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CONTENTS

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American Anthropologist

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THE MYTHOLOGY OF THE KORYAK[1]

BY WALDEMAR JOCHELSON

All the peoples of Siberia, central Asia, and northeastern Europe whose languages are not of Aryan or Semitic origin, speak Ural-Altaic languages. This group, which contains about fifty peoples and tribes, consists of five branches, the Mongolian proper, the Tungus, the Turk, the Samoyed, and the Finn. The group was established and its branches were classified on the basis of linguistic indications, that is, on the similarity in the phonetics and morphology of the languages, by the Finnish investigator Castren, whose researches were conducted some sixty years ago. Anthropological and ethnological investigations subsequently confirmed this classification.

However, there is a small group of tribes in northeastern Siberia which cannot be classed as belonging to the Ural-Altaic family, for in spite of the fact that until recently this group has been investigated but little, Steller's work on the Kamchadal, written in the middle of the eighteenth century[2] and remarkable for its time, and occasional records of various travelers on the languages and life of other tribes, point to the fact that this group cannot be classed among the family mentioned, but that it stands alone. The group includes the Ostyak and Kot on the Yenisei; the Gilyak and Ainu at the mouth of the Amur river, on the island of Saghalin, and

[1] Read at the meeting of the American Ethnological Society, New York, March 21, 1904. Published by permission of the American Museum of Natural History.

[2] Georg Wilhelm Steller, *Beschreibung von dem Lande Kamtschatka dessen Einwohnern, aeren Sitten, Nahmen Lebensart und Verschiedenen Gewohnheiten*, Frankfurt und Leipzig, 1774.

partly in Japan; and the Kamchadal, Koryak, Chukchee, and Yukaghir in extreme northeastern Siberia.

Ethnologists have designated the tribes of this isolated group as either "palæasiatics" or "hyperboreans"; but these names, invented for purposes of classification, have no intrinsic meaning. At best they may answer as geographical, but by no means as ethnological, terms.

It is not, therefore, without reason that Peschel, the well-known German ethnologist, calls these tribes "North Asiatics of indefinite relationship." He says: "The question in this part is not of giving a description of a new group within the Mongolian branch of the human race, but of making the frank confession that our scientific structure will have to be handed down in an incomplete state."[1]

The study of these tribes, the necessity of which was long recognized by Russian ethnologists, was commenced under the so-called "Yakut Expedition," in which the present writer participated,[2] and at the same time the Jesup Expedition of the American Museum of Natural History undertook similar researches among them. The work of the latter expedition was based on the probability that in the remote past there existed some connection between the cultures and types of the Old and the New Worlds, and that for an understanding of the history of the American tribes it is indispensable to determine this connection. Therefore the attention of the expedition was directed, first of all, to the northern coasts of the Pacific, the geographical and geological conditions of which must have facilitated intercourse between the tribes and helped their migrations from one continent to the other.

For this reason the investigation of the Koryak was included in the plans of the expedition.[3] The results of this investigation have shown that the original hypothesis with reference to the kinship of culture of the isolated Siberian tribes with the American aborigines has been fully confirmed, and that the Koryak are to be regarded as one of the Asiatic tribes which stand nearest to the American Indian. I intend to confine myself in this paper to a

[1] Oscar Peschel, *Völkerkunde*, Leipzig, 1876, p. 413.

[2] The Yakut Expedition (1894–1897) was fitted out by the Imperial Russian Geographical Society at the expense of Mr I. M. Sibiryakoff.

[3] The study of the Koryak was intrusted by the Jesup Expedition to the author and was conducted in 1900–01.

consideration of the similarities in the beliefs and myths of the Koryak and the American tribes. It will be necessary, however, to make a few preliminary remarks on the geographical distribution of the Koryak. Their territory is bounded by the Pacific ocean on the east, by the Stanovoi mountain range on the west, by the Palpal range on the north, and by the bays of the Okhotsk sea on the south. The climate of the country is one of the severest on earth; but there is a difference between the climate of the interior and that of the strip of land along the coast. At the beginning of April, when I left the coast of Penshina bay, the temperature was 27° above zero; a day later, eighty miles inland, the thermometer registered 38° below zero. But the interior experiences quite a few warm days during summer, when the temperature sometimes rises to 70° and even higher, while the strip along the coast seldom enjoys temperature higher than 50°. Moreover, the winds and storms that rage along the coast make even a slight cold unbearable. My anemometer frequently registered wind-velocities of 10 to 20 meters per second, or 22.5 to 45 miles per hour; and once, in November, while I was at the settlement of Kamenskoye, a gale raged with a velocity of 22 meters per second, or about 68 miles per hour. I went outside to make a meteorological observation, and when but a few paces from my house, I lost sight of it, owing to the drifting snow, and had it not been for the assistance of my Cossack, I should have been unable to find my way back.

It must be clear that in such a climate agriculture is impossible; hence the inhabitants depend for their subsistence on fish, sea-mammals, and reindeer, supplemented by edible roots and berries. According to the source of their means of maintenance, the Koryak are divided into Reindeer Koryak (who, with their herds of domestic reindeer, wander over the interior of the country) and Maritime Koryak (who live in settlements along the coast).

In our investigations of all the features of Koryak life we meet with three elements — the Indian, Eskimo, and Mongol-Turk, the first generally predominating. This is particularly true with reference to their religious concepts, for the Koryak view of nature coincides in many points with that of the Indians of the north Pacific coast. Their cosmogony is not developed, and in their tales about heroes

and deities they assume that the world existed before them. We find here the tale of the Raven Stealing the Sun, and that of the Sun's Release by the Raven. The universe consists of a series of five worlds, one above the other, the middle one being our earth. The same conception is found among the Bellacoola Indians.

There is a well-known series of myths, especially developed among the Tlingit, Haida, and Tsimshian, in which the raven is recognized as the organizer of the universe. The Koryak myths resemble this series closely; indeed almost their entire mythology is confined to raven stories. Of the hundred and forty recorded myths there are only nine in which the mythical raven or his children are not mentioned.

The mythical raven, or Big-Raven (*Quikinnáqu*), of the Koryak appears also as organizer of the universe. He is the first man, and at the same time the ancestor of the Koryak. The manner of his appearance on earth has not been made quite clear. According to some tales, the Supreme Being, of whom I shall speak later, created him; according to others, he created himself; while a third version asserts that he was left by his parents when quite small, and grew up alone into a powerful man. His wife is sometimes considered to be the daughter of the Supreme Being, sometimes the daughter of the sea-god who has the appearance of a spider-crab (*Toyókoto* or *Ávvi*).

At the time of Big-Raven, or during the mythological age, all objects on earth could turn into men, and vice versa. There were no real men then, and Big-Raven lived with animals, and apparently with inanimate objects and phenomena of nature, as though they were men. He was able to transform himself into a raven by putting on a raven coat, and to resume the shape of man at will. His children married or were given in marriage to animals, such as seals, dogs, wolves, mice; or phenomena of nature, as the wind, a cloud (or Wind-man, Cloud-man); or luminaries, like the Moon-man, Star-man; or inanimate objects, such as the Stone-men, trees, a stick, or plants. Men were born from these unions.

When Big-Raven was no more, the transformation of objects from one form to another ceased to take place, and a clear line distinguishing men from other beings was established. Big-Raven left

the human race suddenly, because, it is said, they would not follow his teachings; and it is not known what became of him. According to some indications his abode is in the zenith.

Big-Raven gave light to men; he taught them how to hunt sea and land animals; he also gave them reindeer, made the fire-drill, gave them the drum, left incantations for amulets, and set up shamans to struggle with the evil spirits, with whom Big-Raven himself had carried on a constant and successful warfare. He is invisibly present at every shamanistic performance; and the incantations are dramatized stories telling how Big-Raven is treating his sick son or daughter, the male or female patients impersonating his children.

Big-Raven is regarded as the assistant of the Supreme Being, whom he helped to establish order in the universe. In the myths and tales the Supreme Being is called Universe or World (*Ñaiñmen*), or Supervisor (*Ináhıtela^{e}n*); in other cases he is called Master-of-the-Upper-World (*Gičhol-Etı'nvila^{e}n*), or simply The-One-on-High (*Gı'čhola^{e}n*), Master (*Étın*), Existence, Being, or Strength (*Yaqhı'čñın*, *Vahı'cñın*, or *Vahı'tñın*), or Dawn (*Tñárgin*). In some instances he is referred to as Sun (*Tiykıtiy*) or Thunder-Man (*Kihigila^{e}n*). Although these names translated into a civilized language may seem to indicate abstract conceptions, they appear to the Koryak mind in a crude, material, anthropomorphic form.

The Supreme Being is represented as an old man living with his family in a settlement of the Upper World, in heaven; and he keeps order on earth. If he wishes to punish men for their transgression of taboos, or for their failure to offer the required sacrifices, he goes to sleep, when the regular course of events on earth comes to a standstill, hunting becomes unsuccessful, and people suffer starvation and other disaster. The Supreme Being, however, does not long bear ill-will, and he may be very easily propitiated. He is, as a rule, rather inert.

The so-called *kaláu* (plural of *kála*) beings that are hostile to man, display much more activity. At the time of Big-Raven, or during the mythological age, they used to assault man openly, and they usually figure in myths as ordinary cannibals. Big-Raven overcame them frequently, but after Big-Raven's departure they

became invisible, and they now shoot man with invisible arrows, catch him with invisible nets, and strike him with invisible axes. Every disease and every death is the result of an attack of these unseen evil spirits. The Supreme Being seldom comes to the assistance of men in this deadly and unequal struggle; man is left to his own resources, and his only means of protection are the incantations bequeathed to him by Big-Raven, charmed amulets and guardians, performances of shamans who act with the help of their guardian spirits called by the Koryak *eñen*, and the offerings of dogs and reindeer as sacrifices to the spirits. Every family is in possession of a certain number of incantations, which pass from father to child as heirlooms and constitute a family secret.

While the Supreme Being is a tribal deity and Big-Raven the common Koryak ancestor, all the guardians are either family or individual protectors. In only one case does a guardian, which has the form of a pointed post and which may well be called an idol, appear as a guardian and master of an entire village.

Crude representations of animals or men carved of wood serve as guardians or amulets. Parts of animals (like hair, the beak, the nose, or a portion of an ear), which are used in place of the whole animal, or inanimate objects (like beads, stones, etc.) serve the same purpose.

The reason why it is believed that objects insignificant in themselves may become means of guarding against misfortune and of curing disease, is primarily the animistic and at the same time the anthropomorphic view of nature held by the Koryak. According to this view not only are all things animate, but the vital principle concealed beneath the exterior visible shell is anthropomorphic. Furthermore, the incantation which must be pronounced over the object makes its vital principle powerful and directs it to a certain kind of activity — to the protection of the family or individual from evil spirits.

I will enumerate here the most important family and individual guardians:

1. The sacred fire-drill, which consists of a board shaped like a human body, a small bow, a drill, and other implements necessary for making fire. By means of this guardian, fire is produced for

religious ceremonies. The fire-board is the master of the hearth, but among the Reindeer Koryak it is at the same time the master of the herd. A few small wood-carvings, representing men, are attached to it; these are supposed to be its herdsmen, and to help it in guarding the herd against wolves.

2. The drum, which is the master of the house.

3. A small figure of a man, called the "searching guardian"; it is sewed to the coats of little children for the purpose of guarding their souls. Children particularly are subject to attacks by evil spirits, and the children's inexperienced souls are apt to be frightened and to leave the body. On the "searching guardian" devolves the duty of catching the child's soul and of restoring it to its place.

All guardians are closely connected with the welfare of the household hearth; they cannot, therefore, be given to a strange family or carried into a strange house.

The sacrifices of the Koryak may be divided into bloody offerings, consisting of the bodies of slaughtered dogs and reindeer, and bloodless offerings, which are usually in the form of food, berries, sacrificial grass, ornaments, tobacco, and even whiskey. Bloody sacrifices are offered mostly to the Supreme Being, that he may not be diverted from keeping order on earth, and to his son, Cloud-man (*Yáhala*^{e}*n*), for his mediation in love-affairs. Cloud-man can inspire a girl with an inclination toward a young man, and vice versa. Bloody sacrifices are offered also to evil spirits, that they may not attack men.

The number of bloody sacrifices offered by the Koryak in the course of a year is quite large. Of the reindeer they sacrifice, they use at least the meat; but the killing of dogs cripples the domestic economy of the Maritime Koryak. It often happens that, toward winter, Koryak families are left without dog-teams. At one time I came to a settlement of twelve houses, and found there more than forty slaughtered dogs hanging on posts, with their noses pointing upward, a sign that the dogs had been offered to the Supreme Being, not to evil spirits. This was to me a most strange and distressing spectacle.

Bloodless offerings are made to the guardians, to sacred hills, to the "masters" of the sea and river, and to other spirits.

The cycle of yearly festivals is also connected with sacrifices. I will mention here only the most important festivals. Those of the Maritime Koryak are the whale festival, the hauling of the skin boat out of the sea in the autumn for the purpose of putting it away for the winter, and its launching in spring. The most important festivals of the Reindeer Koryak are: one in the autumn, on the occasion of the return of the herds from the summer pasture; and another in spring, in connection with the fawning of the reindeer does.

All these are family festivals, except the whale festival, which in one sense may be regarded as a village celebration. Not only does the entire village participate in the festivities, but people from other settlements are invited. The celebration consists of two parts — the welcoming and the home-speeding of the whale. The killed whale is welcomed as an honored guest with burning firebrands, songs, and dances. The dancers are dressed in embroidered dance-coats. Thereupon the whale is entertained for several days, and then preparations are made to send it off on its return voyage. It is supplied with provisions, so that it may induce other whales, its relatives, also to visit the settlement.

The arrangement of festivals and religious ceremonies, and the preparation of guardians and amulets, incantations, and similar things pertaining to the family cult, are attended to by each family separately. The eldest member of the family usually acts as the priest of the family cult, while some female member acquires particular skill in the art of beating the drum and singing, and familiarizes herself with the formulæ of prayers and incantations. All this combined may be called "family shamanism" as distinguished from "professional shamanism."

A professional shaman is a man inspired by a particular kind of guardian spirits called *eñen*, by the help of which he treats patients, struggles with other shamans, and also causes injury to his enemies. Thus the activity of the professional shaman is outside the limits of the family cult, and a skilful shaman enjoys a popularity for hundreds of miles.

Shamans possessing the art of ventriloquism are endowed with particular power, for the Koryak believe that the voices which seem to emanate not from the shaman but from various parts of the house, are the voices of the spirits called up by the shaman.

The so-called "transformed" shamans are still more interesting. These are shamans who, according to the Koryak belief, have changed their sex by order of the spirits. A young man suddenly dons woman's clothes, begins to sew, cooks, and does other kinds of woman's housework. At the same time he is supposed to be physically transformed into a female. Such a shaman marries like a woman. However, a union of this kind leads only to the satisfaction of unnatural inclinations, which were formerly often found among the Koryak. Tales are current, according to which, in olden times, transformed shamans gave birth to children; indeed such occurrences are mentioned in some traditions recorded by me. On the other hand, the children of the "transformed" woman's husband, born to him by his real wife, frequently resemble the shaman. This institution, however, is now declining among the Koryak, although it still holds full sway among the Chukchee.

I wish to point out here another very interesting feature in the religious ceremonies of the Koryak. I refer to the wearing of masks. Grass masks are used by women during the whale festivals, while wooden masks are worn by young men in the fall of the year, for the purpose of driving away evil spirits. The Koryak do not attempt to give their masks animal forms, and in this respect they resemble those of the northern Alaska Eskimo.

In summing up my observations of the religious life of the Koryak, I have come to the conclusion that their views of nature closely resemble those of the Indians of the north Pacific coast; but we likewise find in their religion Asiatic, or rather Turkish-Mongolian, as well as Eskimo elements. It is difficult to say at what period the Koryak first came in contact with the Turkish-Mongolian tribes, or to what period may be ascribed their relations with the Eskimo, with whom they have no intercourse at present; but the fact that we find in Koryak religion and customs a good many features common to those tribes cannot be attributed solely to the influence of similar geographical conditions. The domesticated reindeer of the Koryak is a cultural acquisition of Asiatic origin; and with this factor are connected some religious ceremonies and customs — for instance, bloody sacrifices offered to deities and spirits. These are not found on the Pacific coast of America; but

they do occur east of the Rocky mountains, among tribes like the Iroquois and the Sioux, who kill dogs as sacrifices.

The particular customs connected with the celebration of successful whale-hunting, and their taboo with reference to sea-mammals (the meat of which must not be partaken by women after confinement, and which must not come in contact with dead bodies) are also found among the Aleut and the Eskimo. This similarity is especially interesting since the chief food of the Maritime Koryak, as well as of the Indians of the Pacific coast, does not consist of sea-mammals, but of fish; and berries and edible roots are used extensively by both.

Nothing shows more clearly the close similarity between the culture of the Koryak and that of the Indians of the north Pacific ocean than their mythology. While some religious customs and ceremonies may have been borrowed at a late period, myths usually reflect for a long time the state of mind of the remotest periods. True, we find Mongolian-Turk as well as Eskimo elements in the myths also; but not to any considerable degree. To the Mongolian-Turk elements belong the presence of the domestic reindeer in the myths, and, further, the magic objects and houses of iron, as well as the seas and mountains of fire; but in all other respects the Koryak mythology has nothing in common with that of the Mongolian-Turk peoples. At this time I must confine myself to a mere statement, without a comparative outline of the Mongolian-Turk and Koryak series of myths.

While incidents characteristic of Eskimo tradition occur with great frequency in Chukchee mythology, and while their raven myths are not numerous, we find in Koryak mythology comparatively few elements that are common to the Eskimo. The most distinctive type of their myths is that of the raven cycle. It may be said, in general, that while the Koryak myths, by their lack of color and by their uniformity, remind one rather of the traditions and tales of the Athapascan tribes, they also contain topics from various groups of myths of the north Pacific coast. We find not only the elements of the raven myths proper of the Tlingit, Haida, and Tsimshian, but also incidents from the coyote and the mink, from various other culture-hero cycles, and from other animal tales.

All of these incidents have been adapted to Big-Raven and to his family.

Big-Raven combines the characteristics of the American mink in his erotic inclinations, and those of the raven in his greediness and gluttony; and we find in the tales relating to him some of the features common to all the tales current on the north Pacific coast, namely, a love for indecent and coarse tricks which he performs for his own amusement.

Erotic episodes may be found in Mongolian-Turk myths also; but, in spite of their primitive frankness, these episodes are clothed in a poetic form, and are by no means so coarse as the myths of the Pacific coast. The readiness with which the heroes form marital connections with animals and with inanimate objects is characteristic of both sides of the Pacific.

In analyzing the Koryak myths, I have made a list of 122 episodes which occur over and over again. It appears that 101 of these are found in Indian myths of the Pacific coast, 22 in Mongolian-Turk myths, and 34 in those of the Eskimo. I will mention some of the frequently occurring episodes common to the Koryak and the Indian.

1. The tale of the Raven swallowing the sun, and another in which it is told how he released the sun. In the Koryak tale Raven-man swallows the sun, and Big-Raven's daughter releases him. Raven-man keeps the sun in his mouth, and Big-Raven's daughter tickles him until he laughs, opens his mouth, and lets the sun fly out. Then daylight appears again.[1]

2. The Raven puts out the fire in order to carry away a girl in the darkness.[2]

3. A boy, driven out of his parents' house, goes to the desert and becomes a powerful hero.[3]

4. Numerous tales about people who, by putting on skins of beasts and birds, turn into animals, and vice versa.[4]

[1] For similar episodes, see Boas, *Indianische Sagen*, pp. 55 (Selish); 105 (Nutka); 173, 184 (Newettee); 208, 232 (Heiltsuk); 242 (Bilqula); 276 (Tsimshian); 311 (Tlingit). See also A. Krause, *Die Tlinkit Indianer*, p. 261.

[2] See Boas, *Indianische Sagen*, pp. 43 (Fraser River); 56 (Selish); 260 (Bilqula); 300 (Tsimshian).

[3] Ibid., pp. 151, 162 (Kwakiutl); 253, 256 (Bilqula); 224 (Heiltsuk).

[4] In various Indian tales.

5. An arrow is sent upward and opens the way into heaven.[1]

6. Big-Raven eats all the berries that have been gathered by the women.[2]

7. Big-Raven mistakes his own reflection in the river for a woman, throws presents to her into the water, until finally he is drowned.[3]

8. Big-Raven is swallowed by animals, but kills them by pecking at their hearts or by cutting off their stomachs, and then comes out.[4]

9. Big-Raven or some other person, under the pretext that enemies are coming, urges owners of provisions to flee, and then takes away the provisions.[5]

10. A shaman shows his skill; he sings, and the house is filled with water, and seals and other sea-animals swim around.[6]

11. Raven steals fresh water from Crab (*Ávvi*).[7]

12. Raven and Small-Bird are rivals in a marriage suit. Raven acts foolishly, and is vanquished by Small-Bird, who is very wise.[8]

13. Big-Raven marries a Salmon-Woman, and his family no longer starve. Angered by Miti, the first wife of Big-Raven, the Salmon-Woman departs for the sea, and Big Raven's family again begin to starve.[9]

14. Big-Raven's son, Emémqut, assumes the shape of a whale, induces the neighbors to harpoon him, and then carries away the magic harpoon-line.[10]

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[1] Boas, *Indianische Sagen*, pp. 17 (Shuswap); 31 (Fraser River); 64, 65 (Comox); 117 (Nutka); 167 (Kwakiutl); 173 (Newettee); 215, 234 (Heiltsuk); 246 (Bilqula); 278 (Tsimshian).

[2] Ibid., pp. 76 (Comox); 107 (Nutka); 178 (Newettee); 210 (Heiltsuk); 244 (Bilqula).

[3] Ibid., pp. 66 (Comox); 114 (Nutka); 168 (Kwakiutl); 253 (Bilqula).

[4] Ibid., pp. 34 (Ponca); 51 (Selish); 75 (Comox); 101 (Nutka); 119 (Chinook); 171 (Newettee); 212 (Heiltsuk); 256 (Bilqula); 315 (Tlingit).

[5] Ibid., pp. 106 (Nutka); 172 (Newettee); 213, 233 (Heiltsuk); 316 (Tlingit).

[6] Ibid., p. 95 (Ėeksen).

[7] Ibid., pp. 108 (Nutka); 174 (Newettee); 209, 232 (Heiltsuk); 276 (Tsimshian); 313 (Tlingit); A. Krause, *Tlinkit Indianer*, p. 261.

[8] Boas, op. cit., p. 165 (Nutka).

[9] Ibid., pp. 174 (Newettee); 209 (Heiltsuk).

[10] Ibid., pp. 13, 16 (Shuswap); 23 (Fraser River); 64, 66 (Comox); 201 (Newettee); 248 (Bilqula).

15. Excrement or chamber-vessel speaks and gives warning.[1]

16. The Seal winds the tongue of his wife around with twine, and thus deprives her of the power of speech.[2]

At this time I cannot point out in greater detail the identity of the elements of which the myths of the Koryak and of the Indians of the Pacific coast are composed. This subject will be fully treated in my work on the Koryak, to be published by the American Museum of Natural History.[3] But the most cursory review of the facts here presented points to the identity of the products of the imagination of the tribes among which originated the cycle of myths current on both sides of the Pacific — an identity which can by no means be ascribed merely to the similarity of the mental organization of man in general.

While the similarity of the physical type of two tribes may give us the right to conclude that they had a common origin, similarities of culture admit of two possible explanations. The identity of the religious ideas of two tribes may be the result of a common origin; or their ideas may have originated from a common source, and one tribe, though different from the other somatologically, may have borrowed its ideas from the other. However, in the one case as well as in the other, these two tribes must have been at some time in close contact.

The somatological material collected by the expedition has not been studied as yet, and it is therefore impossible to say at present what conclusions may be drawn from it with reference to the origin of the tribes of the two coasts of the Pacific. However, the folklore which has been investigated justifies us in saying that the Koryak of Asia and the North American Indians, though at present separated from each other by an enormous stretch of sea, had at a more or less remote time a continuous and close intercourse and exchange of ideas.

[1] Boas, op. cit., pp. 101 (Chinook); 177 (Newettee).

[2] Ibid., pp. 176 (Newettee); 244 (Bilqula); 317 (Tlingit).

[3] The first part of the memoir on the Koryak, "Religion and Myths," is now in press.

STUDIES ON THE EXTINCT PUEBLO OF PECOS[1]

By EDGAR L. HEWETT

Introduction

The ethno-archeologist who is seeking to recover the history of any one of our southwestern tribes finds his sources of information gradually fading. Ancient dwellings are being torn down and with them are disappearing some of our best evidences of primitive sociologic conditions. Aboriginal burial mounds are being plowed up and the mortuary pottery therein reduced to fragments or scattered abroad with no accompanying data, thus obliterating our best paleographic record of primitive thought. Old people are dying and with their passing ancient languages are lost beyond recovery, and traditionary testimony of ancient migrations, ritual, and religion melt away.

Tracking the movements of any group of the human race is a most fascinating occupation, no matter how obscure may be the traces left behind. But the scientific man feels much more secure in his conclusions if to documentary evidence he can add linguistic, to this ethnologic, to this archeologic, and so on, until, by careful checking of one sort of evidence against another, he is finally able to construct an unassailable record.

The importance of any given group of people can not always be measured by its prominence in documentary history. The Phœnicians never occupied a formidable place among ancient world powers; we look upon them as great disseminators of culture, basing our belief on documentary, traditionary, and linguistic testimony. Now when one spends some time on the prehistoric archeology of Etruria, Campania, the Grecian peninsula, Cyprus, Rhodes, the old Trojan shore, the Nile delta, and ancient Carthagenian sites, he is overwhelmed with the vision of what this small

[1] A brief synopsis of the leading facts of this paper was presented at the meeting of the A. A. A. S. at Washington, Dec–Jan., 1902–'03. Some new matter has been added.

nation may have contributed to human welfare through its influence as a bearer of the pretraditional germs of that art which was to blossom into such marvelous perfection in Greece and Italy. It is simply that another source of evidence has served to illumine all former data.

Thus the student of the aboriginal tribes of America finds something of peculiar importance in every ethnologic area, whether its former occupants have completely vanished from the scene of action or not, and finds worthy of investigation every class of evidence that is still accessible. An area that may be studied from documentary, ethnologic, linguistic, and archeologic sources, and that is so situated as to bear obvious and important relations to surrounding areas, becomes especially attractive. Such is the position of the extinct pueblo of Pecos, in western San Miguel county, New Mexico. The tribe of Pecos may not occupy a commanding place in Pueblo history, but the indications are that the study of its ruined pueblos may yield important data for comparative purposes. This paper will merely point out in a preliminary way some studies that are in progress and may be pursued at some future time with more definite results. This research does not go into the documentary history of Pecos nor traverse again the ground covered by Mr Bandelier. No student of Pecos, nor indeed of any phase of southwestern archeology, will proceed without first becoming familiar with that splendid piece of work. He should carry the report[1] with him and study it on the ground. During the seven years in which I have been spending short vacations and odd days in the study of Pecos, I have never found it necessary to do over again anything that Mr Bandelier has done. That much of the history of Pecos is a reliable and enduring record. My indebtedness to this distinguished savant will be apparent throughout this entire study. I wish here to gratefully acknowledge this obligation.

A brief statement of a few well-established facts of documentary history may be admitted at this point for the use of the general reader.

[1] *Report on the Ruins of the Pueblo of Pecos*, by A. F. Bandelier; Papers of the Archæological Inst. of America, American series, I, 1881.

Pecos was discovered in 1540 by the Coronado expedition. The pueblo then contained from 2,000 to 2,500 inhabitants, composing one of the strongest of the Pueblo tribes then in existence. The village consisted of two great communal dwellings, built on the terraced plan, each four stories high and containing, respectively, 585 and 517 rooms. The tribe figures prominently in the annals of the Coronado expedition in New Mexico in 1540–42. Two priests remained there to introduce christianity when Coronado began his long march back to Mexico. Fray Luis Descalona, or de Escalona, established there at this time the first mission planted in New Mexico, but he was killed probably before the close of 1542. There is then a hiatus of forty years in its documentary history. Antonio de Espejo visited Pecos in 1583, Castaño de Sosa in 1590–91, and Juan de Oñate in 1598, the last mentioned naming the pueblo Santiago. At this time Fray Francisco de San Miguel was assigned to administer to the spiritual welfare of the tribe, as well as to that of the Vaquero Apaches of the eastern plains and the pueblo dwellers in the Salinas to the south, but it is not probable that Pecos ever became his residence. Juan de Dios, a lay brother of Oñate's colony, was the next missionary to live at Pecos, where he is said to have learned the language, but he probably returned to Mexico in 1601.

The great mission church, the ruins of which have for more than half a century formed such an imposing landmark on the old Santa Fé trail, was erected about 1617. Pecos practically held its own up to the end of the seventeenth century. Its decline, once started, was peculiarly rapid; the Comanche scourge and the "great sickness" worked speedy destruction. In 1840 the last steps were taken by which Pecos was abandoned and the group as a tribal entity became extinct.

We now pass to the investigations of recent years looking toward a closer ethnological and archeological knowledge of Pecos.

