copper in the New World. In the Old World the working of iron, which followed the moulding of bronze, became more widely distributed than bronze casting. In the Old World the working of iron permeated all of the regions in which bronze had been cast, and also the entire African continent, in which no bronze was worked, save in Egypt and on a small portion of the West Coast. Many parts of Asia which had never known bronze-casting adopted the working of iron. In not one of these instances, then, does the alleged principle hold, or rather, in every one of them it holds in exactly reverse form, the more widely diffused trait being the younger, not the older. Many other traits of prehistoric Europe tell a similar tale. Thus, in the Magdalenian period, toward the end of paleolithic times, there existed numerous microliths, types of implements which had appeared previously and which became common in the succeeding Azilian period, at the close of paleolithic times. These did not become as widely distributed as the types of neolithic implements which followed them. There existed at this time the so-called arrow-straightener, or *baton de commandement*, which possibly was not diffused at all, for it has not been found in later prehistoric Europe, and outside of the Eskimo area it is almost as rare as the proverbial hen's teeth. At this time, too, appeared the harpoon, which was diffused to so slight an extent that it has been found nowhere else in prehistoric Europe except around the Mediterranean, where it was formerly used, probably by the ancient Egyptians, in hunting seals. In addition to the Pacific Coast area of North America it has been reported from less than a half dozen ethnological areas, in each of which, for any intimation to the contrary, it

may have developed independently. Contemporary with it, in Magdalenian times, was the spear-thrower, and it too, so far as is known, did not diffuse, but disappeared from prehistoric Europe, and has been found in very few culture areas, such as Australian, Eskimoan, and Nahuan.

The multi-pronged spear was used in Magdalenian times, but it, too, attained a limited distribution in the Old World, and was absent from nearly all of the New World. Tangs were put on these implements by hacking the surface to roughen it, by end or transverse knobs, and by spurs. But the association of these three processes was not widely distributed, and is perhaps restricted to Eskimo culture. Not until neolithic times did the bow and arrow appear, but eventually the use of them became more widespread than the use of the spear; however, to a large extent they were concomitant, for Australia and (most of) Polynesia and Micronesia were the only large areas in which the spear was used and the bow was absent.

In Magdalenian times there was a highly developed realism in art, but this was not widely diffused; it was comparatively rare in subsequent European prehistoric art, and such art was not widely spread among contemporary peoples; at least the ability to portray realistically was not exhibited. Masks were used, but the use of masks, so far as there is evidence, was not widely diffused through subsequent cultures in Europe, and there is no evidence that it was ever as widely diffused throughout the world as the neolithic implements which came later. Mutilation of a finger, it is believed, was practiced; but this, too, appears not to have diffused over adjacent regions, and it may have developed independently in all the other regions, comparatively few, in which it is known to have been practised. Modeling was practised, as were bas-relief, sculpture, perspective drawing, impressionism, composition; but no one of these traits or techniques became widely diffused, or certainly not as widely diffused as many traits which arose subsequently. In the closing phases of the Paleolithic, feather headdress was worn in Southwestern Europe, but this was of restricted ethnographical distribution, and, indeed, was common only in portions of the New World, where it almost

certainly arose independently of Old World influences. Thus, as far as the data are available, the traits of paleolithic culture were not widely distributed in later cultures.

Diffusion of a trait involves the dimension of time, though many students have treated the matter as though only space dimensions were involved, and then they conclude that the space relations can be expressed as a time factor. If one assumes fairly uniform rates of diffusion and long intervals of time, and that new traits arise seldom and spread slowly, then the more widely distributed traits will be the older. But the correlation implies fairly constant rates of diffusion and long time intervals. That at certain times the older trait will be the more widely diffused is necessarily true. Thus when only paleolithic methods of workmanship are known only paleolithic techniques can be diffused. During paleolithic times this is the case for a hundred thousand years or more, and meanwhile paleolithic traits can travel to all cultures. When a neolithic technique appears it is developed in only one place, or certainly in only a few places simultaneously, and at its inception it will, of necessity, be less widely diffused than an older technique which for a hundred thousand years has had the opportunity to diffuse. However rapidly it spreads it cannot at once outdistance paleolithic techniques, and probably all existing cultures will already have adopted the latter.

So, too, copper, bronze, and iron, respectively, will, of necessity, be of limited distribution at their inception, and they can only gradually extend their borders, but a new trait may travel faster than its predecessors, overtake them, and henceforth assume the lead in the invasion of new territory. This happened in the case of the respective metals. Here the time factors were smaller than in the stone ages, and the rates of diffusion were accelerated, because culture changes were now more rapid and communication and trade facilitated the transmission of these new traits. Had copper been given a hundred thousand years to spread it, too, might have gone to all mankind, and so, under similar circumstances, might bronze; but bronze spread more rapidly than copper, and iron spread more rapidly than bronze, so that the most recent of the three metals became the most widely

diffused. But even if the "principle" did hold in the prehistoric world this would be no warrant for assuming that it would hold in any other phase of the culture world, primitive or advanced, least of all outside of the sphere of material culture. Professor Boas seems to assert that the "principle" is sometimes true but not always to be trusted, good enough to believe in with caution, but not good enough to follow in practice. But the "principle," which is true if you believe it but false if you use it, seems so paradoxical as to be almost unprincipled. When and how far the alleged correlation of distribution with age exists no one, so far as we are aware, has even attempted to show. The faith is strong, but the works are weak. More recently, however, Professor Boas has expressed unqualifiedly his conviction that one cannot construct from an examination of the static forms of culture the sequence which expresses the actual historical development of respective traits.

> Every culture is a complex growth, and, on account of the intimate, early associations of people inhabiting large areas, it is not admissible to assume that the accidental causes that modify the course of development will cancel one another and that the great mass of evidence will give us a picture of a law of the growth of culture.[6]

2. The Alleged Centrifugal Spread and Centripetal Elaboration of Traits

Wissler compares the spread of a trait to the outgoing waves which ensue when a pebble is dropped into a pool of water, and states that the area of intensive development or elaboration of a trait is the place of origin and that this is approximately the geographical center of the area through which the trait has been diffused. He assumes, therefore, that the trait spreads with equal facility, or at least to an equal extent, in all directions, and asserts that the simpler forms of the traits lie on the periphery of the area of distribution and the more complex form at, or near, the geographical center of the area.[7]

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[6] Franz Boas, Anthropology and Modern Life, 209. New York, 1928.

[7] Clark Wissler, Man and Culture. New York, 1923. Also Relation of Nature to Man in Aboriginal America. New York, 1926.

We applied this test to the traits mentioned by Wissler in his *Man and Culture*, pages 150 to 157 inclusive, in the chapter in which he discusses the relation of age to magnitude of distribution, and of elaboration of the trait to place of origin. The traits there referred to are pottery, paint, swastika, spiral, cutting off a finger, sacrifice to the sun, sacrificial blood-letting, human sacrifice, hitches, weaving instruments, age-grade societies for men, fire drill, chipping of stone, and lance.

In the Old World the area of intensive ceramics has shifted from time to time, though there is probably but one area of origin. Hence Wissler's method indicates the place of origin correctly only if one selects the proper century in which to identify intensity of development with place of origin. By his criterion, in one century the place of origin would seem to be the Continent, in others, Britain, the Valley of the Nile, or Aegean lands. Paints, the next trait in the list, are not susceptible of historical treatment, for their origins and diffusion are not known. The diffusion of the swastika has not been a centrifugal dispersion into geographically proximate regions. It is not found in Egypt, Chaldea, Assyria, or Phoenicia, although these cultures borrowed designs liberally. It is present in Troy, whence it spread to Gaul, Scandinavia, and the British Isles. It travelled eastward into India and into all lands penetrated by Buddhism: Tibet, Mongolia, Southeast Asia, China, and Japan. In Persia it was rare and played no important rôle, but it was widespread in other Aryan lands and wherever Buddhism flourished. In the contiguous Egyptian-Semitic cultures it obtained no foothold. Perhaps the failure to find a favorable soil in the latter may be attributed to the presence in these cultures of the *crux ansata*, the Egyptian Key of Life, which is found from Persia to Libya. Possibly the *crux ansata* was already fulfilling much the same function which the swastika fulfilled in Aryan and Buddhist cultures and consequently it may have been an indirectly repellent motive. However that may be, the ancient world is divisible into two culture zones, one of which the swastika penetrated, the other, the *crux ansata*, with but slight interpenetrations along the frontier of

contact, in Cyprus, Rhodes, Asia Minor, and Libya. Certainly there was not a centrifugal radiation of the trait.

The spiral was introduced into the Aegean area by invaders who came to Thessaly from Transylvania, by way of eastern Bulgaria and Thrace, or at least their culture spread by that route. It did not appear in Crete until Early Minoan II, whence it diffused to the Aegean area. From there it travelled by the Danube route to Scandinavia, thence to Ireland, and from the Emerald Isle to Britain. Meanwhile the center of distribution was shifting to north and west, for the spiral did not travel with the same facility to east or south, although, of course, the place of origin was not shifting. The place of origin, therefore, does not remain the center of the area of distribution.

The diffusion of the practice of cutting off a finger is not susceptible of historical treatment, and we pass to the next feature in the above list, sacrifice to the sun. In the Old World such sacrifice originated in Egypt or in the civilizations of Persia or India, but at a later date, when the Mithraic cult had penetrated the Roman Empire, it became as widespread in Europe as in Asia or Africa. Mithraism had only one origin, but the center of distribution shifted from century to century and therefore, by Wissler's criterion, tells a varied story, each tale contradicting the others. The center of distribution is not the place of origin, for the trait did not spread concentrically. It did not spread eastward or northward. In the above instances neither the place of intensive development nor the center of distribution is an index to place of origin.

As a further check upon this principle, we again used random sampling and considered the traits described by Kroeber in chapters 10 to 13 of his *Anthropology*, in which he discusses the diffusion of certain traits.[8] The principle of the arch spread about the Mediterranean, first among the ancient civilizations of that region, and later through all the regions which came under Hellenistic influence. With the spread of Roman influences through Europe the arch likewise spread. But at no time was the diffusion centrifugal.

[8] Alfred L. Kroeber, Anthropology. New York, 1923.

The concept of the week originated in the eastern Mediterranean area and spread into other Mediterranean cultures, and finally throughout Europe as well as far into southern Asia, wherever Mohammedan or Buddhist influences permeated. But non-Mohammedan Africa was little affected, for the spread was not centrifugal. The alphabet developed in Semitic lands to the east of the Mediterranean and Phoenician traders disseminated it throughout the Mediterranean area. With the exception of China the higher civilizations adopted it but the lower cultures were not influenced, save here and there and only to a slight extent. The girls' adolescent ceremonies of the Pacific coast, assuming that they originated on the Northwest coast, spread south as far as the gulf of California, and possibly even into the Southwest—if the ceremonies of the latter are not the result of influences from Mexico. But they did not spread among the Eskimo to the north or east, nor among the Plateau tribes; the diffusion was longitudinal rather than centrifugal.

Wissler points out that in the distribution of the conical shelters typical of the Plains and the Eastern Woodland areas, the three-pole tipi is predominant near the center of the area, the four-pole tipi is to some extent interspersed with these, yet reaches wider margins of distribution to south, east, north, and west, and "conical shelters in general" are in the peripheral areas. But there is no evidence that the three-pole tipi, which predominates at the center, developed out of the types peripheral to it.

We do not know that the three-pole tipi is a later development than the four-pole tipi, even if the former does possess advantages over the latter. A similar objection applies to most of Wissler's illustrations. They do not illustrate unless one takes for granted the truth of the principle which he proposes to establish—and not always then; for some of the instances adduced by him in which the diffusion can be historically traced do not conform with his principle.

The peyote cult, for example, began in the Rio Grande region and spread rapidly into some adjacent tribes. It did not spread in all directions, however, though the fact that Indians were then on reservations (1850–1919) would, no doubt, modify normal diffusion. Nevertheless, during the period 1850–1890 it covered

a region some hundreds of miles northeast and southwest but did not go a comparable distance to reservations to the north, south, or west. From 1891 to 1905 it secured a footing on reservations close to those in Oklahoma where it had previously been introduced, on one far to the north, and on one far to the northwest, skipping intervening territory—though the trait could not have skipped intervening territory in aboriginal days, when direct communication was limited to contiguous cultures and there were no contacts at a distance. Its spread shows, however, that mere geographical contiguity does not insure diffusion, and that, in any case, the time element is a factor. By 1922 the peyote cult had spread through practically all of the Plains area except a corner in the Northwest, but elsewhere it met with little success; for the Southwest cultures contiguous with the region in which the peyote cult originated did not accept it.

The spread of the trait, therefore, has its explanation in culture rather than in mere geographical contiguity; and the fact that such is the case is further demonstrated by the difference in rate of diffusion in successive decades. Although the Kiowa adopted the peyote cult as early as 1850, before 1890 only three tribes, it appears, had adopted it. In 1890, however, three tribes adopted the cult, in 1891 two, in 1892 one, and in 1893 one. The distribution of the cult then remained stationary for a seven year period. Not until 1900, when it came to the Shawnee reservation in Oklahoma, was it adopted in a new area.

During the following year it appeared among the Winnebago of Nebraska, in 1902 among the Osage and the Ponca, in 1902 among the Northern Arapaho. In 1906 it came to the Seneca reservation in Oklahoma and to the Omaha, there being one tribal adoption each year in the period 1907–1910. There was no adoption in 1911 or in 1913, but in 1912 there was one adoption, in 1914 two, in 1915 none, in 1916 two, and in 1919 one. Thus in the twenty-year period, 1890–1919, there were twenty-four adoptions, while in the forty year period, 1850–1890, there were but three adoptions. This variation in rate of diffusion cannot be explained in sheer geographical terms.

The next culture trait described by Wissler is the use of the horse. Here likewise the facts contradict his thesis. As early

as 1542 the horse was introduced from the region near the gulf of Mexico or from across the Mexican border. But the trait did not spread in all directions with equal facility, nor with uniform speed. It went rapidly through the Plains area, but scarcely penetrated any region beyond, whereas a centrifugal spread would have carried the trait over most of Mexico, throughout the Southwest, into California, and well into the Southeast. Here, too, culture rather than mere geographical contiguity accounts for the diffusion. The Grass Dance follows similar routes of travel. It originates in the Plains area and spreads throughout that region, going into Wisconsin, the adjacent northern Minnesota area, and south into Texas. But the spread in a southeast-northwesterly direction is twice as extensive as that in a northeast-southwesterly direction, for, here too, the favorable soil is determined by culture and not by mere geographical proximity. Wissler significantly omits from his list the Ghost Dance or New World messianic religions. These do not fall into the concentric scheme which he uses as the framework for his data; indeed, they did not spread at all in some directions. Thus all that Wissler succeeds in demonstrating is: (1) a trait can spread only from the place in which it originates; (2) it can move from the place of origin only into adjacent territory, not skipping tribes along the routes of dissemination; (3) sometimes not all phases of a complex trait spread, but some may be left behind as the trait travels, so that frequently it is found in most elaborate form close to the place of origin. However, though the last mentioned principle may be true if the trait is elaborated before it spreads, it has not been shown to be true if the trait spreads in a simple form which is elaborated subsequently. Although Wissler has frequently used this principle of interpretation, we do not know a single instance in which he has demonstrated its truth. Thus, when discussing shamanistic organizations in the Plains area he concludes that since it is

> very strong among the Pawnee and very weak among the Eastern Dakota we must assume that the Pawnee are the originators.[9]

[9] Clark Wissler, General Discussion of Shamanistic and Dancing Societies. Anthr. Pap. Am. Mus. Nat. Hist., 11: 860, 1916.

But is there any justification for this inference? And can the inference be justified before the principle is empirically established? Indeed, Wissler himself emphasizes the fact that the three widely spread ceremonies in the Plains area, the Grass Dance, the Dream Dance, and the *Iruska*, or Fire Dance, have specific distributions which correspond respectively to subsidiary Plains area cultures. The Grass Dance is typical of the Western group: the Sarsi, Blackfoot, Gros Ventre, Assiniboine, Crow, Hidatsa, Teton, and Arapho; the Dream Dance flourishes in the northeastern part of the area, among the Potawatomi, Menomini, Ojibwa, Iowa, Winnebago, Sauk, Fox, Kickapoo and perhaps Plains-Ojibwa and Plains-Cree; while the *Iruska* is found in the southeast among the Omaha, Ponca, Oto, Osage, Iowa, Kansa, and Pawnee.

The most striking aspect of this distribution is its general agreement with cultural and geographical distinctions. Our western group comprises in the main the typical Plains tribes, our southeastern group is a part of the intermediate Plains group, and our northeastern, the typical Eastern Woodland group. The peculiarity of this correlation is that in each group we find a different form of the dance and that each form tends to completely cover its culture area. Of these types, the western and southeastern are much more alike than the northeastern. Thus the distinctive Central Algonkin culture seems to have modified the Grass Dance most. Hence, granting that the ceremony was distributed from a single center, we have what looks like pattern phenomena, for most surely the uniformity of type in each cultural group must be due to influences from within. We have, therefore, an analytic problem, to discover what specific influences were responsible for the differentiation of these types.[10]

Again:

Notwithstanding the great uniformity in the Grass Dance we have a geographical grouping of minor differences and when we look a little deeper, we find evidences of pattern phenomena in that some dominant ceremonial concepts of the respective localities have been incorporated in the Grass Dance and have inhibited the continuance of others. It is also suggested that very great differences in the culture of two groups of people will retard diffusion, or at least tend to modify and obscure the identity of borrowed traits. Finally, we may suspect that the preceding differences in the Grass Dance are due to cultural differences in the tribes concerned.[11] Thus we have followed the devious path of diffusion back and forth across the Plains Area.[12]

[10] Ibid., 865.
[11] Ibid., 867–868.
[12] Ibid., 870.

At the outset we found that irrespective of chronology the different forms of the ceremony correlated in a remarkable way with the culture grouping of the constituent tribes. Our subsequent analysis of its diffusion has in the main not obscured this correlation. First, we have the gross fact that in the main, the ceremony is confined to the Plains area. Almost every tribe took it. It is true that it has found its way over the border into the fringes of two areas in very recent years, but its failure to go farther is not due to lack of time, for the older form of the ceremony followed about the same path. Why, for example, did the fire trick complex stick to the Upper Missouri-Mississippi Basin? It is quite probable that its distribution was governed by the flora, since a plant preparation was necessary to the trick. On this point, nothing definite can be stated until the identity of the plant has been established. Yet this could not apply to the modern form of the ceremony from which the fire trick is absent. It must be admitted, therefore, that whatever the cause, we have here the work of the same factors that produce the familiar culture area phenomenon. And, as we have previously noted, the most diverse variants of the modern ceremony are found in the west among the Shoshone and in the east among the Central Algonkin intermediate group. Again, how comes it that the Central Algonkin variant, originated by a Potawatomi, is so far removed as to be almost unrecognizable? If a mere coincidence, it is truly remarkable. It is far more likely that we have here a concrete example of what may be expected, if a trait wanders over into a culture where its pattern is a true misfit.[13]

The inapplicability of Wissler's principle of centrifugal diffusion is further evidenced in traits of the Old World where historical evidence is available. One may cite the relative distributions in the Old World of the symbolism attaching to the number four and that attaching to the number seven. Four was a mystic number of magical and ceremonial importance in ancient Egypt, in ancient India, among the Greeks of Hesiod's time, about the eighth century B. C., in China, and in Malaysia. Presumably it represents the diffusion through these areas of a concept which originated, or was first elaborated, in ancient Egypt. At a later date there deveoped in Babylonia the concept of seven as a mystic number and this trait influenced all Semitic peoples, and became an important element in Jewish and Mohammedan thought. It traveled to Greece, where it overlay the older mystic concept of four, and to some extent supplemented rather than displaced it, penetrated the Arab world and European cultures, and spread through India and Malaysia. For centuries it has been a more widely diffused concept in the Old World than the concept four, although, as has been indicated, the latter is in these areas,

[13] Ibid., 872.

as far as historical record is available, the older. Thus the older trait is the less widely diffused, and in neither case is the area of origin the center of the area of distribution.

The explanation of the diffusion is culture and not mere geographical contiguity. The diffusion has followed the routes of Jewish, Christian, and Mohammedan influences. Similarly, the historical religions have not diffused concentrically, and seldom is the place of greatest elaboration the place of origin. Buddhism traveled mainly to the east and but little to north or south as it moved eastward. Christianity spread to the west over Europe and the New World but made merely a trek across Asia, following trade routes, and scarcely influenced that continent or Africa. Mohammedanism spread through northern Africa and across India and southeast Asia into the Philippines, but it did not penetrate in comparable manner either Europe or northern Asia. Protestantism spread to the north and west of Europe but not to the south and east. Methodism spread through England and Wales and penetrated the Protestant portions of English-speaking countries across the seas, but it was not adopted in Scotland or in Ireland. Christian Science spread through the New England states, across the Middle West to the Pacific coast, but it obtained comparatively few adherents in the Southern states. Presbyterianism spread through Scotland and into Protestant Ireland, but elsewhere in Great Britain and in Europe it secured no hold, although, like Methodism, it crossed the seas to Protestant lands. The diffusion of scores of other religious cults tells a similar story of irregularity in spread. The difficult thing is to find a single instance in which the spread has been centrifugal.

The very existence of definite culture areas is *prima facie* evidence, if not proof positive, that a culture trait seldom spreads centrifugally, for if it did so the boundaries of culture areas would soon disappear. And even if one admits that every new elaboration starts at the center of the area of distribution, the supposition that it spreads only to the boundaries of the culture in which it originates implies that the explanation of the spread is not mere geographical contiguity but favorable culture soil.

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ON CALIFORNIA MORTUARIES

By W. C. MAC LEOD

DR. KROEBER'S survey of, and mapping of, mortuary practices in California, brings much order into an otherwise chaotic subject.[1] It is necessary at present to reconsider some aspects of the problems offered.

The area of cremation on the map should be carried up, on the northwest coastal area of California, to the borders of the Wiyot and the Hupa. On the coast, just below the Wiyot, were the Sinkyone. These, says Kroeber, cremated "those slain in battle, or dying at a distance from home, or under circumstances imposing haste."[2] Others were buried. Next below were the Mattole; an early settler reported that this people cremated their dead. In all likelihood he had observed their cremation of those dead in battle; in Powers' day the Mattole only buried.[3] The Kato, next below on the coast, cremated at least those slain in war; how they disposed of others we do not know, but presumably they buried them.[4] Between the Wiyot and the Hupa were the Nongatl, neighbors of the Hupa, who apparently cremated those dead in battle.[5]

The above groups were Athabascan, nearly related to the Hupa. To the south of these were the Coast Yuki, the Huchnom (Yukian) and the interior Yuki or Yuki proper. From his field work among these groups Dr. Kroeber reports that, in their memory, the Yuki of the interior cremated "those slain in fighting,

[1] A. L. Kroeber, Handbook of the Indians of California. Bur. Am. Ethn., Bull. 78, 1925; see map and index.

[2] Kroeber, Handbook, p. 146; source not indicated.

[3] S. Powers, The Indians of California. Contrib. Am. Ethn., Geol. Surv , (data gathered 1872–1875), 3: 110; cf. Kroeber, 142, 146.

[4] Kroeber, 156; for references see 967.

[5] Powers, 87, 110. Cf. Mac Leod, Mortuary Aspects of Northwest Coast Culture. Am. Anthr. n. s., 27: 122–148, 1925; Father Morice, and the Sikanni, ibid., 28: 566, 1926.

[6] Kroeber, 215, 220, 221.

or dying under unusual circumstances." These Yuki stated that their neighbors the Huchnom, like the Pomo, regularly cremated their dead. The Coast Yuki told Kroeber that "like all their neighbors, including the Kato and the northeastern Pomo of the coast, they cremated when it was easier to dispose of the ashes of the deceased than his body." The detached Wappo, Yukian linguistically, but under Pomo influence culturally, cremated those dead in battle, and apparently other classes of the dead.[6] Powers, enigmatically enough, for "the Yuki," merely reported, of war deaths, that:

> If any dead are left on the field, both parties return afterward and carry them away and bury them (they burn only those whom they do not honor, though this rule is not invariable). . . . .[7]

As I have elsewhere indicated, it is expedient henceforth to classify groups practising cremation at all, according to the classes of the dead who are cremated. The fact that the northwestern Athabascans mentioned (and apparently *all* the Yukian groups) cremated at least those who died in battle, means that these groups should be recorded and mapped as practising cremation. The Sinkyone at least—presumably, I think, their neighbors also—cremated those who died far from home; and to judge from further notes on the Yurok and others in this paper, and from other comparisons, I would venture the guess that *these northwestern groups cremated all who died in any way from violence*, as well, no doubt, as certain other classes of the dead. These northwest California groups therefore are nearly on a par with the Tlingit and other more northerly groups as far as cremation is concerned.

A more intensive study of tribes already listed as practising cremation is desirable, to learn just what classes of the dead were *not* cremated. Among the Pomo most classes of corpses seem to have been cremated;[8] not all, however. Powers notes for the Makhelchel of Clear lake that "As all good Indians are burned, so the wicked are 'holed'," and adds that, since the Patwin, the

[7] Powers, 129.

[8] Cf. Powers, 168, 181, 194, and on the cremation of those dead in battle and of perhaps others by the Wappo, see the tale in Kroeber, 220, and note on p. 221.

much despised neighbors of the Makhelchel, only bury, burial is considered by the Makhelchel as a miserable fate.[9] Of the Shanel (Se-nel) Powers notes that "The dead are *mostly* burned," that is, presumably, not all were cremated.[10] But he noted that the Kabinapek of Clear lake were "singular in their devotion to the formality of incineration," and instances a case which shows that even persons meeting death by *drowning* were searched for in order that their remains might be cremated,[11] for without cremation their spirits would not be released and they could not enter the *happy* regions of the afterworld.[12] But we should like to know what classes of the dead were classed as "bad," suffered burial, and became incarnated as grizzly bears and other loathsome, taboo creatures. I think it very likely that the "bad Indians" are not those who have lived immorally, *but merely those who died a "bad" death.*

Among the Yokuts, cremation practices vary from group to group where cremation is known to be practised at all. The Yaudanchi and Yauelmani burned only those who died at a distance from home, bringing back the ashes for burial.[13] But the Chukchansi—neighbors and intimates of the cremating Miwok—Powers reports as cremating those "who die a violent death, or are snake bitten." And this group also, in contradistinction to the Kuadanchi and Yauelmani, do *not* cremate those who die at a distance from home; such persons are buried beside the trail, and passersby throw a stone now and then upon the grave.[14]

Dr. Kroeber is inclined to give weight to a native rationalization to the effect that the widespread cremation of those dead at a distance is the result of desire to be buried at home, and for convenience in transporting the remains. But cremation of those dying at a distance is in all likelihood not to be so easily explained. The distribution of the trait must be mapped out, and note made

[9] Cf. Powers, 214–215, 219; also 194, 240.

[10] Powers, 169.

[11] Among Tlingit and Haida the dead by drowning go to a separate afterworld; we do not know if they were cremated or not.

[12] Powers, 207.

[13] Kroeber, 499; cf. localities, pp. 527 (map) and p. 478 seq.

[14] Powers, 382.

of its linkages with native cosmologies. Note that the Yurok, and other Californian tribes, do not cremate those who die at a distance. The Yurok brought back the whole corpse, if they could; if not, they bought the right to bury in some far-away cemetery.

The segregation of those dead by violence for special consideration appears among the Yurok, who seem to have buried all corpses. In the case of "those who had been killed by violence," or, as it is elsewhere put, those "killed with weapons," mourning customs were different, and given a pecuniary rationalization and adjustment. The souls of such among the dead "went to a separate place among the willows," apparently on the margin of the Yurok River Styx, and "here they forever shouted, and danced the war dance."[15]

This distinction—no doubt shared by the neighbors of the Yurok—bears comparison with the facts of mortuary traits on the cremating section of the far northern west coast, where the distinction was accompanied by distinctive mortuary disposal of the remains.

Dr. Lowie has pointed out that the only Shoshone groups of the plateau who cremate any of their dead are those who have within recent times adopted the south California mourning ceremony; these Shoshone are the Shivwits and Moapa groups; the Paviotso say that they never cremated.[16] This may well suggest that cremation among the Shoshone is the consequence of imitation of south California practice. On the other hand, however, we should note that the northwest California Athabascan groups who cremated were not only considerably beyond the northern limits of the distribution of the southern mourning ceremony, but beyond the limits of that influence of the ceremony which appears in the extravagant mortuary destruction of property among the Yuki, Lassik, and southern Wintun.

There are some indications that cremation practices in northwestern California are to be genetically intimately linked with

[15] Kroeber, 37, 47; 215, 499.

[16] R. H. Lowie, Culture Connection of California and Plateau Shoshonean Tribes. Univ. Calif. Publ. Am. Arch. Ethn., 20, 1923.

those of the Alaskan and British Columbian coasts. Unfortunately we need more information about the intervening peoples. An early traveller reports that the Coos Indians of the Oregon coast "burned" the dead, and, like the Plateau Shoshone, practiced widow immolation.[17] But the context of his note makes it seem very likely that "burned" is a misprint for "buried"; I have seen such misprint elsewhere. Yet there may be significance in another early statement, that

> From north to south, in the present California, up to the Columbia River, they burnt the dead in some tribes, and in others, buried them. These modes of sepulture differed every few leagues.[18]

Neither the Chinook nor any tribe north of them, up to the Bella Coola and Northern Kwakiutl practiced cremation. Archeological evidence, however, instances cremation in an earlier culture on southern Vancouver Island; and in earlier days on the Oregon plateau.

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[17] W. W. Wells, Wild Life in Oregon. Harpers New Monthly Magazine. v. 13. 1856, p. 602. Wells describes the rites.

[18] Taylor's Indianology, *in* The California Farmer, June 8, 1860, cited in Bancroft Wild Tribes, 1: 396.

A NORTHEASTERN CALIFORNIAN DUG-OUT CANOE

By HUGH W. LITTLEJOHN

THE dug-out canoe, shown in plates 59 and 60, was found in Gold Lake, Sierra county, California. For a number of years it had been seen by the people of the vicinity lying on the bottom of the lake under about sixteen feet of water about 150 yards off Fisherman's point on the south shore of the lake. In the autumn of 1925 Forest Ranger Gould hauled the dug-out to the shore, where it remained until the spring of 1926. At that time it came into the possession of Mr. Fenton J. Zehner, who brought it to Gray Eagle lodge, near Blairsden, Plumas county, where it remains at the present time. It was through the courtesy of Mr. Zehner, who is manager of Gray Eagle lodge, that the Department of Anthropology of the University of California was enabled to secure photographs and a description of this dug-out, and to obtain the short and inadequate history given above.

The canoe or dug-out is 20 feet and 8 inches long over all, and is a very massive affair throughout. Its outside width at the center is 27½ inches; 25 inches from the tip of the bow the outside width is 25 inches; 25 inches from the end of the stern the outside width is 26 inches. For the greater part of its length the sides of the canoe are almost parallel. The outside height at the center is 21 inches; the inside height at the same point is 18 inches.

The writer's informant gave the opinion that the log from which the canoe was made came from either a yellow or a sugar pine, but it is a difficult matter to decide, for the wood is badly checked and its character changed from being so long under water. The canoe is in fair condition, the greatest damage being the splitting off of part of the left side due to checking of the wood.

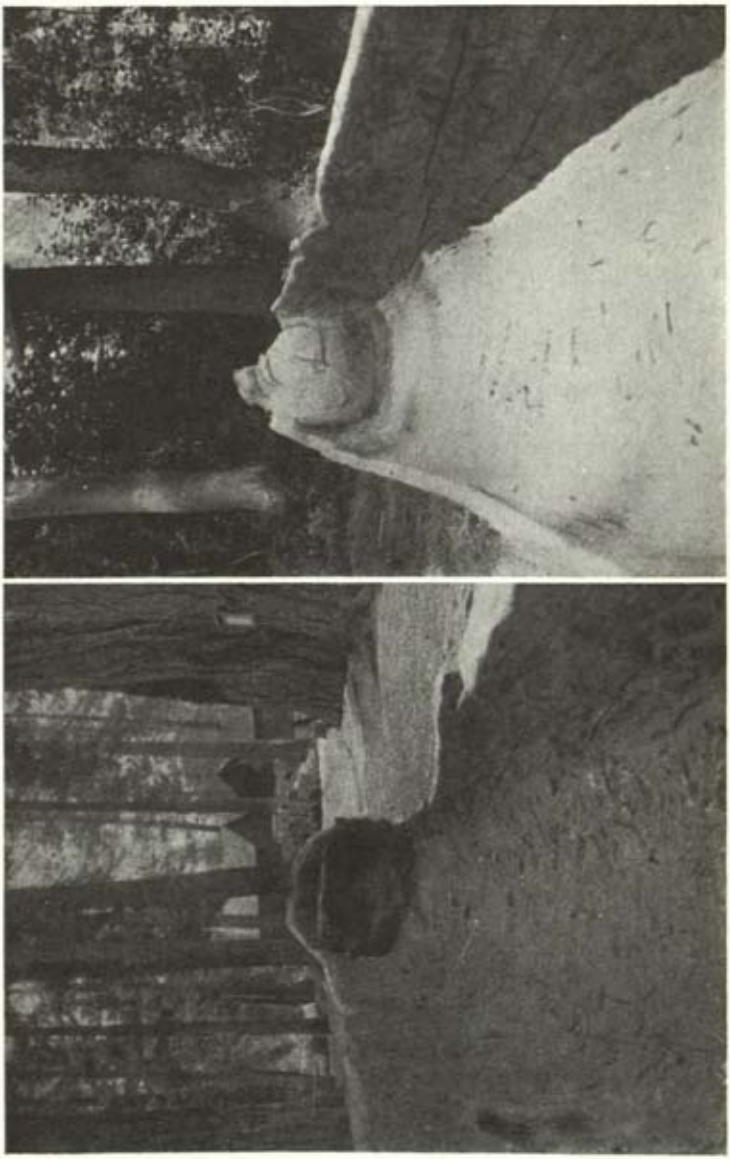
In spite of the evident crudeness of the dug-out, considerable effort has been expended in shaping the bow and the stern. The bow is cut under and brought to a decided point, so that in appearance it is not unlike that of the fisherman's dory used along the New England coast. The stern is shaped so as to appear broad and somewhat flattened, and the curve at the bottom is abrupt, with no tapering as in the case of the bow. The outer surface is so checked and cracked and waterworn that to say that the shaping was done with stone or with metal tools would be a guess.

Inside, the marks of the tool used in shaping the dug-out are very distinct, and from their sharp, deep, and well-defined character it seems evident that they are the marks of a metal adz. Fire was employed in hollowing out the interior, for the sides and especially the ends are still very much charred. A large amount of wood has been left intact in both the bow and the stern, probably for the purpose of giving added strength, and this is largely what gives the appearance of massiveness to the dug-out. The shaping of the sides and bottom has been neatly and carefully done, for the bottom is smoothly and evenly curved to conform to the shape of the log, and the sides are of uniform thickness throughout the length of the main body of the dug-out.