There is living today (August, 1904), at the village of Jemez, 60 miles in an air-line westward from Pecos, the sole survivor of Pecos pueblo. This man, known in his native tongue as Se-sa-fweyah, and bearing the baptismal name of Agustin Pecos, is a well-preserved Indian of perhaps eighty years of age. There are still

José Miguel Pecos (Zu-wa-ng), died 1902. (Photograph by K. M. Chapman, 1902.)

Agustin Pecos (Se-se-fwe-yah), nephew of José Miguel. (Photograph by A. C. Vroman, 1899.)

NATIVES OF PECOS

living at Jemez perhaps twenty-five Indians of Pecos blood, but Agustin Pecos has the distinction of being positively "the last leaf on the tree" when we speak of the Pecos as a tribal society, the tribe having ceased to exist in fact in 1838 and as a matter of record in 1840. Agustin was born at Pecos and believes himself to have been from twelve to fifteen years of age when the pueblo was abandoned. He has returned several times to the scenes of his childhood and the home of his ancestors, and his memory seems perfectly clear. He is a very honest and intelligent Indian and rather proud of the history of his tribe.

The next to the last survivor of the Pecos died at Jemez in the fall of 1902. This was Zu-wa-ng, baptized José Miguel Pecos, uncle of Agustin and probably from ten to fifteen years his senior. José Miguel was a young man when Pecos was abandoned; he was an excellent traditionist, possessed a keen memory, treasured his tribal history, and was ready to give information to those who gained his confidence.

Most of the traditionary material for this paper was obtained directly or indirectly from José Miguel and Agustin Pecos. (See plate XIV.) Mr F. W. Hodge visited Jemez in 1895 and 1899, and made some valuable notes which he has generously placed in my hands with permission to incorporate them in this paper. I may not be able to give full credit to Mr Hodge at every point where it is due, but I wish to say that his notes have been of great service in determining some of the most important ethnologic data presented. In recording the clan system of Pecos he was more successful than I, as will be seen by referring to his paper on "Pueblo Clans."[1] Mr Hodge obtained his information from José Miguel Pecos. The writer is indebted for his traditions to both José Miguel and Agustin. This information was received during two visits to Jemez in 1902, and, since the death of Miguel, by communication with Agustin through my friends Jesus Baca, an educated Jemez Indian, and Pablo Toya, son of the last governor of the Pecos tribe, born at Jemez after the abandonment of Pecos; a man who takes great interest in the tribal history and seems to know it very well.

[1] *American Anthropologist*, Oct., 1896.

The Various Names for Pecos

In the Castañeda narrative[1] Pecos is known as Cicuye. This is probably the name by which it was known to the people of Tiguex, the village on the Rio Grande from which the Spaniards proceeded to Pecos — a people who spoke the Tigua language. It would be natural for the historian of the expedition to use the name learned at Tiguex, where Coronado's force had been in winter quarters. The people of Isleta, who speak the Tigua dialect and who doubtless embrace in their tribe some who are direct descendants from Tiguex, give *Sikuyé* as one of their names for Pecos,[2] and *Sikuyén* for the tribe.

The Pecos people call themselves Pe-kúsh. The Jemez name for Pecos is P'a-qu-láh (Mr Hodge recorded it P'a-tyu-lá). When it is remembered that the initial sound of a word or syllable is often so obscure as to escape notice by one to whom the Jemez pronunciation is new and strange, and the final syllable is also often indistinct, the derivation of a majority of the early documentary names for Pecos becomes plain. The inconsistencies in our synonomy are generally traceable to two or three original errors which have run their usual course of misprinting and misquotation. This is well illustrated by the following partial synonomy prepared by Mr Hodge. It should be borne in mind that the present Jemez name for Pecos is P'a-qu-láh.

A-cu-lah. Simpson (1849) in Rept. Sec. War, 143, 1850. (Given as native name of the pueblo.)

Acuyé. Bandelier in Arch. Inst. Papers, I, 114, 1881. (Probably proper name of pueblo.)

Âgin. Bandelier in Arch. Inst. Papers, I, 20, 1881. (Aboriginal name in Jemez language; *n* evidently a misprint for *u*.)

Agiu? Bancroft, Ariz. and N. Mex., 53, 1889. (Possible proper name, suggested by Bandelier's Âqiu, below.)

A-gu-yu. Bandelier in Ritch, New Mexico, 201, 1885.

Âqiu. Bandelier in Arch. Inst. Papers, I, 114, 1881. (In the language of the former inhabitants of Pecos and those of Jemez.)

A-q'iu. Bandelier in Arch. Inst. Bull., I, 18, 1883.

Aqui. Bancroft, Ariz. and N. Mex. 53, 1889. (Misquoting Bandelier.)

Aquiu. Bandelier in Arch. Inst. Papers, III, pt. I, 127, 1890. (Or Paequiu; same as Pae-quiua-la, the aboriginal name of the Pecos tribe.)

[1] See Winship, *The Coronado Expedition*, Fourteenth Report of the Bureau of American Ethnology, Washington, 1896; reprinted, New York, 1904.

[2] Gatschet, Isleta MS. vocabulary, Bureau of American Ethnology, 1879.

For the derivation of *Pecos*, which is the Hispanized form, we must go to the Queres or Keresan dialects, where we find it as follows:

Santo Domingo,	Pe-a-go,
Cochiti,	Pe-a-ku,
Sia,	Pe-ko,
Santa Ana,	Pe-a-ko,
Laguna,	Pe-a-ku-ni,

To the Spanish people who came in continuous contact with the Queres people after the founding of Santa Fé early in the seventeenth century, the word naturally soon lost its slight dialectic variations, the people becoming uniformly known as *los Pecos* and their village as *el pueblo de los Pecos.*

The Clan System of Pecos

Those who are particularly interested in the Pecos clans should consult the paper by Mr Hodge, previously cited. In 1902 I was able to obtain satifactory evidence of but twelve clans, but Mr Hodge, in 1895, learned of nineteen. It will be noticed that three of the clans in my list do not appear in that of Mr Hodge, so that, on good traditionary evidence, twenty-two Pecos clans are known to have existed. Following is a list of the clans recorded by me; those marked with the asterisk are not in Mr Hodge's list.

Wâ-käh,	Cloud,
Pe,	Sun,
Se-peh,	Eagle,
Kyu-nu,	Corn,
Whâ-lu,	Bear,
Shi-añ-hti,	Mountain Lion,
Wa̤-hä,*	Squash,
Pâh-käh-täh,	Sand,
A-la-wah-ku,*	Elk,
Al-lu,*	Antelope,
Pe-dâhl-lu,	Wild Turkey,
Fwah,	Fire.

The linguistic differences will probably be harmonized by further comparison of the Jemez and Pecos dialects. While it is true

that these belong to the same linguistic stock, the differences are greater than the writer had been led to expect. It is still possible, through Agustin Pecos and Pablo Toya, to recover the Pecos language — a work in which some student of Indian philology may render a great service to science. The Pecos dialect was much modified by the Tano, probably also by the Piro, tribes which are now extinct, while Jemez tradition holds that their dialect grew out of the Pecos in combination with their own *Ta-tsa-a*. As it is not obvious that the Jemez dialect was modified by the small accession from Pecos in 1838, the tradition points to a possible earlier and greater accession from the Pecos tribe in prehistoric times. Evidences of the prehistoric relations between Jemez and Pecos should be sought in the Jemez ritual, which has as yet received but little attention; and the clan history of Jemez should be investigated with great persistence, for therein lies the key, when interpreted in connection with archeologic evidence, to the story of ethnological development in the Pecos and Rio Grande valleys.

Archeology of the Pecos Valley

Let us turn now to a consideration of certain archeological conditions in the upper Pecos valley. Here our old traditionists at Jemez are of great assistance in a corroborative way.

The ruins in Pecos territory may be grouped as follows:

Class I. — The great ruins of the pueblo of Old Pecos. These are described in detail in the report by Bandelier, previously referred to, and will not be redescribed here.

Class II. — Several ruins of smaller communal houses, of the type shown in figure 9, containing from 200 to 300 rooms each, and numerous contemporary ruins of similar construction but containing only from ten to fifty rooms each. These latter were but one story high and were not built around a court or plaza. The former were two stories high and generally embraced the four sides of a quadrangle. These remains are all older than those of Class I.

Class III. — Numerous rock shelters of a very primitive type found throughout the valley wherever there are overhanging cliffs. No description of these will be attempted in this paper.

The only ruins of Class I to be found within the Pecos territory

are those of the well-known Old Pecos pueblo. At the time of the coming of the Spaniards the entire tribe of Pecos was concentrated at this one point. On this documentary,[1] traditionary, and archeologic evidences are all in accord.

From among the ruins of Class II, which are scattered over Pecos territory from the north end of Cañon de Pecos Grant to Anton Chico, a distance of about forty miles, I have selected one, the ancient pueblo of Ton-ch-un, for brief description.

Ton-ch-un lies about five miles southeast of Pecos pueblo and about one mile from the Rio Pecos. The accompanying plan (figure 9) should be accepted as only approximately correct. Excavation will be necessary to lay bare the walls, which are in a fairly good state of preservation to a height of six to eight feet, though so obscured by debris as to be difficult to trace. This building was almost 400 feet long and contained upward of 300 rooms. Sections A and B were two stories in height, and section C was of one story. The detached sections D and E were one-story structures and illustrate the plan of the numerous small houses scattered over the valley, which are referred to above, and which of late years are rapidly disappearing. No burial mounds have been discovered at Ton-ch-un, and as yet I have obtained no entire pieces of pottery therefrom. Enough large fragments have been obtained, however, to indicate that excavation will yield what is needed for study.

The traditions regarding Ton-ch-un are well preserved at Jemez. This was the last outlying village in Pecos territory to be abandoned as the process of concentration went on. It held out for many years after the seven or eight other villages of nearly if not quite equal size had given up the struggle and merged with the main aggregation. These were not mere summer residences, but were permanent habitations, each of which sheltered several clans for several generations. Some of the small dwellings referred to doubtless served as summer residences near the growing crops, but on the other hand some of them were permanent clan homes. The traditions indicate that the clan that lived on the Cañon de Pecos Grant and the first dwellers on the site of Pecos pueblo came

[1] See Bandelier, *Report on the Ruins of the Pueblo of Pecos*, op. cit., p. 117.

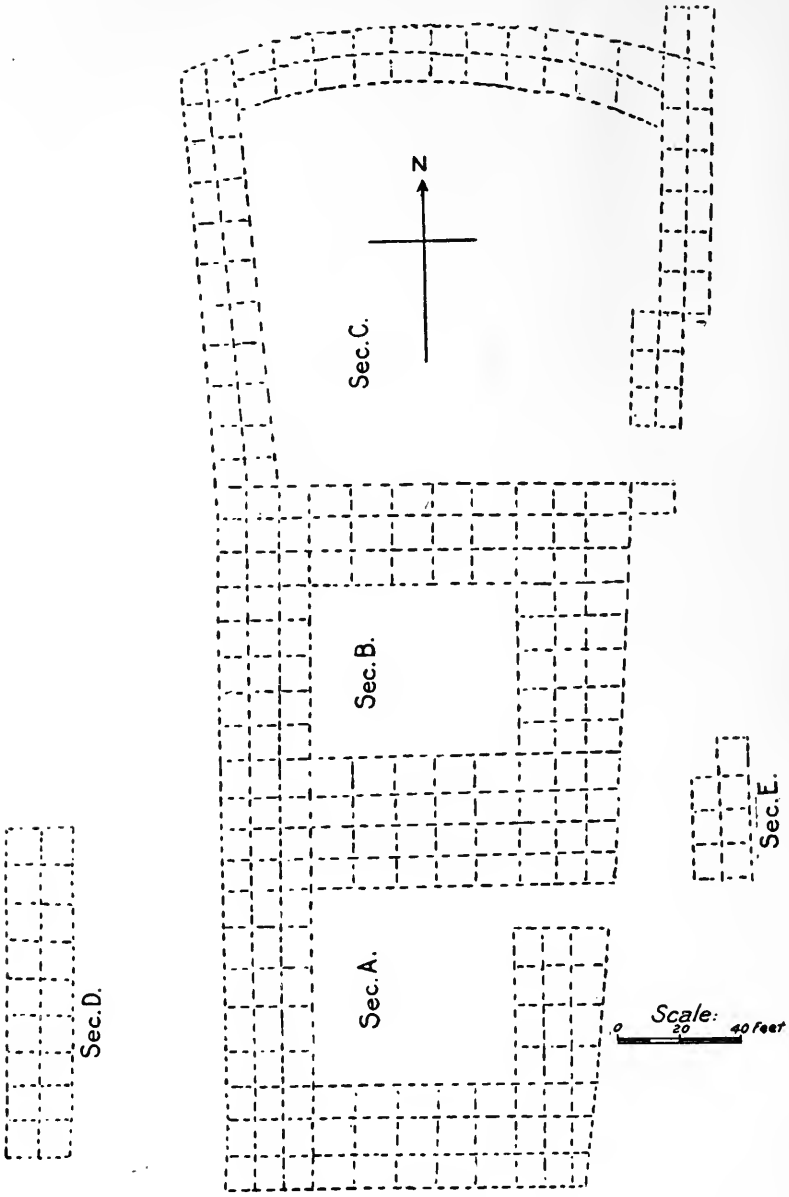

FIG. 9. — Ground-plan of the ruins of Ton-ch-un.

from the north; that those living in Ton-ch-un and the surrounding group of dwellings entered the valley from the west and were of the stock of Jemez; while those living toward the southern end of the territory of Pecos were said to have come from the direction of the so-called Mesa Jumanes and the Manzano mountains. As the traditions are vague, archeological evidence must be brought to bear on this problem. Archeological work should be done among the ruins in the valley first of all, and, for comparative study, any excavations made in the "Gran Quivira" region, in the Rio Grande valley, and about Jemez will be of interest. It is possible also that both archeological and traditionary data bearing on the question may be obtained at Picuris and Taos.

Concentration and Extinction

The area occupied by the Pecos tribe was small. It was embraced within the narrow confines of the Pecos valley, extending from northwest to southeast for a distance of about forty miles, or from the north end of the Cañon de Pecos Grant, about five miles above the ruins of Pecos pueblo, to the present Mexican settlement of Anton Chico. Their territory nowhere exceeded ten miles in width and had an average width of about five miles. Their boundary was rather sharply fixed on all sides. At no place outside of these boundaries have ruins indicating Pecos occupancy been found, and the traditions verify this. Their situation was economically strong; their land was productive, their water supply ample, and their proximity to the buffalo country gave them articles of commerce much in demand by the tribes farther west. During a long period of peace they could not fail to prosper. But their geographical position was such as to afford no security after the arrival of the predatory tribes. Their eastern frontier had no protection at all from the nomadic robbers who found in them a desirable prey because of their rather exceptional prosperity.

These depredations certainly began long before the coming of the Spaniards, at a time when the population was distributed in small communities over their entire territory, for the concentration was entirely accomplished by the year 1540. This concentration movement was toward the north. The village at Pecos was the most

favorably situated of any in the valley for a tribal stronghold. To this point the clans gradually fell back, Ton-ch-un being the last to give way. The two great communal house clusters at Pecos were enlarged from time to time as occasion necessitated. It is probable that Agustin Pecos can localize the clans as they occupied the two great house groups if he can be induced to visit the site with some observer. At last the entire tribe was sheltered in the great houses of the one community. Their village was walled and made as nearly impregnable as possible, and there developed a tribe of such strength as to be able to hold its own for some centuries. The traditions of this period of Pecos history point to incessant strife with the Comanches, who made their appearance in New Mexico with the dawn of the eighteenth century.

The story of the decay of Pecos, which had its beginning after the Pueblo revolt of 1680–92, has been told many times — best of all by Bandelier. The traditions of the "great sickness" which reduced the tribe to such desperate straits early in the nineteenth century and finally led to the abandonment of the village, will admit of some further investigation. It now seems probable that this was a malady of frequent recurrence for many years, possibly for half a century. An examination of the drainage of the pueblo makes the cause of the epidemics quite evident. Of the two springs used by the village, the one on the left bank of the arroyo and which never failed, as the one on the right bank sometimes did, is so situated as to receive the drainage of both the church cemetery and the old communal burial mound. It is a singular fact that to this day the Mexicans of the valley speak of this as the "Poisoned Spring." As my party proceeded to Pecos to make camp in the summer of 1899, we were warned by the Mexicans not to use the water from the "Poisoned Spring."

The traditionists at Jemez agreed in stating that on the day of leaving Pecos the tribe consisted of seven men (two of whom had been away for some weeks), seven women, and three children. They fix the date of abandonment almost beyond question by declaring it to have been the year following the murder of Governor Albino Perez. As that event occurred in August, 1837, the extinction of Pecos may be definitely fixed at 1838.

The Pecos Indians still make pilgrimages to their ancestral home. The last occurred seven years ago, and the writer has a letter from them dated October, 1903, stating that the Pecos Indians wish to visit the old pueblo in August of this year and asking the writer if he can help to secure them from molestation when they go to visit and open their sacred cave. I do not know the exact location of this cave, nor have I learned whether or not the proposed visit has been consummated.

Conclusions

The most important result of the study of Pecos is, to my mind, to be found not so much in what it adds to the history of one Indian tribe, as in the light it sheds on the great problem of primitive sociologic evolution in this highly important branch of our aboriginal races, the Pueblo Indians. This study of a small area is of but little value unless considered in connection with the larger results of other investigators. The masterly work of Dr Fewkes in Arizona marks an epoch in anthropological research in America. To him every student of anthropology in the generations to come must acknowledge profound obligation. Pecos is a "type" area. The study of its problems must be the study of all Pueblo problems and the method employed must be susceptible of wider application.

The writer here desires to propose, provisionally, for the use of students of the Pueblos, the following analysis of their history, founded on sociologic development and pointed out as a conclusion derived from all previous investigations in southwestern ethnology. It was proposed in my unpublished courses of university extension lectures in 1899–1900. I will enter upon no discussion of it here, but at some future time hope to present a paper on the subject.

1. *The Epoch of Concentration.* — From the present day back to the time of the concentration of clans for defensive purposes into the great communal houses, made expedient by the arrival of the nomadic, predatory tribes; giving rise to a new system of social relations; leading to the formation of the present Pueblo languages by composition from clan dialects; the elaboration of the great ritualistic ceremonies as a result of the integration of clan legends

and religious practices.[1] The rivalry of clans at the beginning of this epoch of integration was naturally a great stimulus to certain activities. The supremacy of any clan in the organization would depend largely on the extent to which it could apparently influence supernatural powers by invocatory, propitiatory, or divinatory methods, the exercise of these magic powers taking shape in ritual and finding graphic expression in pictography. Thus the highest development of the ceramic art, particularly its richest symbolic ornamentation, is found in the ruins occupied by tribes in the early stages of this epoch of concentration. The most elaborate of the communal cliff-dwellings may belong to this epoch.

2. *The Epoch of Diffusion.* — A long epoch established by voluminous archeologic and traditionary evidence, during which small communities were distributed over the semi-desert areas; devoted to agriculture; under matronymic social organization; dwelling in fairly substantial houses, yet somewhat migratory in habits. The pottery of this epoch was quite strictly utilitarian, never rich in symbolic ornament. The legends of the clans were embodied in migration and creation myths. In one sense it was an epoch of clan-making. The vast number of small communal houses and countless single cliff-dwellings and cavate lodges probably belong to this epoch. It was characterized by the absence of predatory enemies.

3. *The Pretraditionary Epoch.* — An obscure, archaic epoch of semi-sedentary occupation, supported by no traditionary and scant archeologic evidences, the principal remains of it known to the writer being the many rock-sheltered sites in the Gallinas valley below Las Vegas, many similar remains in the Pecos valley, particularly on the Cañon de Pecos Grant, and the large number of natural caves on the eastern base of the Jemez range in Pajarito Park which seem to have sheltered a population far inferior in culture to the occupants of the cavate lodges proper and the rudimentary communal houses; in short, a people in the most primitive stages of culture of which obvious evidences are found on the American continent.

[1] See *Tusayan Migration Traditions*, by J. Walter Fewkes; Nineteenth Annual Report, Bureau of American Ethnology, p. 578.

Appendix

A communication received from the Pecos Indians at Jemez since the foregoing paper was put in type, conveys the information that they made their pilgrimage to their ancestral home during the last week in August and on opening their sacred cave "found everything all right."

I am informed by them in the same letter that the list of Pecos clans should include two more, namely, the *Mor-bäh* or Parrot and the *Hä-yäh* or Snake, neither of which was previously recorded by either Mr Hodge or myself. They assert that all the Pecos clans are now extinct excepting the Cloud, Sun, and Turquoise.

Agustin Pecos has also caused to be compiled for me a complete census of the tribe at the time of leaving Pecos in 1838. I regard it as rather a valuable record. The names are given in the Pecos dialect, and in some cases I am in doubt as to pronunciation. In such cases I have not marked the vowels.

Men

Se-hoñ-ba
Zu-wa-ng
Shi-to-ne
Wa-ng
Gal-la
Val-ū
Hur-ba

Women

Po-vā
Tye-con-wa-ū
Shi-añ-kya-con-no
Sun-ti-wa-ū
Ma-ta
Hä-ya-sha
Wa-ū

Children

Se-sa-fwe-yah
Tă-at-qū
Da-lur

ABORIGINAL TREPHINING IN BOLIVIA[1]

By ADOLPH F. BANDELIER

While engaged in the investigation of Indian ruins in Bolivia, for the American Museum of Natural History in New York, we spent the greater part of the year 1895 on the island of Titicaca and on the shores of the lake of that name. Up to this time, while in Peru, we had not found any skulls showing marks of trephining, and indeed had only heard of their existence in that country, but the belief was expressed that they were also to be found in Bolivia.

During our excavations at a site called Kea Kollu Chico, on Titicaca, we found, close together, in loose soil and without regularity of interment, at least ten trephined crania, which are now in the American Museum of Natural History. Subsequently we found in other parts of Bolivia, but still within the range of the Aymará Indians, sufficient specimens to increase the entire collection to sixty-five. As the total number of skulls collected by us is nearly twelve hundred, it gives for those on which trephining had been performed the proportion of about five percent.

These trephined crania were obtained by means of excavations at various points within the department of La Paz. Most of them came from the tableland, near Sicasica, south of the city of La Paz, but others were obtained from the southeastern end of Lake Titicaca, from the peninsula of Huata, from the northern and southern flanks of Illimani, and from the eastern slope of the cordillera, near Pelechuco and Charassani. At the latter places but few were found, for the reason that human remains are usually decayed beyond recovery on account of moisture.

The trephined skulls sent to the Museum were investigated and arranged by Dr Aleš Hrdlička, so that a description of them would be superfluous. I desire, however, to allude to the present custom of trephining among the Aymará Indians. The valuable memoir

[1] Published by authority of the American Museum of Natural History, New York.

by Drs Muñiz and McGee[2] furnishes many data on this interesting custom among the ancient Quichua of Peru.

None of the sixty-five trephined crania mentioned above shows quadrangular trephining by incision, as in the case of most of those from Peru described and illustrated by Muñiz and McGee. It may be that the Aymará performed this same method of trephining, but such did not come under our notice.

While at Umayo, near the northwestern shore of Lake Titicaca, the administrator of the hacienda informed me that some twenty-five years before he had known a man near Cuzco who had been trephined for skull-fracture and who wore a piece of gourd inserted in the orifice. I inferred from his conversation that both the operator and the man on whom the operation was performed were Indians. This was the first intimation we received that trephining was practised by Indians at the present time.

Inquiry among the Aymará of Bolivia convinced us that some of them knew about trephining, but were unwilling to impart any information concerning it. When we showed them perforated crania, the usual remark was that they neither knew what it meant nor how it was done. Medicine-men of high standing were sometimes numbered among our laborers, but they were seldom approachable, and in the rare cases, when it was possible to question them, they invariably declared the trephined crania to be those of priests and the perforation the result of tonsure. On the peninsula of Huata, however, we were fortunate enough to find mestizos who held intimate intercourse with the Indians and who gave us information which was subsequently corroborated.

Trephining is today practised in Bolivia, and probably also in the Peruvian sierra, by Indian medicine-men. The operation is performed with any available cutting instrument, such as a sharp pocket-knife or a chisel, and the process is one of incision and scraping. We heard of one case — that above mentioned — in which the aperture, although irregular, was covered by a piece of gourd; but this, if true, would appear to be exceptional. The Indian lived, and possibly still lives, about twelve miles north of La Paz.

[2] *Primitive Trephining in Peru*, Sixteenth Rep't of the Bureau of American Ethnology, 1894–95, pp. 3–72.

Francisca Calderón, an Indian woman from the vicinity of Huata, had her skull fractured in a fight and was trephined. The aperture was about the temporal ridge, irregularly oblong, and had not been closed; the skin was sewed over it and she felt little discomfort except after a debauch. The operation was performed, with simple, well-sharpened pocket-knives, by a well-known Indian medicine-man named Paloma. The woman said the operation was painful, but beyond this she was uncommunicative; she disappeared as soon as possible and avoided us studiously thereafter. The Aymará Indian, on all such matters, is very reticent toward foreigners, unless he expects relief or assistance; even then he gives only the most indispensable information, and lies deliberately if he thinks some benefit may accrue from it.

At the pueblo of Apolobamba, near the river Beni, in north-eastern Bolivia, a mestizo of consideration named Gregorio Gamez fractured his skull on the left side, above the temporal bone. An amateur surgeon (*aficionado*) trephined him, Indian fashion, and the aperture, which is oblong and irregular, was left open, only the skin being sewed over it. The operation was performed with knives, and Gamez asserted that little pain was felt after the periosteum had been cut, and no inconvenience was experienced after the wound had healed.

Everywhere we heard that trephining was not a "lost art" among the Aymará Indians. It is still performed by the medicine-men, and not infrequently, since fractures of the skull occur during every one of the annual or semi-annual engagements fought between neighboring communities and in the drunken brawls accompanying their festivals. Why the operation is kept secret as far as possible was not ascertainable, for no inconvenience results to the Indian during the healing process so long as reasonable care is exercised. The intimate connection, however, between Indian medicine and witchcraft, and the belief in the reality of "*malefice*" among both mestizos and Indians, are conducive to many crimes, very few of which are ever punished.

That the medical faculty of Bolivia is not jealous of the Indian shaman and does not look upon him as transgressing the law, is shown by their treatment of the Aymará Indian Paloma. This

individual died a few years prior to our visit to the peninsula of Huata, so that our information is derived at second hand, but it comes from sources that place it beyond doubt.

Paloma dwelt at or near the town of Hacha-cache, north of La Paz and a short distance from the lake. He was a shaman or medicine-man of the class called *Kolliri*, who practise Indian medicine, or medical magic, as a special vocation along with the common arts of husbandry or any menial work by which to gain a livelihood. Paloma appears to have had a natural talent for surgery, trephining with striking success although with the most ordinary cutting tools. His fame extended beyond the limits of the province of Omasuyos, of which Hacha-cache is the capital, and some of the members of the medical faculty at La Paz, learning of his successful operations with such clumsy implements, presented him with a box of surgical instruments which, it is stated, he never used, preferring his own primitive way. Whether this detail is true or not I am not prepared to assert, but the fact of the gift has been repeatedly affirmed and seems to be well established. He required and accepted compensation like all medicine-men, when he thought he could get it, but he also plied his professional vocation without pay. Indians in straitened circumstances (and they always declare themselves paupers when it is to their interest to do so) were attended by him without charge. Paloma was a benefactor to his community, since at his time physicians were almost unknown outside of La Paz. He acquired the art empirically and through training by other and older shamans, and made no secret of it. This fact makes it the more singular that the Indians, without the least cause for apprehension, so persistently deny acquaintance with the process, and indeed the same reticence is manifested toward all whites with respect to every phase of their life and activities; their simplest and most harmless actions and customs are concealed or denied. This comes from a profound aversion to all whites, and especially to foreigners. In early times Indian medicine-men were sometimes persecuted, and not without reason, for many of their practices are dangerous. In this connection I wish to state that while I am far from believing in the possibility of direct results, evil or good, from witchcraft, belief in it is by no means harmless.

Those having faith in sorcerers are induced to crime, since, as they believe in the supernatural power of witchcraft, they rely on it for protection, hence regard crime with impunity.

We found no trace of trephining among the Indians at the present time for any but external injuries, but it does not follow that they use it only for the purpose of removing splinters of bone or for relieving pressure on the brain. Among the trephined crania which we disinterred from the burial places there are some that do not show any indication of lesion; there are also specimens that exhibit two to four perforations, some of them quite small. The theory has been advanced that trephining was a ceremonial operation, and it has even been suggested that it was performed as a punishment for crime. I believe the latter interpretation to be scarcely worthy of serious attention; but the hypothesis that it contained a religious element is not to be discarded entirely, for in cases where a trephined skull exhibits no lesion whatever, the operation was doubtless performed for other than an external cause. The Indian attributes every disease to spiritual influence, from the moment it resists ordinary remedies, and even in cases in which the cause is absolutely unquestioned he suspects the interference of higher powers.