Near the middle of the side which is intact are two places where the edge has been gouged out for the apparent purpose of holding two boards or seats, which doubtless extended to the opposite side, now broken away. The assumption is strengthened by the appearance of the broken ends of rusty iron nails in the places gouged out. The presence of nails in the dug-out would indicate that, no matter what its age, it has been in use at least since the white man came to this part of California. In the stern is cut a deep notch which could have had no other purpose than that of acting as a seat for a rudder, oar, or scull. This notch seems to have been made later than the canoe itself, and it may have been contemporaneous with the gouges and the iron nails on the side, and even perhaps with the deep, sharp adz-marks on the interior.

It is the writer's opinion that the canoe was originally made by the aborigines of the region and that it was later found and used by some white settler, who adapted it to his special purpose. A white informant of some three score years and ten, now living in Blairsden, told the writer that when he was a young man living near Manzanita lake, Shasta county, he and a friend found an old Indian dug-out similar to the one described in this paper. He and his friend were accustomed to do night fishing in the lake, so they rigged a contrivance for holding an iron basket of fire in the dug-out. One man fished while the other propelled the boat from the stern. Something similar may have happened to the dug-out we are describing, and the adz-marks may have been made by

Dug-out canoe found in Gold Lake, Sierra county, California.



Other views of the dug-out canoe.

the white owners who wished to shape the interior of the canoe better to suit themselves. This cannot be stated with any certainty, however, for the canoe may have been hollowed out by the Indians at a time when they knew the use of metal tools.

If the dug-out is of Indian manufacture, to what tribe of Indians did it belong? Gold lake is some 6400 feet above sea level, and according to the writer's Indian informant living near Quincy, the adjoining territory was never occupied permanently due to the severity of the winter climate. This same informant stated that during the summer the Washo and the Northeastern Maidu would go to Gold lake to fish, and that warfare was of frequent occurrence between these two tribes. Mohawk valley, wherein lies Blairsden, was considered as neutral hunting territory, and no one tribe was allowed to appropriate any portion of it for permanent or temporary camps. Moreover, near Lake Hawley, which lies at about the same altitude as Gold lake, but about three miles to the west, there is a large flat rock covered with Indian petroglyphs. That Indians were frequent visitors to the whole of this so-called Lake Basin area is further shown by the large number of artifacts, especially arrowpoints, that have been picked up in this area. Maidu, Washo, Paiute spent their summers fishing and hunting in this Lake Basin area, and, provided an Indian origin for the dug-out of Gold lake is accepted, we cannot say for sure that it was the property of any one tribe more than another.

None of these tribes was prolific in boat-making in any sense of the term, so it is interesting to find such a dug-out canoe coming from a region of long cold ice-bound winters and short summers, where, on account of its weight and bulk it could be used only upon the lake where it was first hollowed out.[1]

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[1] Dixon, The Northern Maidu (Bull. Am. Mus. Nat. Hist., 17: 140, 1905) says: The rude dug-out canoes, in use only among the northeastern Maidu, were made from fallen pines, as a rule. A section of the requisite length was burned off, the bark stripped, and the canoe excavated by fire. . . . . The charred wood was scraped off with rough axes or adzes, and the fire kept up till the canoe was completely hollowed out. Elk-antler wedges were used to split trees, being driven by a round hammer-stone held in the hand.

BOOK REVIEWS

METHODS AND PRINCIPLES

Reallexikon der Vorgeschichte. Herausgegeben von MAX EBERT. Elfter Band. (Berlin: Walter De Gruyter & Co., 1927-'28. 445 pp., 151 pls.)

Volume 11 of Ebert's encyclopaedia (cf. AMERICAN ANTHROPOLOGIST, n.s., 27: 561, 1925; 29: 332, 1927; 30: 714, 1928) again provides the general student of culture with a vast amount of valuable reading matter. There are regional surveys of prehistory for Rumania (p. 165, Silesia (p. 269) and Switzerland (p. 384); paleolithic articles of personal adornment are fully discussed by Obermaier under the caption "Schmuck" (p. 292); and substantial treatişes cover the history of swords (Sprockhoff, Ranke, Thomsen, Unger; p. 412) and of ship-building (Behn, Thomsen, Assmann, Meissner; p. 235). Under "Schrift," Egyptian writing (p. 336) is treated by Roeder; the Semitic systems and the origin of the alphabet (p. 347) by Johs. Pederson; the several Greek letters (p. 357) by Hiller v. Gaertringen. These and other sections are preceded by a general article from the pen of Thurnwald (p. 314).

The last-mentioned author also contributes comprehensive articles on "Rausch" (p. 39), which besides intoxicants is made to include such topics as shamanistic ecstasy and the sweat-bath, and "Recht" (p. 50), as well as a number of minor ones. It is interesting to recognize as "Scherzbeziehung" (p. 228) our old friend the joking-relationship. Thurnwald has shown considerable aptitude in translating standard expressions of this type into his mother tongue. A few comments on special points seem called for. It is strange that under "Rätsel" (p. 27) Thurnwald fails to emphasize the dearth of riddles in the New World. Possibly his intemperately moderate attitude on the question of their diffusion would have become more positive. ("Der Gedanke von Übertragung ist . . . . . nicht ohne weiteres von der Hand zu weisen"). In the essay on "Rausch," p. 40, he cites Graham (Journ. Polynes. Soc., 254, 1921) to the effect that a Dutch mariner of the 17th century discovered a Chilean beverage, cici, prepared like kava. This point seems to merit further investigation. Finally, exception must be taken to the categorical

statement under "Recht," p. 58, that land is hardly ever owned privately among hunting tribes and pastoral nomads. Since Speck's observations among the Northeastern Algonkians and Seligmann's account of the Vedda that view has become antiquated.

The general discussion of "Religion" (p. 89) by Max Löhr sanely stresses the emotional aspect of belief, the distinction between the Sacred and the Profane, and the importance of individual leadership on the savage level. As a whole, however, the article is inadequate and betrays the author's remoteness from the ethnographic basis for speculation on the subject of primitive religion. The assumption of bodily degeneration among latter-day savages, and the hackneyed juxtaposition of primitive and juvenile psychology, indicate considerable naïveté. On the other hand, the special articles on Aegean, Egyptian, Syrian, and Mesopotamian religion are highly instructive. Thus, it is enlightening to have the gap between Aegean and Greek cult so strongly emphasized by Karo, and to see the anthropomorphic divinities of Mesopotamia set off in relief against Egyptian theromorphism by Unger. Americanists will be interested in Unger's reference to Babylonian berdaches, priests of Istar,

deren Männlichkeit durch Istar in Weiblichkeit umgewandelt ist (p. 121).

The parallel with well-known Siberian cases naturally occurs to an ethnographer.

The reviewer feels particularly grateful for the articles on the reindeer (p. 122), cattle (p. 137), sheep (p. 220), and pig (p. 386). The zoological part is in each case by Hilzheimer, and except for the first of these there are supplementary statements by Ranke on Egypt and Thomsen on Palestine-Syria. Collaboration with a student of culture history as a whole would have enhanced the value of these studies, but even in their present form they are a great boon. That on the reindeer is the least satisfactory, notwithstanding its gratifying moderation, for Hilzheimer ignores important data, e. g., Jochelson's material on Siberia and Russia. He does take cognizance of Wiklund, but adopts Lönnberg's view that the Lapps may have raised reindeer before their immigration into Scandinavia.

"Taurine" cattle are made to include domestic cattle of all varieties *and* the zebu. Unfortunately Hilzheimer does not define his views as to the relations of the zebu to the others. Rejecting various claims, he regards the urus (*Bos primigenius*) as the only taurine wild form, hence derives all domestic varieties monophyletically

from this ancestor. They are products of domestication and can no more be sharply divided from one another than can the races of mankind. Brachycephaly has thus developed independently in quite diverse brands of cattle. C. Keller's theory that the variety *Bos taurus longifrons* (turbary cattle) goes back to the Indochinese banteng is rejected as anatomically indefensible and rendered improbable by the relative infertility of banteng-cattle bastards. The oldest European remains of domestic cattle come from the older kitchen-middens; their racial affinity is as yet obscure. The Swiss pile-dwellings show first the *B. t. longifrons* variety, to which *B. t. primigenius* is only added toward the close of the Stone Age. This, however, must be treated as a result of merely local validity, for the latter race certainly occurs in the Neolithic of Germany.

Hilzheimer leaves the European or extra-European origin of cattle domestication in doubt, but suggests that,

> sei es nun im Anschluss an das importierte Hausrind, sei es spontan, der Ur hier an verschiedenen Stellen domestiziert worden ist.

Historians of culture will be less ready to assume the likelihood of such spontaneous generation.

From Ranke's supplement we learn that prehistoric Egyptian graves contain the bones of cattle, especially skulls and thigh-bones. Reference is made to the Pleistocene find of a urus skull-fragment from the Fayum, which (as Breasted has already shown, eliminates the necessity of Asiatic importation of the domestic form.) Hornless cattle, while not demonstrable for the prehistoric period, figured in the Old Kingdom, the humped variety not before the New Kingdom. Ranke's nonchalant remark that the object of cattle-breeding was the same in Egypt "as everywhere else," viz., milk and beef, betrays a provincial ignorance of ethnographic data.

Wild sheep nowadays occur only in two European localities, Corsica and Sardinia, and belong to the moufflon type (*Ovis Musimon Schreb.*) They are the probable survivors of a wild sheep formerly extending from Asia through Moravia, southern Germany, southern France, and southern England, but became extinct north of the Alps before the close of the Pleistocene. The most ancient remains of domestic sheep known are from the older kitchen-middens. In several of these sites the bones might on purely anatomical grounds be assigned either to goats or sheep; but since the more recent kitchen-middens lack indications of goats, Hilzheimer plausibly argues that

in all these instances sheep remains are involved. The later kitchen-midden finds permit racial identification; they belong to the turbary variety (*Ovis aries palustris*) first noted by Rütimeyer in Swiss pile-dwellings and distributed over Switzerland, Italy, France, Germany, and England. It probably survived the mediaeval migration period and persists in more or less pure form in Iceland to this day. In the Eneolithic a large form with heavy horns, *Ovis aries Studeri*, suddenly made its appearance. It still occurs on the St. Kilda Island Soay. Both these varieties were short-tailed, the long-tailed forms being probably introduced by the Romans. However, even these earlier domestic breeds had longer tails than wild sheep. The Eneolithic sheep, which came to supersede its predecessor, resembles the Anatolian *Ovis orientalis Brant* to such an extent that a relationship is beyond doubt. As to the turbary sheep, not even conjectures are possible at the present time. Hornless sheep do not appear before the Bronze Age.

Ranke points out that the Egyptians never utilized wool. Duerst and Gaillard have distinguished two species,—a fat-tailed type, *Ovis platyra aegyptiaca*, which appears in the Middle Kingdom; and *Ovis longipes palaeo-aegypticus*, which dates back to prehistoric times in Egypt and became extinct before the New Kingdom. Lortet regards it as indigenous in Africa, Duerst and Gaillard derive it from Asia.

Possibly the most startling results of recent investigation in this line appertain to the history of the pig. While the genus *Sus* dates back to the Lower Pliocene of Europe, the species *Sus scrofa* L. is not demonstrable before the Pleistocene, but has persisted since then both in Europe and northern Asia. Its southern limits are difficult to determine because to the south a wild form appears that differs significantly in anatomical features, notably in the shortness of the lachrymal bone. Hilzheimer holds that the various types described under such labels as *Sus indicus Gray*, *S. cristatus Wagner*, etc., in India, Japan, the Malay peninsula, and Indonesia represent a single form. Further, the very differences that divide them from *S. scrofa* distinguish the juvenile wild pig of Europe from its older fellows. Hence, *all* wild pigs of Asia, Europe, and North Africa are, according to Hilzheimer, members of a single group (*Angehörige eines Formenkreises*), the several members merely representing different stages of senescence. Hence the frequency of intermediate forms that defy classification.

The application of recent findings to prehistory is as follows. Rütimeyer had distinguished two species of domestic pig in the Swiss lake-dwellings. Of these, the more recent was evidently traceable to *Sus scrofa* and was accordingly dubbed *S. scr. domesticus*. The other more ancient form differed markedly and was set off as *Sus palustris*, its distinctive features linking it with *Sus indicus*. Since Rütimeyer could not find a wild turbary form and was ignorant of corresponding wild *South* European varieties, he argued that the pig must have been imported from Asia. We now know definitely that the Sardinian *Sus meridionalis Major* is related to *Sus indicus*, and this probably also holds for the Spanish, Italian, and Bosnian breeds. Rütimeyer's conclusions must thus be amended to read: The turbary pig of the pile-dwellings was imported from outside of Switzerland, but not necessarily from Asia. Furthermore, Pira's researches in Sweden have proved that this *Sus scrofa domesticus* precedes the turbary form, which develops from it as a result of domestication before the close of the Stone Age. Even before Pira, Strobel had established similar results for Italy, that is, derived the turbary from the indigenous wild pig. According to Hilzheimer, the effect of domestication is to arrest post-embryonic development at a juvenile stage, whence differences between domestic breeds and their wild ancestors, the effects being overcome only by a more advanced knowledge of animal husbandry.

Wenn aber . . . . das Bindenschwein gewissermassen ein jugendliches Wildschwein ist und das Torfschwein aus dem Wildschwein durch Verjugendlichung entstanden ist, so ist es natürlich, dass sich beide gleichen, eine Verwandtschaft darf allein aus dieser anatomischen Gleichheit nicht gefolgert werden.

In short, Hilzheimer rejects Asiatic importation. Where the turbary pig appears without predecessors, as in Denmark and Switzerland, it must of course have been introduced, but since the pig is not an easily transportable beast we can hardly assume that it came from remote areas. In fact, the author tends to assume several European centers.

Unfortunately editorial limitations seem to have prevented Hilzheimer from envisaging the subject from a broader view, either geographically or historically. Several centers of domestication in his sense do not necessarily imply several independent impulses to bring wild swine under control: the idea may very well have passed from one region to another. An explicit statement as to precisely

how he stands in this matter would have been welcome. Further, the domestication of pigs cannot be considered adequately without some attention to Chinese data, which Hilzheimer completely ignores. Finally, whatever the difficulty of driving pigs over great distances, they can be transported by mariners, as happened in Oceania.

Ranke's supplementary paragraphs bring out two significant facts as to Egyptian swine-raising. There is prehistoric evidence of domestication; but its aims are wholly obscure, since the Egyptians seem neither to have eaten pork nor to have made any other use of pigs.

ROBERT H. LOWIE

An Introduction to Sociology. WILSON D. WALLIS. (New York: Alfred A. Knopf, 1927. xv, 433 pp. $3.50.)

Many books have recently been written by sociologists on anthropological topics. Professor Wallis, with the great advantage, of course, that he is sociologist as well as anthropologist, has returned the compliment by writing an elementary text in sociology.

Wallis' book is "a descriptive interpretation of the social world in which we live." Much more anthropological and historical material is presented than is found in most such books. Indeed, the book is somewhat of a departure in its field. Wallis himself says that

> the approach to sociology adopted in this book turns away from the usual paths, not because they are too well trodden, but because they seldom lead to profitable adventures. The work is an attempt to come to grips with the realities of the social world. It describes forms of social organization, those of our ancestors as well as those of our contemporaries—their social life, institutions, ideals, practice, and theory.

There are six parts to this volume, dealing, respectively, with social life in cultural perspective, social theory, external factors influencing social life, cultural and psychological factors influencing group life, phases and problems of modern society, and the trend of social development. Whether this is sociology in the opinion of the sociologians, *ex cathedra*, I do not know. It is enough, here, to say that this should be a useful and stimulating book to beginning students. It has a sound point of view and it is full of common sense and wisdom. Apart from criticism of details it may be said that it covers too much ground, but that, perhaps, is a fault almost inherent in elementary texts in this field.

MAURICE G. SMITH

Cultural Change. F. S. CHAPIN. (New York: Century, 1928. pp. xix, 448. $3.50.)

The Range of Social Theory. F. N. HOUSE. (New York: Holt, 1929. pp. x, 587. $3.60.)

These two books written by sociologists should interest students of social anthropology. They are worth while in themselves, despite points of weakness and many limitations. They are, however, especially significant as indications of the diffusion of anthropological methods, data, and conclusions, and, many persons will say, also, apart from this, that they are representative of the progress sociology is making.

Professor Chapin undertakes an historical and statistical analysis of cultural change, a topic which among sociologists has largely supplanted the interest in the abstract and general concept of social evolution. After an introduction (part 1) on the perspective of man's past, his book has a detailed analysis (part 2) of certain phases in the social and economic history of Greece, Rome, and medieval England, on the theme that history tends to repeat itself. But his view of history and historical continuity is more like that of Oswald Spengler than like the outmoded view of Lewis Morgan. As Dr. Chapin says:

> The main stream of human culture is found to be something of an abstraction. Morgan and his school seem to have confused this abstract idea of a main or central stream of human culture with the facts of concrete similarities in different areas at different times. In so far as these similarities exist, it would now appear that they are really examples of similar cyclical changes in independent cultural groups and not illustrations of universal cultural stages in one continuous world-wide stream of unified cultural evolution (p. 202).

Historical continuity, as he says, includes separate streams of group cultures, as illustrated in the cycles of national growth and decay. Part 3 of this book is a careful treatment of the character of cultural changes and the societal reaction pattern to the movements of culture, and part 4 discusses the measurement of social change.

Professor House's book surveys a large number of problems and topics from the point of view of their relation to social theory. Its material has been arranged under three headings: Geography and social differentiation (8 chapters); Human nature and collective behavior (17 chapters); and Conflict and social control (10 chapters). A vast amount of work is intelligently and critically discussed.

Though its chief value will probably be as a reference book, Professor House does more than serve as a guide to literature.

Everyone is agreed that sociologists have something to learn from anthropology. May it not be true, also, that anthropology, especially social anthropology, can learn from sociology?

MAURICE G. SMITH

The United States of America. Studies in physical, regional, industrial, and human geography. ALBERT PERRY BRIGHAM. (New York: Oxford University Press, American Branch, 1927. x, 308 pp. $3.00.)

This may be a useful book, but it appears to this reviewer to be only another version of the usual material found in geography books, save for some general and patriotic remarks about Americans in the concluding chapters. Its utility is increased by its 40 maps and its statistical appendix consisting of 16 tables.

The author, who is Professor of Geology at Colgate University, says in his preface:

> This volume is based on a course of lectures given at the University of London in February, 1924. The University Press kindly asked the author to include additional subjects and offer a short text suited to the later secondary and earlier University years. This volume is not to be taken as a geography of the United States—it is a series of studies in important phases of American geography.

Since this book was prepared for Englishmen, Dr. Brigham emphasizes, in his chapter on traditions and language as well as elsewhere, how English we are. He goes so far as to say that "even the anti-British American is often, without knowing it, British in his basal ideas of life and conduct" (83).

While there is, therefore, much in the book that will please our 100 per centers, there are also some things Dr. Brigham tells that, truth or no truth, will be unpleasant to these ladies and gentlemen. For example, speaking of our first settlers, he says:

> Added to these [seekers for freedom and restless, progressive spirits] were undesirables, of whom London and other places were well rid, and many criminals as well; but here we are to remember that many were not guilty of turpitude, their offenses might be legal but not moral, and in many instances they, and their children, were of good stuff for American citizenship (2).

Of our people in 1790, he says:

> There was diversity among the Britons—Puritans, Cavaliers, Quakers, educated, ignorant, poor and affluent, men of highest character, and un-

desirables of the populace, for it is a fallacy to assume that the first colonists were all supermen (84).

Something of Brigham's point of view toward anthropological subjects can be gathered from his discussion of the Indian under the caption, An Empty Land, in his first chapter:

> Vivid and vigorous as the red savage was, he made little ultimate impression on American life. He is now in the process of absorption in the white and negro population, but the infusion is too small to be of account. He has produced no significant result in race or in institutions. He tested the colonial fibre and bred in the pioneer alertness, determination, and not infrequently, revenge. His presence for some generations kept the eastern colonists in compact settlements, and this condition had important social as well as protective results . . . . .
>
> There were economic gifts also, for early engineers had much occasion to use the trails long trodden by men who had an almost superhuman sense of direction and locality. Tobacco has affected America and the world and Indian corn was the indispensable condition of survival for some of the first settlers and is today one of the three leading products of American soil. If we add the fur trade, we have, perhaps, a fairly full catalogue of the red man's contribution to American history (5, 6).

Chapter 5, The Racial Composition, is perhaps of special interest to anthropologists in illustrating how geographers handle such a topic. Here, as might be expected, nationality is usually treated as race. It is asserted in this chapter that the old stock of Americans "are not dying out, and under existing restrictions, is not in danger of being submerged" (83; see also 92). There are also some platitudinous and only partially true remarks about the restriction of immigration:

> Americans in their new views of immigration make no assertion of the superiority of any race or nationality. There is no national egotism in the minds of thoughtful students of the problem, however much loose talk there may be about "Anglo-Saxon" superiority. And it should be observed that Latin and Slav were not so influential in bringing us to present views as were the ruling classes of central Europe [*sic*], who are not so far from us in blood. We may sum up the American conviction by saying that in its newer attitude it demands loyalty, and reasonable health and strength of mind and body (98).

Let me close this notice by indicating how, as it seems to me, preconceptions confuse writers who deal with the social as well as the biological. Writing of our recent immigration, Professor Brigham says:

> Large masses of raw human material cannot safely be transformed by any process known under the rather vague name of "Americanization."

If we let in aliens that are basically inferior, the biological argument comes into force—what goes into the social fabric must come out; in other words, we are dealing with heredity, and environment and training will not create power or efficiency (98).

Writing of an alleged gulf between Americans and Britons, he says:

If Americans are different from Britons, it is not because of recent floods of aliens, but is due rather to the fusions of two hundred years and to influences of history and environment (83).

MAURICE G. SMITH

Dacia; an Outline of the Early Civilizations of the Carpatho-Danubean Countries. VASIL PARVAN. (Cambridge University Press, 1928. 204 pp., 16 plates, 1 map.)

The late prominent Roumanian scholar, Professor Vasile Parvan, had delivered a series of lectures on the early civilization of southeastern Europe at Cambridge University shortly before his death in 1926. As a memorial to his visit, the Cambridge University Press published *Dacia*, which is based upon Parvan's lectures and translated by Evans and Charlesworth, both of St. Johns College, Cambridge. The five chapters of text treat of the relationship between the Carpatho-Danubians and the Villanovans, the Scythians, the Greeks, the Celts, and the Romans respectively, considering both the cultural and the racial aspects.

The treatment starts with the third period of the Hungaro-Roumanian Bronze Age (about 1000 B.C.) and describes the industrial products of Dacia as being derived from the west rather than from the east. A northern branch of the Thracians were the native ethnic elements. The fourth Bronze period (corresponding to Hallstatt I of central Europe) marked the advance of close cultural contacts with northern Italy and the Illyro-Celtic west.

The Villanovans, therefore, constitute the first Italic wave in Dacia (p. 34).

The nomadic Scythians appeared about 700 B.C. While they had a disturbing influence upon the highly agricultural native economy, and for some 150 years interrupted western relations, they nevertheless did not cause any break in the cultural development of Dacia.

The subsequent influence of the Greek civilization was quite extensive, but not prominent enough to stamp Dacia with a specific

Daco-Hellenic culture for the western contacts continued to constitute the predominating elements.

In the fourth century B.C. (La Tène I) the Celts began to appear and during the La Tène II period, they spread throughout the Daco-Thracian territory. To them is attributed the introduction of the potter's wheel and money coinage in Dacia. At the same time the penetration of southern traits, Hellenic and Italic, is strongly felt, but . . . . .

> the Dacians nevertheless remain an essentially northern people during this Celtic period (p. 140).

In the La Tene III period relations with Rome were more preponderant than with Greece. At first the Celts were the intermediaries in the Daco-Roman contacts, but the intercourse was soon direct and "had lasted for some centuries before Trojan" (p. 160). Gradually the whole of Dacia and virtually the entire territory of the old kingdom of Burebista came under Roman influence. Dacia was always a highly agricultural country. The Romans, aside from introducing the Latin language brought

> practically nothing that was new to the natives. The industries of the La Têne period, for instance, continued uninterrupted during the Roman occupation and even after their withdrawal (p. 199).

The Latin elements, which even today are present in the Danubean region, are considered by Parvan as being "derived directly from the old Danubean population" (p. 200).

The Romano-Danubean cultural unity held its own until the time of Slavonic invasions. The pastoral Dalmatia and Moesia Superior were the first to submit to the Slavs. Dacia and Moesia Inferior, however, resented this until the tenth century, when they finally gave way to the Slavs, Magyars, and Germans.

Thus today, Roumania, instead of forming a contiguous peninsula of the Latin mainland, is only an isolated inland island, quite remote from her Latin kinsmen.

The book in the main appears to be based on Parvan's extensive work *Getica, o Protoistorie a Daciei*, Bucharest, 1926. It is necessarilly sketchy, but will, nevertheless, be appreciated by the American student of European antiquity. The 16 plates and 1 map are a good feature of the work.

VLADIMIR J. FEWKES

ASIA

Oraon Religion and Customs. SARAT CHANDRA ROY. With an introduction by Colonel T. C. HODSON, Reader in Ethnology in the University of Cambridge. (Ranchi, 1928, 418 pp.)

In 1915 Sarat Chandra Roy published an excellent volume on *The Oraons of Chota Nagpur* in which he presented their history, economic life, and social organization. At the time he promised at a future date to supplement this work by one dealing with Oraon religion, and in the volume at hand this promise is made good.

The first chapter deals with religion and magic and their place in Oraon life, the author making his modern position very clear. The Oraon, he says, does not attribute all phenomena of nature and all the good and ill of life to spiritual agencies. He realizes that natural causes and his own efforts may ordinarily produce definite desired results. His accumulated lore based on observation of these constitute his rudimentary science, and he counts upon its regular and uniform working. But he finds exceptions to the expected and normal, and to avert these unforeseen contingencies or neutralize their effects he has recourse to magical and religious rites. His magic begins where his primitive science ends, and is subordinated to and supplemented but not actually supplanted by, his religion. By way of precaution he has come to employ these rites in conjunction with his normal activities, to ensure that their course may run smooth.

The following chapters are concerned with the careful study of the deities, spirits, and other supernatural powers, the "rites du passage," religious feasts and festivals, and black and white magic. The final chapter deals with revival movements and modern tendencies in Oraon religion, and contains many details of interest in regard to this often neglected aspect of the subject.

The Oraon present a very attractive field for study. A Dravidian tribe which supplanted and is still largely surrounded by more primitive Munda-speaking folk, subject for centuries to Hindu influences and for over eighty years an active center for Christian missions, they offer rather unusual opportunities for the study of complex cultural blending. To say that the author has realized these opportunities and has organized and presented his materials with skill, clearness, and sanity is to state rather inadequately the service which this "modest and accomplished scholar" (to quote from Colonel Hodson's preface) has rendered all students of Indian anthropology.

R. B. DIXON

The Japanese Enthronement Ceremonies. D. C. HOLTOM. (Tokyo: The Kyo Bun Kwan, 1928. x, 146 pp. Yen 4.50 in Japan.)

Historian and student of religions, Dr. Holtom does not style himself an ethnologist. Nevertheless, ethnologists are in his debt for researches into Japanese religion and ceremony. Students of Japanese culture have wished that his *Political Philosophy of Modern Shintō* might be followed by a comprehensive book on Japanese religion, embodying the fruits of his field work and documentary researches. Although that wish remains unfulfilled, this monograph on the Enthronement Ceremonies is of value to ethnologists.

The Enthronement Ceremonies of 1928 attracted world-wide attention. Because Japan's Emperor acknowledges no peer, the ceremonies cannot be called a "coronation," lest one imply the existence of a power capable of conferring a crown. Portions of the ceremonies have survived from prehistoric days, and the Imperial Household Department has meticulously recorded changes in the ritual during historic times. It is thus possible to gain insight into primitive Japanese ceremonial.

Holtom describes the Imperial regalia, emblems of authority, incarnations of Divine power. He outlines the ceremonies, describing in detail the two most elaborate portions of the cycle. The accession of a Japanese Emperor involves three principal groups of ritual acts. First, and basic, is the transfer of the Three Sacred Treasures or Imperial regalia to the new Emperor, immediately upon the death of his predecessor. Possession of these Divine objects is emperorhood. This transfer, carried out with simple dignity during the mourning period, effects the actual establishment of the new Emperor.

The year of mourning must be completed before the elaborate formalities of the second and third ceremonies may take place. New rice, planted after the mourning ends, is indispensable to the final ceremony; hence two years or longer may elapse before the completion of the rites. The first ceremony has given Japan an Emperor in fact—the second and third proclaim, consecrate, and celebrate the Enthronement.

Detailed accounts, in English, of these ceremonies, are of especial value in connection with the theories recently advanced by Hocart (in *Kingship*). Whatever controversies Hocart may have provoked, he has effectively called attention to the importance of study of cor-

onation rites in the Eurasiatic area. Perhaps Holtom's apparent unfamiliarity with Hocart's work enhances the value of his study of the Japanese rites; he is obviously not seeking to discover Hocart's coronation-complex in the Japanese data. The description of the Enthronement ritual is quite objective, with only a few casual references to parallels in other regions.

Holtom's neglect of the rôle of diffusion from areas other than China results in the passing over of important cultural interrelations, but it also means that his data are free from the theoretical bias of the enthusiastic diffusionist. While Chinese elements in the Japanese rites are freely acknowledged, those portions of the ceremonies that seem to indicate diffusion from India, the Malay region, or the Pacific Isles, are described without directing attention to such possibilities. Dr. Holtom was among the first to stress the Malayo-Polynesian element in Japanese culture, and his reticence at this point is puzzling. His citations of Asiatic cusoms indicate an attitude sympathetic to theories of independent origin. Happily, his theoretical assumptions are few and may be disregarded with no impairment of the value of the study.

A critically historical investigation of matters related to the dignity of Japan's Imperial House requires tact, even courage. Dr. Holtom evades no issues, handling the stiuation with skill and dignity. No patriotic Japanese could find just ground for offence. More serious than possible censorship has been the limitation of space; greater detail in describing ceremonial paraphernalia would have been welcome.

The Imperial regalia are shown to function in what Hocart would term a "solar kingship" ritual. The mirror incarnates the sun-goddess, Amaterasu; the sword is identified with the lightning of her storm-god brother Susa; while the jewels incarnate the moon-god Tsukiyomi, another brother of the sun-goddess, and ruler of the "ocean plain." These jewels strikingly resemble the *mana*-bearing curved stones of the Maori, a fact unnoted by Holtom. The regalia unite a three-fold Heavenly Sovereignty, transferring the powers thus summated to the Emperor. Significantly, ancient records refer to the Japanese Imperial Dynasty as "Hitsugi," literally a "light-succession" or "sun-succession." Holtom interprets the phenomena as a "totemistic conception of human origin and relationship." Would he hold to this interpretation if he had considered the possibilities of diffusion, or if he had taken into account the analyses of

totemism set forth by Lowie and Goldenweiser? There is an uncritical, though reserved, acceptance of Frazer's theory of magic as false association of cause and effect. Nevertheless, the interpretation of the Regalia, as objects containing supernatural power, is sound:

> Something must be found outlasting the brief lives of individual men, whereby the *mana* . . . . of the dynasty may be safely carried across the break of death. For the solution of this great problem man has turned to the magical operation of the regalia (p. 10).

The modern function of the regalia is used to illustrate a theory previously endorsed in Holtom's writings:

> The history of the Japanese regalia also illustrates another important principle of human social evolution, namely, that objects and rites whose original functions are magical, become at more advanced cultural levels, the symbols of higher ethical ideas (p. 50).

Such processes have indeed occurred in many regions; still, one might hesitate before postulating a principle of human social evolution.

The descriptions of the three main parts of the cycle of Enthronement Ceremonies are excellent. The first, the Senso, is the accession, with transfer of the Regalia. The second, occurring later, is the Sokui-Rei, or Ascension of the Throne, adopted from the Chinese. The third, the Daijō-Sai or new-food festival, receives Holtom's major attention, as the core of the ancient Japanese ritual.

> In it are merged a primitive harvest festival, and survivals of the original Japanese Enthronement rites (p. 95).

Holtom thinks that the eight-legged table bearing a branch of the *sakaki* tree represents the original form of the Shintō shrine. This *himorogi* (illustrated on p. 98) is worshipped in the course of the Daijō-Sai. Comparative data on places of worship throughout Indonesia and Polynesia might illuminate this point, for so much of the Daijō-Sai is reminiscent of South Sea culture. There is a brief, clear description of the tortoise-shell divination as now practised; an equally good account of the tying of the Emperor's life cord to insure the presence at the ceremony of all four of his souls.

The meaning of the Daijō rites is found in the divine status of the Emperor. The Spirit of the Rice, essential to the nation's food supply, is magically transferred to the Emperor's person, for safe preservation in this most sacred of beings. This theory contrasts with Hocart's

interpretation of the relation between "Solar Kings" and the food supply.

Original contributions are embodied in Holtom's interpretations of the Daijō-Sai, and of the duplicate shrines used in that ceremony. Writing in the Jiji Shimpō (Tōkyō Daily Times), Dr. Genchi Katō of the Tōkyō Imperial University says;

> The author makes good use of the expositions of our historians and thereby avoids falling into conjecture, and at the same time out of his own original study he advances new interpretations of the Daijō-Sai and the nature of the Yuki and Suki shrines. . . . . Speaking from the standpoint of a Japanese I am grateful that Dr. Holtom has published this excellent book wherein our Enthronement Ceremonies are so well explained to foreign readers.

Holtom has skillfully oriented the ceremonies in the life of modern Japan:

> . . . . the Sokui-Rei and the Daijō-Sai . . . . are the two major movements of a great Imperial symphony (p. 141).

The book is printed on double pages, bound in old Japanese style, and contains among its illustrations three excellent specimens of block printing in color. Scholarly readers will miss bibliographies and index. The work well meets its purpose, the furnishing of a guide for the more discriminating, scientifically-minded visitors to the Enthronement festivities.

DOUGLAS G. HARING

Papers on the Ethnology and Archaeology of the Malay Peninsula. IVOR H. N. EVANS. (Cambridge University Press, 1927.)

This small volume consists of papers on the pagan races of Malaya, on Malay beliefs, on Malay technology, and on some of the antiquities of the peninsula. Mr. Evans is in the custom of republishing his technical papers in book form. The present volume consists of papers published since the appearance of his very valuable book, *Studies in Religion, Folk-lore and Custom in British North Borneo and the Malay Peninsula.*

P. Schebesta has recently renewed our interest in the Semang of the Malay peninsula by the technical and popular publication of the results of his field work. Unfortunately this author has neglected to make even an elementary comparison of the Semang culture with those of their neighbors, the Sakai and Jakun. This gap can to a great extent be remedied by a perusal of the two volumes by Mr. Evans. It appears that the *hala* or medicine men, the *cenoi*, their

guardian spirits who possess them, the *pano* hut, where the *hala* hold their séances, and the ability of the *hala* to turn into tigers, are all ideas common likewise to the Sakai, and probably taken from them. Even the idea of a thunder god who demands blood sacrifice at the time of a storm, is common to both peoples.

It is very difficult to say just what are the aboriginal customs of the Semang. Mr. Evans lists the following customs and ideas as characteristic of the Semang:

(1) That a bird-soul animates the foetus in pregnant women.
(2) That children are named from the kinds of trees near which they were born, or from the nearest stream.
(3) That dart-quivers are decorated with magical patterns which by sympathy render the game tame. (P. 143).