This fact came forcibly to our notice on one occasion while on Titicaca island, when my wife hurt herself against a stone. The shaman whom I had taken care to assign as her assistant, so that she might observe him and glean such information as might be possible, told her to eat a small piece of the stone, lest it injure her again. Indians, like other mortals, suffer from pain in the head; when the pain becomes persistent, suspicion of evil powers dwelling within the cranium, or of some evil substance smuggled inside of it through sorcery, naturally follows. In such cases, after all other charms have proved ineffectual, the final resort is to perforate the skull and let the evil out. This is a religious act, and trephining in such cases is accompanied by ceremonies, which are as yet unknown to us. There is abundant evidence that the existence of foreign bodies in our organism is believed by the Bolivian Indians to be the cause of many diseases, and the *callahuayas* or peddling shamans of Curva, near Charassani, are known to make a lucrative industry of the trick of "extracting" these fancied germs of disease. Suck-

ing of parts of the body afflicted with pain or ulceration is common among the Aymará and Quichua, as among other Indian tribes. We know of an instance in which two medicine-men, near Huata, drew the pus from a syphilitic tumor by means of their lips, and the only precaution taken by them was to rinse their mouths with alcohol before and after the process. Another case known to us is that of two *callahuayas* who pretended to expel live toads from the body of a man suffering from chronic dysentery, and produced the reptiles in testimony of the cure; but the division of spoils caused such a lively broil between the impostors that the trick was exposed. However, the impression which the performance created on the patient's mind, combined with the violent internal remedies used, effected a complete cure. Where such a belief is so deeply rooted, it would not be strange if the same people had opened skulls of those suffering from tumors or from chronic headache, in order to drive out the evil spirit believed to be responsible for the ailment.

The Indians have no anesthetics, properly so called, but the constant use (or I might say abuse) of *coca* creates insensibility. The plant is always applied by them to wounds, bruises, and contusions, and it certainly tends to deaden pain, if not to eliminate it. In this manner the Indians unconsciously employ an anesthetic, although they believe only in its healing qualities.

As to the implements used in trephining before the introduction of iron, we have no positive knowledge. At the ruins of Chujun Paki, near Huata, my wife obtained from a cyst a fragment of skull which had been trephined, and close to it was a small, rude bowl containing two fragments of chipped obsidian with very sharp edges. From the coast at Arica we procured a lancet consisting of a sharp obsidian point inserted in a wooden handle, the point resembling the extreme tip of an arrowhead. While investigating the ruins at Ezcupa, near Pelechuco, in northern Bolivia, on the eastern slope of the Andes, one of our men complained of a strained knee. Our principal laborer at that time was a Quichua medicine-man; he at once broke a bottle in which he had carried alcohol for the offering (without which no excavation, it is thought, can be successful), and from the sharpest fragment made a lancet, with which he bled the

painful spot. There were knives at hand, sufficiently sharp for the purpose, yet the Indian refused to use anything but the glass, which, as it resembled obsidian, he may have preferred on that account.

The primary cause of the invention of trephining by the mountain tribes of Peru and Bolivia may be looked for in the character of their weapons, which are mostly blunt, for crushing and breaking; hence they had to deal almost exclusively with fractures. The ancient missiles were and still are the sling-stone and the *bola* or *liui*, but at close quarters a club of stone or of metal was chiefly used. Spears were carried by the Incas of Cuzco as well as by those of the coast, but their use was not general. A fracture of the skull sometimes resulted in almost instant death, but on the other hand many survived wounds of this sort, at least for a time, and an attempt to remove splinters of bone that pricked the brain, or to cut out fragments that pressed upon it, must have been early regarded as a natural procedure. From such operations on external injuries to similar ones for internal maladies the step was comparatively short.

In closing this brief paper I may say that the Aymará Indians of the province of Pacajes, on the western slope of the cordillera in northwestern Bolivia, were among the few tribes that, in their primitive condition, used bows and arrows. They also employed lancets of flint for bleeding. The Aymará language contains the terms *llisa*, "white flint," and *chillisaa kala*, "black flint," or obsidian. The latter material was especially used for shearing the llama, and there is every likelihood that where obsidian was obtainable, implements made from it were employed in many cases for trephining. The Jesuit Bernabé Cobo, who wrote in the first half of the seventeenth century, and who had considerable practical acquaintance with the Indian tribes of the Peruvian and Bolivian mountains, mentions the custom of bleeding with "very sharp points of flint" and that in very serious cases the shamans placed the patient in a room by himself, "and the sorcerers did as if they would open him by the middle of the body with knives of crystalline stone, and they took out of his abdomen snakes, toads, and other repulsive objects."

It is a source of surprise to me that thus far I have not been able to find any mention of trephining in the early sources.

NUMERAL SYSTEMS OF THE COSTA RICAN INDIANS

By H. PITTIER DE FÁBREGA

In the *Nineteenth Annual Report* of the Bureau of American Ethnology there appears an extensive memoir on the "Numeral Systems of Mexico and Central America," by Dr Cyrus Thomas. This work contains many facts and interesting suggestions, and it may be regarded as exhaustive in so far as it relates to the numeral systems of Mexico and the adjacent parts of Central America. We regret, however, to find several errors, some of which would indicate that the author was not familiar with all the literature pertaining to the languages of southern Central America.

In the present paper I desire to offer what I hope will prove to be a better explanation of the numeral systems of the several Costa Rican tribes; but first I wish to call attention to a few points in Dr Thomas's memoir. On page 882, we read: "The four following lists are from R. F. Guardia (*Lenguas indígenas Cent. Am. Siglo*, pages 101 and 110). The tribes are classed with the Chibcha group, a South American stock, but are, or were, located in Guatemala and Porto Rico." Then follow the lists, which include three Costa Rican languages and the Lean y Mulía. As the Cabécara, Viceyta, and Lean y Mulía appear under the same head, it will be natural for the casual reader to regard them as belonging to a single stock. But I do not see how such an investigator as Dr Thomas, who may be considered an authority on the distribution of the languages and tribes of Central America, could overlook the identity of the Lean y Mulía numerals with those of the Jicaque de Yoró (Honduras), published on page 915 of his memoir:

1.	*pani*	*pani*
2.	*matiaa*	*mata*
3.	*contias*	*condo*
4.	*chiquitia*	*diurupana*
5.	*cumasopni*	*comasopeni*
	etc.	etc.

A comparison of the vocabularies published by Fernández y Ferráz and Membreño[1] illustrates better still the identity, so that it is easy to understand that the Lean y Mulia were families of the Jicaque stock and were placed next to our two Costa Rican languages simply because the monk who understood these was also acquainted with the first ones. The Jicaque stock is situated in Honduras and not in Guatemala or "Porto Rico," as Costa Rica is called in Dr Thomas's paper.

On page 914 are found the numerals of the "Morenos" of Honduras. As explained by Membreño in his *Hondureñismos* (p. 193 et seq.), the Morenos are Caribs, brought to the mainland from the island of St Vincent, and their numerals are intermixed with French, not with Spanish as Dr Thomas asserts.

	Moreno	French	Spanish
4	*gadri*	*quatre*	*cuatro*
5	*senc*	*cinq*	*cinco*
6	*sis*	*six*	*seis*
7	*set*	*sept*	*siete*
8	*vit*	*huit*	*ocho*
9	*nef*	*neuf*	*nueve*
10	*dis*	*dix*	*diez*

I fear, moreover, that the *cinca* of the Sumos, and especially the *aunqui* of the Payas, have nothing to do with the Spanish *cinco*, notwithstanding their apparent likeness.

Now, to return to the numeral systems of Costa Rica, I would first state that Dr Thomas seems to have overlooked the two very important publications of Thiel[2] and Gabb,[3] and also the essays of Gagini and Pittier.[4] The first two are fundamental to the study of Bribri, or Viceyta, and to that of several other dialects; and in the

[1] Alberto Membreño, *Hondureñismos: Vocabulario de los provincialismos de Honduras*, 2ª edición, Tegucigalpa, 1897.

[2] Dr Bernardo Augusto Thiel, *Apuntes lexicográficos de las lenguas y dialectos de los Indios de Costa Rica*, San José de Costa Rica, 1882.

[3] Williams M. Gabb, *On the Indian Tribes and Languages of Costa Rica*, Proceedings Amer. Philosophical Society, Philadelphia, 1875.

[4] H. Pittier and C. Gagini, *Ensayo lexicográfico sobre la lengua de Térraba*, San José de Costa Rica, 1892. H. Pittier de Fábrega, *Die Sprache der Bribri Indianer in Costa Rica, herausgegeben und mit einer Vorrede versehen von Dr. Friedrich Müller.* Mit einer Karte. Wien, 1898.

latter the numeral systems are explained at length, at least for the Bribri and Térraba. In recent years I have been enabled to make a partial investigation of most of the other native languages still spoken in Costa Rica, the results of which, in relation to the numerals, I shall here endeavor to give.

1. BRIBRI

As already shown by Gabb, the Bribri have six distinct modes of counting, dependent on the shape or nature of the objects to be counted. In explanation of these methods, it will suffice to reproduce the examples given in my *Sprache der Bribri:*

BRIBRI MODES OF COUNTING

(*a*) *For People*

Së ekur	1	person	(lit. us one, or our one)
së búúr	2	persons	
së mñor	3	"	
së kur	4	"	
së sker	5	"	
së terul	6	"	
së kuúr	7	"	
sê pagul	8	"	
së surí-tu	9	"	
së dábop	10	"	
së dabop ki ekur	11	"	(lit. ten upon one)
së dabop ki buúr	12	"	
së dëbop buu djuk	20	"	(lit. to do two, or twice ten)
së dëbop buu djuk ki ekur	21	"	
së dëbop mña djuk	30	"	
së dëbop kie djuk	40	"	
së dëbop ske djuk	50	"	
së dëbop ker djuk	60	"	
së dëbop kuúr djuk	70	"	
së dëbop par djuk	80	"	
së dëbop surí-tu	90	"	
së dëbop djuk dëbop	100	"	(lit. to do ten times ten)

In this case the expression corresponding to the number is preceded by the pronoun *së*, we, us; *Së ekur*, *së búúr*, etc., should be translated 'one of us,' 'two of us,' etc.

(*b*) *Round Objects*

áx ek	1 orange
áx buúk	2 oranges
áx mñor	3 "

and so on, as for people. Here, as in every other case, the name of the objects to be counted precedes the numeral, and the only distinguishing feature is a slight variation in the form of the latter.

(*c*) *Small Animals*

du etk	1 bird
du butk	2 birds
du mñatk	3 "
du kir	4 "

and so on. Same observations as for round objects.

(*d*) *Long Objects and Large Animals*

stsa é-tub	1 rope
stsa bu-tub	2 ropes
stsa mña-tub	3 "
stsa ki-tub	4 "
stsa ske-tub	5 "
stsa tek-tub	6 "
stsa tuk-tub	7 "
stsa pak-tub	8 "
stsa suri-tub	9 "
stsa dëbop-tub	10 "
stsa dëbop ki e-tub	11 "

The numeral is followed by the particle *tub*, the meaning of which I have not as yet been able to ascertain.

(*e*) *Trees and Plants*

tsirú iré kar	1 cacao tree
tsirú bur kar	2 cacao trees
tsirú mñor kar	3 " "
tsirú kir kar	4 " "
tsirú sker kar	5 " "
tsirú tërul kar	6 " "
tsirú kur kar	7 " "
tsirú pagur kar	8 " "

tsirú suri-tu kar	9 cacao trees
tsirú dëbop kar	10 " "
tsirú dëbop ki er-kar	11 " "

and so on, as for the first series. In counting trees, the name of the special tree (here *tsirú*, cacao) precedes the numeral, which is followed by the generic name *kar*, tree.

(*f*) *Houses*

hú etk ué	1 house
hú butk ué	2 houses
hú mñatk ué	3 "
hú kir ué	4 "
hú sker ué	5 "
hú terur ué	6 "
hú kur ué	7 "
hú págur ué	8 "
hú suri-tu ué	9 "
hú dëbop ué	10 "
hú dëbop ki etk ué	11 "

and so on. The mode of counting houses is analogous to that for trees, except that the suffix is *ué*.

2. CABÉCARA

In the Cabécara language the first five numerals are *é-kra*, *boor*, *mëñar*, *kir*, and *sker*, with the following variations:

é-tka hú tré	1 house
boor hú tré	2 houses, etc.
gsa djuri é-tba	1 rope
gsa djuri bo-tbú	2 ropes
gsa djuri mña tbŭ	3 "
gsa djuri tki-tbú	4 "
gsa djuri sker-tbú	5 "
tsirú-kurú er-ka-ri	1 cacao tree
tsirú-kurú bor-ka-ri	2 cacao trees, etc.

For people, round objects, and birds or other small animals, the Cabécara use the ordinary numerals, preceded by the name of the

object counted and without a suffix. The Cabécara have also ordinal numbers, as follows:

i-sĕ-kĕtu	first
i-tú-ki	second
i-bĕ-ta	third
i-xà-na	fourth

In comparing the four dialects of the Cabécara language, a few slight variations are observed. The examples given are from the Coen dialect, which I have studied at length. One and two, *é-kra* and *bo-or*, remain the same; *mëñar* differs only in its terminal vowel being more or less open, i. e., it passes gradually through *a*, *â*, and *o*. *Kir* takes a *b* initial in the Chirripó and Tucurrique dialects (*e-kir*), and sometimes a *t* (*t-kir-i*) in Cabécara. In Chirripó, *sker*, five, becomes *skun-grĕ*.

The Tucurrique count only to five in their language, and thence onward employ the Spanish numerals. For numerals six to nine the Coen repeat the count from one to five, adding the prefix *ki*, 'upon': *ki-e-kra* upon one, *ki-boor* upon two, etc. The Estrella and Chirripó have special terms, viz., *ter-lu* or *ter-ĕ-re* six, *kur* seven, *pa-gr* eight, *tëne-grë* nine. In the four dialects ten is *dë-bop* or *dë-bom*, and none of them seems to extend beyond this. On asking a Cabécara why he did not count like the Estrella people, he answered, "Because *this* is the only right way," and at the same time put his left thumb against his right thumb and said, "*ki-é-kra*"; then he placed his left index against his right index and said, "*ki-boor*," etc.

3. TÉRRABA

The Térraba language seems in many ways to have been systematized, probably at the instance of Franciscan missionaries. For example, there are two definite series of numerals, characterized by the prefixes *kró* and *kuó*, the first of which is employed in counting long objects, the other in counting rounded ones. In fact, *kró* means 'tree,' and *kuó* 'round.' The Brurán people can count up to one thousand, although I doubt whether there is among them any one who can conceive such a quantity.

1.	*kua-rá*	*kra-rá*
2.	*kuú-bú*	*kru-bú*

3.	*kuo-miá*	*kro-miá*
4.	*kuo-bkin*	*kro-bkin*
5.	*kuo-xkin*	*kro-xkin*
6.	*kuo-terrë*	*kro-tërre*
7.	*kuo-kok*	*kro-kok*
8.	*kuo-kuong*	*kro-kuong*
9.	*kuo-xkup*	*kro-xkup* (*u* = French *eu*)
10.	*kuo-rubóp*	*kro-rbóp*

Ten is also *sak-kuará*, and this term is used in forming the numerals from 11 to 19.

11.	*sak kua-rá kinxó kua-rá*	*sak kua-rá kinxó kra-rá*
12.	*sak kua-rá kuú-bú*	*sak kua-rá kru-bú*
13.	*sak kua-rá kuo-miá*	*sak kua-rá kro-miá.*
20.	*sak puk*	
21.	*sak puk kinxó kua-rá*	*sak puk kinxó kra-rá*
22.	*sak puk kinxó kuu-bú*	*sak puk kinxó kru-bú*
30.	*sak mia*	
31.	*sak mia kinxó kua-rá* (etc.)	
40.	*sap kin*	
50.	*sak xkin*	
60.	*sak tërre*	
70.	*sak kok*	
80.	*sak kuong*	
90.	*sak xkop*	
100.	*sak dëbop*	
101.	*sak dëbop kinxó kua-rá*	
110.	*sak dëbop kinxó sak kua-rá*	
120.	*sak dëbop kinxó sak puk*	
130.	*sak dëbop kinxó sak mia*	
200.	*sak dëbop krin kuú-bú*	
210.	*sak dëbop krin kuú-bú kinxó sak kua-rá*	
300.	*sak dëbop krin kuo-mia*	
400.	*sak dëbop krin kuo-bkin*	
1000.	*sak dëbop krin kuo-ru bop.*	

Sak or *sap* means the fingers, that is, the ten fingers of both hands. One finger is *sapkuó;* ten, or *sak-kua-rá*, means the (ten) fingers once. In *sak-puk*, twenty, or twice ten, we find the Tirub *puk* or *pug*, instead of *bú*. In counting the whole series of numbers,

the tens are not expressed, i. e., 11 is *kin-xó kua-rá* or *kin-xó kra-rá*, 16 is *kin-xó kuo-tërre* or *kin-xó kro-tërre;* and similarly 21, 31, or 26, 36, etc. But an isolated number must express itself completely: *hú sak-mia kin-xo kua-rá*, 31 houses, etc.

4. TÍRUB

The Tírub, on the headwaters of Tararia river, are partly the ancestors of the Térraba of Diquís valley. They seem to count up to seven only:

1. *fra-da*
2. *pug-da*
3. *mia-re*
4. *b-keng-de*
5. *x-keng-de*
6. *ter-de*
7. *ko-gu-de*

But their language has not yet been thoroughly investigated, and further research may bring to light a more comprehensive numeral system.

5. BRUNKA

The Brunka Indians certainly do not count beyond eight, and this is much the more to be wondered at, inasmuch as they are by far the most intellectual and civilized of all the Costa Rican aborigines. Their numerals are:

1. *eé-tse*
2. *boók*
3. *ma-ang*
4. *ba-qkang*
5. *kxi-xkang*
6. *téx-hang*
7. *kuú qkú*
8. *ut-ang*

Beyond eight they employ the Spanish numerals.

6. GUATUSO

The numeral system of the Guatusos is still more poverty-stricken, extending only to five; but they have also a word for ten, the root of which evidently means two:

1. *doo-ka*
2. *ppán-gi*
3. *poó-se*
4. *po-quái*
5. *o-ti-ni*
10. *pa-un-ka*

THE COSTA RICAN LANGUAGES IN GENERAL

In 1898, not having knowledge at that time of Dr Adolf Uhle's paper, presented ten years before, on the relations and migrations

of the Chibcha,[1] I appended to my grammar of the Bribri [2] the following conclusions, the result of personal investigations on the subject:

(1) With but few and possibly casual exceptions there is no close connection between the languages of Costa Rica and those formerly spoken northward from that country.

(2) San Juan river and Lake Nicaragua form the true ethnic boundary between Central America and South America, excepting about the western slope, where northern migrations penetrated as far as the peninsula of Nicoya.

(3) The Costa Rican languages undoubtedly bear closest resemblance to those spoken toward the southeast, in Chiriquí and Veragua, and analogy can be traced to the Cuna, Chibcha, Tule, and the languages of more distant tribes in the northern part of South America.

(4) The Nicaragua depression forms a chorographic limit to the dispersion of the two great ethnic groups of Central America as well as to the distribution of plants and animals.

A further study of the subject has satisfied me that the second and fourth of these conclusions are too absolute in their assertion, since it has been found that the southern migration has gone beyond the San Juan river as far as Honduras, in the same way that, on the western side, the Chorotegas have penetrated far beyond the lake of Granada, to the end of the peninsula of Nicoya. For there is no doubt that the Ramas and Sumos of Nicaragua and the Payas of Honduras belong to the same linguistic stock as the Costa Rican Indians, as a comparison of the numerals in the table which follows quite clearly shows.

In 1888 Dr Uhle endeavored to prove the existence of a parental bond between the Isthmian Indians and the Chibcha, by comparing their numerals and an extended series of selected words. But at that time he did not have at his disposal very complete data on the languages of the former, so that a repetition of the experiment will give results far more conclusive.

An examination of the Guaymi and Dorasque dialects will show

[1] Adolf Uhle, *Verwandtschaften und Wanderungen der Tschibtscha* (*Compte-Rendu du Congrès International des Américanistes*, 7e session, Berlin, 1888, pub. Berlin, 1890).

[2] Loc. cit., p. 51.

at once their analogy with the Térraba; they have the prefixes *kuo* and *kra*, more or less altered; and similar lexical devices are traceable in the Cuna and even in the Chibcha. In order to facilitate these comparisons, the first thing to be done is to eliminate the affixes, so as to have before us the numerical expressions only. Also, in the cases where there are several variations of a single idiom, the simplest root should be chosen as a standard. We have taken into account these details in forming the following tables, in which are compared the numerals of all the Central American tribes that may possibly belong to a single linguistic stock:

COMPARISON OF NUMERALS IN CENTRAL AMERICAN LANGUAGES

	1	2	3	4
Chibcha	*at-a*	*bo-za*	*mi-(ka)*	*mui-hi-(ka)*
Cuna	*(kuén)-tai-ke*	*po-kua*	*pa-(gua)*	*pa-ke-(gua)*
Dorasque	*ku-é*	*mat, mo*	*mas, bak*	*pa-ki, pa-ka*
Guaymi	*ti, da*	*bu*	*mo*	*bo-ko*
Térraba	*ra*	*bu*	*mia*	*b-kin*
Tírub	*ra*	*pug*	*mia*	*b-keng*
Cabécara	*ek*	*be*	*më-ñar*	*b-kir*
Bribri	*ek, et*	*bu*	*më-ñar*	*kir*
Brunka	*et*	*bo*	*ma-ang*	*ba-qkang*
Guatuso	*doó-ka*	*pan*	*poó-se*	*po-qai*
Rama	*sai-ming*	*puk*	*pang-(sak)*	*kun-kun*
Sumo	*as*	*bo, bu*	*bas*	*arun-ka*
Paya	*as*	*pok*	*ma-i*	*ka*

	5	6	7
Chibcha	*hiz-(ka)*	*ta*	*ku-kup(ka)*
Cuna	*a-ta-le*	*ner-kua*	*ku-(ble-ge)*
Dorasque	*ma-le*	*pa-ka, ta-ka*	
Guaymi	*ri-ge*	*ti*	*ku-gu*
Térraba	*x-kin*	*tërre*	*kok*
Tírub	*x-keng*	*ter*	*ko-gu*
Cabécara	*s-ker*	*ter, ted*	*kur*
Bribri	*s-ker*	*ter*	*kur*
Brunka	*xki-xkang*	*tex-hang*	*ku-u-qku*
Guatuso	*o-ti-ni*		
Rama	*kuik-as-tar*		
Sumo	*cin-ka*		
Paya	*aun-ki*	*se-ra*	*ta-uá*

	8	9	10
Chibcha	*su-hu(za)*	*a-ka*	*ub-chi-hi-ka*
Cuna	*pa-ba-ka*	*pa-ke-ba-ge*	*am-be-gi*
Dorasque			
Guaymi	*kuó*	*kon-kon, é,kon*	*jó-to*
Térraba	*kuón*	*xkup*	*s-bop*
Tirub			
Cabécara	*pa-grë*	*të-ne-grë*	*dë-bom, do-bob*
Bribri	*pa-gul*	*su-ri-ti*	*dëbop*
Brunka	*ut-ang*		
Guatuso			*pa-un-ka* [1]
Rama			
Sumo			*sa-lap*
Paya	*o-uá*	*tax*	*u-ka*

Modes of Counting

It is not for me to decide whether the variation according to the class of the objects to be counted, observed in the numerals of several of the languages referred to in this paper, is a peculiar and original feature of these languages, or whether it has been transmitted from a more highly developed linguistic system. With reference to the use of the fingers in primitive numeration and to the origin of the words expressing numbers, I may be allowed to mention that the Costa Rican Indians have a double mode of counting, i. e., they use their fingers in current oral computations, and grains of corn whenever they wish to keep a record of of any number. In my expeditions across the southern part of the country, my men used grains of corn to keep an account of their days of labor; and in Talamanca, a Bribri, who had collected beetles and land shells for me at the rate of ten for five cents, presented me with a number of grains corresponding to the groups of ten collected. The custom of counting by means of seeds was transmitted from the aborigines to the Spanish invaders, but instead of corn they used cacao beans, and these even acquired sometimes a monetary value. A popular expression still in vogue in Costa Rica, in speaking of a worthless thing, is "*No vale dos cacaos*"; that is to say, "It is not worth two cacao beans."

[1] *Pa, pan* is two in Guatuso, *aun-ki* is five in Paya. It is not unlikely then, that, given the relation between the two languages, *pa-unka* is "two-five."

Now, the numeral expressions bear a well-defined correlation with the custom just described. In Bribri, *i-kuo* means a grain of corn, and *e-kra* means one (originally, without doubt, to count long things, *e-kuo* having fallen into disuse; compare the Térraba numerals). In Brúnka *e-e-tsi* and *e-e-tsé* have the same relative signification, and the *as* (= one) of the Sumos and Payas is found to correspond again with corn in *as-ka*, a corn-field. This seems to indicate that several, if not all, of the tribes of southern Central America counted by means of grains of corn, one grain finally becoming the symbol of unity.

IROQUOIS IN NORTHWESTERN CANADA

By ALEXANDER F. CHAMBERLAIN

The primitive home of the Iroquoian stock was, according to Brinton,[1] "in the district between the lower St Lawrence and Hudson bay." Their historical area, exclusive of the Cherokee offshoot and cognate tribes in the Virginia-Carolina country (with its *Hinterland*), is represented on the Powell linguistic map by an irregular triangular extension from a point about two-thirds the distance between the mouths of the Ottawa and the Saguenay, the base-line of which runs from the head of Chesapeake bay to central Ohio and southern Michigan. The lines of the excursions and forays of the Iroquois outside this area led to St John's river in New Brunswick, to the interior of Massachusetts and parts of Maine in New England, far into the Ohio-Mississippi valley and along the northern shore of Lake Huron, whither they went in pursuit of the Ojibwa and other tribes.

Besides these warlike expeditions, the energy and spirit of adventure of the Iroquois have asserted themselves in other and more peaceful directions. Their intelligence and their ability as canoemen led the whites who had to do with the fur-trade and the exploration of the far west to employ them both in private enterprises and as servants of the great corporations. The Hudson Bay Company, the Northwestern Fur Company, etc., had from time to time many Iroquois Indians in their service. In the "Liste des 'bourgeois,' commis, engagés, et 'voyageurs' de la Compagnie du Nord-Ouest, après la fusion de 1804," we find Simon Allen, an Iroquois, set down as *contremaître* for the department of Athabasca river; and as simple *voyageurs*, "Paul Cheney-e-choe, Iroquois," "Ignace Nouwanionter, Iroquois," and "Jacques Ouiter Tisato, Mohawk."[2] The departments farther east show also a few Iroquois names.

[1] *The American Race*, N. Y., 1891, p. 81.

[2] Masson, *Récits de voyages, lettres et rapports inédits relatifs au Nord-Ouest canadien*, 1e ser., Quebec, 1889, pp. 395–413.

The Iroquois canoemen in the service of the Hudson Bay Company are reputed to have been the most expert in the country, and many stories are told of their skill and spirit of adventure. Sir George Simpson, a famous governor of the Hudson Bay Company, after whom Fort Simpson was originally named, used to make an annual trip from Montreal (*via* the Ottawa, Lake Nipissing, Lake Superior, Lake of the Woods, and Winnipeg river) to the end of Lake Winnipeg in a birch-bark canoe, paddled by Iroquois. Says Rev. E. R. Young:[1] "His famous Iroquois crew are still talked about, and marvellous are the stories in circulation about many a northern camp-fire of their endurance and skill." And again: "There are hundreds of people still living who distinctly remember when the annual trips of a great governor were made from Montreal to Winnipeg in a birch-bark canoe, manned by Indians."

Harmon,[2] under date of June 22, 1800, mentions encountering near Rainy Lake Fort, west of Lake Superior, "three canoes, manned by Iroquois, who are going into the vicinity of Upper Red River to hunt beaver, for the North West Company. Some of them have their families with them." One of Harmon's men, "an Iroquois," died Oct. 22, 1903, at Alexandria, near the source of Upper Red River, west of Lake Winnipeg.

Father Petitot[3] pays tribute to the services of the Iroquois of the Sault St Louis (Caughnawaga) as canoemen, guides, carriers, and *voyageurs* in the service of the Hudson Bay Company, — "they followed Franklin, Richardson, and Back to the Polar Sea." In the first years of his residence in far northwestern Canada, Petitot met with several of these expatriated Iroquois in the *pay d'en haut*, as the popular Canadian-French term for this region runs. In another place Petitot briefly relates the fatality which, in the old days, overtook a large canoe, manned by Iroquois at the great rapids of the Noyés on the Slave river, in consequence of the foolhardiness of the *commis* in charge. It is from this catastrophe that the rapid got its name of "Rapids of the Drowned."

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[1] *By Canoe and Dog-train among the Cree and Salteaux Indians*, Toronto, 1890, p. 75.

[2] *Journals*, new ed., N. Y., 1903, p. 19.

[3] *En route pour la Mer glaciale*, 2e éd., pp. 53, 311.