The first point still remains uncertain, since it was not confirmed by Schebesta. Schebesta claims that the idea is of Malay origin. (Bei den Urwaldzwergen von Malaya, p. 96. Leipzig, 1927.) The third point is probably ancient Malayan, and not Negrito. The arrow quivers of Mentawei have also magical bead designs which, I was told, are for the purpose of attracting the game.

E. M. Loeb

AFRICA

Some Nigerian Fertility Cults. P. Amaury Talbot. (London: Oxford University Press, 1927.)

With this little book, the contents of which concern the fertility rites and practices of the Ibo and Ijaw tribes of southern Nigeria, Mr. Talbot again places ethnology under his debt. For in it he gives us a careful and detailed account of the ceremonies which go to celebrate the importance of the great Earth-Goddess, Ale, the goddess of fertility who is of such moment in the lives of these people. Although the subject is one that has been touched upon in his massive *Southern Nigeria*, it is nowhere treated with the detail which is accorded it here. The facts recorded were gathered by Mr. Talbot in the course of his duties as district commissioner in 1914, when he had to travel extensively and when, as this book testifies, he made good use of his opportunities.

As in *Southern Nigeria*, Mr. Talbot is prone to ascribe perhaps too great an influence to the Egyptian civilization, and to read universal implications into the ceremonies he describes, as his references to Greek mythology indicate. Aside from that, however, the actual data contained in his book are of value for the light they throw on

the processes of religion and of sympathetic magic among the natives of Nigeria. Whether or not with this cult of the Earth Mother and the Sky Father

> by whose fecundative showers her fruition is brought about, (and) of the kindly ancestors, whose spirits watch over their descendants and aid in the sending of rich harvests,—lastly, and most intimately of all, by sympathetic magic through that mysterious link thought to lie between the generative organs, both male and female, and the fruitfulness of the animal and vegetable kingdoms—the innermost workings of primitive minds may, in a measure, be reached at last

is something open to question. But that the material he gives us is suggestive in the extreme in view of the theoretical vistas it spreads before us cannot be denied.

He begins his account with the story of the great drum of Ihie, one like that destroyed by the Resident as punishment for the natives having sacrificed government runners to it shortly before he observed this one. This drum was carefully carved, and on it, besides the great serpent, symbols of the crescent moon, of a Juju horn, and of what was either a double-headed axe or an Ibo musical instrument, was an object simultaneously interpreted as a tortoise and as a representation of "the labia majora, with the clitoris showing between." Although there was some disagreement among the natives about this, it seemed evident that, in any event, to the natives

> the tortoise herself symbolizes the feminine generative organs, just as the serpent is well known to typify the phallus.

And here, Mr. Talbot thinks, he finds a clue to the puzzling presence of the impaled tortoise which is to be seen in front of most Jujus, and adds that

> although the snake is recognized by anthropologists as the phallic emblem, no widespread feminine symbol of like significance appears to have been known here hitherto.

With this clue to go on, Mr. Talbot began to find more and more evidence of the importance of the tortoise in this connection. In the Mbara house at Obogwe, which is built in two sections, one dedicated to the Thunder God and the other to his spouse the Earth Goddess, the serpent was found in the shrine of the male deity, but the tortoise alone in that of the female. If we are unwilling to go with Mr. Talbot in his extension of his hypothesis to the importance of the tortoise in West African folklore for its cunning and its final supremacy over

the other animals, we must at the very least grant him a stimulating suggestion.

He then proceeds to discuss the Mbari houses, shrines dedicated to these two deities. That the goddess of Earth is a symbol of the utmost importance to the people cannot be doubted. She stands for the satisfaction of the two great instinctive needs, food and reproduction. And it is not without interest, as the author tells us at some length, that in all the shrines figures are found depicting "license in the most blatant form"; that is, figures depicting the violation of the four principal sex taboos that no native would dare violate. In some of the houses, again, there are representations of humans performing sexual acts of a pathological nature.

After a consideration of the relationship between the Earth Goddess and the Sky God who is so jealous of his domain that "it is forbidden to a woman to climb to any height," and who

> often sends his lightning to strike tall trees or hill tops because he is jealous of all things which seek to raise themselves near to his kingdom,

the author proceeds to a further consideration of the manifestations of the fertility cult. That the phallic cult is very strong is evident from the information given. The Ibudu, or representations of the genital organs, are to be found everywhere, and stand for both the male and female, the latter being bell-shaped, with the coiffure denoted which only a woman who has borne a child may wear. They vary in shape, but that they are greatly potent is shown by the accounts of the manner in which the girl about to be married must ceremonially partake of the potency of the Ibudu so that it will grant fruitfulness to her and let her have "many piccans." In the western part of the district over which Mr. Talbot was placed at the time, the cult takes on rites which are an extension of those mentioned above. Here an Eku, or representation of the phallus, is erected every year by each girl who is not yet married but has reached puberty. Failure to do so would result in infertility. These pillars may be plain, or decorated in bright colors, and they are also thought analogous to the formations of hard clay to be found in the bottom of the large ant-hills, which are also regarded as potent in making for fertility.

We have further accounts in the last two chapters showing how this passion for fertility dominates the ceremonial life of these people. The yams must be planted at certain times, and the greatest yam is kept to insure the magical reproduction and success of the

rest of the crop. The ceremonies which go with the seasons of harvest and planting are described, and the extent to which sympathetic magic plays a part is made highly apparent. The account of the ceremonial wrestling, where the wrestlers must finish their combat quickly lest they become tired and thus mar the power of Mother Earth to propagate is only one facet of this aspect of the matter. The strict taboos on sexual contact anywhere except in a town, the ceremonies which must be undergone before a town can be declared to exist in what was the bush, bring out these points, while the importance of the ancestors, so manifest in all of Africa, is shown finally to have its close connection with the worship of Ale.

Mr. Talbot has given us material of which there is relatively little from Africa. It should be of value, however, not only to the Africanist, but to all those interested in the psychological processes of association between the functions of the organs of sex and reproduction and the symbolic representations which are given to them, and the manner in which the preoccupation with the maintenance of the food supply and of the tribe through reproduction by the earth and by man is interrelated with the other aspects of social life.

MELVILLE J. HERSKOVITS

The Bantu Tribes of South Africa, Reproductions of Photographic Studies. A. M. DUGGAN-CRONIN. Vol. 1, Section 1, Plates 1–20, *The Bavenda*, with an Introductory Article on the Bavenda and Descriptive Notes on the Plates by G. P. LESTRADE, M. A. (Cambridge: Deighton, Bell & Co., Ltd. Kimberly: Alexander McGregor Memorial Museum, 1928.)

This volume is the first of a projected series of photographic studies dealing with the various Bantu-speaking tribes of South Africa. The origin, history, and culture of the Bavenda are briefly but adequately described in an introductory chapter. The sections dealing with native social and political organization and with their ideas of justice and forms of legal procedure are unusually clear and concise and contain much information of general interest. An excellent Bavenda bibliography is also given. The twenty plates illustrate native houses, costumes, industries, dances, and ceremonies together with a fine series of portrait studies showing the various physical types. The whole forms a valuable record of the rapidly diasppearing native culture.

R. LINTON

OCEANIA

Polynesian Religion. E. S. CRAIGHILL HANDY. (Bernice P. Bishop Museum, Bulletin 34. Pp. 342. Honolulu, 1927.)

It is more than a century and a half since the study of Polynesian ethnology began. Indeed the very beginnings lie earlier still in the observations, usually meager, of the Spanish and Dutch explorers. Incomparably greatest of the explorers is Cook, in the accounts of whose voyages is to be found a great amount of first class material. Following the explorers there came a generation of missionaries and traders typified by Orsmond, Ellis, and Moerenhout, after whom, for half a century, there are hardly any notable names except the dictionary makers. A new era dawned with Emerson and Fornander in Hawaii, and a group in New Zealand, including Williams, Tregear, Percy Smith, and Elsdon Best, the last-named the greatest field worker the Pacific has seen. Lineal descendants of these New Zealanders are Fox, of San Cristoval; Jenness, whose work began in Melanesia but has since moved to the American field; Te Rangi Hiroa (P. H. Buck); and others— two among them field workers at the present time in Melanesia. On the Hawaiian side is a notable group—Stokes, Emory, Linton, the two Handys, Miss Helen Roberts, Dr. Margaret Mead, Loeb, Sullivan, Gifford, andMcKern. They hail, with one exception, from the universities of the United States, and have been drawn into the Polynesian field through the agency of the Bishop Museum. They have worked systematically in all the more important Polynesian groups with the result that the main problems of Polynesian ethnology are now emerging.

Dr. Handy's book on Polynesian religion is the first of the general works of the American group: indeed it has had only two predecessors in its class in the whole field—Tregear's *Maori-Polynesian Comparative Dictionary* and Williamson's *Social and Political Systems of Central Polynesia.* Handy spent three years at Harvard working over the literature relating to Polynesia and then five years in the field in the Marquesas and Tahiti, with briefer contacts with native life in Hawaii and Samoa. His book is a great achievement, laying a broad foundation for all future work in its field. His opening section deals with the philosophy of Polynesian religion. This is followed by sections on deities, on modes of worship, on rites, and finally on "Ethnographic Considerations." To readers other than specialists in the Polynesian field, the last will probably prove the most interesting section. Despite

a crowd of interesting problems arising earlier in the book, the present review must confine itself to Handy's broad conclusions. In his view the analysis of Polynesian religions in the various groups reveals their composite nature. There are, first, those elements that belong to an ancient foundational system. These are distinguished by their fundamental nature in relation to Polynesian culture as a whole, their universal occurrence, their uniformity, and their existence in more clear-cut form on the periphery of the area, i.e., in Hawaii, the Marquesas, and New Zealand. These elements Handy terms Indo-Polynesian, since their sources are to be found in regions long dominated by Indic influence.

Second in importance is a group of elements predominant in that part of Polynesia,where Tangaloa was regarded as Supreme Being and divine ancestor, i.e., Samoa, Tonga, and the Society islands. These elements are regarded as a recent cultural intrusion. In contrast to the Indo-Polynesian elements they are highly variable and are least pronounced in the islands on the periphery.

In the third group of elements are other, later, intrusions and borrowings of secondary importance from neighboring cultural areas—Melanesia and America.

There is nothing new or startling in Handy's derivation of elements in Polynesian religion from an Indic source, since such a source has often been suggested by students of Polynesian religion and culture. Such a derivation seems probable though there has not yet been a marshalling of facts numerous enough to constitute a demonstration. The element of startling novelty is evident, however, in Handy's second group, or rather in his derivation of this group from southern China. The river people in that region are called Tan-kah-lo and this name Handy equates with Tangalo or Tangaloa, supreme deity in Samoa, Tonga, and the Society group. The evidence in support of this identification is by no means convincing, but this should not prejudice the case, for the nature of the present work forbids the mustering of any large body of evidence on this particular point. The equation of Tan-kah-lo and Tangaloa is unconvincing, but the derivation of elements of Polynesian culture from south China is far from impossible or even improbable. There are a number of elements in the material culture of the American Northwest Coast, which seem to be allied to elements in Polynesian material culture, and if this alliance is real the common ancestor of both may well have been south Chinese.

Handy's derivation of Polynesian culture elements from America

would be equally startling had he not prepared his colleagues for such an alliance by an earlier paper on the point. The elements in question are the general and extensive use of stone in building temples, the cult of human sacrifice, and the importance of processions in ceremonials. Points of such generality are not likely to prove convincing to the majority of students.

Lest these criticisms should be thought to affect the essential merit of Dr. Handy's book the reviewer hastens to say that he would place it first in merit among general works on Polynesian culture. It will be constantly in the hands of all future students.

H. D. SKINNER

Ethnology of Polynesia and Micronesia. RALPH LINTON. (Field Museum of Natural History, Department of Anthropology Guide, part 6. Chicago, 1926.)

This little handbook of Polynesia and Micronesia is primarily intended for the use of visitors to the Field Museum, and thus, the emphasis is directed towards the material culture of the regions described. Because of the size and general nature of the handbook, however, it can doubtless be used to give the elementary student of anthropology a first view into the culture of Oceania.

Some slight corrections might be noted in the generalizations on the absence of traits in Polynesia. Thus Linton writes that the dog was present everywhere in Polynesia and Micronesia except Easter island (p. 30). He further states that pigs were present everywhere in Polynesia, except New Zealand and Easter island (p. 31). Again

> Nearly all the Polynesians drank kava, but it was not used in New Zealand or Easter Island (p. 48).

In correction I may state on my own authority that the dog was originally absent in Niue, and on the authority of Shand, that the dog was originally absent in the Chatham islands. The pig was originally absent in Niue, and, of course, likewise absent in the Chatham islands. According to the traditions of Niue, kava drinking was originally unknown to the island, and the present day natives do not partake of it. Kava drinking was unknown in the Chatham islands. It might also be added that the sweet potato, or kumara, was originally absent in both Niue and the Chatham islands.

The fact has recently been reiterated by Margaret Mead (AMERICAN ANTHROPOLOGIST, n.s., 30: 152, 1928) that the cultures of Niue

and the Chatham islands bear certain resemblances, viz., the absence of tattooing and circumcision, and the presence of canoe burial in both regions. The absence of so many important material culture traits in both Niue and the Chatham islands appears to me to lend support to my original contention that the natives of Niue represent an archaic branch of the Polynesian race, and the same statement might be made of the Chatham islands. Miss Mead is inclined to the opinion that the attenuated culture of both the Moriori and the people of Niue is due to early migrations having been made without the guidance of well-informed leaders. Yet even the polloi of Polynesia would have remembered to bring along the pig, dog, and kumara. (The absence of the kumara in the Chatham islands may be due to the cold climate.)

E. M. Loeb

MISCELLANEOUS

Folklore in the English and Scottish Popular Ballads. I. C. Wimberly. (Chicago: The University of Chicago Press, 1928, pp. xiii, 466.)

In this elaborate treatment of the folkore material in the popular ballads of England and Scotland the author gives us a very useful book which will be of great help both to ballad students and to folklorists. It would be impossible to enumerate here the many interesting instances of heathen lore in ballad poetry. I only wish to call special attention to the important chapter on the material ghost or the living corpse, a chapter in which this pre-animistic notion is shown to have been present in the popular ballads.

Nevertheless the numerous instances of heathen notions and practices do not prove that the ballads themselves reach back into an age which is purely heathen. They might be, and in fact they are, survivals in modern folklore and therefore they give no valid indication for the high antiquity of the ballads. The author argues in an opposite sense, but I am of the opinion that the popular beliefs and customs, although they find their counterparts in savage thought and practice, do not give sufficient proof for believing that the ballads reach farther back than medieval literature.

There are some further objections of a more specific sort that I should like to make. It sometimes happens that the author adduces no sufficient evidence for primitive customs in ballad poetry. What he says about totemism (pp. 66 ff.) and the couvade (p. 124) is not convincing at all. The practice, mentioned in ballad poetry, of laying

a green sod on the breast or some other part of the corpse is not sufficiently explained by reference to the strange connection between green color and death. The practice seems to me to be the result of the widespread conception that the dead members of the clan or family are intimately connected with the fertility of the soil. Furthermore, I think it highly improbable that the flower-burdens are to be considered as survivals of magic incantations. A stanza like the following in "Lady Isabel and the Elf-knight" (Child No. 4):

A 1 Fair lady Isabel sits in her bower sewing,
Aye as the gowans grow gay
There she heard an elf-knight blawing his horn.
The first morning in May

clearly points in another direction. We find here a lyrical song of the conventional type (describing the blessings of lovely May), which has developed into a very characteristic burden, equally well known in Scandinavian balladry. The rose, thyme, rowan, and broom are not magic at all, but simply denote the delightful children of spring.

The blood-smelling giants are no traditional representatives of actual cannibals. They clearly belong to the Otherworld. In Indonesian folk-tales the ghosts are made aware of any human intruder by the strong and disagreeable smell which emanates from his body. Hence the giant is not the successor of an aboriginal cannibal, but he is a terrible and magnified "draugr." The commingling of otherworld creatures, ghosts, fairies, dwarfs, and witches, is another striking example of the relatively young stage of development found in the heathen lore of the ballads.

JAN DE VRIES

LEIDEN, HOLLAND

Von Seele und Antlitz der Rassen und Völker, Einführung in die vergleichende Ausdrucksforschung. LUDWIG FERDINAND CLAUSZ. (München: J. F. Lehmanns Verlag, 1929. Paper 10 marks, bound 13 M.)

This is not Clausz's first book in the field. He has written three others[1] besides several articles, but nowhere has he made his purpose and method as clear as in this.

[1] Die nordische Seele. Artung, Prägung, Ausdruck. Max Niemeyer, Halle. 1923. Rasse und Seele, eine Einführung in die Gegenwart. J. F. Lehmanns Verlag, München. 1926. Fremde Schönheit, eine Betrachtung seelischer Stilgesetze. Niels Kampmann Verlag, Heidelberg. 1927.

Clausz does not believe that the usual methods of anthropologic measurements can determine the essential differences between races and peoples. He does not seem to object to anthropometry as such, but he conceives the essential differences to be not of form, but of manner.

Clausz differentiates between *Stil*, *Ausdruck*, and *Anlage*. *Stil* is that manner of reacting to the outer world that underlies all of an individual's actions. *Ausdruck* is the expression which accompanies the action, and the physiological correlate of *Stil*. *Anlage* is the relation of *Ausdruck* to *Stil*.

The *Stil* of a race or individual is permanent, fixed from birth to death; it is to him, consciously or unconsciously, the essential value of his life. The desire to mold the objective world to his ideals, the wish to impress others, the free surrender to feeling, consecration to inspiration, devotion to the immediate: each of these is a *Stil*, the ultimate factor that determines not what an individual does, but how he does it.