Major Chadwick,[1] in his sketch of the Iroquois, mentions "'Michel's Reserve,' near Edmonton, in Alberta, 40 square miles," on which are situated 82 "Indians" of this stock. The existence of these Iroquois so far beyond the normal limits of their people has apparently been overlooked altogether by ethnologists. They are not noticed under the rubric of the Iroquoian family in Major J. W. Powell's "Indian linguistic families of America, north of Mexico.[2] Just as these lines are being written, however, there appears a note on the subject by Mr James Gibbons,[3] Indian agent at Edmonton, under date of November 24, 1903. From this we learn that "the members of Michel's band are the children and grandchildren of two brothers, Michel and Baptiste, who came originally from near Montreal (probably from Caughnawaga)." According to Michel Callihoo (i. e., Garheyo, "Fine Forest"), who is now more than seventy years of age, his father went to the North West "at least a hundred years ago." The party of Iroquois who went with him are said to have numbered about 40 (all males, no women venturing with them), and they entered the service of the Hudson Bay Company and other fur companies, Michel's father becoming a boatman in the pay of the Hudson Bay people.

It appears that some of the more adventurous ones made their way out on the plains, where eighteen were killed in a fight with the Blackfeet. After this, Mr Gibbons says, "the majority appear to have gone up to the Jasper Pass country, and though I hear of them occasionally, they are outside my field of enquiry." It is probable that some of those who went into the Jasper Pass region were the Iroquois referred to by Father Morice as having been killed by the Carrier Indians of British Columbia "some 60 or 70 years ago" (from 1889), for the sake of their canoes.

The father of Michel married a French *métisse*, and he and his brother alone are said to have left descendants in Alberta. Of these Mr Gibbons gives the following account: Thirteen families, numbering sixty-six individuals, can trace descent from one or other of these brothers, and, as no women came with the original immi-

[1] *The People of the Long House*, Toronto, 1897, pp. 124–125.

[2] *Seventh Ann. Rep. Bur. Ethnol.*, 1885–'86, Washington, 1891, pp. 76–81.

[3] *Iroquois in the North West Territories*, Annual Archæological Report for 1903, pp. 125–126.

grants, it is obvious that the Iroquois blood in this generation is attenuated to the vanishing point. They have lost their language, and, if they retain any tribal characteristics, they have become so feeble that the ordinary observer of Indian manners is unable to discern them. In appearance, habits, and social status, they are indistinguishable from the half-breeds of the country.

The Iroquois community of the Jasper Pass is evidently the one referred to by Dr V. Havard,[1] in his account of "The French Half-breeds of the Northwest," in which he states that "where the Saskatchawan issues from the Rocky mountains are a small number of Iroquois *métis*." Their settlement in the Rocky mountains he regards as "a striking illustration of the roaming propensity of savages."

Mackenzie[2] mentions these Iroquois as follows: "A small colony of Iroquois emigrated to the banks of the Saskatchiwine, in 1799, who had been brought up from their infancy under the Romish missionaries, and instructed by them at a village within nine miles of Montreal."

This little group of Iroquois may have exerted an influence even beyond the Rocky mountains. Father Morice,[3] in his detailed account of the Western Dénés, describes and figures "a Tsé'kéhne cross-bow of modern manufacture," which "does duty against small game, or for target practice, and is also used by children as a plaything." Although the old men of the tribe now living state that such weapons have always been in use, Father Morice remarks: "I cannot believe that cross-bows were known to the original Tsé'kéhne. It is much more probable that they have been derived from the band of Iroquois established in close proximity to the territory of the Beaver Indians."

Elsewhere the same authority[4] ascribes another factor in Déné culture to the Iroquois. In the beginning of the nineteenth century the Carrier Dénés used only birch-bark canoes, — "'dug-outs' are a recent importation from the east." Says Father Morice: "Some sixty or seventy years ago, a party of Iroquois, having crossed the

[1] *Ann. Rep. Smithsonian Inst.*, 1879, Washington, 1880, p. 318.
[2] *Voyages*, new ed., N. Y., 1903, vol. II, p. 345.
[3] *Trans. Canadian Inst.*, Toronto, 1894, IV, pp. 59–60.
[4] *Proc. Canadian Inst.*, 1889, 3d ser., vol. VII, p. 131.

Rocky mountains, reached Lake Tatlh'a in two wooden canoes which at once excited the curiosity and covetousness of a band of Carriers, who killed the strangers for the sake of their canoes. These having been brought here (Stuart's Lake) served as models for the building of the first home-made 'dug-outs.'"

Writing in 1871, Mr C. S. Jones,[1] United States Indian Agent at the Flathead agency, Jocko reserve, Montana, attributes to Iroquois from Canada the stimulating of the Flathead Indians to send to St Louis in 1839 the deputation whose visit resulted in the coming to their country of Father de Smet, the famous missionary, who labored so well among the Indians of Idaho, Montana, and British Columbia — Kootenay, Flatheads, and others. According to Mr Jones, "nearly forty years since [about 1830] some Iroquois from Canada, trading with the Flatheads, told them of the teaching of the Jesuit fathers, who for many previous years had been laboring among them."

These facts and statements are of interest as indicating the culture-bearing character of the Iroquois and the influences exerted by them at points so far distant from their original home.

[1] *Rep. Comm'r Ind. Aff.*, 1871, p. 425.

DERIVATION OF THE NAME POWHATAN

By WILLIAM WALLACE TOOKER

No name, perhaps, is more thoroughly identified with the early annals of the Virginia Colony than that of *Powhatan*, which still survives among the geographic names of the state to designate a county, its seat, a station, and other features, both natural and political.

During several years' research on the Algonquian names recorded on Captain John Smith's map of Virginia, aided by careful study of his writings for any clew or hint that might tend toward the solution of some of the problems presented by them, I became strongly impressed with the idea that the generally accepted etymology and translation given by the late Dr J. H. Trumbull,[1] viz., "*Powhat-hanne*, or *Pau't-hanne*, 'falls in a stream'," and so reiterated in several of his contributions to Algonquian geographic nomenclature, was in error for a number of reasons; but what might be its more probable and acceptable etymology for a long time eluded my best efforts. I am at last fully satisfied that the true meaning of the term has been discovered, as it is so well corroborated by the contemporary facts herein presented.

Indeed, it is these facts that have brought about the discovery, which, like that of Columbus and the egg, is a simple one; yet the facts plainly indicate the error into which Dr Trumbull was led, as they show indisputably that he did not study the main points of the question concerning the exact locality of the Indian town. Dr Trumbull's translation, therefore, must be regarded as a hasty conclusion, which a subsequent revision of the name might have changed, although his etymology is seemingly upheld through the resemblance of *Powhatan* to names of similar orthography, but which are of different etymology and meaning.

[1] *Historical Magazine*, 2nd ser., vol. VII, p. 47, 1870.

Heckewelder's "*Pawat-hanne*, 'the stream of wealth and fruitfulness'," like other of his derivations, is unworthy of consideration.

For a proper understanding of the real origin and etymology of *Powhatan*, we shall quote Smith and his associates in order to show the exact location of the place which bore this name, the true appreciation of the application of the term by the Indians themselves, and its use by Smith and his companions. We cannot doubt that Smith was well aware of the derivation, although he never alluded to it.

In the first place, as Smith[1] informs us, "Their chiefe ruler is called *Powhatan*, and taketh his name of the principall place of dwelling called *Powhatan*. But his proper name is *Wahunsonacock*." This explanation takes away the personal attributes as embodied in a name when bestowed upon an individual, and gives it to a place.

Captain Archer[2] says: "We came to the second Ilet Described in the Ryver; over against which on *Popham* syde is the habitatyon of the greate kyng *Pawatah:* which I call *Pawatahs Towre;* it is scituat upon a highe Hill by the water syde, a playne betweene it and the water. 12. score [yards] over, whereon he sowes his wheate, beane, peaze, tobacco, pompions, gourdes, Hempe, flaxe, &c. And were any Art vsed to the naturall state of this place, it would be a goodly habitatyon. . . . But now rowing some. 3. myle in shold water we came to an overfall, impassable for boates any further."

Smith further says (page 6): "Giuing vs in a guide to go with vs vp the Riuer to *Powhatan*, of which place their great Emperor taketh his name, where he that they honored for King vsed vs kindely. But to finish this discouerie, we passed on further, where within an ile [a mile] we were intercepted with great craggy stones in the midst of the riuer, where the water falleth so rudely, and with such a violence, as not any boat can possibly passe, and so broad disperseth the streame."

Again, according to Wingfield, Smith says (pages 91–92): "In 6 daies they arrived at a towne called *Powhatan*, consisting of

[1] *History of Virginia*, p. 375.

[2] Arber's *Smith*, p. xliii.

some 12 houses pleasantly seated on a hill: before it, 3 fertil Iles, about it many of their cornefields. The place is very pleasant, and strong by nature. . . . To this place, the riuer is navigable; but higher within a mile, by reason of the Rockes and Iles, there is not passage for a smal boate: this they call the Falles."

Mr Edward C. Bruce[1] says: "Smith's brief description is enough in itself amply to identify the locality. The falls are about a mile above; directly in front are the three islands, though one of them has been reduced by freshets to the humble station of a sand-bar. Of this there can be no mistake, since no other island exists between the falls and the immediate neighborhood of Appomatox, a distance of forty miles. For considerably more than a century, Powhatan, as it is styled, has been in the hands of one family. Taste, time, and wealth have combined to enhance the natural beauty of the spot."

Dr Lyon G. Tyler[2] says: "A mile below Richmond is a place called Powhatan, long the home of the Mayos, who came from Barbadoes to Virginia."

It will be observed that these quotations are explicit in locating the village of Powhatan on a hill, and in a locality situate about a mile below the falls, a fact that in no event, to an Indian's mind, would induce him to bestow a name connotive of "falls in a river" on a place where it would not be appropriately applied. The Indians were very literal and particular in naming natural features, so that no doubt could arise about the description in another native's mind. Strachey[3] gives "*Paqwachowng* (= *paqu-achuan*, 'where the overflow widens or breaks'). The falls at the end of the Kings river," as the true name for the falls. Therefore Trumbull's translation does not harmonize with the actual situation of the town, and on that account must be in error.

Again, the town was situated on a high hill, doubtless a notable landmark some little distance back from the water; and this fact is confirmed by Smith's map, on which Powhatan is laid down as a "king's residence" with the contour lines of a hill about it, the river a short distance away, and the falls still farther off.

[1] *Loungings in the Footprints of the Pioneers*, Harper's Magazine, May, 1859.

[2] *Cradle of the Republic*, p. 134.

[3] *The Historie of Travaile into Virginia, Britannia*, etc., 1612.

The hill site is also established by the terminal *-atan*, which, in nearly all Algonquian dialects, is a radical element signifying 'to search', or 'to look about', secondarily, 'hill', or 'mountain'; hence this affix should be translated 'hill', for it substantiates, etymologically, the exact location of the town, and no other sounds need be accounted for.

The prefix, *powh-*, *powwh-*, *pough-*, *powah-*, *paw-*, *poh-*, and *pewh-*, as it is variously found in Arber's Smith, does not here refer to *pau't* 'a fall of water' (although it is possible that both are derived from the same root, signifying, 'to make a loud noise'), but is the Virginia equivalent of our adopted word *-powwow*, Massachusetts *pauwau*, 'he uses divination', or, as employed by Eliot, 'a witch, wizard, sorcerer'; or by Roger Williams, *powwaw*, 'a priest.' Williams says it was a term applied to the "Priests, their wise men, and old men, they make solemn speeches and orations, or Lectures to them, concerning Religion, Peace or Warre and all things."

Brinton[1] translated the word as 'the dreamer' or 'an interpreter of dreams'. This was simply collateral to a *powwow's* labors, and is not a literal translation of the word. Hariot[2] says of the conjuror: "The inhabitants give great credit unto their speeche, which often tymes they finde to be all true."

Wood[3] says: "Their *pow-wows* betakeing themselves to their exorcismes and necromanticke charmes by which they bring to passe strange things, if we may believe the Indians."

The *Century Dictionary*, under the word *powwow*, as adopted, gives, as a primary meaning, "to perform a ceremony with conjurations for the cure of diseases, or for other purposes"; and as a secondary one, "to hold a meeting—a powwow."

The village was therefore the *Pauwau-atan*, 'the hill of the pauwau,' 'the hill of the sorcerer,' or 'the hill of divination,' where Powhatan, or Wahunsonacock, held his powwows.

Archer[4] speaks in the following terms of the first English-Indian powwow held there: "Heere we were conducted vp the Hill to the kyng, with whome we found our kinde kyng *Arahatec*: Thes. 2.

[1] *The Lenape and their Legends*, p. 70.

[2] *Narrative*, 1685.

[3] *New England's Prospect*, chap. XII, 1634.

[4] Smith, p. xliv.

satt by themselves aparte from all the rest (saue one who satt by *Powatah*, and what he was I could not gesse but they told me he was no *Wiroans*): Many of his company satt on either side: and the mattes for vs were layde right over against the kynges."

That Powhatan, the man, was the chief priest, is amply shown by Smith in several instances. He remarks (page 75): "Their principall Temple or place of superstition is at *Vttamussack* at *Pamavnke*, neare vnto which is a house Temple or place of *Powhatans*." Also (page 376): "A myle from *Orapakes* in a thicket of wood, he hath a house in which he keepeth his kinde of Treasure. . . This house is fiftie or sixtie yards in length, frequented onely by Priests. At the foure corners of this house stand foure Images as Sentinels, one of a Dragon, another a Beare, the third like a Leopard, and the fourth like a giantlike man: all made evill favouredly, according to their best workemanship."

He also remarks (page 81): "It is strange to see with what great feare and adoration all the people doe obay this *Powhatan*."

Thus after nearly three centuries do we learn the true meaning of this well-known Virginian name.

A MODERN MOHEGAN-PEQUOT TEXT

By FRANK G. SPECK

The following text is in the dialect of the Mohegan-Pequots, a New England branch of the great Algonquian linguistic stock. The dialect was originally spoken by the Pequots, who, after migrating about the year 1600 from the upper Hudson River country, inhabited that portion of Connecticut lying between Connecticut river on the west, the Pawcatuck on the east, Long Island sound on the south, and the Nipmuck country on the north. The Mohegans, however, a mutinous offshoot of the Pequots, formed under Uncas a separate band about the year 1640, retaining nevertheless their maternal Pequot tongue.[1] Outside linguistic influences are noticeable, too, in some loan-words, but the dialect is practically identical with that of the Pequots of long ago. Today the modern Mohegan-Pequots number fewer than one hundred, their principal settlement being near Norwich, Conn.

Of these Indians there lives but one who still retains a knowledge of the ancient dialect, namely Fidelia A. H. Fielding, the narrator of the accompanying text. The writer's effort for a number of years has been to school himself with Mrs Fielding that her dialect and tradition may not pass away with her. It is needless to say that under such conditions of isolation a language must necessarily be found in a state of decay, and that much of the fulness and complexity of Indian grammar has been modified and lost. I might further mention that, previously to what has been done by Professor J. Dyneley Prince and myself, nothing has been written in connection with this dialect except a manuscript vocabulary by President Stiles of Yale College, a number of years ago. Consequently shortcomings on my part are due largely to scantiness of material and the decaying condition of the dialect as it survives today.

[1] See "The Modern Pequots and their Language," by J. Dyneley Prince and F. G. Speck, *American Anthropologist*, 1903, vol. 5, No. 2, pp. 193–212.

Mohegan-Pequot Text

(1) Inchŭnî'n wî'nai mō'wî ū'nkshâ bîū'mch New Lóndonŭg. (2) Sū'mî' dŭ'pkwâ. (3) Gŭtō'wî tŭ'bō jôhŏ'g? (4) Nā'wā jŏkwî'ŭn. (5) Wôtāiŭ''tŭm bā'kîmŭs dā'bî nŭtŭ'b nîdā'i yūdŭ'pkwŭg. (6) Nŭmō'wî tî! tî! skwŭ'ndôg. (7) Owā'nŭks squâ bî'yâ yūnjŏ'nŭm skwŭnd. (8) Nŭnŭnā'wâ. (9) Î'wā gŭsŭgwî'sh, wî'chū. (10) Nŭ'î'wā dā'bî nŭtŭ'b yūdaí yŭdŭ'pkwŭg? (11) Owā'nŭks squâ î'wā, nái! mŭd gŭyū'ndŭm, nŭmî'cî tŭ'kŭnîg dâ jîshs, dā'bî gŭmî'tchiŭn? (12) Mŭd nŭyū'ndŭmî' yūdŭ'pkwŭg, mŭs nŭmî'jŭnî wômbū'nsiŏñ. (13) Wŏ'nŭks squâ î'wā, chŭ'nchî mŭd gŭ'î'wā gŭnā'wānî yūdaí.

(14) Ŭndaī' nŭpō'nŭm nŭmŭnū'dî, dâg ŭndaī' nŭzŭmŭ'ksŭn. (15) Nŭgāwî'. (16) Yūmbō'wî nŭgŭtŭ'mkî. (17) Mŭdjô'g jŏkwî'ŭn. (18) Jŏ'nāū gŭ'nkchî sūn, ŭndái nŭkō'nŭ'm nŭtŭ'kŭnîg dâ jîshs gŭ'nkchî kaíyaú gî'tŭs mî'gŭchīd dâ'kŭ wòmbā'iyô skŭn. Dî'bîŭg!

Translation

An old Indian woman goes to sell brooms at New London (Conn.). It becomes very dark. Where is she going to stay? She sees a house. She thinks, "Perhaps I can stay there tonight." I go rap! rap! on the door. A white woman comes and opens the door. I know her. She says, "Come in"; she smiles. I say, "Can I stay here tonight?" The white woman says, "Yes! Are you not hungry? I made some bread and cheese, can you eat some?" "I am not hungry tonight. I will eat if I live in the morning." The white woman says, "You must not say that you saw me here." (She did not wish it to be known that she was a witch.)

Then I put down my back-basket, and then I lie down. I go to sleep. Early I arise. There is nothing (to be seen) of the house; it is all a great stone. Then I find my bread and cheese (to be) a great cold piece of cattle dung and a white bone. Horrors!

Analysis

1. *Inchŭnî'n wî'nai mō'wî ū'nkshâ bîómch New Lūndonŭg.*

Inchŭnî'n — English loan-word for Indian + *în* man (pl. *înŭg*). So *înskî'dŭmbāk*, concrete for Indians (Lat. *viri*) or 'true men.'

wî'nai — radical for 'woman,' containing stem *în*, often appearing as *wînais*, with contracted suffix *kchaisū* to be old, hence 'old woman.'

mō'wî — modal particle, denoting future and motion toward, from stem *m* to go, with probable 3d pers. element *w* and *i* modal. Also seen

in *nugutawi gĭ'shtūtŭsh* I am going to wash. The common indicative future particle is *mŭs*. *mō'wî* seems also to have the idea of purpose.

ū'nkshâ — she sells, 3d pers. sing. trans. with inanimate objective wanting. *ū'nkshâ* ought to show coördination with *mō'wî*.

bîū'mch — Indianized English for 'brooms,' with usual inan. pl. ending *ch*, as *sūn* stone, *sūnch* stones. In all such transmutations Mohegans pronounce *n* or *y* for *r*; e. g., *yātsh* rat.

New Lóndonŭg — *ŭg* is nominal locative suffix meaning at, in, on. Said to be from *ū'kî*, earth, ground.

2. *Sū'mî' dŭ'pkwâ.*

sū'mî' — superlative substantive 'too much.' Final *î* is 3d pers. inan. impers., seen also in other adverbial ideas, viz., *mŭchî'mî* always (lit., 'it is always'), *m'tā'wî* much, *chŭnchŭchî'* only a little, etc. *sū'mî'* has usual meaning 'because.'

dŭ'pkwâ — substantive, night.

3. *Gŭtō'wî tŭ'bō jôhŏ'g?*

gŭtō'wî — compounded of *t*, one of the stems 'to go,' and 3d pers. future modal *ō'wî*, as above (sentence 1) *mō'wî*.

tŭ'bō — 3d. pers. sing. animate of stem *tŭb* or *dŭp*, he stays, sits, exists, remains, etc. The 3d pers. sing. is made in the animate indic. by suffixing *ā*, *ō*, or *ū* to the stem; cf. *gĭgîtū'kŭ* he speaks, *wŭskŭsū* he writes, *nūpâ'* he dies, etc.

jôhô'g — interr. compounded of *jô* or *chô*, simple interr. particle (as in *chāgwān* what?) and vocalic connective *h* + locative suffix *ŭg* or *ôg*. *jô* also has the significance of an indef. relative, referring to inan. objects.

4. *Nā'wâ jŏkwî'ŭn.*

nā'wā — 3d pers. sing. animate indic. pron. *wā* suffixed to stem *nā*, to see, know, understand.

jŏkwî'ŭn — 'a white man's house,' probably from *jô* inan. indef. relative and form of *wî'tū* (?) house.

5. *Wôtāiŭ''tŭm bā'kîmŭs dā'bî nŭtŭ'b nîdā'i yūdŭ'pkwŭg.*

wôtāiŭ''tŭm — from stem (composite) *aiŭ'tŭm*, lit., 'to be minded' (cf. Ojibway *inendam* he thinks), + trans. 3d pers. pron. *w* prefixed, and connective *t*. The principal element *ŭ''tŭm* is found suffixed to stems of all verbs denoting a state of mind, and some others of a similar nature. See list of such verbs at end of analysis.

bā'kîmŭs — from *bā'kî*, a subjunc. verbal; stem *b* to come, and *mŭs*, simple future indic. particle. *kî* is inan. 3d pers. The combination means maybe or perhaps.

dā'bî — an impersonal verb commonly in use denoting can, am able,

but derived from *dāp*, distantly meaning it is enough, with *î* inan. 3d pers. pron.

nŭtŭ'b — 1st pers. sing. pron., with stem *tŭb* (see sentence 3). The full form of pron. is wanting here.

(In considering the connection between these last three verbs I am inclined to think that they should be incorporated into one word, although the narrator keeps them divided: *bā* — *kî* — *mŭs* — *dābî* — *nŭ* — *tŭb* — (Potential) Come — it — will — it may happen, or be (subj.) — I — stay. The simple indicat. future *mŭs* invariably precedes its verb, instead of being suffixed to another, as *bā'kîmŭs*. The whole phrase, however, seems to be incorrectly construed.)

nîdā'i — from *nî*, demonstr. that + *dāi* inseparable locative adverbial suffix, so *yū'dai* here, *dō'dai* where (relative).

yūdŭ'pkwŭg — composed of *yū*, demonstr. this, prefixed to *dŭ'pkwô* night, and locative *ŭg*.

6. *Nŭmō'wî tî! tî! skwŭ'ndôg.*

nŭmō'wî — for *mō'wî* (see sentence 1), *nŭ*, 1st pers. sing. pron. The forms of this verb are defective throughout.

tî! tî! — exclamatory, 'rap! rap!'

skwŭ'ndôg — *skwŭnd* door, locative *ôg* on.

7. *Owā'nŭks squâ bî'yâ yūnjŏ'nŭm skwŭnd.*

owā'nŭks — from *ôwā' nŭg* pl. of *âwâ'n* animate interr. and relative pron. 'who?' and ablative *ūtch* from, which appears mutilated in final *s*. The term *Owā'nŭks* came to be used for the whites, illustrating the question in the native mind, "Whence did they come? Who are they?" The word is erroneously supposed by some to have come from the Indian term for "pale-face."

squâ — usual suffix used dependently for female. Cf. *Chākū's squâ* (Schaghticoke dialect; see Prince and Speck in *Proc. Amer. Philos. Soc.*, vol. XLII, no. 174) negress, *squâ'sî's* little girl. *squâ* is said to be derived from *î'kwĕ* to split, with infixed *s*.

bî'yâ — 3d pers. sing. animate of stem *bî* to come.

yūnjŏ'nŭm. — from *yūnjā'n* open, conjunc. mood, transitive as shown by indef. obj. *ŭm*. Cf. *nūqŭ'tsh'tŭm*, I taste it.

skwŭnd — see sentence 6.

8. *Nŭnŭnâ'wâ.*

nŭnŭnâ'wâ — I know her. Stem *nū* or *nā* to know, with incorporate subject *nŭ* and object animate *nâ'wâ*.

9. *Î'wā gūsŭgwī'sh, wî'chū.*

î'wā — 3d pers. sing. of stem *îw* to speak, whence *wūt* mouth; im-

perative form is *î'wāsh*. In all terms denoting parts of the body, local suffixes express the part of the body, as *qŭnnŭ'ng* throat, *qŭ'ddŭng* a swallowing.

gŭsŭgwî'sh — formed from stem *w* to come, with imperative *wĭsh* or *îsh* modal suffix, and emphatic 2d pers. pron. prefixed, *gŭ*. *ŭg* is perhaps locative with connective *s*.

wî'chū — Independent mood, 3d pers. sing. This verb also shows action of mouth, *wî*.

10. *Nŭ'î'wā dā'bî nŭtŭ'b yūdaí yūdŭ'pkwŭg ?*

nŭ'î'wā — For *î'wā* (see sentence 9). *nŭ*, 1st pers. pron. with connective *t* wanting (*nŭtîwā*).

dā'bî — see sentence 5.

nŭtŭ'b — see sentence 5.

yūdaí — demonstr. *yū* this, with suffix, for which see sentence 5.

yūdŭ'pkwŭg — same as sentence 5.

11. *Owā'nŭks squâ î'wā, naí ! mŭd gŭyū'ndŭm, nŭmî'cî tŭ'kŭnîg dâ jîshs, dā'bî gŭmî'tchîūn ?*

owā'nŭks squâ' — see sentence 7.

î'wā — see sentence 9.

nā'i — affirmative yes, possibly a subjunctive. The usual 'yes' monosyllabic is *nŭk*.

mŭd — This negative is an invariant particle, expressing all conditions of negation, prohibition, etc. Other forms must formerly have existed for different moods, but they are now obsolete.

gŭyū'ndŭm — 2d pers. sing. pron. *gŭ*, and *yū'ndŭm* hungry, showing suffix *dŭm* state of mind or body. See *wôtāiŭ''tŭm*, sentence 5.

nŭmî'cî — 1st pers. pron. with subjunc. element probably. I am undecided as to whether the stem is *wū'stŭ* he makes, or a stem containing *m*.

tŭ'kŭnîg — noun, bread, from *ptŭ'kwî* it is round, referring to cakes, loaves, whence bread. Final *g* denotes 'the thing that is.'

dâ — coördinate conjunction. There probably existed a discrimination between this form and *dâ'kŭ*, but none is noticeable now.

jîshs — English loan-word with Indian stress, i. e., 'cheese.'

dā'bî — see sentence 5.

gŭmî'tchîūn — 2d pers. sing. transitive subj. of stem *mîtch* to eat, with incorporate obj. *ūn*, inan. ; so *gŭwā'jînŭm* you have it.

12. *Mŭd nŭyū'ndŭmî yūdŭ'pkwŭg, mŭs nŭmî'jûnî wômbô'ñsîŏñ.*

mŭd — see sentence 10.

nŭyū'ndŭmî — for *nŭyū'ndŭm* see sentence 11 ; the final *î* or *mî* is the suffixed portion of the negative.

mŭs nŭmî'jŭnî — 1st pers. sing. of the future subjunc. *nŭ . . . î*, and stem *mîtch* with incorporate inan. object *ŭn*.

wômbŏ'ñsîŏñ — from *wŏ'mbôñ* sunrise, or tomorrow, and *sîŏ'ñ* animate subjunc. 1st pers. 'if I.' A final *î* should be found to complete the subj. pron., but owing to the obscurity with which final vowels are pronounced, its absence is explained. *bŭn* may more properly be the stem 'to live,' but as this stem is not found now, I cannot be certain of it.

13. *Wŏ'nŭks squâ î'wā, chŭ'nchî mŭd gŭ'î'wā gŭnā'wānî' yūdaî.*

wā'nŭks squâ — see sentence 7.

î'wā — see sentence 9.

chŭ'nchî — impersonal verb from *chŭ*, to want, or to be necessary, and *ch*, contracted for adjectival *gŭ'nchî* great, always used thus in composition (cf. Ojibwa *gitche*). The final *î* is inan. 3d pers. sing. *chŭ'nchî* literally means 'it is greatly needed,' hence 'must.'

mŭd gŭ'î'wā — another defective verb with 2d pers. sing. pron. and negative element loosely attached to stem *îw*; see sentence 9.

gŭnā'wānî' — stem *nā*, for which see sentence 4, in conjunc. mood with preceding *î'wā*, having incorporate 2d pers. subject and 1st pers. object, *nî*, the 2d pers. subject *gŭ* being prefixed. This precedence of the 2d pers. over the 1st pers. is a common characteristic of nearly all North American languages. In the Tsimshian of the North Pacific coast, where the verb uses different stems for the sing. and the pl., the presence of a 2d pers. pron. influences the construction so much that the sing. or the pl. stem is used according to the number of the 2d pers. pron.

yūdaî — see sentence 10.

14. *Ŭndaî' nŭpō'nŭm nūmŭnū'dî, dâg ŭndaî' nŭzŭmŭ'ksŭn.*

ŭndaî' — *ŭn* I cannot place. For *daî* see sentence 5; the meaning is 'then,' 'at that time.'

nŭpō'nŭm — from stem *pōn*, to put, to place, etc., with 1st pers. pron. and incorporate indef. object *ŭm*. For similar transitive forms see sentence 7.

nŭmŭnū'dî — made from *mūŭ'ndū* mystery, or *Mūŭ'ndū* God (cf. Ojibwa, etc., *Manitu*). Final *î* is inan. noun ending, as *bîŏ'tî* plate, etc.; and *nŭ* 1st pers. sing. pron., the whole meaning 'my basket,' cognate with idea of unknown inan. contents. Indians of the east designate a basket or its contents as objects which betray nothing of their internal character by their outside appearance or shape, hence the psychological analogy with God, or mystery.

dâg ŭndaî' — see sentences 11 and 14.

nŭzŭmŭ'ksŭn — composed of *zŭ* 'from out of' (?) + connective *m*,

+ *ŭk*, locative down, or on; *sŭn* to fall (cf. *dŭksŭ'nî* I fall down), and 1st pers. pron. *nŭ*, intrans.

15. *Nŭgāwî'*.

nŭgāwî' — made from *gā'wî*, uninflected, 'sleep,' + 1st pers. pron. *nŭ*.

16. *Yūmbō'wî nŭg'ŭtŭ'mkî*.

yūmbō'wî — contraction of *yū*, demonstr. this; *ŏ'mbî* time, and *wîgŭ'* light. Or else final *î* is impers. 3d pers. pron. element; see *dā'bî*, *chŭ'nchî*, sentences 5 and 13.

nŭg'ŭtŭ'mkî — from *ŏ'mkî* to get up, with *g* progressive, and 1st pers. pron., the suffixed element being absent, hence intrans.

17. *Mŭ'djôg jŏkwî'ŭn*.

mŭ'djôg — negative *mŭd*, + *jôg* inan. relative, elliptical for *jôgwā'n* a thing. *mŭ'djôgwā'n* 'nothing' also occurs.

jŏkwî'ŭn — see sentence 4.

18. *Jŏ'nāū gŭ'nkchî sūn, ŭndaî' nūkō'nŭ'm nŭtŭ'kūnîg dâ jîshs gŭ'nkchî kaiyaú gî'tŭs mî'gŭchīd dâ'kŭ wŏmbā'iyô skŭn*.

jŏ'nāū — Intensive *jô*, inan. indef. with *nô*, or *nā'gŭm*, a form of the independent animate 3rd pers. sing. pronoun.

gŭ'nkchî — emphatically protracted form of adjective *kchî'* great, large.

sūn — substantive, inan.; pl. *sūnch* stones.

ŭndaî — see sentence 14.

nūkō'nŭm — from *kŭ'nā* he catches, finds, hunts, etc., 1st pers. sing. trans. indic., with incorporate object *ŭm*.

nŭtŭ'kūnîg — same as in sentence 11, but with 1st pers. pron. In these nouns with pronoun elements the required subjective and objective sets have been lost.

dâ — see sentence 11.

jîshs — see sentence 11.

kaiyaú — adjective from *tĭkā'* cold, hard, + *yū*, demons. this. This combination of the adjective and a demonstrative is frequent, so *squā'yau* red, *wŏmbaiyau* white, *sūggā'yau* black, etc.

gî'tŭs — possibly a generalization from *jîts* bird, barnyard fowl, and broadly used for any general animal term, hence cattle. The animate pl. *gî'tŭsŭg* is commonly used at Mohegan to designate 'critters.'

mî'gŭchīd — derived from *mî'kî* hard, strong; ending *id* or *od* denotes inan. state of being.

dâ'kŭ — see sentence 11.

wŏmbā'iyô — adjective white from *wŏ'mbî* white; see *kaiyaú* above.

skŭn — inan. substantive, pl. *skŭnch*.

19. *Dî'bûg* — pl. of animate noun *dî'bî*, from *chî'pî* terrible, awful, bad, whence Devil. Other forms of same occur, as *jîbaîôg*, *tî'pûg*, *bî'bûg*.

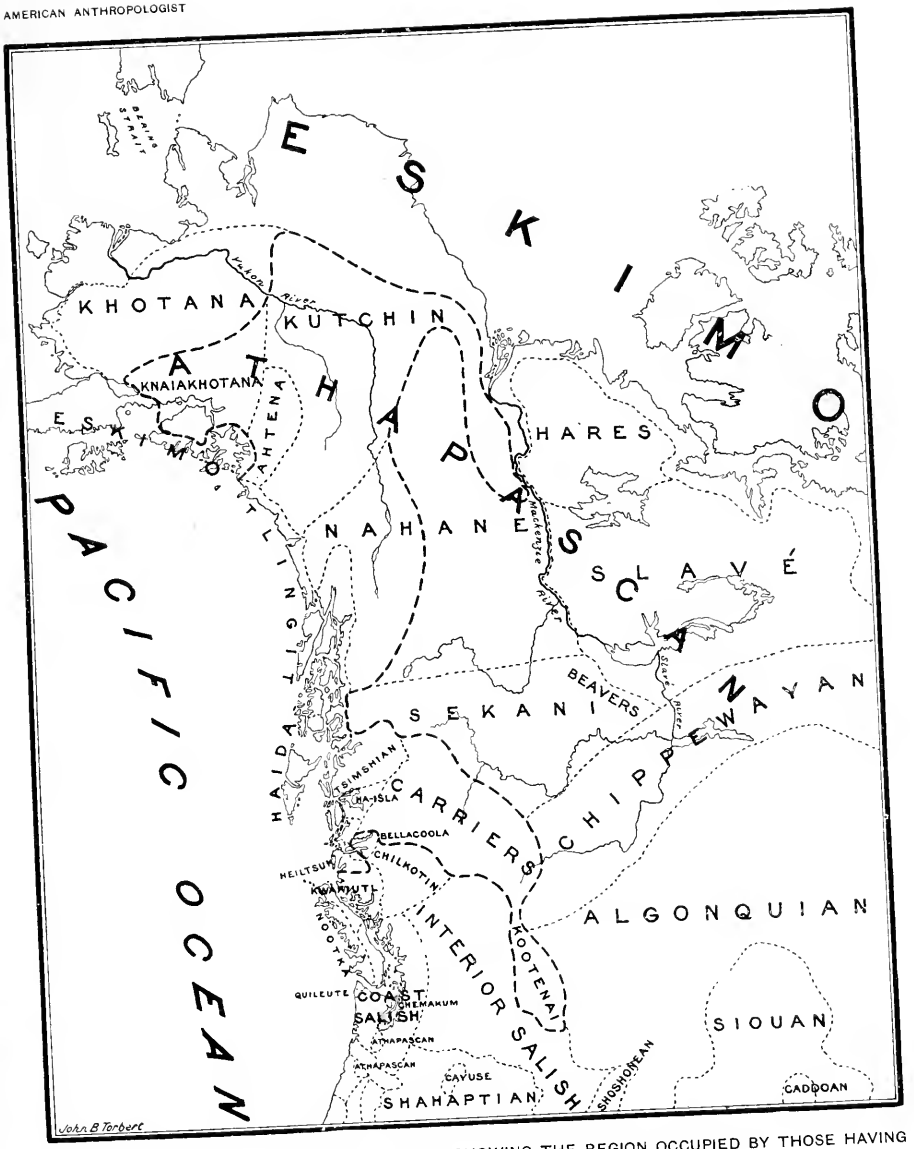
Nouns and verbs are traceable to common radical elements, which take both suffixes and prefixes. Adverbial and pronominal affixes construct them into verbs; substantive (animate or inanimate) and pronominal affixes form them into nouns.

Furthermore, there is very little difference between intransitive verbs and nouns with possessive pronominal formatives, e. g., *nûgāwî'* I sleep, or my sleep; *nûnûpâ'* I die, or my death.

The list of verbs containing element *ŭ'*(*tŭm*) or *ŭ'*(*dŭm*), mentioned in sentence 5, follows:

yū'ndŭm to be hungry, or, feel hunger; *sîwâ'tŭm* to feel sorry.
kū'ngŭtŭm to feel thirsty; *chū'ntŭm* to feel want.
wî'ktŭm to feel love; *jôkwā'tŭm* to feel haste.
qŭ'tshtŭm to feel taste; *pŭ'dŭm* to feel hearing.
nŭtŭ'ddŭm to find out by asking; *mŭddúmâmō* to feel badly or sick.

For further remarks on Mohegan-Pequot morphology see Prince and Speck, "Glossary of the Mohegan-Pequot Language," *American Anthropologist*, N. S., vol 6, No. 1, pp. 18–21.



TRIBES OF NORTHWESTERN NORTH AMERICA, SHOWING THE REGION OCCUPIED BY THOSE HAVING MATERNAL DESCENT

THE DEVELOPMENT OF THE CLAN SYSTEM AND OF SECRET SOCIETIES AMONG THE NORTHWESTERN TRIBES

By JOHN R. SWANTON

The peculiar aboriginal culture found on the northwest coast of America occupies, so far as is now known, an altogether isolated territory. Within this area are embraced (see plate xv) the Tlingit, Haida, Tsimshian, Ha-isla, Heiltsuk, Kwakiutl, Nootka, and the Bellabella and other coast Salish, while its influence extends northward to the Eskimo and southward to the coastal stocks of northwestern California. In the interior the Chilkotin, Carriers, western Nahane, Kutchin, Khotana, and Ahtena belong to it or are greatly affected by it.

Considered from the technical and the esthetic points of view, this culture is found to reach its highest development among the Haida of Queen Charlotte islands, although the Tsimshian and the Tlingit are but slightly inferior. I shall adduce evidence to show that the origin of the clan system associated with mother-right must be looked for in the same region.

On the map (plate xv) the heavy, broken line separates the area of tribes possessing mother-right from those having paternal descent or those in which the form of descent is transitional. All of these tribes except the Kootenai possess clans, or organizations that seem to correspond to them, and all belong to the area of northwest coast culture. The Chilkotin "gentes" mentioned by Father Morice[1] appear to admit descent in the male line, and therefore this tribe falls outside the list of tribes with maternal descent. Fortunately for us in this connection, it happens that, for the interior tribe of Carriers, which has a most highly developed maternal clan system, we have the first-hand authority of Father Morice. This writer has made the question "Are the Carrier Sociology

[1] *Trans. Canadian Inst.*, vol. IV, p. 28, 1892–93; also *Trans. Roy. Soc. Canada* for 1892, sec. II, p. 121.

and Mythology Indigenous or Exotic?" the subject of a special paper[1] and, from a study of their arts, customs, social organization, and myths, comes to the conclusion that both have been introduced, principally from the Tsimshian. He even goes further and says:

"In all the tribes of the Déné nation which have no intercourse with coast Indians, patriarchate takes the place of the matriarchate obtaining here, and the clans, with their totems and the social pecularities derived therefrom are unknown. So are the tribes' divisions into nobles and common people, the right of the former or any to particular hunting-grounds, the potlatches or distribution feasts, as observed here, the burning of the dead, the protracted and systematic wooing of the young man before winning over his wife's parents," etc.

The clan system of the western Nahane, Kutchin, Khotana, and Ahtena has never been made a special object of study. From Callbreath[2] we learn that the Nahane of Stikine river, also called Tahltan, have two clans or "castes," Birds and Bears, with descent in the female line.[3] It is certainly significant that, while the Carriers have four clans like their coastal neighbors, the Tsimshian,[4] the Tahltan have two like *their* coastal neighbors, the Tlingit. The Kutchin are said to have three exogamic divisions with female descent,[5] but our information regarding them is too meager to enable us to determine whether this organization is a very old one or whether it was introduced from the Tlingit of Chilkat and Copper rivers.

The Knaiakhotana of Cook's inlet are said to be divided into two sections and subdivided into eleven "stocks," each exogamic and with descent in the female line. They are the following: *First series:* 1, Raven; 2, Weavers of Grass Mats; 3, Corner in the Back Part of the Hut; 4, named from a color; 5, Descendant from

[1] *Trans. Roy. Soc. Canada*, op. cit., p. 109.

[2] *Ann. Rep. Geol. and Nat. Hist. Surv. Canada*, N. S., vol. III, pt. I, 195B.

[3] A slip in printing seems to have occurred here. Evidently the sentence reading, "A man who is a Bird must marry a Bear and his children belong to the Birds" should be "and his children belong to the Bears."

[4] The Grouse, Beaver, Toad, and Grizzly Bear (*Trans. Canadian Inst.*, vol. IV, p. 203). In an earlier paper (*Proc. Canadian Inst.*, 3d ser., vol. VII, p. 118) he speaks of five, but it may be assumed that the above, being later, is correct.

[5] Hardesty in *Ann. Rep. Smithsonian Inst.* for 1866, p. 315; Jones in ibid., p. 326.

Heaven; 6, Fishermen. *Second series:* 1, Bathers in Cold Water; 2, Lovers of Glass Beads; 3, Deceivers like the Raven (who is the primary instructor of man); 4 and 5, named from a certain mountain.[1]

The binary division indicated, along with the prominence of the Raven, suggests Tlingit influence, but this entire region needs much more study in order to develop its true social condition.

From all of this evidence it seems certain that the matriarchal clan system among the Carriers and the western Nahane has been mainly, if not entirely, the result of coastal influences, and while lack of information prevents us from reaching an absolute conclusion regarding the Kutchin and their allies, we may suspect that the same is also true with them.

Among coast tribes possessing a clan system the Ha-isla and Heiltsuk may also be excluded in our search for its origin. According to Boas the Ha-isla have six clans: Beaver, Eagle, Wolf, Salmon, Raven, Killer whale; and the Heiltsuk three: Eagle, Raven, and Killer whale. Both form parts of the great Wakashan linguistic stock which includes two other principal groups — the Kwakiutl of Queen Charlotte sound and the Nootka of the west coast of Vancouver island. Of these the Nootka have paternal inheritance, and the Kwakiutl, although now transitional, have been shown by Boas[2] to have once been organized in the same way. This being the case, it is a simple and natural conclusion that the other divisions of the same stock were also formerly paternal but have been completely altered by contact with their northern neighbors.

We are thus brought to the point of seeking the origin of the clan system among three neighboring peoples of diverse language, the Tlingit, Haida, and Tsimshian.

In the first place it is interesting and important to know that the geographical area in which we are to look can be very considerably reduced; this is due to the fact that at least a large part of the Tlingit people formerly lived at the mouths of Nass and Skeena rivers in much closer proximity to the other two stocks mentioned (see plate XVI).

[1] Richardson, *Arctic Searching Exp.*, London, 1851, p. 406, quoted by Bourke in *Jour. Am. Folk-Lore*, 1890, III, 122.

[2] *Rep. U. S. Nat. Museum* for 1895, pp. 333-335.

The arguments on which this conclusion is based are the following:

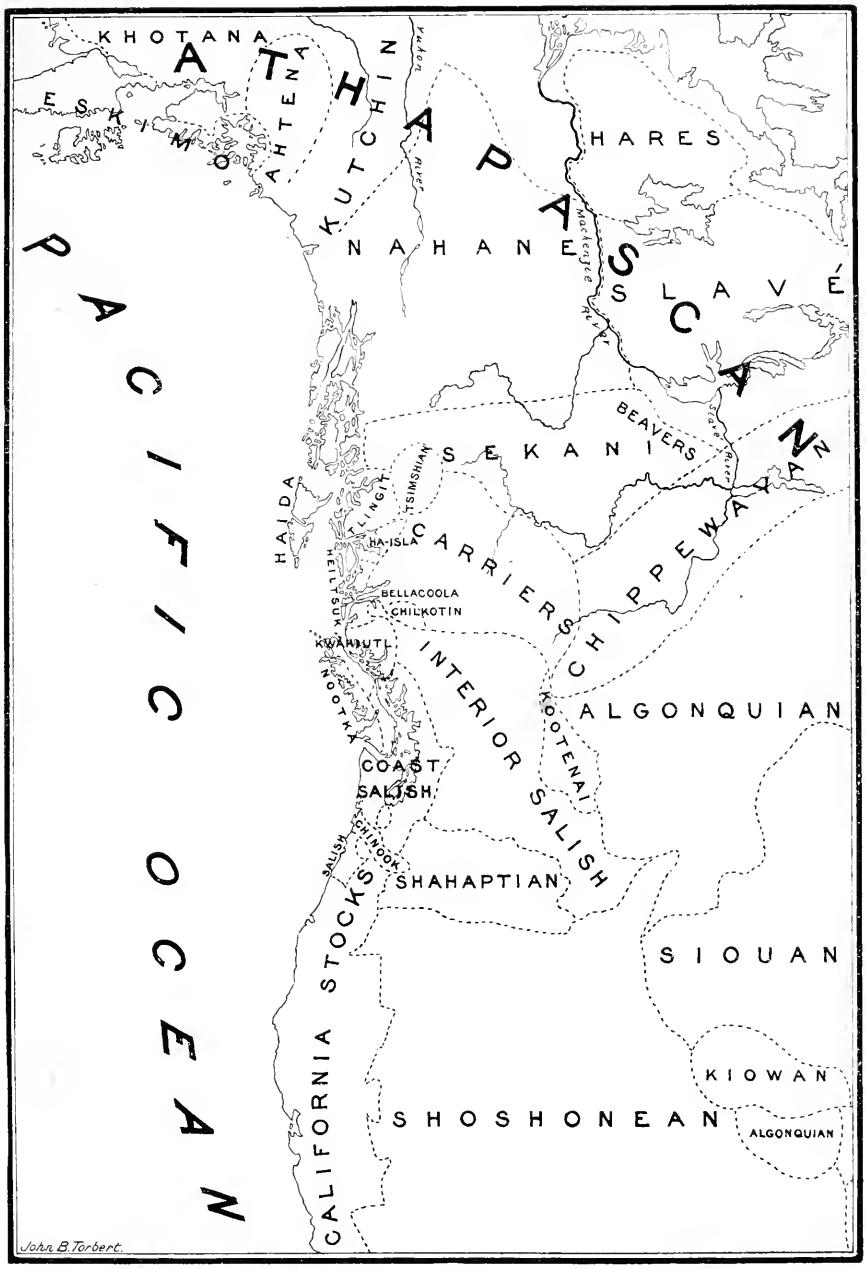
(1) A large proportion of the traditions of the different Tlingit family groups state that they formerly lived on the coast of British Columbia "below Port Simpson." This would place them in the neighborhood of Old Metlakahtla, where were a large number of ancient towns of which many stories are still told.

(2) This coincides completely with Tsimshian traditions, according to which the Tsimshian have moved southwestward to the coast, in quite recent times, from their former homes near the sources of the Nass and the Skeena.

(3) A comparative study of the Tlingit and Haida languages shows certain similarities which can most readily be explained in this way. The most striking point is that the name of nearly every animal not found upon the Queen Charlotte islands, but occurring on the neighboring mainland, is almost identical in the Haida and Tlingit tongues. The only name that the Haida seem to have borrowed from the Tsimshian is that for the mountain goat (*mAt*), while the terms for grizzly bear, wolf, marten,[1] wolverine, moose, and ground-squirrel are all plainly taken from Tlingit. Now, in the present geographical arrangement of the three stocks, there is no apparent reason for such preponderance in favor of Tlingit. The communication between the southern Haida and the Tsimshian in historic times has been of so intimate a nature, and the Tsimshian language is so popular among the former (amounting, as it does, to the adoption of nearly all of their potlatch songs from that language, and of many other songs besides), that it seems incredible they should have gone so far afield as Alaska for the names of animals so abundantly well known to the Tsimshian. Indeed one name for the Haida town on terms of closest social intimacy with the Tsimshian was "Grizzly-bear town" (*Xū'ạdjî lnagā'-i*), and the word for grizzly bear in Tlingit is *xūts!*.

Whether all the Tlingit lived in this region is of much less consequence than the very evident fact that they consider it to have been once their most important seat. We are thus led back quite surely for the origin of clan organizations in the northwest to a

[1] The marten, however, is found on both the islands and the mainland.



TRIBES OF NORTHWESTERN NORTH AMERICA, SHOWING THE FORMER HABITAT OF THE TLINGIT, TSIMSHIAN, CHILKOTIN, AND BELLACOOLA

small section of coast on Hecate strait, within the present limits of British Columbia; and even could we go no farther, this result would be sufficient reward for the labor expended on it. What follows will be largely in the way of suggestion, but the suggestions are founded on some facts which may themselves prove of interest.

Were we to attempt to reduce still further the number of stocks within which the origin of clans is to be sought, we should first exclude the Tsimshian. This stock is peculiar in its absolute linguistic isolation, and it might be at first supposed that a peculiarity in one respect might be associated with other peculiarities, such as the possession of a clan system. But on the other hand, as already noted, the people of this stock appear to have pushed down to the coast in comparatively recent times, directly against the stream of cultural influence; again, had the clan system originated with them and been transmitted to the Haida and Tlingit, we should expect to find them possessed of the same four-clan system, while, as a matter of fact, they have but two clans. An exception in the one case might be explained, but not so readily two such exceptions. If a two-clan system, however, be once established, it is not difficult to see how the number of clans might be increased. For instance, among the Tlingit there is a small group, called *Nehadi*, who are privileged to marry into either clan, consequently there is nothing to prevent these people from moving into other towns and, in time, from spreading all over the Tlingit country. They would thus constitute a third clan, and, in fact, they do so today in every respect but size.

Granting, however, that this point must still remain more or less doubtful, let us exclude the Tsimshian for the sake of the argument and see what facts a study of the clan system among the Haida and Tlingit by themselves brings forth. These facts I state on the authority of personal notes recorded among the Haida in the winter of 1900–01 and among the Tlingit early in 1904.

The Haida clans, members of which are found in every town and each of which is divided into a number of local, self-governing groups, are called Raven and Eagle. The second is also known as *Gîtî'ns*, a term of uncertain meaning but which may possibly contain the word for "son" (*gît*). My investigation into the origin of

these clans has seemed to develop a different character for each. Traditions regarding the Ravens lead back to three centers, with a certain tendency to carry two of these back into the third, a point near the southern end of the Queen Charlotte islands. But in only one tale is reference made to immigration from beyond the sea or to any foreign groups having been received into the Raven clan. This exception is in the case of the leading Raven family of Skedans and relates that those people came down from Nass river with the people of Kitkatla; but the account differs entirely from all others and appears to have arisen to explain the intimate friendship existing between the leading families of the two places. Another tradition of the same group points back to one of the three origins above referred to and migration thence in an exactly opposite direction.

Quite different are the traditions of the Eagle people. Not only do they fail to indicate the same unity of origin among the groups reckoned as Eagle, but some point to a strictly foreign inception. The only one that fails to do so is very short, relating how a certain Eagle woman married in Masset and had daughters there from whom the Eagle groups in that place came, and how she afterward went to Cape Ball, married a chief at that point, and had other children from whom came the Eagle families of Skidegate inlet. It seems to have been constructed rather with the idea of recording relationships and does not carry the history of the groups involved very far back. Part of the Eagles of the northern end of Graham island, however, refer their origin directly to the Stikine and Nass rivers.

More significant, in my judgment, than either of these is the famous Haida story of *Djîlâqons* which records the origin of the southern groups of Eagles. According to this all of the inhabitants of a large town in the Haida country, except one woman, were once destroyed by fire. This woman, after various adventures, reached the Tsimshian country, married a chief and had many children by him, some of whom remained where they were while some returned to their mother's country. From them, the story concludes, came five of the principal Haida families and several of those among the Tsimshian. This may indicate nothing more than the clan connec-

tion recognized between the groups involved in the story, but it is strange that all the progenitors are brought from the mainland rather than from the Haida side, while on the other hand the question is raised why, with the small exception above noted, there are no such traditions among the Raven groups.

It is worthy of notice in this connection that a wild band of Haida, described by the rest of the people as "uncivilized," once lived on the west coast of the Queen Charlotte islands and were reckoned as Ravens. Moreover, all of the towns of first consequence, except the comparatively modern ones like Tanu and Ninstints, were owned by families of the Raven clan, and to that clan are attributed all the chief deities recognized by the Haida people.

Concerning the Tlingit clans my records are not so complete. One was called Raven; the other, Wolf among the southern Tlingit and Eagle among the northern ones; but the independence of the groups of which each was composed was apparently greater than among the Haida. Even if it has no deep significance, it is peculiar that the status of the Tlingit clans seems to have been exactly the reverse of that among the Haida. The most prominent groups—those about which the nationality of the stock centered strongest—are Eagle or Wolf groups, such as the Kagwantan of Sitka and Chilkat, and the Nanyeayi of Wrangell. On the other hand it happens, by accident or otherwise, that all the groups known to me that are said to have been taken in from the outside, are Raven. This was true of the Kashkekwan of Yakutat, who are said to have been Athapascans, of part of the Katcade of Wrangell and Kake who were from the same source, and of the Kaskakoedi of Wrangell who claim to have been once Haida.

Supposing that the Tlingit formerly lived along the mainland coast now occupied by the Tsimshian, where they were neighbors for a long time of the Haida on the coasts of the Queen Charlotte islands opposite, and supposing that both people had loose social organizations without clans, is it possible that the clan idea could have originated among them through intermarriage, resulting in the continued presence on each side of a number of persons of alien stock? Although no clan can now be traced back so far, we have several cases in which smaller groups have sprung up in this way,

such for instance being the history of the Tsimshian family *Gîttcī's*, who sprang from a Haida woman, and that of a now extinct group at Sitka who were also descended from the Haida. Differences in speech would probably tend more strongly to bring about such a distinction. The point least clear in this particular case is why the children should have been reckoned with the mother's rather than with the father's people.

General Conclusions.—From the evidence presented by Morice and Boas I think it is safe to look for the original seat of the clan system with maternal descent on the northwest coast among the Tlingit, Haida, and Tsimshian, and from that brought together by myself I consider it demonstrated that a large portion of the Tlingit once lived at the mouths of Nass and Skeena rivers. At the time when the clan system arose here, therefore (unless it be supposed always to have had existence among these people), we find the three stocks in question brought close together at this one point on the coast. So much seems certain. On the other hand I admit that my argument regarding the priority of the two-clan system among the Haida and Tlingit to the four-clan system of the Tsimshian and the upgrowth of the whole from matrimonial alliances between different people to be entirely hypothetical. These are, however, hypotheses founded on certain observed peculiarities of social organization in this region, such as the occurrence of a Tlingit group which can marry into either of the two great clans, and on studies of the relative status of the two clans among the Haida and the Tlingit.

One point developed incidentally in the preceding argument is that the origin of the system under discussion is traceable to a region where several different linguistic stocks were in close contact. Another institution characteristic of northwest coast culture — the so-called "secret societies" — seems to refer back to a similar area, although at a different point on the coast. Owing to the fact that the names applied to several of these secret societies are Kwakiutl, as well as to other considerations, Professor Boas has traced back their origin to that people and has further traced the origin of the cannibal rites to the Heiltsuk.[1] The traditions regarding these societies among the Haida, both at Masset and Skidegate, uniformly

[1] *Rep. U. S. Nat. Mus.* for 1895, pp. 660–664.

place their beginning in "Gîtadjū'," evidently Kittizoo or Gyidestzo, the southermost Tsimshian town, which stood on Millbank sound, not far from the chief town of the Bellabella. Judging from the facts at our disposal, it would appear likely that the more important features of the secret societies arose among the Heiltsuk proper or Bellabella, who were in close contact with the Tsimshian of Kittizoo on one side and with the Bellacoola on the other. Now these latter are a fragment of the great Salishan stock, which Boas supposes to have moved northward from among the coast Salish at some distant time to take up their abodes on Dean canal and Burke channel. Morice tells us, however, that the Athapascan Chilkotin, who now separate these people from their congeners in the interior, once occupied but a single village back of the Bellacoola and have driven the Shuswap eastward out of the valley of Chilkotin river quite recently.[1] If this process has been going on for some time longer the interior Salish must have bordered on the Bellacoola at no very distant day (see plate XVI). It would seem more likely, therefore, to suppose that some interior Salish at that time effected a lodgment near the heads of the long inlets just mentioned, and have gradually pushed seaward, while the Chilkotin meanwhile cut them off from the rest of the linguistic stock to which they belong, and this explanation makes it easier to understand why they are not found at the mouths of those inlets. If this suggestion prove correct, regarding both the origin of the Bellacoola and the point of origin of the secret societies, a possibility of influences having effected an entrance into the latter from the eastern Indians is suggested, more plausible than would at first appear.

[1] *Trans. Canadian Inst.*, 1892–'93, p. 23.

THE PERIODICAL ADJUSTMENTS OF THE ANCIENT MEXICAN CALENDAR

By ZELIA NUTTALL

The interesting question as to whether and how the ancient Mexicans rectified their calendar has been resuscitated by a treatise recently published in the *Zeitschrift für Ethnologie* under the title "The rectifications of the year and the length of the Venus year," in which Prof. Edward Seler propounds the new hypothesis that the ancient Mexicans rectified their solar calendar by intercalating 10 days at intervals of 42 years, and their Venus calendar by the deduction of four days at the end of 55 Venus years, which are equivalent to 88 solar years.

On studying Professor Seler's treatise with the careful attention due to the work of such a well known authority, I was surprised to find therein certain inaccuracies which completely invalidate his theory. It is my duty to point out the following facts to my fellow workers, in order to avert the confusion which would inevitably arise if Professor Seler's new hypothesis were to obtain currency amongst Americanists.