But this *Stil* can be studied only through its physical accompaniment, the *Ausdruck*. The *Ausdruck* depends on the physical form of the body and the way its parts move in conjunction with each other. To interpret it aright, it is necessary not only to observe but to experience the feelings accompanying it in the way they are originally felt. Thereby the investigator is compelled to live a long time, as Clausz has done, among the people he studies.

Anlage is the way the body is suited to the *Stil*. By no means does it always correspond. Therefore the expression is not always unmixed. Such expression will have something incomplete, unsatisfying, peculiar.

Of all these there are all sorts of combinations possible; Clausz discusses some of them.

The question arises: How does Clausz know that these *Stile* really exist? He does not attempt an *a priori* catalogue of possibilities, but, studying many individuals, he has come to know several *Stile* intimately. These he describes. He does not say how many there are or might be.

If we ask: How does he know that these *Stile* are original, essential, pervailing throughout the race?; his answer is experience. He has lived with the people he describes, felt with them, found their expressions corresponding to one or another essential manner, or to a mixture of manners. This is the weakest place in his theory: How

does he know that what he considers pure *Stil* is pure and the other mixed? May the mixed *Stil* not be pure from another point of view or the pure *Stil* even be other?

But the book—none of his books—is concerned primarily with the theory. Clausz feels that he is evolving a method, not that he has already perfected it; and he gives us the benefit of his work as he goes along. Description and theory go hand in hand. We may hope that in the not too distant future he may feel sure enough of himself to give us in detail his principles and justifications as well as the individual steps of his method, that we, too, may learn to apply it and be delivered of the suspicion that perhaps the results can be attained only by a certain intuition.

This particular book, as well as *Rasse und Seele* and *Fremde Schönheit*, contains many illustrations, which will make the method seem more apt and the results more tangible than this dry review.

R. E. SALESKI

The Old Savage in the New Civilization. RAYMOND B. FOSDICK. (New York: Doubleday, Doran & Co., Inc., 1928.)

In a series of addresses delivered before college and university audiences, and now issued in book form, the author raises a number of pertinent questions. If these cannot be answered categorically, they at least challenge the serious attention of the thinking world.

> Humanity stands today in a position of unique peril. An unanswered question is written across the future. Is man to be the master of the civilization he has created, or is he to be its victim? Can he control the forces which he himself has let loose? Will this intricate machinery which he has built up and this vast body of knowledge which he has appropriated be the servant of the race, or will it be a Frankenstein monster that will slay its own maker?

In brief, what is going to happen to man unchanged in a changing world?

This is an age of standardization not only in material things but also in things intellectual and spiritual. How far is it possible to combine the uniformity and large-scale industrial operations with the diversity, originality, and spontaneity, which are the supreme contributions of the individual to society? The author comes to the conclusion that in the realm of ideas standardization means death. Variations from type are the biological steps by which the race advances; these society cannot afford to stamp out. It is through

variations from type, such for example as "a St. Francis, a Goethe, or a Darwin, that we have any civilization at all."

The very leisure which our machine civilization engenders may be a source of danger.

> Leisure does not automatically produce culture. It may create an opportunity for culture, but it does not guarantee that the opportunity will be developed. And yet sheer idleness—browsing without any particular purpose from one lazy interest to another—may be the means by which we keep the lid from blowing off our high-power civilization.

Machine civilization has led to the unity of civilization.

> Into this delicately adjusted mechanism of our modern life comes the savage. The transformation that has revolutionized his world has scarcely touched him.

The organic unity of civilization renders it more easily susceptible to injury, since the whole is as vulnerable as its exposed and weakest parts. What might happen should the old savage stalk into the picture "armed no longer with bows and arrows, but with TNT?"

Under these conditions, no nation can any longer live unto itself. In this new unity of the human race, there are no chosen people nor is there special salvation. There are no longer two worlds—one of Greeks, and another of Barbarians. Today "nations are roped like Alpine climbers crossing a glacier; they survive or perish together."

Science is fast creating not only useful machinery but also tools that may be turned into deadly weapons. Is there intelligence enough to convert destructive into constructive tendencies? "What use will the old savage make of his new civilization?"

For the reviewer to claim the necessary knowledge needed to answer questions which the author frankly leaves unanswered would be presumptuous. He can, however, and should, and in this case does, acknowledge the fact that the author's work has set him thinking and is well calculated to do as much for other readers.

GEORGE GRANT MACCURDY

The Folklore of the Teeth. LEO KANNER. (New York: The Macmillan Company, 1928. 316 pp., 17 figs.)

Most of the material in this book was published serially in *Dental Cosmos* two to three years ago. The author, a surgeon, makes a simple

presentation of considerable data concerning the teeth, with no bias toward theory, and with no attempt at interpretation; although he did make a rather unconvincing effort in that line about a year ago in *The Psychoanalytic Review*.

There is a useful place for a book of this sort, which is written primarily for the dentist and the layman who is interested in the oddities of folkways and in superstitious beliefs, especially as they occur in Europe and Asia. Chapters are devoted to such matters as the cutting of the first tooth, disposing of the first cast tooth, causes and cures for toothache, the use of plant and animal products as remedies, the filing, extraction, and staining of teeth, and the relief of toothache by charms and by intervention of holy persons. One chapter that might be of especial interest to anthropologists is the one devoted to to the primitive use of toothbrush and toothpick.

What seems to be an interesting antithesis in evaluation of data, develops in that Dr. Kanner is so little concerned with dreams about losing a tooth, that he devotes a single paragraph to the subject on the next to the last page, whereas, Dr. C. G. Seligmann in an address before the Anthropological Institute some four years ago, showed that he would make that very subject the opening chapter in any treatise he might write on the folklore of the teeth. The concept of "thunder-teeth" as found in Malaysia, in which Elliot Smith and W. J. Perry have shown some interest, receives no mention. Tooth evulsion in Australia, a problem that Frazer has endeavored to solve, is dismissed with a few paragraphs. And again, the use of teeth as money, as adzes, and the subject of the haggletoothed gods of Mexico receive scant mention, if any at all.

This is because very few data have been derived from anthropological books and papers, almost none from American works; nor have folklore journals been consulted exhaustively. More German works are referred to than English, and many of the former would have been overlooked, probably, had anyone but a physician and surgeon compiled the material. A bibliography is included, but specific book titles and page numbers are rarely given in the text, so that one can hardly employ the work in a reference capacity. Dr. Kanner says that he only looks upon his production as a skeleton for a more comprehensive study in which he hopes many will engage.

H. S. DARLINGTON

Dränkta länder och kulturer. [Drowned lands and cultures.] WILHELM RAMSAY. (Soc. Sci. Fennica, Årsbok lv, 1925, No. 2, 15 pp., 8 figs. Helsingfors, 1926.)

This paper deals with two important consequences of the eustatic changes of sea level connected with the waxing and waning of the Pleistocene ice sheets. During the glaciations, when the ocean level was low, there occurred more or less extensive land areas outside the modern coasts. And since, during the glaciations more than at other ages, the coastal areas may have offered the most favorable living conditions of man, they are eventually the original homes of cultures appearing during subsequent interglacial and postglacial epochs. As example is given the Persian gulf and the Sumerian culture.

During the interglacial and postglacial epochs sea level rose, submerging the edges of the continents to amounts corresponding to the reduction of the ice sheets and glaciers. The shore lines formed at the limits of the transgressions are contemporaneous on all coasts; and the relation of the prehistoric living sites to these shore lines offers perhaps the best means of correlation between archaeological epochs in different parts of the world. As example is taken the postglacial eustatic transgression and the cultures in northern Europe.

ERNST ANTEVS

SOME NEW PUBLICATIONS

Allier, Raoul. The Mind of the Savage. (London: Bell, 1928. 15s. New York: Harcourt)

Barton, George A. The Historical Results of Recent Exploration in Palestine and Iraq. (Amer. Historical Review, 33: 759–783, 1928.)

Baudin, Louis. L'Empire socialiste des Inka. (Travaux et Mémoires de L'Institut d'Ethnologie [Univ. Paris], 5: 1–283, 1928.)

Begouen (Comte) et Begouen, Louis. Découvertes nouvelles dans la caverne des Trois-Frères (Ariège). (Revue anthropologique, 38: 358–364, 1928.)

Bégouen (Comte). Deux Bambous pyrogravés. Modèles pour tatouage des Iles Marquises, conservés au Musée d'Histoire Naturelle de Toulouse (Collection Roquemaurel) et au Musée de Brive. (Bulletin de la Société d'Histoire Naturelle de Toulouse, Tome 57, 1928.)

Bey, Noureddin, Bey, Nechet Omer, Dr. Mouchet, Bey, Sureya. Craniologie des Turcs. (Revue anthropologique, 38: 321–323, 1928.)

Bleek, D. F. Comparative Vocabularies of Bushman Languages. (Cambridge Press. 6s.)

Blom, Frans. La Importancia de las Investigaciones Arqueológicas en la América Latina. (Nueva Patria, 1: 7–8, 1929.)

Boas, F. Anthropology and Modern Life. (New Jersey: New York W. W. Norton & Co. 1928. $3.00.)

Breuil, Abbé Henri *and* Burkitt, M. C. Rock Paintings of Southern Andalusia. A Description of a Neolithic and Copper Age Art Group. (Oxford Press, 1928. 63s.)

Bryk, Felix. Neger-Eros; Ethnologische Studien über das Sexualleben bei Negern. (Berlin: A. Marcus & E. Weber, 1928. 146 pp., 85 ills.)

Bushnell, David I., Jr. Friedrich Kurz, Artist-Explorer. (Smith. Rept. for 1927, Publ. 2950: 507–527, 1928.)

Butler, C. S. Primitive Syphilis. (United States Naval Medical Bulletin, v. 26, no. 3, 1928.)

Caso, Alfonso. Las Estelas Zapotecas. (Publ. de la Secretaria de Educacion Publica, 1928. Mexico.)

Carthaus, Emil. Auf der Suche nach dem Pithekanthropus, dem "Affenmenschen" von Java. (Reclam Philipp jun. Leipzig, n.d., pp. 72; gehefted 40 Pf.; gebunden 80 Pf.)

Chi-Chao, Liang. Archeology in China. (Smith. Rept. for 1927, Publ. 2947: 453–466, 1928.)

Collins, W. H. The National Museum of Canada. (Canada: Dept. of Mines, Bull. 50: 32–70, 1928.)

Crane, Leo. Desert Drums: The Pueblo Indians of New Mexico, 1540–1928. (New Jersey: Explorers' Book Service, 1928. 50 ills. $5.00.)

Davidson, D. S. Decorative Art of the Têtes de Boule of Quebec. (Indian Notes and Monographs, 10: 85–113, 1928.)

Davidson, D. S. Family Hunting Territories in Northwestern North America. (Indian Notes and Monographs, no. 46: 1–34, 1928.)

Davidson, D. S. Family Hunting Territories of the Tribes of Tierra del Fuego. (Indian Notes, 5: 395–410, 1928.)

Dawson, Christopher. The Age of the Gods. (Boston: Houghton Mifflin Co., 1928. 446 pp. $5.00.)

Deserontyon, John. A Mohawk Form of Ritual of Condolence. (Translated, with an Introduction by J. N. B. Hewitt.) (Indian Notes and Monographs, 10: 61–84, 1928.)

Dickey, Lyle A. String Figures from Hawaii. (Bernice P. Bishop Mus., Bull. 54: 1–170, 1928.)

Durlach, Theresa M. The Relationship Systems of the Tlingit, Haida, and Tsimshian. (Publ. Am. Ethn. Soc. of New York, 11: 1–177, 1928.)

Ellis, T. P. Welsh Tribal Law and Custom in the Middle Ages. (2 vols., Oxford: Clarendon Press, 1926, pp. xiv, 456, 460. £4.)

Emory, Kenneth P. Archaeology of Nihoa and Necker Islands. (Bernice P. Bishop Mus., Bull. 53: 1–123, 1928.)

Firth, Raymond. Wealth and Work of the Maori. (London: Kegan Paul, Publishers, 1928. 25s.)

Gann, Thomas. More Maya Discoveries. (London: Duckworth, Publishers, 1928. 21s.)

Gann, Thomas. Discoveries and Adventures in Central America. (London: Duckworth, 1928. 21s.)

Gilmore, Melvin R. The Making of a New Head Chief by the Arikara. (Indian Notes, 5: 411–418, 1928.)

Gilmore, Melvin R. Arikara Account of the Origin of Tobacco and Catching of Eagles. (Indian Notes, 6: 26–32, 1929.)

Gilmore, Melvin R. The Dakota Ceremony of Hunká. (Indian Notes, 6: 75–78, 1929.)

Greeley, A. W. The Polar Regions in the 20th Century. (New Jersey: Explorers' Book Service, 1928. $4.00.)

Gsell, Stéphane. Histoire Ancienne de l'Afrique du Nord. Tome V. Les Royaumes Indigènes: Organisation Sociale, Politique, et Économique. Tome VI. Les Royaumes Indigènes: Vie Materielle, Intellectuelle, et Morale. (Paris: Hachette, 1927. Pp. 297, 302, 45 fr. each.)

Guha, B. S. Some Anthropological Problems in India. (Man in India, 8: 146–167, 1928.)

Haeberlin, H. K., Teit, James A., *and* Roberts, Helen H. Coiled Basketry in British Columbia and Surrounding Region. (B.A.E., Ann. Rept. 41: 119–484 [1919–1924], 1928.)

Hafen, LeRoy. The Overland Mail 1849–1846. (Cleveland: Arthur H. Clark Co., 1928. $6.00.)

Harrington, M. R. Old Sauk and Fox Beaded Garters. (Indian Notes and Monographs, 10: 37–44, 1928.)

Harrington, M. R. A Sacred Warclub of the Oto. (Indian Notes and Monographs, 10: 23–30, 1928.)

Harrington, M. R. A Bird-quill Belt of the Sauk and Fox. (Indian Notes and Monographs, 10: 45–52, 1928.)

Hebard, Grace Raymond *and* Brininstool, E. A. The Bozeman Trail. (Cleveland: Arthur H. Clark Co., 1928. $12.50.)

Holmes, S. J. The Resistant Ectoderm of the Negro. (Am. Jour. Phys. Anthr., 12: 139–153, 1928.)

Holmes, S. J. Will the Negro Survive in the North? (The Scientific Monthly, 27: 557–561, 1928.)

Holmes, S. J. Age at Parenthood, Order of Birth, and Parental Longevity in Relation to the Longevity of Offspring. (Univ. Calif. Publ. Zool., 31: 359–375, 1928.)

Hrdlicka, Ales. The Origin and Antiquity of the American Indian. (Smith. Rept. for 1923 [revised edition], publ. 2778: 481–494, 1928.)

Hrdlicka, Ales. The Evidence Bearing on Man's Evolution. (Smith. Rept. for 1927, Publ. 2945: 417–432, 1928.)

Imbelloni, J. Einige konkrete Beweise für die außerkontinentalen Beziehungen der Indianer Amerikas. (Mitteilungen der Anthropologischen Gesellschaft in Wien, 58: 301–331, 1928.)

Jenness, D. Archaeological Investigations in Bering Strait. (Canada: Dept. of Mines, Bull. 50: 71–80, 1928.)

Kendrick, T. D. The Archaeology of the Channel Islands. (Methuen, Publishers, 1928. 25s.)

Kirk, Edwin. Bathmopterus, a New Fossil Gasteropod Genus from the Silurian of Alaska. (Proc. U. S. National Mus., 74: 1–4, 1928.)

Krieger, Herbert. Indian Villages of Southeast Alaska. (Smith. Rept. for 1927, Publ. 2948: 467–494, 1928.)

Laufer, Berthold. The Prehistory of Aviation. (Field Mus. Nat. Hist., Publ. 253: 1–96, 1928.)

Leblanc, Dr. Les Touareg, ethnographie physique et anthropométrie (mission du Hoggar, 1928). (Revue anthropologique, 38: 331–357, 1928.)

Lehmann-Nitsche, R. Coricancha. (Revista del Museo de La Plata, 31: 1–260, 1928.)

Leigh, R. W. Dental Pathology of Aboriginal California. (Univ. Calif. Publ. Am. Arch. Ethn., 23: 399–440, 1928.)

Lévy-Bruhl, Lucien. The "Soul" of the Primitive. (Allen and Unwin, 1928. 12s 6d.)

Lothrop, S. K. Santiago Atitlan, Guatemala. (Indian Notes, 5: 370–394, 1928.)

Lothrop, S. K. Further Notes on Indian Ceremonies in Guatemala. (Indian Notes, 6: 1–25, 1929.)

Lotsy, J. P. *and* Goddijn, W. A. Voyages of Exploration to Judge of the Bearing of Hybridization upon Evolution. I. South Africa. (The Hague: Martinus Nijhoff, Publisher, 1928. 35 guilders.)

Lynd, Robert S. *and* Helen Merrell. Middletown. A Study in Contemporary American Culture (foreword by Clark Wissler). (New York; Harcourt, Brace and Co., 1928. $5.00.)

Macalister, R. A. S. The Archaeology of Ireland. (London: Methuen.)

Mahalanobis, P. C. A Statistical Study of the Chinese Head. (Man in India, 8: 107–122, 1928.)

Martin, Paul S. The 1928 Archaeological Expedition of the State Historical Society of Colorado. (The Colorado Magazine, 6: 1–35, 1929.)

Mason, Gregory. Pottery and Other Artifacts from Caves in British Honduras and Guatemala. (Indian Notes and Monographs, no. 47: 1–45, 1928.)

Maspero, Henri. The Origins of the Chinese Civilization. (Smith. Rept. for 1927, Publ. 2946: 433–452, 1928.)

Mathiassen, Therkel. Material Culture of the Iglulik Eskimos. (Rept. Fifth Thule Expedition 1921–1924 [Gyldendalske Boghandel], 6: 1–242, 1928.)

Mathiassen, Therkel. Some Specimens from the Bering Sea Culture. (Indian Notes, 6: 33–55, 1929.)