In the opening sentences of his treatise, and in support of his statement that the oldest authorities explicitly deny that the Mexicans employed bissextile intercalation, Professor Seler quotes two passages from Bernardino de Sahagun's writings. In both of these the friar employs the expression "it is conjectured," and in one he adds, "it is probable that in the festival held at intervals of four years the Mexicans made a bissextile intercalation."

Commenting on this Professor Seler says: "Be it well noted that the friar does not say that he has heard this, he only says it is probable and it is conjectured. Therefore it is his own supposition only. And, in point of fact, no word of this occurs in the corresponding portion of the Nahuatl text."

A reference to the passages quoted from Sahagun's work shows that, in both cases, the point under consideration was the *time* or

period when an intercalation was made, and not the *fact* whether or not bissextile intercalation was employed by the Mexicans. Without entering into a discussion of the latter question, and merely for the purpose of accurately representing Sahagun's views, I refer the reader to the appendix to book IV of the latter's *Historia*, with which Professor Seler is naturally supposed to be familiar.

In the friar's long and vehement refutation, contained in this appendix, of what he terms the "falsehoods" written about the native calendar by a now unknown friar, the following sentence occurs:

"What he [the unknown friar] says about the bissextile intercalation not being used is also false, for in the count known as the real calendar they count 365 days and every four years they count 366 days by means of a festival that they hold for this purpose every four years."

It is evident that, had Professor Seler quoted the above explicit expression of opinion by Sahagun, he could hardly have emphasized, as he does, that the friar expressed only "a *supposition* which is, indeed, directly contradicted by other early authors."

The above sentence is followed by Professor Seler's statement that Motolinia, one of the first Spanish missionaries who went to Mexico, and after him Torquemada, *denied* that such an intercalation was used, and that the author of a chronicle written in Guatemala in 1683 maintained that neither the Mexicans or the Guatemalans employed bissextile intercalation. A translation is here given of this part of Professor Seler's text:

"Whereas the old authors are quite explicit on this point, later scholars sought to meet the difficulty by the assumption that an intercalation was made at the end of the 52-year period. There is no doubt that this theory is to be assigned to the learned Jesuit Don Carlos Siguenza, who lived in the second half of the 17th century.

"An intercalation of a whole week of thirteen days at the end of the 52-year cycle, or, as León y Gama prefers, an intercalation of 25 days at the end of the double cycle of 104 years, would have, in point of fact, pretty well rectified the calendar. Unfortunately this whole theory is an idle or fantastic speculation which is not proven by any old record; nor is it corroborated, so far as one can judge at present, by the picture-writings."

Professor Seler's positive assertions that the idea that the Mexicans intercalated 13 days at the end of the 52-year cycle was a fantastic theory assignable to Siguenza y Gongora, and that no old document recorded such an intercalation, prove that Professor Seler must be unacquainted with the contents of the invaluable work written in 1656 by Jacinto de la Serna, a native Mexican priest and doctor of theology, who was thrice elected rector of the University of Mexico and was renowned for his erudition and knowledge of the language and antiquities of the Mexicans.

As Serna's *Manual de los Ministros de las Indias*, including a treatise on the idolatries of the Mexicans, has been accessible to all students since 1899, when it was published in the *Anales* of the National Museum of Mexico, and as Professor Seler has quoted Serna's name in his publications, it appears inexplicable that he should ignore the testimony it contains in support of the fact that the Mexicans added 13 days to their 52-year cycle.

The circumstance, recorded by Beristain, that Siguenza y Gongora actually owned the original manuscript of Serna's great work, which had been written when Siguenza was but eleven years of age, likewise furnishes proof that instead of originating what Professor Seler designates as "a fantastic theory," the erudite Siguenza, and, after him, the most learned of Mexican scholars, accepted the following statements of Serna as authoritative:

"The century of these natives consisted of no more than fifty-two years. . . . At the end of these fifty-two years they intercalated thirteen days which did not pertain to any month or year and were designated by no name like all other days. These days were passed over as though they did not exist, and they were not adapted to any month or year whatsoever. These days were held as unfortunate, unlucky, and sad, and those persons who were born on one of them were considered unlucky. During these thirteen days, which constituted one of their weeks, all fires were extinguished throughout the lands subject to the Mexican monarchy. They named the element fire 'Xiuhtecuhtli,' or the Lord of the Year. During all of these days nothing was undertaken, no food which required cooking was partaken of and a general fast was observed. There existed a tradition according to which the world was to come to an end on one of these days, therefore throughout the thirteen days a general silence was observed and all watched during the night because it was thought possible that the next day might never break.

"On the thirteenth day, all persons being on the watch, the high priest lighted the new fire with fire-sticks, at sun-rise, on the summit of the hill of Ixtapalapa, and thence it was distributed throughout the land, with great rejoicing and shouting, and music made by their wooden drums, war drums, clarionets, rattles, and other instruments, the same ceremony being observed in all parts.

"These thirteen days were considered miserable because of the lack of fire, but on the day when the above ceremony was performed they began a new cycle, in such an ingenious manner, that, after the intercalated days had passed without having been designated by any sign or counted by signs like ordinary days, or dedicated to any of their gods, they began the new year and cycle in such a way that, if the preceding cycle had commenced with the sign One Calli, or house, the next cycle began with the sign One Tochtli, or rabbit. . . . And when this cycle ended, the same intercalation of thirteen days and the ceremony of lighting the new fire were observed, and they passed on to the third sign, Acatl, or cane, and then to Tecpatl, or flint. At the close of four cycles, or 208 years, they began again by One Calli. Thus the same combination of sign and number recurred only every four cycles."

In another portion of his work Serna states:

"After each year of 360 days, five days were intercalated, which were also called Nemontemi and were regarded as unfortunate . . . like the thirteen intercalary days of the year-cycle, but with this difference, that whereas the latter constitute a count of the bissextiles which were omitted in the cycle and were not numbered or marked by day-signs, the five days are those which are lacking in the [calendar] year, which did not contain more than 360 days."

The following important statement by Serna proves that a denial, such as made by Motolinia, Torquemada, and the chronicler cited by Professor Seler, that bissextile intercalation was used, does not necessarily constitute a denial that the thirteen-day intercalation was employed:

"*And although they had no knowledge of the bissextile year*, they attained the same result by means of the thirteen intercalary days added to each cycle. Thus there actually existed an accord between the native years and days with the years of the Church, but a divergence in the months, of which the Mexicans had eighteen." . . . (cap. VII, par. 1.)

The above quotations from what is the clearest dissertation on the native calendar in existence, and which was written 27 years

before the Guatemalan chronicle classed by Professor Seler among the "old authorities," suffice to demonstrate the error of the latter's assertion that the 13-day intercalation is "not proven by any record" and is "a fantastic speculation assignable to the learned Jesuit Siguenza."

In my *Preliminary Notes on the Ancient Mexican Calendar System*, published five years before Serna's invaluable work appeared, I maintained that the 13-day intercalation at the end of each 52-year cycle was not only the natural outcome of the ingenious numerical system, but that its use explained and reconciled certain conflicting statements concerning the recorded names of the first days of the years. By means of tables I demonstrated, at that time, how the mere use of the 13-day intercalation caused each successive cycle to begin with the 20-day signs in rotation, the obvious result being the formation of a great cycle consisting of 20 cycles, each of these easily distinguished by the mere fact that it commenced with a different day-sign. Combined with the four year-signs in regular rotation, these day-signs afforded a means of distinguishing each cycle with a different name. It was my opinion then, as it is now, that the calendar system itself furnishes positive evidence that the 13-day intercalation at the end of the 52-year cycle was an all-important factor which was depended on by the ancient calendar makers when they planned their ingenious cyclical system.

It will be for my fellow-students to judge how much the internal evidence furnished by the calendar system itself and by Serna's testimony, which was adopted by the most learned of his countrymen, outweighs Professor Seler's new hypothesis that the Mexicans rectified their calendar by adding 10 days to 42 years.

Let us now examine Professor Seler's equally novel theory that the ancient Mexicans periodically adjusted 55 Venus years with 88 solar years by adding to the 88 years a Mexican year shortened by 4 days.

As by "Mexican year" Professor Seler designates the vague solar year of 365 days, the intercalation he suggests consists of 361 days and is intended to adjust 88 vague solar years to 55 Venus years.

Unlike Señor Paso y Troncoso, whose work he does not mention, but which contains the most painstaking and instructive study of the Venus year in connection with the Mexican calendar that has yet been published, Professor Seler makes no attempt to reconcile his theoretical adjustment with the fixed periods of the native calendar system. Had he more thoroughly tested the adaptabilities of the numerical system he would have found that a periodical adjustment of the count of vague solar years to Venus years could have been made in a manner even more simple than that suggested by Señor Troncoso, but as essentially the natural outcome of the native system itself.

Although I had not intended publishing it in advance of my work on the Mexican Calendar, I here submit a table which forms a part of the reconstruction of the calendar system which I made in 1892, the printed plates of which have since been preserved and exhibited in the Peabody Museum at Cambridge.

This table demonstrates the fact which Señor Troncoso first noted, and which Professor Seler has also recorded, how, owing to the numerical structure of the system, a series of synodic periods of Venus, each consisting of 583.92, or, roughly speaking, 584 days, inevitably produced or formed a cycle which completed itself only at the end of 65 Venus years, a 66th Venus year infallibly beginning on a day of the same sign and number as the first.

An interesting fact, which seems to have escaped Señor Troncoso, but which Professor Seler has observed, is that, throughout the 65-year cycle, the Venus years begin on only five out of the twenty days of the Mexican calendar. This natural result of the system associated a Venus cycle with five special day-signs and divided it into groups of five Venus years, equaling eight vague solar years.

Let us now see how simply the count of Venus years could have been adjusted to the count of vague solar years by merely adhering to the order of the calendar system itself.

Five Venus years, or 5×584 days, contain 2,920 days and are exactly equal to eight vague solar years of 365 days each. Therefore, at regular intervals of eight years the Venus and solar calendars met, with slight divergences—an interesting detail in connection

with the records that a special festival, associated with the planet Venus, was celebrated at intervals of eight years.

The complete Venus cycle of 65 synodic periods equals $2 \times 52 = 104$ vague solar years, as $65 \times 584 = 37{,}960$ days, and $104 \times 365 = 37{,}960$ days.

The system which produced the above harmonious results also furnishes the means of rectifying, in an equally harmonious and simple manner, not only the divergences between both counts, but those between the apparent movements of the sun and Venus, and their respective calendars. Notwithstanding Professor Seler's assertions to the contrary, Serna's authority, corroborated by other writers and by the system itself, establishes the fact that a group of thirteen days effectively adjusted the 52-year solar cycle.

Accordingly, a period of $2 \times 52 = 104$ vague solar years, equaling the cycle of 65 Venus years, received two intercalations of thirteen days each, which converted the 104 vague solar years into tropical years of 365.25 days, with a total number of 37,973 days.

On the other hand, at the end of the Venus cycle of 65 synodic periods, calculated as of 584 instead of 583.92 days, the Venus calendar was ahead of astronomical facts. As its progression amounted to about five days, it is obvious that, by simply deducting a five-day group from the end of the Venus cycle, i. e., by beginning the subsequent cycle five days earlier, a most simple and effective rectification of the Venus calendar was possible.

CYCLE OF PLANET VENUS

Consisting of $5 \times 13 = 65$ synodic periods of $583.92 = 584$ days each, and beginning on day 1 Cipactli.

Order of Venus Years.	Name of First Day of Each Year According to Mexican Calendar.													
1st.	Cipactli	1	9	4	12	7	2	10	5	13	8	3	11	6
2nd.	Coatl	13	8	3	11	6	1	9	4	12	7	2	10	5
3rd.	Atl	12	7	2	10	5	13	8	3	11	6	1	9	4
4th.	Acatl	11	6	1	9	4	12	7	2	10	5	13	8	3
5th.	Ollin	10	5	13	8	3	11	6	1	9	4	12	7	2

Note. — Five Venus years are equal to eight vague solar years:

$$5 \times 584 = 2{,}920, \quad \text{and}$$
$$8 \times 365 = 2{,}920.$$

Thus the Venus cycle equals $2 \times 52 = 104$ vague solar years, as $65 \times 584 = 37{,}960$ days, and $104 \times 365 = 37{,}960$ days.

The deduction of a five-day period from its end would effectively adjust the Venus cycle and cause the three cycles which follow to begin with the following sets of day-signs:

Cycle II.	Cycle III.	Cycle IV.
Cozcaquauhtli	Ozomatli	Ehecatl
Xochitl	Quauhtli	Miquiztli
Cuetzpalin	Quiahuitl	Itzcuintli
Tochtli	Calli	Ocelotl
Malinalli	Mazatl	Tecpatl

I pause here to point out the harmonious perfection of a system which permitted the progression of the Venus calendar and the retrogression of the count of vague solar years to be rectified by the simple deduction of an integral five-day group in one case and the addition of integral thirteen-day groups in the other.

It is interesting to observe, what I am the first to point out, the effect produced by the deduction of a five-day group at the end of each Venus cycle: it causes each of four successive cycles to be associated with a fresh set of five day-signs and starts a great cycle which completes itself only at the conclusion of the four cycles or after the $4 \times 5 = 20$ day-signs have served in turn as initial days, on exactly the same principle that is applied in the great solar cycle.

The great Venus cycle and the lesser cycles it embraces present a resemblance to an inner wheel revolving rapidly from left to right and an outer one turning more slowly in retrogressive motion. The latter is curiously matched by the retrogressive numeration recorded in the accompanying table, in which the 65 Venus years are seen to begin, in succession, on days the numbers of which run backward.

Evolved from the numerical system itself, the great Venus cycle, embracing $4 \times 65 = 260$ Venus years, thus accords perfectly

with the Tonalpoualli, the 260-day period or unit year which constitutes the basis of the system.

The harmonious working of this masterpiece of ingenuity is further demonstrated by the following detail: At the end of $4 \times 65 = 260$ Venus years, unless a different adjustment were made, the following cycle would begin on the days of the first group, but in a different order, the sign Acatl taking the lead, and so on until the $4 \times 5 = 20$ possible combinations were exhausted.

Another remarkable fact, which Señor Troncoso first noted, is that the total sum of intercalary days added to the $4 \times 13 = 52$ vague solar years, multiplied by 20, and forming the great solar cycle of 1,040 years, amounted to 260 days or a complete fundamental unit of the calendar system.

It would appear as though, when they devised the system based on the 260-day period, the calendar-makers must have had in view the simultaneous and ultimate formation of a great solar cycle of $4 \times 13 = 52 \times 20 = 1{,}040$ years rectified by 20 intercalations of 13 days each, forming a total sum of 260 days, and of a great Venus cycle of $5 \times 13 = 65 \times 4 = 260$ synodic revolutions, rectified by the deduction of 260 groups of five days each, or 1,300 days.

The close association of the five-day group with the Venus calendar, produced by its employment to rectify the apparent progression of the planet, suggests a possible explanation of the peculiarity that, in Maya and Mexican manuscripts, the sign of the planet Venus consists of five dots, which might also designate the groups of five Venus years equaling eight vague solar years.

It is unnecessary to discuss the striking contrast afforded by the simple and harmonious way of rectifying the calendar so clearly indicated by the system itself, and the complicated adjustment suggested by Professor Seler, which are not in harmony with the fixed order of the cyclical system, in which groups of 42 and 88 years and intercalations of 10 or 361 days or deductions of four days are absolutely out of order.

Before presenting the newly gained evidence furnished by an important document which has only just been published in full and which proves the astronomical origin of the 260-day period, I will make passing mention of the lunar count — the Meztlipohualli of

the ancient Mexicans, of which I submitted an experimental reconstruction to the Congress of Americanists at Huelva in 1892.

Fresh light is also thrown on this subject by Serna, who records that "the months were counted [by the Mexicans] like the Hebrews, from one neomenia to another, that is to say, from one appearance of the new moon to another . . . the word for month being the same as moon, thus a month was called one moon. It was by this count that the women counted the months of their pregnancy. . . In Oaxaca they had a count of thirteen months, with thirteen gods, one for each month."

I may here pause to point out that Serna's record that the lunar count was especially used by women in association with a nine-months' period is of particular significance and importance in connection with the 260-day period which, as I have noted elsewhere, accords with the period of human gestation. The view I expressed at Huelva, that the "Nine Lords of the Night" were the nine moons of the lunar year, is corroborated by Serna's statement that each of the thirteen moons of the Oaxaca lunar calendar had its special god. In the experimental reconstruction which I submitted at Huelva, the cycle formed consisted of $4 \times 13 = 52$ lunar years of 265 days each. In pointing out the advantages of the 265- over the 365-day period as a means of cursive registration of dates, I quoted the following opinion, concerning the merits of the 260-day period, expressed to me in a letter by Sir Norman Lockyer:

"The short year of 260 days is magnificent; it was the very finest thing they could have done. The lunation is 29.53 days and nine lunations are equal to 265.7 days. The short year, therefore, plus an epact of five days, equalled nine moons, so this brought the moon right, that is to say, the new moon (or the full moon, it is immaterial) would begin the second short year, third short year, and so on."

An objection to my reconstruction, raised by several fellow-workers, amongst them Dr Daniel G. Brinton, was that we had no documentary evidence to prove that such a lunar count was ever actually employed by the ancient Mexicans.

Serna, however, supplies us with the missing record of the existence of a lunar calendar. He records the names of the Mex-

ican "Nine Lords of the Night" and describes how a nocturnal calendar consisting of a count of nine night periods was employed. A simple verification of his statements concerning this nine-night count not only shows how intimately it was associated with the 260-day period, but furnishes further indications of the connection of the latter with the lunar count.

It is obvious that a 260-day or -night period embraces exactly 29 groups of 9 nights each, and also, approximately, 9 vague lunations of 29 days each.

Serna points out that the 259th night of a count of nine nights, beginning on the sign of the first Lord of the Night, infallibly falls on the sign of the eighth lord, and that, consequently, the 260th night corresponds to the sign of the ninth lord.

An experimental reconstruction of this basis further reveals that the 9 × 29 night periods contained in the Tonalpoualli would naturally begin on the signs of the Nine Lords of the Night in the following order of rotation:

29 day period	No. 1	begins on the sign of the lord	1
"	2	"	3
"	3	"	5
"	4	"	7
"	5	"	9
"	6	"	2
"	7	"	4
"	8	"	6
"	9	"	8

The experimental addition of the five-day epact[1] which, as Sir Norman Lockyer has pointed out, would so effectively adjust the lunar count, initiates a cycle of 9 × 9 true lunar years of 265 days each, which begins as follows:

Year 1	on the sign of the lord	1
2	"	6
3	"	2
4	"	7

[1] The above adjustment of the 260-day period to astronomical facts by means of an epact of five days offers an exact parallel to the method which was actually employed in the case of the solar calendar, in which, as is well known, a five-day epact was added to the native year of 360 days in order to adjust the true solar year.

Year	5	on the sign of the lord 3
	6	" 8
	7	" 4
	8	" 9
	9	" 5

On the other hand, as the duration of nine lunations exceeds 265 days by exactly 17 hrs., 36 m., and 27 s., this excess, gradually accumulating, would soon cause a marked divergence in a prolonged count of successive periods of 265 days.

At the end of the $9 \times 9 = 81$ lunar years of 265 nights the retrogression of the lunar calendar would amount to 6 days, 14 hrs., 28 m., and 3 s. It is interesting, moreover, to note that the lunar cycle of $9 \times 9 = 81$ years exceeds in length the 52-year cycle of solar years of 365 days each by 6 years and 295 days; the latter period consisting of one 260-day period and 35 days (i. e., $4 \times 9 - 1$ day).

Postponing further discussion of the 265-day period, I now draw attention to the hitherto inedited treatise on the observation of the planet Venus by the ancient Mexicans, attributed to no less an authority than Friar Motolinia, which has just been published in the City of Mexico by Dr Nicolás León and in Paris by Señor Luis Garcia Pimentel.

The existence of this precious manuscript in the library of the late Joaquin Icazbalceta has long been known to scholars, but it was Señor Troncoso who first published, in 1883, fragmentary quotations from its pages. Since then Señor Alfredo Chavero and Professor Edward Seler have referred to it as a valuable source of information concerning the observation of the planet Venus by the Mexican priesthood.

The extracts printed below suffice to establish that an astronomical origin was assigned to the 260-day period by the Mexicans themselves. A table of the 260-day period accompanies the following text:

". . . here is explained the calendar or table of the star named Hesper, or, in the language of the Indians, Hueycitlalin (lit. the Great Star) or Totonametl (lit. the Shining One).

"The table given here can be designated as the calendar of the

Indians of New Spain, which they counted by a star which, in the autumn, begins to appear, toward evening, in the west with a clear and resplendent light. Indeed, those who have good eye-sight and know where to look for it can perceive it from mid-day on.

"This star is that we call Lucifer, etc. . . . As the sun goes lower and the days grow shorter the star seems to rise—thus each day it appears a little higher until the sun seems to reach it and pass it in the summer and spring when it sets with the sun and is visible through its light.

"And in this land the duration of time from the day when it first appears to when after rising on high it loses itself and disappears, amounts to 260 days, which are figured and recorded in said calendar or table. . . .

". . . the sign cipactli is the first day of the 260 and of all days. . . This count is not that of the course of the sun or the year, nor is it in respect to [the sun] that it is named and the signs exist, but it is from contemplation of the star. They named this count Tonalpoualli . . . which means the count of the planets or heavenly bodies which illuminate or give light, and by this they did not only signify the planet named Sun. . . . They also name the star Citlaltona, or 'the star of light.' . . .

"Next to the sun they adored and made more sacrifices to this star than to any other celestial or terrestrial creature. The astronomers knew on what day it would appear again in the east after it had lost itself or disappeared in the west, and for this first day they prepared a feast, warfare, and sacrifices. The ruler gave an Indian who was sacrificed at dawn, as soon as the star became visible. . . . In this land the star lingers and rises in the east as many days as in the west — that is to say, for another period of 260 days. Some add thirteen days more, which is one of their weeks.

"They also kept account, like good astrologers, of all of the days when the star was visible. The reason why this star was held in such esteem by the lords and people, and the reason why they *counted the days by this star* and yielded reverence and offered sacrifices to it, was because these deluded natives thought or believed that when one of their principal gods, named Topiltzin or Quetzalcoatl, died and left this world, he transformed himself into that resplendent star. . . . "

While it is obvious that the recorded observations as to the season and the period of visibility of the planet Venus, being necessarily transitory, apply only to one year, the above authoritative statements definitely establish not only that the 260-day period began with the

day Cipactli and was named the "Tonalpoualli" or "count of the celestial shining bodies," but that it was actually employed for the purpose of registering the apparent movements of the planet Venus.

Emphasizing again that the Tonalpoualli more closely corresponds to the duration of nine lunations than to the periods between the superior conjunction and digressions of the planet Venus, which is of 220 and not of 260 days as Motolinia records, I also wish to point out how admirably its numerical system is adapted to the registration of astronomical data in general. A striking instance of this adaptability is obtained if we experimentally register the synodic periods of the planet Mars.

According to Sir Norman Lockyer this planet takes 779.94 = 780 days to return to the same position with regard to the earth. If we fix on the day 1 Acatl of the Mexican calendar, for instance, as that on which the position of the planet is registered, and count 780 days, we ascertain that the 781st day falls again on the sign 1 Acatl and will continue to do so indefinitely. It can readily be seen how, in this case, a planet would come to be identified with a single day and sign until marked progression called for an adjustment and the adoption of a different sign.

It is of course impossible to enter here into what would necessarily be an extended discussion of the much debated question as to the date and day-sign on which the Mexican solar calendar began.

The publication of Serna's and Motolinia's important documents obliges students of the ancient Mexican calendar, myself included, to revise some of their conclusions and to abandon others which were reached prior to an acquaintance with these works.

The purpose of the present communication will be fulfilled if it directs the attention of American scholars to the important evidence which Professor Seler has ignored, and to the undeniably harmonious results which I have obtained by partly revised reconstructions on the lines indicated by Serna and Motolinia and confirmed by other early authors.[1]

The following résumé of the main features of the reconstructed independent solar, lunar, and Venus year cycles are respectfully submitted to the consideration of my fellow-workers:

I

A count of solar years of $360 + 5 = 365$ days subdivided into groups of 5, 13, and 20 days, forming lesser cycles of $4 \times 13 = 52$ years, each adjusted by an epact consisting of an integral 13-day group, and a great cycle of $20 \times 52 = 1{,}040$ years, at the end of which the total number of epacts employed for the purpose of rectifying the calendar amounted to $20 \times 13 = 260$ days, or one integral Tonalpoualli.

II

A nocturnal count of lunar years of $260 + 5 = 265$ nights subdivided into 29 groups of 9 nights and embracing 9 lunations, forming a cycle of $9 \times 9 = 81$ lunar years, at the end of which retrogression would amount to 6 days, 14 hrs., 28 m., and 3 s.

It is obvious that *the addition of an integral 13-day group at the end of two lunar cycles* would have effectually adjusted the lunar calendar, a fact which is not only interesting *per se* but also in connection with the method of adjusting the solar calendar.

III

A count of Venus years of 584 days each, subdivided into 5-day groups, forming lesser cycles of $5 \times 13 = 65$ years, each adjusted by the deduction of one integral 5-day group; a great cycle of $4 \times 65 = 260$ years with a total deduction of $4 \times 5 = 20$ days, and a greater cycle of $5 \times 260 = 1{,}300$ years, with a total deduction of $5 \times 20 = 100$ days.

THE CHAMORRO LANGUAGE OF GUAM — IV

By WILLIAM EDWIN SAFFORD

VIII. — The Verb — *Continued*

16. The Verbal Infix **um.** — Transitive verbs with a definite object have inserted before the first vowel of the verb the particle *um* to express the past and present tenses of the indicative mode, providing that the action expressed by the verb has already been referred to or indicated. Thus, if a ship (*modong*) has been sighted and reported, the question is asked, *Hayi l***um***ii i medong?* "Who saw the ship?", inserting the particle **um** before the first vowel of the word *lii* (see). If some one suddenly sights it, however, he says **Hu***lii i medong!* "I see the ship," in this case prefixing a verbal particle to the verb.[1]

The infix **um** is also used with those intransitive verbs which lack the prefix *fan*, or a similar syllable (as *falágo*, run; *fatáchong*, sit), and it forms the infinite of all transitive verbs as well as of the intransitive verbs indicated.

This use of a verbal infix is a feature of the Chamorro language, separating it from all languages of Polynesia and Melanesia proper. Strangely, however, it is also a characteristic of the languages of the widely remote inhabitants of Madagascar, the Javanese, and the Khmers of Cambodia, as well as of the nearer Philippine archipelago. Examples of the use of verbal infixes in the languages referred to are:

Chamorro,	*ch***um***ule*,	from the root *chule*,	carry;
Tagálog,	*b***um***asa*	from the root *basa*,	read;
Malay,	*p***um***ilihan*,	from the root *pilih*,	choose;
Javanese,	*h***um***urub*,	from the root *hurub*,	flame;
Khmer,	*s***am***lap*,	from the root *slap*,	dead.

Of the common origin of the languages of Polynesia, Melanesia, and the Malay archipelago there can be no doubt. Many words

[1] See *American Anthropologist*, vol. 5, p. 310 (p. 22 of reprint), 1903.

common to all bear evidence to this fact in the same way as the words which prove the relationship of the languages of the great Aryan family. These words are not only names of common objects, such as sky, fire, fish, bird, but also the names of a number of economic plants, such as coconut, sugar-cane, yam, and, as we have already seen, the personal pronouns and the numerals. The similarity of the grammatical structure of the Chamorro language to that of the Philippine dialects and of other western idioms shows that the ancestors of the people of Guam did not accompany the ancient Polynesians or Melanesians in their exodus, but remained united with the original stock inhabiting the Malay archipelago and the Philippines, together with the ancestors of the settlers of Madagascar until the evolution of the grammatical features which now are common to these people, and of which not a trace is to be found in the eastern Pacific races. From what has just been said it must not be inferred that the vocabularies of the languages of Guam and the Philippines are closely allied. Outside of the primitive words referred to above, they have little in common.