McKern, W. C. The Neale and McClaughry Mound Groups. (Bull. Public Mus. City of Milwaukee, 3: 213–416, 1928.)

Mehta, S. S. Laws of Eugenics and the Institution of Marriage amongst Hindus. (Man in India, 8: 168–177, 1928.)

Miles, W. R. Human Body-Weight: I. Correlations Between Body Widths and Other Physical Measurements on Young Men. (Science, n.s., 68: 382–386, 1928.)

Miller, Gerrit S. Some Elements of Sexual Behavior in Primates and their possible Influence on the Beginnings of Human Social Development. (Jour. of Mammalogy, 9: 273–293, 1928.)

de Morgan, Jacques. La Préhistoire Orientale. (3 vols., Paris: Geuthner, 1925–27, pp. xxxv, 334; vi, 426; vi, 436. 300 fr.)

Morris, Earl H. Notes on Excavations in the Aztec Ruin. (Anthr. Pap., Am. Mus. Nat. Hist., 26: 267–421, 1928.)

Myer, William Edward. Two Prehistoric Villages in Middle Tennessee. (B.A.E., Ann. Rept., 41: 485–614 [1919–1924], 1928.)

Nielsen, Ditlef (editor). Handbuch der Altarabischen Altertumskunde. Band I. Die Altarabische Kultur. (Copenhagen: Arnold Busck, 1927, pp. viii, 272.)

Oetteking, Bruno. Primitive Traits in the American Aboriginal Population. (Institut International d'Anthropologie, III Session Amsterdam [Paris: E. Nourry], 1928.)

Oetteking, Bruno. Morphological and Metrical Variation in Skulls from San Miguel Island, California. II. The Foramen Magnum: Shape, Size, Correlations. (Indian Notes and Monographs, no. 45: 1–54, 1928.)

Parvan, Vasile. Dacia: Recherches et Découvertes Archéologiques en Roumanie. Publiée sous la direction de Vasile Parvan. Tome I, 1924; tome II, 1925. (Bucharest: Cultura Nationala, 1927, pp. viii, 368; viii, 429.)

Peake, Harold. The Origins of Agriculture. (London: Ernest Benn, Ltd., Sixpenny Library.)

Pepper, George H. A Wooden Image from Kentucky. (Indian Notes and Monographs, 10: 53–60, 1928.)

Pepper, George H. A Stone Effigy Pipe from Kentucky. (Indian Notes and Monographs, 10: 3–22, 1928.)

Phillips, Paul C. (edited by). Forty Years on the Frontier as seen in the Journals and Reminiscences of Granville Stuart. (Cleveland: Arthur H. Clark Co., 1928. $12.50.)

Poisson, G. Les civilisations néolithiques et énéolithiques de la France. (Revue anthropologique, 38: 368–388, 1928.)

Puxley, W. L. The Magic Land of the Maya. (New Jersey: Explorers' Book Service, 1928. Ills. $4.00.)

Ramadas, G. Marriage Customs in South India. (Man in India, 8: 136–145, 1928.)

Renaud, E. B. Evolution of Population and Dwelling in the Indian Southwest. (Social Forces, 7: 263–270, 1928.)

Ritchie, William A. An Algonkian Village Site near Levanna, New York. (Research Records [Rochester Municipal Mus.], 1: 1–27, 1928.)

Rivet, P. Relations commerciales précolombiennes entre l'Océanie et l'Amérique. ("Anthropos" Administration: St. Gabriel-Mödling, 1928.)

Roy, Sarat Chandra. Oraon Religion and Customs. (Shambazar, Calcutta: K. M. Banerjee, 1928. Twelve Rupees.)

Saville, Marshall H. Astronomical Observations in Ancient Mexico. (Indian Notes, 6: 79–80, 1929.)

Saville, Marshall H. Shell Carvings from Colombia. (Indian Notes, 5: 357–363, 1928.)

Saville, Marshall H. Bibliographic Notes on the Shrinking of Human Heads in South America. (Indian Notes, 6: 56–74, 1929.)

Schebesta, Paul. Among the Forest Dwarfs of Malay. (Hutchinson, Publishers, 1928. 18s.)

Schwarz, E. H. L. The Kalahari and its Native Races. (Witherby, Publishers, 1928. 16s.)

Semple, Ellen Churchill. Ancient Mediterranean Agriculture. (Baltimore: Agricultural History, 2: 61–98, 129–156, 1928.)

Shtezner, V. A Journey to the Northeast of Mergen. (Review of the Manchuria Research Society, pp. 23–26, 1928.)

Skinner, Alanson. An Illinois Quilled Necklace. (Indian Notes and Monographs, 10: 31–36, 1928.)

Smith, H. I. Restoration of Totem Poles in British Columbia. (Canada: Dept. of Mines, Bull. 50: 81–84, 1928.)

Spinazzola, V. Le Arti Decorative in Pompei Nel Museo Nazionale di Napoli. (Plauen: C. F. Schulz & Co., 1928. 300 pls. $13.00.)

Stolpe, Hjalmar. Collected Essays in Ornamental Art. (Stockholm: Aftonbladets Tryckeri, 1927.)

Stolpe, Hjalmar. Collected Essays in Ornamental Art. Atlas. (Stockholm: Aftonbladets Tryckeri, 1927.)

Swanton, John R. The Interpretation of Aboriginal Mounds by Means of Creek Indian Customs. (Smith. Rept. for 1927, Publ. 2949: 495–506, 1928.)

Tessmann, Günter. Menschen ohne Gott; ein Besuch bei den Indianern des Ucayali. (Stuttgart: Strecker und Schröder, 1928. 224 pp., 14 M., cloth 18 M.)

Thomas, W. I. *and* Dorothy S. The Child in America. (New York: Alfred A. Knopf, 1928.)

Vestal, Stanley. Kit Carson, the Happy Warrior of the Old West. (New York: Houghton Mifflin Co., 1928. $3.50.)

Weller, Stuart. Paleontology and Human Relations. (Smith. Rept. for 1927, Publ. 2940: 309–319, 1928.)

Wildschut, William. Blackfoot Pipe Bundles. (Indian Notes, 5: 419–433, 1928.)

Wintemberg, W. J. Uren Prehistoric Village Site, Oxford County, Ontario. (National Museum of Canada, Bull. 51: 1–97, 1928.)

Work, Monroe N. A Bibliography of the Negro in Africa and America. (New York: H. W. Wilson Co., 1928(?) [17,000 references.] $12.00.)

Wright, A. R. English Folklore. (London: Ernest Benn, Ltd., 1928; Sixpenny Library No. 33.)

NEW ISSUES OF ANTHROPOLOGICAL JOURNALS

ANTHROPOS, 23: 749–1114, Heft, 5, 6, 1928.

Lehmann, Walter. Ergebnisse einer mit Unterstützung der Notgemeinschaft der Deutschen Wissenschaft in den Jahren 1925–1926 ausgeführten Forschungsreise nach Mexiko und Guatemala.—*Césard, R. P.* Proverbes et contes Haya.—*Lebzelter, Viktor.* Zur Geschichte der Bergdama.—*Nimuendajú, Kurt.* Wortliste der Sipaiya-Sprache.—*Champagne, P. Emery.* La religion des noirs du Nord de la Gold Coast.—*Walk, Leopold.* Initiationszeremonien und Pubertätsriten der südafrikanischen Stämme.—*Sandschijew, Garma.* Weltanschauung und Schamanismus der Alaren-Burjaten.—*Bosch, G. van den.* Quelques notes sur le nom et la notion de l'Etre Supreme et d'un dieu-vengeur chez les Balendu.—*Tauern, Odo D.* Beitrag zur Kenntnis der Sprachen und Dialekte von Seran.—*Rohlfs, G.* La Grecia italica.—*Vanoverbergh, Morice.* Notes on Iloko.

ANTIQUITY, 2: 385–527, December, 1928.

Vouga, Paul. The Oldest Swiss Lake-dwellings.—*Crawford, O. G. S.* Stone Cists.—*Navarro, J. U. de.* Massilia and Early Celtic Culture.—*Rice, D. Talbot.* The Monasteries of Mount Athos.—*Peake, Harold.* The Copper Mountain of Magau.—*Salter, H.* The Ford of Oxford.

ANTIQUITY, 3: 129–256, 1929.

Fox, Cyril. Dykes.—*Burkitt, M. C.* Rock Carvings in the Italian Alps.—*Raistrick, A.* and *Chapman, S. E.* The Lynchet Groups of Upper Wharfedale, Yorkshire.—*Wheeler, R. E. M.* Caistor, and a Comment.—*Hemp, W. J.* Three Hill Forts in Eastern Spain.—*Hawkes, Christopher.* The Roman Siege of Masada.

ANTIQUITY, 3: 257–368, 1929.

Collingwood, R. G. Town and Country in Roman Britain.—*Crawford, O. G. S.* The Giant of Cerne and other Hill-figures.—*Liddell, Dorothy M.* New Light on an Old Problem.—*Collingwood, W. G.* Arthur's Battles.—*Roe, Frank G.* The 'Wild Animal Path' Origin of Ancient Roads.—*Virolleaud, Ch.* The Syrian Town of Katna and the Kingdom of Mitanni.—*Heurtley, W. A.* Prehistoric Macedonia.—*Hutton, J. H.* Assam Megaliths.

DISCUSSION AND CORRESPONDENCE

The Flexibility of Methodology

Happily there are few authors who are able conscientiously to defend their writings in every detail after a lapse of four years. Such a defense would imply a want of progressive thought. Every author feels that his work could be improved if he were allowed a second edition. It is therefore in no spirit of complacent satisfaction that I defend the *History of Tattooing and its Significance.* The book was originally published in England, 1925, but the American edition did not appear until two years later. There has been time therefore to receive a large number of reviews, all of which, with one exception, have indicated that my critics have taken the trouble to read the introduction in order to ascertain the nature and purpose of the book. The title also suggests the fact that the social and psychological significance of body marking is the main theme.

Miss Mead's disparaging remarks (American Anthropologist, n.s., 31: 176, 1929) require a comment for two reasons. The more important of these is my critic's tacit assumption that there is one method of approach which is for every purpose superior to all others. I refer to the method which insists on consideration of a factor only in relation to every detail of its cultural setting. Such a method assumes the inadmissibility of comparing facts relating to the pubertal tattooing of Kabyle, Ainu, and Melanesian women. Generally speaking, the investigator who follows a strictly ethnological method is supposed to work in definitely restricted ethnological areas in which the inhabitants are racially and culturally comparable.

I admit that in taking a broad view along the lines of sociology and psychology I have been "hospitable to evidence from every area." The tattooing of girls of marriageable age is a social fact which in my opinion may be profitably and logically studied in southeastern New Guinea, Greenland, Yezo, and Paraguay. The fact that I have made comparisons of the pubertal tattooing in widely separated areas does not "show a scanty knowledge of the cultural patterns." With these I am no doubt as well acquainted as is my critic. Furthermore, due regard was paid to the cultural setting insofar as it had a bearing on the points in question. Cultural elements, locations,

periods, may differ, but there is a basic fact of tattooing whose social and psychological significance may be studied wherever it occurs. The broader the field, the better the general impression of the function of the factor.

Again, in my survey I have compared tattooing as an honorific mark used by Eskimo who take whales, a Koita man who takes a head, and an Omaha Indian who registers his war honors by tattooing his daughter. If the technique of tattooing varies in such a way that one adolescent girl is tattooed with an instrument of shark's teeth, another with bamboo splinters, and a third with a small adze, I do not feel that my psychological and sociological analysis is vitiated. If the body-marking process is significant in its implication of a definite social status by arrival at puberty or prowess in war, the assembling of illustrations from diverse cultural settings adds to, rather than detracts from, the philosophical interest. To say that because examples are chosen from points which are geographically and ethnologically remote, "The whole argument can be dismissed as worthless," is as arrogant as it is unscientific.

Fortunately there is no need to protest at length against the charge of a rambling discussion. The chapters and sub-headings are plainly printed and the subject matter is appropriately arranged under these headings. But, in spite of a systematizing of data, there is, as every writer knows, a difficulty in classifying certain borderline instances.

With regard to historical data, is Miss Mead able to furnish a date more remote than that certified for the skin of an Egyptian mummy? I refer to the exhibit photographed in the Royal College of Surgeons.[1] My detractor cannot claim that I have tried to hinge an argument on this instance which is mentioned in the chapter dealing with historical data. On the contrary I have made a critical examination of Professor Elliot Smith's theory. I have stated that against the theory of Egyptian origin there are important points which should be carefully weighed.[2]

Touching upon the exclusion of references which Miss Mead felt the need of incorporating, I plead, not ignorance of their existence, but the fact that they do not add a new *raison d'être* for the tattooing process. I should welcome evidence which proved some

[1] History of Tattooing, 320.

[2] Ibid., 334.

entirely new social and psychological reason for tattooing. Perhaps it is pertinent to add that the book is published, not through the courtesy of a learned society but as a publisher's risk. Fortunately the publisher's optimism has been justified, but a limitation was placed upon foot notes, bibliography, and pictures. I should have liked treble the number of illustrations in order to give further cogence to my remarks on the "naturalistic" and "geometrical" schools,—terms which seem to be somewhat derisively quoted by my critic.

I am well aware that I might now, after acquiring a fair general grasp of the subject as a background, attack the problem along ecological lines. My methods of dealing with the *History and Significance of Tattooing, Tribal Dancing and Social Development, or Origins of Education*, do not imply that I favour the sociological method as an instrument suitable for the investigation of every problem. In dealing with body-marking, dancing, and types of education through initiation ceremonies, an inquirer is probably dealing with three of the oldest and most important factors of human development, all of which are widely distributed among culture patterns of varied types. I feel convinced that in dealing with such basic factors there is scientific value in beginning with a generous philosophical, social, and psychological background. The supplementing of this line of thought by regional surveys is a separate thesis calling for a distinct technique. Before attempting to hack one's way through difficult and wooded country there is an advantage in surveying the contours from an adjacent hill.

When questioning the cohesion of research in ethnology, it is logical to ask whether there is any coördinating principle running through the inquiry. Let us suppose the classification of West Australian boomerangs, spear-throwers, churingas, and spears, into local groups. There then follows some speculation with regard to the reasons for this preservation of easily recognized local patterns. Social, psychological, and geographical facts may be adduced to explain the distribution. Thus far the study is one of ecology, for it is mainly concerned with the relation of an organism to environment. A natural extension of the inquiry would embrace other Australian group types. But, if the investigation turns to a comparison of Australian spear-throwers and boomerangs with similar types of weapons from remote areas, the character of the problem may have changed in principle. Instead of a coördinating social, geographical, or psychological factor the vindication for research may be a compara-

tive study of the mechanics and mathematics of the flight of missile weapons. Cultural setting is not indispensable.

The study of snake cults in Africa may begin with a careful regional survey. Soon the student will have recourse to Arabian and Iranian ethnology to help in explaining certain beliefs which prevail in the areas of Africa which have been subject to Semitic and Hamitic culture. A wider vision shows that far from the regions mentioned there are beliefs in rainbow snakes, fire-spitting serpents, and the snake as an emblem of fertility. All beliefs connected with serpents have, I think, a definite origin in the facts of herpetology. In other words, the research began with an ethnological method but ended with zoology as the unifying principle. Methodology logically depends on the antiquity and generality of a factor in relation to the viewpoint desired,

In conclusion it is only fair to Miss Mead to say, that after a vigorous two-page attack on my methodology, the task of knocking down the straw man of her own creation has proved wearisome. The review of my book concludes by saying that,

> The main service of the book rests upon the assemblage of a large body of illustrative material about the number of diverse social and religious concepts which may become associated with such an old and widely distributed practice as tattooing and its relatives, body painting and scarification.

In view of this admission, and taking into consideration the title, the introduction, and the general arrangement of my book, it is curious that so much critical acumen should have been devoted to an exposé of my supposed ignorance of certain facts and methods. These I did not employ for the adequate reason that they were not germane to my purpose.

WILFRID D. HAMBLY

THE INFLUENCE OF ANTHROPOLOGY ON SOCIOLOGY

There has been much talk and much writing in recent years about the influence of anthropology on sociology. Anthropologists have hoped, and with some right, that sociologists would help them put the results of their science, small as they yet are, into the stream of current thought. Certain sociologists, aligning themselves with the social anthropologists, have also looked forward to such a cooperation.

Anthropology may have become more popular in the last decade in the academic as well as in the lay world, but a recent survey[1] shows

[1] Hornell Hart, The History of Social Thought. Social Forces, 6: 190–196, 1927.

that so far as sociological textbooks and teaching is concerned anthropologists play a very insignificant rôle as yet. This survey, done in the socio-statistical manner by Professor Hornell Hart of Bryn Mawr, may come as a surprise to all of the fraternity, but it must come as a shock to the members of "The American School."

Before giving the results, let me tell first what Professor Hart and a group of his students did. Dr. Hart wanted to secure an American consensus on the relative importance of various contributions to the development of sociology. He says he is concerned with "social thought,"[2] but his exclusive interest is sociology, with the special aim of finding out what writers, prospective Ph.D.'s, should study for their examinations.

With this as his aim, he took the following as the bases for the statistics he got up: (1) the men discussed in the sociology courses at Wellesley and at the universities of London, Columbia, and Missouri; (2) those discussed in the different histories of sociology by Bogardus, Lichtenberger, and Small; and in Bliss's "New Encyclopedia of Social Reform"; (3) the writers referred to in the indices of Small's "General Sociology," Giddings' "Studies in the Theory of Human Society," Bushee's "Principles of Sociology," and Dealey's "Sociology," and in the books of sociology readings by Carver, Case, and Park and Burgess; (4) the works listed in the bibliographies on sociology in the *Encyclopedia Britannica* and the *New International Encyclopedia*.