In the following examples the first list includes verbs conjugated with the infix **um**; the second includes verbs having the intransitive prefix **fan,** or a syllable like it, which are conjugated without the infix *um.* In forming the tenses, the *infinitive* and the *preterite* or *past definite of the indicative* are derived directly from the definite, or urgent imperative; the *present* and *imperfect of the indicative,* which may be compared to the progressive form of the English ('I am laughing', or 'I was laughing'), implying continued action, are derived from the *indefinite,* or *suspended imperative.*[1]

A.—*Infinitives with* **um.**

	Root Imperative.	Reduplicated Root Suspended Imperative.	Infinitive and Preterite.	Present and Imperfect.
laugh,	*cháleg,*	*cháchaleg,*	*ch***um***áleg,*	*ch***um***áchaleg.*
weep,	*táñgis,*	*tátañgis,*	*t***um***áñgis,*	*t***um***átañgis.*
lie down,	*áson,*	*áason,*	**um***áson,*	**um***áason.*
rise,	*kahúlo,*	*kahúhulo,*	*k***um***ahúlo,*	*k***um***ahúhulo.*
descend,	*túnog,*	*tútunog,*	*t***um***únog,*	*t***um***útunog.*

[1] The difference between the two forms of imperative is explained under the heading "Reduplication", *American Anthropologist,* vol. 6, p. 114 (p. 66 of reprint), 1904.

go,	*hánao,*	*háhanao,*	*h***um***ánao,*	*h***um***áhanao.*
carry,	*chúle,*	*chúchule,*	*ch***um***úle,*	*ch***um***úchule.*
stay,	*sága,*	*sásaga,*	*s***um***ága,*	*s***um***ásaga.*
enter,	*hálom,*	*háhalom,*	*h***um***álom,*	*h***um***áhalom.*
go out,	*húyong,*	*húhuyong,*	*h***um***úyong,*	*h***um***úhuyong.*
swim,	*náñgo,*	*nánañgo,*	*n***um***áñgo,*	*n***um***ánañgo.*
lament,	*úgung,*	*úugung,*	**um***úgung,*	**um***úugung.*
hide,	*atog,*	*áatog,*	**um***átog,*	**um***áatog.*
blaspheme,	*chátfino,*	*cháchatfino,*	*ch***um***átfino,*	*ch***um***áchatfino.*

B.—*Infinitives without* **um**.

	Root Imperative.	Reduplicated Root Suspended Imperative.	Infinitive and Preterite.	Present and Imperfect.
see (intr.)	*fanlíi,*	*fanlílii,*	*manlíi,*	*manlílii.*
read (intr.)	*fanáitai,*	*fanánaitai,*	*manáitai,*	*mannaitai.*
write (intr.)	*fanúge,*	*famúnuge,*	*manúge,*	*manúnuge.*
carry (intr.)	*fañule,*	*fañúñule,*	*mañule,*	*mañuñule.*
sit,	*fatáchong,*	*fatátachong,*	*matáchong,*	*matátachong.*
run,	*falágo,*	*falálago,*	*malágo,*	*malálago.*
arrive,	*fáto,*	*fáfato,*	*máto,*	*máfato.*
go on foot,	*famókat,*	*famómokat*	*mamókat.*	*mamómokat.*

Examples of the use of verbs with the infix *um:*

Hayi tumataitai i lebbloko ?	Who is reading my book?
Guaho tumataitai. Tumataitai yô.	I am reading (it).
Hayi kumano i kahet ?	Who ate the orange?
Si Huan kumano. Kumano si Huan.	John ate (it).
Hayi tumaha i hayuho ?	Who cut my wood?
Si tata tumaha. Tumaha si tata.	Father cut it.
Hayi tumuge ini na katta ?	Who wrote this letter?
Tumuge i chêluho.	My brother wrote (it).
Hayi chumáchaleg guenao na guma ?	Who is laughing in that house?
Chumáchaleg i famaguon.	The children are laughing.

Examples of the use of verbs with the Infinitive:

Malago yô umason.	I wish to lie down.
Munga umason.	You must not lie down.
Munga yô humanao.	I won't go.
Munga gui humalom.	He won't come in.
Munga sumaga si nana.	Mother will not stay.
Siña yô humuyong ?	May I go out?
Siña hao sumaga giya hame.	You may stay at our house.

Reduplicated Form with Chamo. — With verbs which take *um* in the infinitive, the precative *chamo* causes the reduplication of the accented syllable, as in the present or progressive form. This may be considered as a progressive form of the infinitive:

Chamo **um***áason !*	Don't lie down ! Don't be lying down.
*Chamo h***um***áhanao !*	Don't go ! Don't be going. You must not be going.
*Chamo h***um***áhalom !*	Do not enter ! Don't be entering.
*Chamo s***um***ásaga !*	Do not stay ! You must not be staying.

17. Verbal Particles. — Verbal particles precede the verb and are united with it enclitically. They indicate person, but they are quite distinct from the personal pronoun. They are used with all verbs in the future, whether transitive or intransitive, but are used in the past and present of transitive verbs only when they have a definitely indicated object and their action has not before been referred to. Following are the verbal particles of the Chamorro language:

Past and Present.	Future.	Singular.
hu-	**hu-**	1st person.
un-	**un-**	2d person.
ha-	**u-**	3d person.
		Dual and Plural
ta-	**uta-**	1st person inclusive.
in-	**in-**	1st person exclusive.
en-	**en-**	2d person.
ha-	**uha-**	3d person.

As in the form of the verb where the infix *um* is used, the preterite indicative of verbs conjugated with prefixed particles is formed from the definite, or urgent, imperative, and the imperfect and present from the reduplicated form, which is the indefinite or suspended imperative. Examples:

Hu*chule i tihongmo gi gima,*	I carried your hat to the house.
Hu*lii i lähen magalahe,*	I saw the son of the governor.
Hu*chuchule i niyog siha,*	I am or was carrying the coconuts.
Hu*lilii i guihan gi tipo,*	I see the fish in the well.
Ta*lii i chêlumo ni i bachet,*	We (you and I) saw your brother who is blind.

Hafa enao? Ti **hu***tungo,*	What is that? I do not know (it).
Un*lii i tätáho gi läncho,*	You saw my father in the ranch.
U*lii i tätámo agupa,*	He will see your father tomorrow.
Ha*lii nigab i chêlumo,*	He saw your brother yesterday.

In the above examples it will be observed that the verb has a definitely indicated object and that the action of the verb has not before been expressed.

Particles used with the Imperative. — It has already been stated that the definite imperative, second person singular, is the simple root of the verb. The other persons of the imperative are formed from the future very much as in the English expressions 'she shall go,' 'he shall do it,' 'they shall work.' Examples:

Lii i gima!	See the house!
U*lii i gima!*	Let him see the house!
Ta*lii i gima!*	Let us see the house!
Lii i gima!	See ye the house!
Uha*lii i gima!*	They shall see the house!

18. The Possessive Form of the Verb. — As already indicated, person and number are expressed in certain verbs by means of possessive particles suffixed enclitically to the verb.[1] The preterite or past definite tense is formed directly from the definite imperative, or primitive form of the verb, and the present or imperfect has the reduplicated form. Examples:

Hafa ilég **ña,**	What did he say? What said he?
Hafa ilélleg **ña,**	What is he saying? What was he saying?
Ileg **mâme,**	We said, we did say.
Ileg **mámame,**	We are saying, we were saying.

In this form of the verb the reduplication takes place not necessarily in the root of the verb, but in the accented syllable of the new word formed by combining enclitically the possessive suffix with the root. In verbs denoting mental action, as already stated, the effect of reduplicating the verb would be to weaken its meaning; so that with the verb *malago*, for instance, the unreduplicated form is used in the present as well as in the past tense: *Hafa malagó***mo**? What do you wish? or, what did you wish? *Gaó***ko,** I prefer. *Hinasó***ko,** I think.

[1] See *Am. Anth.*, vol. 5, p. 513 (p. 30 of reprint), 1903.

The use of this form of the verb may be compared to that of the Polynesian dialects, in which a common form of expression is, 'What is your wishing?' — Hawaiian, *Heaha kou makemake? Aole ona manao e hele.* 'None his wishing to go.' 'He did not wish to go.'

19. The Passive Voice. — To express the passive voice, when the agent is singular, the particle **in** must be inserted before the first vowel of the verb. This has the effect of changing the vowel *a* to *ä*, *o* to *e*, and *u* to *i*, as in the formation of abstract nouns. Thus, from *gôte*, seize, we have *g***in***ête*, to be seized by some one.

When the agent of the action is not expressed, or is plural, the passive voice is indicated by prefixing the particle **ma** to the verb. Thus, from *gôte*, we have **ma***gôte*, to be seized by more than one, or simply 'seized,' without expressing the agent.

The present and imperfect tenses are formed by reduplication as in the other forms of the verb; as, *g***in***ête yo nu i lähe*, I was seized by the man; *g***in***egête yo nu i chêlumo*, I am (or was) being seized by your brother; **ma***gôte yo nu i lälahe*, I was seized by the men; **ma***gogôte yo uu i mañelumo*, I am (or was) being seized by your brothers.

The passive voice cannot be used if the agent is of the first or the second person, or if the subject of the verb is of the first person and the agent is of the singular or dual number unless the agent is without article, adjective, or preposition. Thus it is proper to translate by the passive voice, 'I was stung by a wasp' (*Inaka yo sasata*), 'We were stung by mosquitos' (*Manmaaka ham ñamo*). But the sentence 'I was stung by that big centipede' must be rendered in Chamorro 'That big centipede stung me'; and 'The berries were picked by me' must be translated 'I picked the berries.' Other examples:

*F***in***anague si Hosé as Pedro,*	Joseph was taught by Peter. (Agent singular.)
Ma*fanáan Hosé Palomo i pale ni i fumague yô,*	The priest who taught me was called José Palomo. (Agent not specified.)
*B***in***aba hao as Tata,*	Thou wert whipped by Father. (Agent singular.)
Ma*mofea si Eliseo nu megae na famagúon.*	Elisha was ridiculed by many boys. (Agent plural.)

*Man***ma***akude hamyo nu i manachataotaomiyo.*	Ye were aided by your-fellow-country-men. (Verb and agent plural.)

20. MODE. As we have seen, inflections are made by means of reduplication and by the addition of prefixes, infixes, and suffixes. Though not corresponding to the grammatical structure of the Aryan group of languages, the Chamorro verbs may be considered to have four modes, the imperative, infinitive, indicative, and conditional.

IMPERATIVE MODE

There are two imperatives, the definite or urgent, which is the simple root of the verb, and the indefinite or suspended, which is the reduplicated form of the root. The definite imperative expresses a command which is urgent and is expected to be obeyed immediately, as *Hanao!* Go! The indefinite or suspended imperative expresses a command, request, or exhortation, which is not expected to be obeyed forthwith; as *cháchaleg!* laugh (and the world laughs with you); *óomag*, bathe (as when a doctor advises a patient).[1] The second person of the imperative is the same in the singular and plural. The third person of the imperative is similar to the third person singular and plural of the future, as, **u***lii*, let him see, or he shall see; **uha***lii*, let them see, or they shall see. The first person plural is similar to that of the preterite and present, as, **ta**lii, let us see. An interesting feature of the Chamorro is the use of an auxiliary with the first person plural of the imperative, recalling the Hebrew form, as, *Nihi talii!* O come let us see! The negative imperative is expressed by the precative *chamo*, do not, before the reduplicated, or suspended imperative. Examples:

Chamo fatátachong!	Do not sit down!
Chamo kahúhulo!	Do not get up!
Chamo famómokat!	Do not go on foot!
Chamo falálago!	Do not run!
Chamo falagisásadog!	Don't go-to-the-river!
Chamo famúmuno!	Thou shalt not kill!
Chamo fandádage!	Thou shalt not lie!

[1] It may also be considered in the light of a progressive form of the imperative, as 'be laughing,' 'be bathing'; or as an exhortation to perform an habitual act, as 'laugh and grow fat,' 'bathe frequently.'

If the verb take the infix *um* in the infinitive, the reduplicated form, with this particle before the first vowel (as in the present, or imperfect), follows the precative; as, *chamo umáason*, do not lie down; *chamo humáhanao*, do not go.

Some imperative phrases follow:

Halom!	Come in!
Chamo kahúhulo!	Do not rise!
Fatáchong!	Sit down!
Fatáchong gi fionho,	Sit in my proximity (near me).
Ginem ini na tuba,	Drink this toddy.
Chamo gumiginem i tiba pago,	Do not drink the toddy now.
Giginem gin homlo hao,	Drink (it) when you are well.
Maila tafanoo chokolate,	Come, let us make some chocolate.
Maila ya unchocho,	Come and you eat.
Nihi tafalag-i-halom-tano,	Come, let-us-go-to-the-woods.
Tafanfi flores,	Let us pick flowers.
Nangga!	Wait!
Ekungog ayu na aga,	Listen to that crow.
Atan enao na sasata,	Look at that wasp.
Adahe!	Take care!
Ta-agang si Luis,	Let us call Louis (transitive).
Ta-fanagang,	Let us call (intransiive).
Pakakâ!	Be silent!
Chamo áamam!	Don't tarry!
Gusi magi!	Hurry hither!

INFINITIVE MODE

All transitive verbs form their infinitive by inserting the particle *um* before the first vowel of the primitive root, or definite imperative. Examples:

DEFINITE IMPERATIVE	INFINITIVE
chule, carry;	*ch***um***ule*, to carry.
náe, give;	*n***um***áe*, to give.
taitai, read;	*t***um***aitai*, to read.
tuge, write;	*t***um***uge*, to write.
fahan, buy;	*f***um***ahan*, to buy.

Some intransitive verbs form their infinitive in the same manner:

chaleg, laugh;	*ch***um***aleg*, to laugh.
tañgis, weep;	*t***um***añgis*, to weep.
nañgo, swim;	*n***um***añgo*, to swim.

All intransitive verbs beginning with **fan** or the syllable **fa** in the imperative, and all transitive verbs with an indefinite object taking **fan** in the imperative, change the prefix to **man** or **ma** in the infinitive:

fa*ñule*, carry (intr.);	**ma***ñule*, to carry.
fan*náe*, give (intr.);	**man***náe*, to give.
fan*aitai*, read, or pray;	**man***aitai*, to read, or pray.
fan*uge*, write (intr.);	**man***uge*, to write.
fal*ago*, run;	**mal***ago*, to run.
fat*achong*, sit down;	**mat***achong*, to sit down.
fa*chocho*, work (intr.);	**ma***chocho*, to work.

INDICATIVE MODE

21. Formation of Tenses. — From the Definite or Urgent Imperative, which is the simple root, are formed the Preterite or Past Definite of the Indicative Mode, and the Definite future of all verbs except those having the prefix *fan*, or a similar syllable, in the imperative.

From the Indefinite or Suspended Imperative, which is the reduplicated form of the root, are formed the Imperfect, Present and Indefinite Future. These forms may be considered as like the Progressive form in the English 'I was seeing,' 'I am seeing,' 'I shall be seeing.' The Anterior Pluperfect or Past Perfect of the Indicative is like the preterite, preceded or followed by the verbs *monhayan* and *magpô* ('to have finished'), or by the word *yesta* derived from the Spanish *ya está*, it is done. Examples:

Definite imperative, *Lii*, See!	Indefinite imperative, *Lilii*, See.
Preterite, **Ha***lii*, He did see.	Present or imperfect, **Ha***lilii*, He is seeing, he was seeing.
Definite future, **U***lii*, He will see.	Indefinite future, **U***lilii*, He will be seeing.
Anterior or Pluperfect { **Monhayan ha***lii*, / **Ha***lii* **magpô**, }	He had seen; he had finished seeing.[1]

[1] Like the Spanish *acabó* [*de*] *ver*.

Past Time. — As in many Oceanic languages, past time is frequently expressed by means of adverbs. Time fully past is indicated by *hagas*, formerly, or the English 'used to'; time recently past by *gine*, translated in English by 'to have just' and in French by *venir de;* time definitely past by *monhan*, which corresponds to the German *schon;* and time already past at some past period by *monhayan* or *magpô*, which may be supposed to correspond to the Spanish *acabar de*, 'to have finished some act in past time.' The reduplicated form of the verb used in connection with past time expresses continuous or progressive action, something happening at the same time that another past event took place; it is therefore sometimes called the "copresent," and is expressed by the "imperfect" of the Latin languages. Examples:

Hagas *kapitan hao,*	You were captain (Formerly you were a captain).
Hagas *mato yô Manila,*	I have been to Manila (not recently).
Gine *hulii si Nana,*	I have just seen Mother (Je viens de voir ma mère).
Gine *malañgo yô,*	I have been sick (recently).
Monhan[1] *halagse i chininaña nigab,*	Already he sewed his shirt yesterday.
Monhayan *hao chumocho nigabña, anae mato si Magalahe giya hamyo.*[2]	You had finished dining day before yesterday when the Governor arrived at your home.

22. Person and Number. — It has been shown under the pronoun that there are two forms for the first person plural, one including the person addressed and the other excluding him. The first may be thought of as 'you and I', the second as 'they and I.'

Transitive verbs with a definite object have no distinct form for indicating the dual number. Intransitive verbs indicate the dual by using the plural pronouns with the singular form of the verb, while they prefix to the verb the plural particle *man*, to indicate that the subject is plural. Thus we have the intransitive verbs:

Singular:	*Tumunog yo,*	I descended (from *tunog*, descend).
	Manlii yo,	I saw (from *lii*, see).

[1] German, *Er hat* **schon** *gestern sein Hemd genäht.*

[2] *Giya hamyo* = French *chez vous.*

Dual:	*Tumunog hit,*	We descended (thou and I);
	Tumunog ham,	We descended (he and I).
	Manlii hit,	We saw (thou and I);
	Manlii ham,	We saw (he and I).
Plural:	*Manunog*[1] *hit,*	We descended (ye and I);
	Manunog ham,	We descended (they and I).
	Manmanlii hit,	We saw (ye and I);
	Manmanlii ham,	We saw (they and I).

Verbs in the passive voice form the plural like intransitive verbs and adjectives:

Singular:	*Ginête yo,*	I was seized (from *gôte*, agent singular);
	Magôte yo,	I was seized (agent plural, or not indicated).
Plural:	*Manginête hit,*	We were seized (you and I; agent singular);
	Manmagôte hit,	We were seized (you and I; agent plural or not indicated).

23. Forms of the Verb. — A single verb may assume various forms and be conjugated in various ways, according to the sense in which it is used. Thus it may be transitive with a definite object or intransitive; used for the first time or used again after its action has been referred to; passive with a single agent or passive with the agent plural or not indicated; or it may be causative active or causative passive. Moreover, the verb may be used in its primitive form, which in general expresses some definite or precise exaction, or in a reduplicated form, which in general expresses a continuous progressive, repeated or vague action. Examples with the verb *lii*, see:

Primitive root (definite imperative), *lii*, see (object definite).
Reduplicated root (indefinite imperative), **li***lii*, be seeing.
Infinitive (with infix *um*), *l***um***ii*, to see.
Intransitive form, imperative, **Fan***lii*. See! (object indefinite.)
Intransitive form, infinitive, **man***lii*, to see.
Passive form with singular agent, *l***in***ii*, seen (by some one).

[1] When the plural prefix is used with words beginning with *t*, this initial letter is eliminated. See *Am. Anth.*, vol. 5, 1903, p. 303 (p. 15 of reprint), for rules governing the modification of initial letters.

Passive form with plural agent, **ma***lii*, seen.

Causative form (with prefix *na*), **na***lii*, make see, or 'show' (somebody).

Causative passive form, *na***ma***lii*, cause to be seen, 'display' (something).

24. CONJUGATIONS. — Following are given the various conjugations of Chamorro verbs:

The FIRST FORM, in which **particles** *are* **prefixed** to the verb to indicate person and number, is used in the case of **transitive verbs** *with a* **definite object,** *when the action of the verb has* **not before been referred to.**

The SECOND FORM, in which the particle **um** is infixed into the body of the verb, and person and number are indicated by distinct pronouns, is used with **transitive verbs** *the action of which has* **already been referred to.**

The THIRD FORM, in which the verb is preceded by the intransitive particle **fan**, is used with **transitive verbs without a definitely specified object** and with verbs **used intransitively.**

The FOURTH FORM, in which the verb is **essentially intransitive** *and takes the infix* **um** in the infinitive, is used where the intransitive prefix *fan* is not used.

The FIFTH FORM, in which the verb has *neither the prefix fan nor the infix um*, is used with certain **neuter verbs.**

The SIXTH FORM, in which **possessive pronominal suffixes** are used to indicate person and number, may be called the *possessive form* of conjugation. With certain verbs it is always used in the present and past of the indicative. With other verbs it is generally used only when the sentence is interrogative after the pronoun *hafa*, what. With the precative *chamo* it is used in the imperative.

The SEVENTH FORM, in which the verb takes the *infix* **in** or the *prefix* **ma,** is used with verbs in the **passive voice.**

The EIGHTH FORM, in which the verb has the *prefix* **nâ,** is used with **causative** verbs.

25. FIRST FORM OF CONJUGATION: *Verbal Prefixes.* — This form is used when the verb is **transitive with a definitely indicated object** and the action has **not before been referred to.**

IMPERATIVE MODE

Definite	Indefinite
SINGULAR	
Lii, See (thou)!	**Li***lii*, Be seeing.
U*lii*, Let him see!	**U***lilii*, Let him be seeing.
DUAL AND PLURAL	
Ta*lii*, Let us see![1]	**Ta***lilii*, Let us be seeing.
Lii, See (ye)!	**Li***lii*, Be ye seeing.
Uha*lii*, Let him see!	**Uha***lilii*, He shall be seeing.

INDICATIVE MODE

Past Definite, or Preterite Tense

SINGULAR

Guaho **hu***lii i gima*, I saw the house, I did see the house.[2]
Hago **un***lii i gima*, Thou sawest the house, Thou didst see the house.
Guiya **ha***lii i gima*, He saw the house, He did see the house.

DUAL AND PLURAL

Hita **ta***lii i gima*, We saw the house, We did see the house (incl.).
Hame **en***lii i gima*, We saw the house, We did see the house (excl.).
Hamyo **in***lii i gima*, You saw the house, You did see the house.
Siha **ha***lii i gima* They saw the house, They did see the house.

Present and Imperfect

SINGULAR

Guaho **huli***lii i gima-mo*, I see your house, I am (or was) seeing your house.

Hago **unli***lii i täsi*, Thou seest (art seeing, or wert seeing) the sea.

Guiya **hali***lii i chälan*, He sees (is seeing, or was seeing) the road.

DUAL AND PLURAL

Hita **tali***lii i gima-yuus*, We (you and I) see (or were see-seeing) the church.

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[1] To express the first person plural or dual of the imperative, the verb is often preceded by the interjection or expletive *nihi*, as *Nihi talii!* which may be rendered 'O come let us see!'

[2] In this form the personal pronouns are expressed only when the subject is emphatic. When no confusion is probable the pronoun is omitted.

Hame **inli***lii i galaide*, We (he or they and I) see (or were seeing) the canoe.
Hamyo **inli***lii i sädog*, You see (or were seeing) the river.
Siha **hali***lii i egsô*, They see (or were seeing) the hill.

ANTERIOR OR PLUPERFECT

SINGULAR

Monhayan hu*lii* or **magpô** *hulii*, I had finished seeing.[1]
Monhayan un*lii* or **magpô un***lii*, Thou hadst finished seeing.
Monhayan ha*lii* or **magpô ha***lii*, He had finished seeing.

DUAL AND PLURAL

Monhayan ta*lii* or **magpô ta***lii*, We had finished seeing (incl.).
Monhayan in*lli* or **magpô in***lii*, We had finished seeing (excl.).
Monhayan en*lii* or **magpô en***lii*, You had finished seeing.
Monhayan ha*lii* **magpô ha***lii*, They had finished seeing.

FUTURE TENSE

DEFINITE		INDEFINITE OR VAGUE
	SINGULAR	
Hu*lii i gima*,	I shall see the house ;	**huli***lii i gima*.
Un*lii i gima*,	Thou wilt see the house ;	**unli***lii i gima*.
U*lii i gima*,	He will see the house ;	**uli***lii i gima*.
	DUAL AND PLURAL	
Uta*lii i gima*,	We shall see the house ;	**utali***lii i gima*.
In*lii i gima*,	We shall see the house ;	**inli***lii i gima*.
En*lii i gima*,	You will see the house ;	**enli***lii i gima*.
Uha*lii i gima*,	They will see the house ;	**uhali***lii i gima*.

From the above forms it will be seen that the future resembles the preterite and imperfect tense forms except in the third person singular and plural and the first person plural inclusive, all of which have the prefix **u**. If the subject is emphatic the personal pronouns are used.

26. SECOND FORM OF CONJUGATION : *Verbal Infix* **um**. — Action of verb **already referred to,** as in answer to a question, *Hayi lumii i äga ?* Who saw the crow ?

[1] In the same way the adverb *hagas* (formerly) may be used to express past time ; as *hagas hulii i tätamo*, I formerly saw your father.

INDICATIVE MODE

PRETERITE OR PAST DEFINITE

SINGULAR

Hayi /**um***ii i äga ?*	Who saw the crow?
Guaho /**um***ii i äga,*	I saw the crow.
Hago /**um***ii i äga,*	Thou sawest the crow.
Guiya /**um***ii i äga,*	He saw the crow.

DUAL AND PLURAL

Hita /**um***ii i äga,*	We (incl.) saw the crow.
Hame /**um***ii i äga,*	We (excl.) saw the crow.
Hamyo /**um***ii i äga,*	You saw the crow.
Siha /**um***ii i äga,*	They saw the crow.

INDICATIVE PRESENT OR PROGRESSIVE

SINGULAR

Hayi /**um***ilii yuhe na modong ?*	Who sees yonder ship?
Guaho /**um***ilii yuhe na modong,*	I see yonder ship.
Hago /**um***ilii yuhe na modong,*	Thou seest yonder ship.
Guiya /**um***ilii yuhe na modong,*	He sees yonder ship.

DUAL AND PLURAL

Hita /**um***ilii yuhe na modong,*	We see yonder ship.
Hame /**um***ilii yuhe na modong,*	We see yonder ship.
Hamyo /**um***ilii yuhe na modong,*	You see yonder ship.
Siha /**um***ilii yuhe na modong,*	They see yonder ship.

FUTURE TENSE

The future tense is identical with that of the preceding form.

27. THIRD FORM OF CONJUGATION: **Intransitive Prefix fan.** — **Object** of the verb **indefinite** or lacking.

IMPERATIVE MODE

DEFINITE	INDEFINITE
SINGULAR	
Fan*lii*, See;	**Fan***lilii*, Be seeing.
*U***fan***lii*, Let him see;	*U***fan***lilii*, Let him be seeing.
DUAL	
*Ta***fan***lii*; Let us two see;	*Ta***fan***lilii*, Let us two be seeing.
Fan*lii*, See ye (two);	**Fan***lilii*, Be ye (two) seeing.
*Uha***fan***lii*, Let the two see;	*Uha***fan***lilii*, Let the two be seeing.

PLURAL

*Tafan***man***lii*, Let us see ; *Tafan***man***lilii*, Let us be seeing.
*Fan***man***lii*, See ye ; *Fan***man***lilii*, Be ye seeing.
*Ufan***man***lii*, Let them see ; *Ufan***man***lilii*, They shall be seeing.

INDICATIVE MODE

PRETERITE OR PAST DEFINITE

SINGULAR

Man*lii yô*, I saw ; **Man***lii yo guihan siha*, I saw fishes.
Man*lii hao*, Thou sawest ; **Man***lii hao guma*, Thou sawest a house.
Man*lii gui*, He saw ; **Man***lii gui aga*, He saw a crow.

DUAL

Man*lii hit*, We (two) saw (incl.); **Man***lii hit pution siha*, We (two) saw stars.
Man*lii ham*, We (two) saw (excl.); **Man***lii ham hanom*, We (two) saw water.
Man*lii hamyo*, You (two) saw ; **Man***lii hamyo aniti*, You (two) saw a ghost.
Man*lii siha*, They (two) saw ; **Man***lii siha halúo*, They (two) saw a shark.

PLURAL

*Man***man***lii hit*, We saw ; *Man***man***lii hit modong*, We saw a ship.
*Man***man***lii ham*, We saw ; *Man***man***lii ham tuba*, We saw some toddy.
*Man***man***lii hamyo*, You saw ; *Man***man***lii hamyo lalahe*, You saw some men.
*Man***man***lii siha*, They saw ; *Man***man***lii siha mañake*, They saw thieves.

PRESENT AND IMPERFECT

SINGULAR

Man*lilii yô*, I see ; **Man***lilii yô megae na pution*, I see many stars.
Man*lilii hao*, thou seest ; **Man***lilii hao babue*, Thou seest a pig.
Man*lilii gui*, he sees ; **Man***lilii gui manog*, He sees a chicken.

DUAL

Man*lilii hit*, We (two) see (incl.) or were seeing.
Man*lilii ham*, We (two) see (excl.) or were seeing.
Man*lilii hamyo*, You (two) see, or were seeing.
Man*lilii siha*, They (two) see, or were seeing.

PLURAL

*Man***man***lilii hit*, We see, or we were seeing.
*Man***man***lilii ham*, We see, or we were seeing.
*Man***man***lilii haymo*, You see, or you were seeing.
*Man***man***lilii siha*, They see, or they were seeing.

FUTURE TENSE

DEFINITE	INDEFINITE
SINGULAR	
*Hu***fan***lii*, I shall see ;	*Hu***fan***lilii*, I shall be seeing.
*Un***fan***lii*, thou wilt see ;	*Un***fan***lilii*, Thou wilt be seeing.
*U***fan***lii*, He will see ;	*U***fan***lilii*, He will be seeing.
DUAL	
*Uta***fan***lii*, we two shall see ;	*Uta***fan***lilii*, we two shall be seeing.
*In***fan***lii*, we two shall see ;	*In***fan***lilii*, we two shall be seeing.
*En***fan***lii*, ye two will see ;	*En***fan***lilii*, ye two will be seeing.
*Uha***fan***lii*, they two will see ;	*Uha***fan***lilii*, they two will be seeing.
PLURAL	
*Utafan***man***lii*,[1] we shall see ;	*Utafan***man***lilii* we shall be seeing.
*Infan***man***lii*, we shall see ;	*Infan***man***lilii*, we shall be seeing.
*Enfan***man***lii*, ye will see ;	*Enfan***man***lilii*, ye will be seeing.
*Uhafan***man***lii*, they will see ;	*Uhafan***man***lilii*, they will be seeing.