Two points were given to a man listed in any course and one point for being in the encyclopedia bibliographies. For the other main sources names were put into two groups: those given major emphasis received two points, while those given minor emphasis received one point. Under this scheme the maximum possible score was thirty.

Forgetting the basis and method of the investigation, which were not conducive to a high score for anthropologists, how did anthropology fare at the hands of these sociologists? As the following list shows, no anthropologist is ranked very high:

Boas 4	Rivers 3
Frazier (sic) 4	Kroeber 2
Goldenweiser 3	Wissler 2
Lowie 3	E. B. Taylor (sic) 2

It may be said, of course, that these scores should not be taken too seriously, but it cannot be denied that they indicate that a knowledge of anthropology and anthropologists is considered of little importance

to future sociologists.[3] It may be added here that of 259 sociologists who returned the questionnaire sent out in 1926 by the American Council of Learned Societies inquiring about major fields of interest, only four gave anthropology.[4]

To give some idea of the relative value placed by sociologists upon different approaches and contributions to sociology I have selected a few names from the long list of writers scoring two points or more. The environmentalists get many places and high scores:

Buckle 13
Montesquieu 13
Ellen Semple 7
Ratzel 5
Ellsworth Huntington 4

Other examples I choose almost at random:

Condorcet 7
Carrol D. Wright 4
Schmoller 5
John Ruskin 4
William Morris 5
Lasalle 6
John Fiske 5
Dante 4
James Bryce 4
G. Novicow 4
Louis Blanc 3

Is it a result of the scoring system alone that gives these writers a higher rating than the anthropologists? It must be remembered that most of the books taken as a basis for scoring were written by men of the old school. Indeed, the list as a whole shows the great influence of tradition upon a study which prides itself, perhaps too much, on being progressive. This authority of tradition can be seen in the list of writers who are considered to be important, that is, men with fifteen points or more, or fifty percent of the maximum possible score:

Aristotle 17
Comte 25
Darwin 16
Giddings 18
Malthus 15
Plato 15
Ross 19
Adam Smith 15
Herbert Spencer 27
Tarde 16
Lester Ward 24

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[3] He would not confine his attention to writers alone if he were really interested in "social thought," whatever that may mean.

[3] It may be pertinent to point out that Francis Bacon received only two points and that the social teachings of Jesus received only a score of seven, or twenty-three percent of the maximum possible score.

[4] Hugh Carter, Research Interests of American Sociologists. Social Forces, 6: 211, 1927.

John Stuart Mills, Rousseau, and Sumner each reached fourteen points.

Sociologists have pointed out[5] that "one of the notable trends in American sociology during the past decade has obviously been an increased interest in the field of anthropology." So many people believe this that we must conclude that Dr. Hart's report understates the influence of anthropology on sociology. But evidently that influence has not yet reached textbooks.

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[5] Carter op. cit., 211

ANTHROPOLOGICAL NOTES AND NEWS

The Social Science Research Council Fellowships

At its recent meeting the Fellowship Committee of the Social Science Research Council awarded 27 research Fellowships. The awards were distributed among the Social Scientists as follows: Anthropology three; Economics five; History six; Political Science three; Psychology three; Sociology three; Geography one; Law two; Miscellaneous one.

The three Fellows selected from the applicants in Anthropology are:

Gower, Charlotte Day (Ph.D. Chicago)
Social Science Research Council Fellow 1928–29.
Project: "An Ethnological and Sociological Study of a Typical Sicilian Village Community as a Contribution to the Background of the Problem of the Sicilian Immigrant to the United States."
Study half in Sicily and half in Chicago.

Lattimore, Owen
Project: "Preparatory Academic Work,—Leading up to Direct Work in Manchuria, Political and Economic."
Study at Harvard University, Paris and Manchuria.

Lesser, Alexander(Ph.D. June 1929,Columbia)
Project: "An Inquiry into the Possibility of Law in Social Phenomena, with special reference to the social oganization of primitive peoples."
Study in New York City and Southwestern United States.

These Fellowships are designed to promote the development of research workers rather than to aid in the execution of specific research projects. It is hoped they may save to the field of productive scholarship promising Ph.D's whose zeal for research and writing has been gradually ebbing under heavy and diversified teaching schedules and routine administrative responsibilities. Or again, by affording a year of travel and investigation, the fellowships may broaden and enrich the scholarship of the young men and women who have just completed their Ph.D. work. Such a year may enable a Fellow to push further his researches in the field which his Ph.D. thesis has opened up. It may simply result in his digging deeper within the narrow confines of his own discipline. This in itself is worth while. It may, however,—and the Committee hopes that this will frequently prove to the case—enable him to broaden his approach

to the problem of his special interest. He may elect to use the year to study such phases of other social disciplines as will enable him better to understand the ramifications of his own problem. In this way he will become not only a more effective economist or historian, for example, but also a more effective social scientist.

Awards are made once a year. Applicants should apply to John V. Van Sickel, Fellowship Secretary, 50 East 42nd Street, New York City, N. Y. (after April 1st, 230 Park Avenue) in time to get their formal applications in by December 1st, for the awards beginning July 1st, following. The Committee meets in January or early February and the awards are made known around the middle of February.

The fellowships are open to men and women, citizens of the United States or Canada, who hold the Ph.D. degree or its equivalent and who are not over thirty-five years of age. These requirements are not absolutely iron bound but exceptions are more and more infrequent. The general term of the fellowship is one year, though in exceptional cases they may range from three months to two years. The stipend varies with the requirements of the fellow, such as his present salary, number of dependents, amount of travel involved, etc.

Descendants of Stone Age Man

Direct descendants of men of the Old Stone Age, eagerly sought for all over the world by anthropologists, are to be found in a small and dwindling race of South African natives, the Korannas, according to a report made by Dr. Robert Broom, of Victoria College, Stellenbosch, S. A., in *Nature*.

The skull measurements of the present-day Korannas agree closely with those of a prehistoric skull recently found about 80 miles north of Pretoria, associated with the bones of an extinct species of buffalo, which had apparently killed the hunter and then died of its own wounds. The human skeleton was badly broken, the skull especially being crushed into small fragments. The latter, however, have been skillfully pieced together, permitting a scientific determination of the type of man it once belonged to.

The skull, which Dr. Broom has christened the "Bushveldt skull," is of modern type, with little or no suggestions of the Neanderthal about it. It is not of the well-known European Cro-Magnon type, although Bushveldt man was contemporary with early Cro-Magnon

man in Europe, as shown by the type of implements he used, and by the bones of the extinct buffalo. Its comparatively modern pattern is suggested, among other things, by its small teeth, its well-developed chin, and the relative thinness of its bony walls.

The character that marks Bushveldt man as a primitive type, and at the same time ties him up with the present Koranna tribe, is the relatively low temporal, or side region of the head. In all advanced races this part of the cranium is quite definitely high.

Although the Bushveldt skeleton was the first find of actual human remains to be made in the region, Dr. Broom is of the opinion that the valley of the Vaal River was once the home of tens if not hundreds of thousands of men and women of this race. He bases this conclusion on the enormous numbers of the stone implements of their workmanship which have been discovered.

The New Policies of the Indian Bureau

The policy of the Indian Bureau under the new administration has been considered by the Board of Indian Commissioners, created by Congress to advise it on Indian problems, and has been given general approval as announced by Secretary Wilbur. It is as follows:

The fundamental aim of the Bureau of Indian Affairs shall be to make of the Indian a self-sustaining, self-respecting American citizen just as rapidly as this can be brought about. The Indian shall no longer be viewed as a ward of the nation but shall be considered a potential citizen.

As rapidly as possible he is to have the full responsibility for himself. Leadership should be given the Indians rather than custodianship.

The Indian stock is of excellent quality. It can readily merge with that of the nation.

In order to bring this about it will be necessary to revise our educational program into one of a practical and vocationa' character and to mature plans for the absorption of the Indian into the industrial and agricultural life of the nation.

Decentralization of the activities of the bureau shall be brought about as rapidly as possible.

Viewed over a term of years, the Indian agent, as such, with his abnormal powers, shall be dispensed with.

In so far as it is feasible, the problems of health and of education for the Indians shall become a responsibility of the various states.

Certain assistance for these purposes should be provided the states wherever it is equitable and desirable to do so.

New Indian schools should only be provided if it is not possible to merge the training of the Indian into the school system of the states. In so far as it is possible, scholarships in the institutions of higher learning of the country shall be provided for those Indian boys and girls who are capable of going beyond the ordinary high-school training.

The educational program for the Indians should be placed under the supervision of the Bureau of Education.

The health program should be placed under the Public Health Service.

In so far as it is possible, except on a few large reservations that are appropriate for a satisfactory life for the Indians, there should be continued allotment of land with full ownership rights granted to the Indians.

It shall be the aim to provide employment for Indians for all occupations possible in connection with Indian communities.

The general policy should be to increase the facilities for the care and development of the Indian for a short period of time, with the general plan in mind of eliminating the Indian Bureau within a period of, say, twenty-five years.

No new appointments should be made in the Indian Bureau except in following out the above program.

In so far as it is possible, general legislation and general appropriations from the Congress shall be sought, rather than specific legislation for specific Indian groups or to solve individual Indian questions.

A survey shall be made of all existing laws with which the Indian question is involved, so that proper laws can be drawn rescinding former actions which are no longer necessary, and an adequate legislative program developed for the future.

* * * *

MR. WILLIAM LLOYD WARNER, one-time graduate student at the University of California, has completed his field work among the Murngin tribes of Northern Australia and returned to the United States in September, 1929. The researches were conducted under the auspices of the Rockefeller Foundation and the Australian Research Council and were under the general direction of Professor A. R. Radcliffe-Brown. Mr. Warner will be a tutor at Harvard in 1929-1930.

THE ENTIRE COLLECTION of the Academy of Natural Sciences of Philadelphia relating to the archaeology and ethnology of the American Indian has been sold to the Museum of the American Indian, Heye Foundation, at Broadway and 155th Street, New York City, and will be transferred there immediately. The principal part is the Clarence B. Moore collection, said to be the largest and finest known collection from the prehistoric Indian mounds of the Southern United States. The transfer also includes the A. H. Gottschall collection and the S. S. Haldeman collection, both of great scientific value. The Gottschall collection comprises thousands of Indian relics, such as costumes, pipes, weapons and stone work. The Haldeman collection is representative of the archaeology and ethnology of the Indian and was brought together between 1840 and 1870. Mr. Charles M. B. Cadwalader, director of the academy, is reported to have said that the Moore collection "was going at the request of the donor."

DR. HUGO OBERMAIER, professor at the University of Madrid, has been elected an honorary member of the Anthropological Society in Vienna.

A RECONSTRUCTION of the main plaza of the Mayan city of Tikal has been prepared for the hall of civilization of the Buffalo Museum of Science. The city of Tikal was chosen for reproduction because it is an excellent example of the pyramidal style of architecture.

THE SECOND NORTHWESTERN UNIVERSITY expedition to Dutch Guiana for the study of the Negro sailed from New York on June 14, under the leadership of Dr. Melville J. Herskovits, assistant professor of anthropology. In the upper reaches of the Surinam River, Professor and Mrs. Herskovits expect to spend six weeks studying the customs, laws, beliefs and language of the people.

Dr. Louis Captain, member of the *Académie de* Médecine de Paris, Loubat Professor of American Archeology in the *Collège de France*, and Professor of Prehistory in the *École d'Anthropologie de Paris*, died in Paris on September 1.

DR. R. SCHULLER, who returned from Central America some time ago, has been working at Harvard University for some months in order to finish his work on the Maya k'iche language.

THE DEATH is announced of Sir Baldwin Spencer, F.R.S., emeritus

professor of biology in the University of Melbourne, known for his studies of the wild tribes of Australia.

PROFESSOR F. WOOD JONES, Rockefeller professor of physical anthropology in the University of Hawaii, has accepted a professorship of anatomy at the University of Melbourne to succeed Dr. R. J. A. Berry, who recently resigned.

THE UNIVERSITY OF WASHINGTON is embarking on an enlarged program for anthropology, made possible by combining the Washington State Museum with the department of anthropology. Dr. Leslie Spier has been recalled as Professor of Anthropology and appointed director of the museum. Dr. Erna Gunther has been appointed Instructor, while Dr. Melville Jacobs continues as a member of the department. Larger funds are available for field work and publication.

During 1929–30 Dr. Spier will be on leave to carry on a general anthropological survey of the Gilbert and Ellice groups in eastern Micronesia for the Bishop Museum of Honolulu. Dr. Gunther will have charge of the Washington museum during his absence.

NEIL M. JUDD, curator of American archaeology, in the U. S. National Museum, left Washington on May 15 for Flagstaff, Arizona, there to join Dr. A. E. Douglass, of the Steward Observatory of the University of Arizona, and Mr. Lyndon Hargrave, of the Museum of Northern Arizona at Flagstaff, on an archaeological reconnaissance of central Arizona in search of ruins from which charred timbers might be recovered. It is the desire of the present expedition, under the auspices of the National Geographic Society, to obtain sections of timbers cut before 1260 A.D. and thus to bridge the single remaining gap in the "tree ring" chronology now being erected by Dr. Douglass and by means of which it is expected most pre-Spanish ruins of the Southwest can be dated. The current researches are in continuation of the society's archaeological explorations at Pueblo Bonito, New Mexico, from 1920 to 1927, under direction of Mr. Judd.

The CZECH JOURNAL, ANTHROPOLOGIE, has published an anniversary volume in honor of Dr. Ales Hrdlicka's 60th birthday. The publication takes the place of issues 1 and 2 of the 1929 volume, begins with a biographical account of Dr. Hrdlicka in both Czech and English, and contains a considerable number of articles on physical anthropology and related topics, all in English.

THE NATIONAL ACADEMY OF SCIENCES at its annual meeting held in Washington on April 22, 23 and 24 elected new members as follows: Dr. Roger Adams, professor of organic chemistry at the University of Illinois; Irving W. Bailey, associate professor of botany, Bussey Institution, Harvard University; Dr. A. F. Blakeslee, botanist at the Carnegie Institution's station for experimental evolution at Cold Spring Harbor; Dr. James B. Conant, associate professor of chemistry, Harvard University; Dr. Bergen Davis, professor of physics at Columbia University; Dr. C. J. Davisson, physicist at the Bell Telephone Laboratories, New York; Dr. Joel H. Hildebrand, professor of chemistry at the University of California; William Hovgaard, professor of naval design at the Massachusetts Institute of Technology; Dr. Albert W. Hull, research physicist at the General Electric Company's Research Laboratory at Schenectady; Frank Leverett, geologist of the U. S. Geological Survey and lecturer in glacial geology at the University of Michigan; Dr. Paul W. Merrill, astronomer at the Mt. Wilson Observatory, Pasadena; Dr. David H. Tennent, professor of zoology at Bryn Mawr College; Dr. George H. Whipple, dean of the School of Medicine and Dentistry and professor of pathology at the University of Rochester, N. Y., and Dr. Clark Wissler, curator of ethnology at the American Museum of Natural History, New York, and professor of anthropology in the institute of psychology at Yale University.

DR. GEORGE GRANT MACCURDY of Yale University, Director of the American School of Prehistoric Research, has been elected a *Membre Correspondant* of the *Société des Américanistes de Belgique.*

THE NINTH SUMMER SESSION of the American School of Prehistoric Research opened in London on July 1, under the direction of Dr. George Grant MacCurdy of Yale University. The greater part of the summer was spent on the continent, especially in France, where excavation was carried on. Professor and Mrs. MacCurdy sailed from New York on June 15.

HARLAN I. SMITH spent the field season of 1928 in British Columbia, where incidental to collecting ethnological specimens and making motion picture records in the Shuswap, Okanagan, Coast Salish, and Tsimpshian Indian areas he carried on archaeological reconnaissance, making photographs of pictographs and petroglyphs, as well as of specimens in local Museums and collections. Petroglyphs were found overlooking the sea on two points immediately west of Aldridge point some twenty miles west of Victoria. It is

rather remarkable that these should have escaped the attention of archaeologists who have worked in this region for many years. The pictographs on the rock bluff on the west side of Mara lake about six miles south of Sicamous in the Shuswap Indian area were visited; also those of two localities in the Okanagan Indian area, one on the west side of Okanagan lake near Kelowna, and another on the right side of the Penticton-Keremeos road. In the Coast Salish Indian area pictographs were visited about two miles south of Britannia Beach, Howe sound near Vancouver.

UNDER THE AUSPICES of the Division of Anthropology and Psychology of the National Research Council a conference on Mid-western Archaeology was held in St. Louis, Missouri, on May 18, 1929. On the preceding day preliminary meetings were held under the auspices of the committee on State Archaeological Surveys.

THE DEANS of the University of Minnesota recommended to the president that Dr. Albert Ernest Jenks, professor of anthropology, represent recent research work of the faculty in an address before the university convocation on April 18. The address given was entitled "Field Researches in the Culture of Prehistoric Americans," and dealt with the field work in Mimbres culture carried on last summer in New Mexico by Dr. Jenks and four graduate students, in cooperation with Mr. Wesley Bradfield, of the Santa Fe Museum. On February 15 the annual Sigma Xi Address at the University of Minnesota was delivered on the same subject by Dr. Jenks.

THE DEPARTMENT of sociology and anthropology at the University of Chicago has been dissolved and reconstituted as two separate departments. The department of sociology will be under the chairmanship of Dr. Ellsworth Faris, while the chairman for anthropology is Dr. Fay-Cooper Cole.

EDGAR L. HEWETT has resigned as director of the San Diego Museum and has been succeeded by Lyman Bryson, lecturer in anthropology at the State Teachers College. Dr. Hewett had been director of the California museum since its founding, and is also director of the Museum of New Mexico, in Santa Fe.

Mr. Bryson, the new director, has held several posts including that of lecturer at the University of California, head of the publications service of the International Red Cross, in Paris, and teacher at the University of Michigan. Dr. Hewett has been appointed director emeritus.

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