Verbs Belonging to this Conjugation. — In addition to verbs which are primitively transitive, and which take the intransitive prefix *fan* when their object is wanting or is not specified definitely, there are certain verbs beginning with the syllable *fa* which follow this form of conjugation. Examples :

Fa*tachong*, Sit down !	**Fa***lago*, Run !
*U***fa***tachong*, Let him sit down ;	*U***fa***lago*, Let him run (or go).
*Ta***fa***tachong*, Let us (two) sit ;	*Ta***fa***lago*, Let us (two) run.
*Tafan***ma***tachong*, Let us sit down ;	*Tafan***ma***lago*, Let us run.
*Ufan***ma***tachong*, Let them sit down ;	*Ufan***ma***lago*, let them run.
Ma*tachong yô*, I sat down ;	**Ma***lago yô*, I ran.
Ma*tachong hit*, We (two) sat down ;	**Ma***lago hit*, We (two) ran.
*Man***ma***tachong hit*, We sat down ;	*Man***ma***lago hit*, We ran.
Ma*tátachong yo*, I am sitting ;	**Ma***lálago yô*, I am running.

[1] In the plural forms the particle *man* is the intransitive particle preceding the root ; the particle preceding this (*fan* in the future and imperative, and *man* in the past and present) is the plural prefix.

*Hu***fa***tachong*, I shall sit down ;
*U***fa***tachong*, He will sit down ;
*Utafan***ma***tachong*, We shall sit ;
Chamo **fa***tátachong*, Don't sit ;
Siña yô **ma***tachong*, May I sit?
*Siña hu***fa***tachong*, Is it possible that I shall sit?
Munga **ma***tachong*, You must not sit down ;
Munga yô **ma***tachong*, I do not wish to sit ;

*Hu***fa***lago*, I shall run.
*U***fa***lago*, He will run.
*Utafan***ma***lago*, We shall run.
Chamo **fa***lálago*, Don't run.
Siña yô **ma***lago*, May I run?
*Siña hu***fa***lago*, Is it possible that I shall run?
Munga **ma***lago*, You must not run.
Munga yô **ma***lago*, I do not wish to run.

28. Fourth Form of Conjugation : **Intransitives with Infix um.** — To illustrate this conjugation I shall take the verb *tunog*, descend ; infinitive *t***um***unog*, to descend.

IMPERATIVE MODE

Definite	Indefinite
SINGULAR	
Tunog, Descend ;	*Tutonog*, Be descending.
Utunog, Let him descend ;	*Utútunog*, Let him be descending.
DUAL	
Tatunog, Let us two descend ;	*Tatútunog*, Let us two be descending.
Tinog, Descend ye two ;	*Titinog*, Be ye two descending.
Uhatunog, Let the two descend ;	*Uhatútunog*, Let us two be descending.
PLURAL	
Tafanunog, Let us descend ;	*Tafanútunog*, Let us be descending.
Fanunog, Descend ye ;	*Fanútunog*, Be ye descending.
Uhafanunog, Let them descend ;	*Uhafanútunog*, They shall be descending.

INDICATIVE MODE

Preterite	Present or Imperfect
SINGULAR	
*T***um***unog yô*, I descended ;	*T***um***útunog yô*, I am (or was) descending.
*T***um***unog hao*, Thou descendedst ;	*T***um***útunog hao*, Thou art descending.
*T***um***unog gui*, He descended ;	*T***um***útunog gui*, He is descending.

DUAL

Tumunog hit, We two descended ;	*Tumútunog hit*, we two are descending.
Tumunog ham, We two descended ;	*Tumútunog ham*, we two are descending.
Tumunog hamyo, Ye two descended ;	*Tumútunog hamyo*, Ye two are descending.
Tumunog siha, They two descended ;	*Tumútunog siha*, They two are descending.

PLURAL

Manunog[1] *hit*, We descended ;	*Manútunog hit*, We are descending.
Manunog ham, We descended ;	*Manútunog ham*, We are descending.
Manunog hamyo, You descended ;	*Manútunog hamyo*, You are descending.
Manunog siha, They descended ;	*Manútunog siha*, They are descending.

FUTURE TENSE

DEFINITE	INDEFINITE

SINGULAR

Hutunog, I shall descend ;	*Hutútunog*, I shall be descending.
Untunog, Thou wilt descend ;	*Untútunog*, Thou wilt be descending.
Utunog, He will descend ;	*Utútunog*, He will be descending.

DUAL

Utatunog, We two shall descend ;	*Utatútunog*, We two shall be descending.
Intinog, We two shall descend ;	*Intítinog*, We two shall be descending.
Entinog, Ye two will descend ;	*Entítinog*, Ye two will be descending.
Uhatunog, They two will descend ;	*Uhatútunog*, They two will be descending.

PLURAL

Utafanunog,[1] We shall descend ;	*Utafanútunog*, We shall be descending.
Infanunog, We shall descend ;	*Infanútunog*, We shall be descending.
Enfanunog, They will descend ;	*Enfanútunog*, You will be descending.
Uhafanunog, They will descend ;	*Uhafanútunog*, They will be descending.

[1] When the plural prefix (*fan* in the future and *man* in the past and present indicative) precedes a root beginning with *t*, this initial letter is eliminated, according to the rule given for the plural of adjectives, vol. 5, 1903, p. 303 (p. 15 of reprint).

29. Fifth Form of Conjugation: **Neuter Verbs without Infix.** — Verbs of this kind are conjugated like the preceding, but do not take the infix *um* in the infinitive and past and present of the indicative. As an illustration I shall take the verb *basnak*, fall.

IMPERATIVE MODE

Definite	Indefinite
SINGULAR	
Basnak, Fall;	*Bábasnak*, Be falling.
Ubasnak, Let him fall;	*Ubábasnak*, Let him be falling.
DUAL	
Tabasnak, Let us two fall;	*Tabábasnak*, Let us two be falling.
Basnak hamyo, Fall ye two;	*Bábasnak hamyo*, Be ye (two) falling.
Uhabasnak, Let the two fall;	*Uhabábasnak*, Let the two be falling.
PLURAL	
Tafanbasnak, Let us fall;	*Tafanbábasnak*, Let us two be falling.
Fanbasnak, Fall ye;	*Fanbábasnak*, Be falling.
Uhafanbasnak, Let them fall;	*Uhafanbábasnak*, Let them be falling.

INDICATIVE MODE

Preterite	Present and Imperfect
SINGULAR	
Basnak yô, I fell;	*Bábasnak yô*, I am (or was) falling.
Basnak hao, You fell;	*Bábasnak hao*, You are (or were) falling.
Basnak gui, He fell;	*Bábasnak gui*, He falls, or was falling.
DUAL	
Basnak hit, We (two) fell;	*Bábasnak hit*, We two are (or were) falling.
Basnak ham, We (two) fell;	*Bábasnak ham*, We two are (or were) falling.
Basnak hamyo, You (two) fell;	*Bábasnak hamyo*, You fall, or were falling.
Basnak siha, They (two) fell;	*Bábasnak siha*, They fall, or were falling.

PLURAL

Manbasnak hit, We fell, or did fall; *Manbábasnak hit*, We fall, or were falling.

Manbasnak ham, We fell, or did fall; *Manbábasnak ham*, We fall, or were falling.

Manbasnak hamyo, You fell; *Manbábasnak hamyo*, You fall, or were falling.

Manbasnak siha, They fell; *Manbábasnak siha*, They fall, or were falling.

The future tenses and the other parts are like those of the preceding verb. In the plural of the future and imperative the syllable *fan* is the plural and not the intransitive particle.

INFINITIVE MODE

SINGULAR AND DUAL	PLURAL
basnak, to fall.	*manbasnak*, to fall.

30. SIXTH FORM OF CONJUGATION: **Possessive Suffixes.**—This form is used in common forms of expression with certain verbs in the present and past of the indicative mode; it is the usual form of all verbs after the interrogative **hafa,** 'what,' many of which take the infix **in,** as in the case of a derivative noun.

Kano, eat (trans.) **Alog,** say (trans.).

IMPERATIVE MODE

DEFINITE	INDEFINITE	DEFINITE	INDEFINITE
	SINGULAR		SINGULAR
Kano,	*Kákano*, Eat.	*Alog*,	*Áalog*, Say.
Ukano,	*Ukakano*, Let him eat.	*Ualog*,	*Uáalog*, Let him say.
	DUAL AND PLURAL		DUAL AND PLURAL
Takano,	*Takákano*, Let us eat.	*Taalog*,	*Taáalog*, Let us say.
Kano,	*Kákano*, Eat.	*Alog*,	*Áalog*, Say ye.
Uhakano,	*Uhakákano*, Let them eat.	*Unhaalog*,	*Uhaáalog*, They shall say.

INDICATIVE MODE

PAST DEFINITE OR PRETERITE

SINGULAR

Hafa ***k*in***anó***ho***, What did I eat? *Ilé*g***ko***, I said, I did say.

Hafa ***k*in***anó***mo***, What did you eat? *Ilé*g***mo***, Thou saidst, thou didst say.

Hafa ***k*in***anó***ña***, What did he eat? *Ilé*g***ña***, He said, he did say.

DUAL AND PLURAL

Hafa ***kin****anan*ó**ta**, What did we eat? *Ilég***ta**, We said, we did say.
Hafa ***kín****ano***máme**, What did we eat? *Ileg***máme**, We said, we did say.
Hafa ***kin****ano***míyo**? What did you eat? *Ileg***míyo**, You said, you did say.
Hafa ***kin****ano***ñíha**, What did they eat? *Ileg***ñíha**, They said, they did say.

PRESENT AND IMPERFECT

SINGULAR

*Hafa kinanóno***ho**, What am I eating? *Ilélег***ko**, He says, he was saying.
*Hafa kinanóno***mo**, What are you eating? *Ilélег***mo**, You say, you were saying.
*Hafa kinanóno***ña**, What is he eating? *Ilélег***ña**, He says, he was saying.

DUAL AND PLURAL

*Hafa kinanóno***ta**, What are we eating? *Ilélег***ta**, We say, we were saying.
*Hafa kinano***mámame**, What are we eating? *Ileg***mámame**, We say, we were saying.
*Hafa kinano***mímiyo**, What are ye eating? *Ileg***mímiyo**, Ye say, ye were saying.
*Hafa kinano***ñíñiha**, What are they eating? *Ileg***ñíñiha**, They say, they were saying.

FUTURE

SINGULAR

Hafa hukano, What shall I eat? *Hualog*, I shall say.
Hafa unkano, What will you eat? *Unalog*, You will say.
Hafa ukano, What will he eat? *Ualog*, He will say.

DUAL AND PLURAL

Hafa utakano, What shall we eat? *Utaalog*, We shall say.
Hafa inkäno, What shall we eat? *Inälog*, We shall say.
Hafa enkäno, What will you eat? *Enälog*, You will say.
Hafa uhakano, What will they eat? *Uhaalog*, They will say.

It will be seen in the above examples that the present and imperfect are formed by reduplicating the accented syllable (the penult) of the preterite.

Verbs Belonging to this Conjugation. — There are certain verbs which are used only with possessive suffixes. Among them are *yaho*, I like; *gäoko* or *gâñäko*, I prefer; *hinäsôko*, I think or imagine; *pinêlôko*, I thought, I believed; *châmo*, don't.

Yaho, *I like.*

PRESENT	PAST	FUTURE
	SINGULAR	
*Ya***ho**, I like;	*Hagas ya***ho**, I used to like;	*Uya***ho**, I shall like.
*Ya***mo**, thou likest;	*Hagas ya***mo**, You used to like;	*Uya***mo**, You will like.
*Ya***ña**, he likes;	*Hagas ya***ña**, He used to like;	*Uya***ña**, He will like.
	DUAL AND PLURAL	
*Ya***ta**, We like;	*Hagas ya***ta**, We used to like;	*Uya***ta**, We shall like.
*Yan***mame**, We like;	*Hagas yan***mame**, We used to like;	*Uyan***mame**, We shall like.
*Yan***miyo**, You like;	*Hagas yan***miyo**, You used to like;	*Uyan***miyo**, You will like.
*Yan***ñiha**, They like;	*Hagas yan***ñiha**, They used to like;	*Uyan***ñiha**, They will like.

Instead of *hagas* for the past, *naya* may be used before the verb or after, and *estaba*, derived from the Spanish, is also used. To denote time recently past *gine* is placed before the verb; as *gine hayo*, I have liked.

Gäoko, or **gâñäko**, I prefer, or like better; and **hinäsôko**, I imagine, or think to be, are conjugated like the preceding. The effect of reduplication would be to weaken the force of the verbs; as, *hinäsósôko*, I have a faint impression, I am inclined to think.

Pinêlôko, *I supposed.*

PAST	PRESENT	FUTURE
	SINGULAR	
*Pinêlo***ko**, I supposed;	*Pinêlólo***ko**, I suppose;	*Upinêlo***ko**, I shall suppose.
*Pinêlo***mo**, You supposed;	*Pinêlólo***mo**, you suppose;	*Upinêlo***mo**, You will suppose.
*Pinêlo***ña**, He supposed;	*Pinêlólo***ña**, He supposes;	*Upinêlo***ña**, He will suppose.

DUAL AND PLURAL

*Pinêlo***ta,** We supposed;	*Pinêlólo***ta,** We suppose;	*Upinêlo***ta,** We shall suppose.
*Pinêlon***mame,** We supposed;	*Pinêlon***mámame,** We suppose;	*Upinêlon***mame,** We shall suppose.
*Pinêlon***miyo,** You supposed;	*Pinêlon***mímiyo,** You suppose;	*Upinêlo***miyo,** You will suppose.
*Pinêlon***ñiha,** They supposed;	*Pinêlon***ñíñiha,** they suppose;	*Upinêlon***ñiha,** They will suppose.

Châmo, *Don't! Refrain from!*

This verb is used chiefly in the direct imperative, second person; it may, however, be used in all the persons.

SINGULAR

*Châ***ho,** Let me not; let me refrain from.
*Châ***mo,** Do not; you must not.
*Châ***ña,** Let him not; let him refrain from.

DUAL AND PLURAL

*Châ***ta,** Let us not, do not let us, let us refrain.
*Châ***mame,** Let us not, we must not, let us refrain.
*Châ***miyo,** Do not, ye must not, refrain.
*Châ***ñiha,** Let them not, they must not, let them refrain.

This verb is used only in the definite imperative or after a verb expressing a command, entreaty, or request. When followed by an intransitive verb that does not take the infix **um,** the latter is in the indefinite or suspended imperative, as —

Fatachong, Sit down;	*Chamo fatátachong,* Do not sit down.
Famokat, Walk;	*Chamo famómokat,* Do not walk.
Falagisádog, Go-to-the-river;	*Chamo falagisásadog,* Don't go-to-the-river.

When the verb is one which takes **um** in the infinitive, this infix is inserted before the first vowel of the reduplicated verb, as —

Ason, Lie down;	*Chamo* **um***áason,* Don't lie down.
Tunog, Descend;	*Chamo t***um***útunog,* Do not descend.
Saga, Stay;	*Chamo s***um***ásaga,* Do not stay, stay not.

Halom, enter;	*Chamo h***um***áhalom*, Do not enter.
Chaleg, laugh;	*Chamo ch***um***áchaleg*, Do not laugh, refrain from laughing.
Tangis, weep;	*Chamo t***um***átangis*, Do not weep, weep not.

In the dual *cha***mo** becomes *cha***miyo.** It is used with the indefinite imperative of the reduplicated verb with the infix **um**; as *chamiyo fatítinas*, or *chamiyo fumatítinas*, do not do (that); *chamiyo háhanao*, or *chamiyo humáhanao*, do not (you two) go. In the plural the governed verb must be in the second person plural of the indefinite imperative; as, *chamiyo fanháhanao*, go ye not.

Some further examples of the use of *chamo* follow:

*Ina yô ya cha***ho** *matótompô*,	Light me that I may not stumble.
*Cha***ña** *kumahúhulo*, or *Cha***ña** *kahúhulo*,	Let him not go up.
*Cha***ña** *fatátachong*,	Let him not sit down; don't let him be seated.
*Ileg***ña** *na cha***ho** *fatátachong*,	He said that I must not sit down.
*Manago nu cha***ta** *fatátachong*,	He commanded that we (two) must not sit down.
*Malägô nu cha***mame** *fanmatátachong*,	He wishes that we do not sit down.
*Hatago si Magalahe nu cha***ta** *fanmatátachong*,	The Governor commands that we do not sit down.

31. Seventh Form of Conjugation: *Verb in the* **Passive Voice.** — If the agent is **singular** and is indicated, the passive voice is formed by infixing the particle **in** before the first vowel of the verb. If the agent is **plural** or is not indicated, the passive voice is formed by prefixing the particle **ma.** For an example I take the verb *gôte*, seize, which becomes *ginête* by the insertion of the particle *in*, the vowel *ô* being modified as already shown under abstract nouns; and *magôte* by the prefixing of the particle *ma.*

Ginête *To be seized* [*by some one*].

INDICATIVE MODE

Preterite	Present or Imperfect
SINGULAR	
*Gin**ête yô*, I was seized;	*Gin**égête yô*, I am seized (by some one).

*Gin**ête hao***, You were seized; *Gin**égête hao***, You are being seized.
*Gin**ête gui***, He was seized; *Gin**égête gui***, He is being seized.

DUAL

*Gin**ête hit***, We (two) were seized; *Gin**égête hit***, We (two) are seized.
*Gin**ête ham***, We (two) were seized; *Gin**égête ham***, We (two) are seized.
*Gin**ête hamyo***, You (two) were seized; *Gin**égête hamyo***, You (two) are seized.
*Gin**ête siha***, They (two) were seized; *Gin**égête siha***, They (two) are seized.

PLURAL

*Mang**inête hit***, We were seized; *Mang**inégête hit***, We are seized (by some one).
*Mang**inête ham***, We were seized; *Mang**inégête ham***, We are seized (by some one).
*Mang**inête hamyo***, You were seized; *Mang**inégête hamyo***, You are seized (by some one).
*Mang**inête siha***, They were seized; *Mang**inégête siha***, They are seized (by some one).

FUTURE

This is formed like the future of other verbs; as, *hug**inête***, I shall be seized (by some one); *ug**inête i bäka nu i pätgon***, the cow will be seized by the child.

Magôte, *To be seized.*

(Agent plural or not indicated)

INDICATIVE MODE

PRETERITE	PRESENT OR IMPERFECT
SINGULAR	
Ma*gôte yô*, I was seized;	**Ma***gógôte*, I am seized, or was being seized.
Ma*gôte hao*, You were seized;	**Ma***gógôte*, You are seized.
Ma*gôte gui*, He was seized;	**Ma***gógôte gui*, He is seized.
DUAL	
Ma*gôte hit*, We (two) were seized; etc.	**Ma***gógôte hit*, We (two) are seized, etc.
PLURAL	
*Man***ma***gôte hit*, We were seized; etc.	*Man***ma***gógôte hit*, We are being seized, etc.

FUTURE TENSE

The future tense is formed like that of other verbs; as *hu***ma***gôte*, I shall be seized; *uta***ma***gôte*, we (two) shall be seized; *utafan***ma***gôte*, we shall be seized; *u***ma***gôte*, he will be seized. From this is taken the imperative. Thus we have in the Lord's Prayer: *u***ma***tuna i naanmo*, thy name shall be hallowed, from *tuna* bless, **ma***tuna* blessed or hallowed; *u***ma***fatinas i pintômo*, thy will shall be done, from *fatinas* do or perform, **ma***fatinas* to be done or performed.

32. EIGHTH FORM OF CONJUGATION: **Causative** *Verb with the Prefix* **nâ.** — To illustrate this form I will take the verb **nâ***ápakas*, to whiten, to make white. If the object of this verb is singular the component adjective remains *ápaka*, but if the object is plural, the component adjective takes the plural form **man***ápaka*, which, preceded by the particle *nâ*, becomes **fan***ápaka*. Thus we say **nâ***ápaka i gima*, whiten the house; but **nâ***fanápaka, i gima siha*, whiten the houses (*faites blanche***s** *les maisons*).

IMPERATIVE MODE

OBJECT SINGULAR	OBJECT PLURAL
SINGULAR	
Na*ápaka*, Whiten (the thing);	**Nâ***fanápaka*, Whiten (the things).
*U***nâ***âpaka*, Let him whiten (it);	*U***nâ***fanápaka*, Let him whiten (them).
DUAL AND PLURAL	
*Ta***nâ***ápaka*, Let us whiten (it);	*Ta***nâ***fanápaka*, Let us whiten (them).
Nâ*ápaka hamyo*, Whiten ye (it);	**Nâ***fanápaka hamyo*, Whiten ye (them).
*Uha***nâ***ápaka*, Let them whiten (it);	*Uha***nâ***fanápaka*, Let them whiten (them).

INDICATIVE MODE

PRETERITE

*Hu***nâ***ápaka*, I whitened (it);	*Hu***nâ***fanápaka*, I whitened (them).
*Un***nâ***ápaka*, You whitened (it);	*Un***nâ***fanápaka*, You whitened (them).
*Ha***nâ***ápaka*, He whitened (it);	*Ha***nâ***fanápaka*, He whitened them.
*Ta***nâ***ápaka*, We whitened (it);	*Ta***nâ***fanápaka*, We whitened (them).

*En***nâ***ápaka*, We whitened (it); *En***nâ***fanápaka*, we whitened (them).

*In***nâ***ápaka*, You whitened (it); *In***nâ***áfanápaka*, You whitened (them).

*Ha***nâ***ápaka*, They whitened (it); *Ha***nâ***fanápaka*, They whitened (them).

The present and imperfect tenses may be formed by reduplication, and the future by using the regular future particles. Examples:

*Ha***nâ***ason i patgon*, He made the child lie down, he laid the child down.
*Un***nâ***chegcheg i nifenmo*, You caused your teeth to grit.
*Ha***nâ***mapuno si Huan*, He caused John to be killed.
*Ha***nâ***baba si Luis*, He made Louis crazy.
Nâ*libre yô*, Deliver me.
Nâ*fanlibre ham*, Deliver us.
*Ha***nâ***hóhomlo i tataotao*, It makes well (cures) the body.
*Un***nâ***sahñge*, It will cause to be apart, it will separate (something).
*Un***nâ***jañahñge i lälahe yan i famalaoan*, It will separate the men and the women.

33. Reflexive Verbs. — These are conjugated like the transitive verbs with a definite object (First form of Conjugation), with the addition of the pronoun following the verb; as **hu***bale* **yô**, I availed myself; **un***bale* **hao**, thou didst avail thyself; **ha***bale* **gui**, he availed himself; **ta***bale* **hit**, we availed ourselves, etc. The present and imperfect are formed by simple reduplication; as **hu***hábale* **yô**, I am, or was, availing myself. The word *maisa*, corresponding to the English 'one's self', is also used; as *faaila*, accuse; *faaila-maisagui*, to accuse himself.

34. Reciprocal Verbs. — These are formed by prefixing to the verb the particle **a**. Thus, from *gôte*, seize, is formed **á***gôte*, seize each other. There is no singular. The dual is formed by prefixing the particle *um* to the verb; the plural is formed by prefixing the particle *fan* in the future and imperative, and *man* in the past and present indicative: **Á***gôte*, seize each other; *um***á***gôte hit*, we seized each other (dual); *man***á***gote hit*, we seized one another (plural); *ta***á***gôte*, let us seize each other; *tafan***á***gôte*, let us seize one another.

35. Defective Verbs. — Among the defective verbs of the Chamorro language are **guaha** there is (Fr. *il y a*); **taya,** there is not (Fr. *il n'y a pas*), there is lacking; **gae,** prefixed to a noun, denoting to have; **tae,** prefixed to a noun signifying not to have, to be without; **gaege,** corresponding to the Spanish *estar*, signifying to be in some place; **taegue,** signifying to be absent; **gine,** prefixed to the name of a place or direction, signifying to come from; **falag,** prefixed to the name of a place or direction signifying to go to.

Guaha. — This verb is used only in the third person; as, *guaha*, there-is; *gine guaha*, there has just been; *hagas guaha*, formerly there-was; *monhan guaha*, there once was (Germ. *es war schon*); *uguaha*, there-will-be. When reduplicated it loses in force; as *guáguaha salape*, there-is-a-little money, or there-is-still-a-bit-of money. To denote possession this verb is used with a noun followed by a possessive particle; as, *guaha chêluho*, I have a brother; lit., there-is (a) brother-mine (Spanish, *hay* (*un*) *hermano-mio*).

Taya. — This is the negative of *guaha*. It is used in the same way and expresses the non-existence of an object: *taya tiba*, there-is-no toddy; *taya chêluho*, I have no brother; there-is-no brother-of-me.

Gáe. — This is usually combined with the following word, and forms a compound verb; thus **gáe***gima* may be considered as an intransitive verb to-have-a-house, to be a house-owner, conjugated, **gáe***gima yô*, I have-a-house; **gáe***gima hao*, thou hast-a-house, *man***gáe***gima hit*, we have-a-house, *u***gae***gima*, let him have-a-house; *fan***gáe***gima hamyo*, may ye have-houses; *tafan***gáe***gima*, let us have-a-house. To express tense, adverbs may be used as in the case of *guaha*. *Gáe* may be prefixed to *iyo*, meaning property or possession, and to *ga*, where the object possessed is an animal; as **gáe***iyo yô payo*, I possess an umbrella; I have possession [in an] umbrella; **gáe***ga hao kabayo*, you possess a horse (you have-possession [in a] horse).

Táe. — This is the negative of *gáe* and is used in the same way: **tae***payo yô*, I have no umbrella; **tae***salape si Tata*, Father has no money; **tae***gima ham* (dual), we (two) have no house; *ma***nae***gima ham* (pl.) we have no house; **tae***nobiyo hit*, we (thou and I) have no ox; *ma***nae***nobiyo hit*, we (ye and I) have no ox; **tae***mamahlao si*

Pedro an Huan, Peter and John have no shame; **tae***añao i palaoan*, the woman is fearless; *ma***náe***añao na famalaoan*, they are women who are fearless.

Like *gáe* it is used with *iyo*, denoting property or possession, and *ga* when an animal is spoken of; as, **tae***iyo yô payo*, I possess no umbrella; **tae***ga hao kabayo*, thou ownest no horse.

GAEGE. — This verb signifies to be in a certain place, or 'to be,' and corresponds not to the Spanish *ser*, but to *estar;* as already stated, the Chamorro language has no copulative verb 'to be.' *Gaege* is usually followed by *gi*, signifying 'at' or 'in.' Examples of its use: *gáege yô gi gima*, I am in the house; *gáege hit gi länchо* (dual), we (you and I) are at the ranch; *mangáege hit giya hita*, we (ye and I) are at our home (Fr. *nous sommes chez nous*); *ugáege giya hame agupa*, he will be at our house tomorrow; *utafangaege gi lanchota*, we (ye and I) shall be at our ranch. To express the past time the Chamorros now use the Spanish *estaba;* as *man-estaba hit gi gima*, we were in the house (preterite or past definite), and *manestátaba hit*, we were (being some place when something else happened).

TÁEGUE. —This is the reverse of *gáege*, and is conjugated in the same way: *Mano nae gaege i tatamo?* Where (at) is your father? **Taegue** *guini*, he is not here. *Táegue yô*, I am not present; *manáegue ham giya hamyo*, we (they and I) are not at your home (Fr. *Nous autres ne sont pas chez vous*). The future is conjugated like all other futures; as *hu***táegue**, I shall be away; *utaegue lokue si Huan*, John will be absent also; *utafa***náegue** *giya hame*, we shall not be at home; *uhafanáegue gi sadog*, they will be in the river. The past tenses may be expressed by adverbs; as, *gine táegue yô*, I have just been away; *gine hit manáegue*, or *gine manáegue hit*, we have just been away (pl.); *gine hit táegue*, we (you and I — dual) have just been absent; *monhan yô taegue*, or *monhan taegue yô*, I have already been away (Germ. *Ich bin schon fort gewesen*).

GINE. — This verb is combined with the name of a place or direction to signify 'come from'; as, **gine***españa yô*, I have come from Spain. In reduplication the accented syllable of the com-

[1] *gi i* combine to form *gi : gi iya* form *giya*, at the home of or in possession of (Fr. *chez*); *mano nae gaege*, where at is, becomes *manggi*, where's.

pound word is doubled; as **gine***espápaña yô*, I am (or was) coming from Spain; **gine**-*mano hao*, whence have you come? **gine***sadog gui*, he came from the river; *man***gine***españa hit*, we came from Spain; *ma***gine***espápaña siha*, they are coming from Spain; *uha-fan***gine***españa*, they will come from Spain.

FALAG. — This verb is the reverse of *gine*; it signifies to go to a place or in a certain direction, and is combined in the same way as *gine*. In the present and past indicative it becomes **malag**, just as the plural and intransitive prefixes *fan* change to *man*: **Falag-***manila*, go-to-Manila; *ta***falag***manila*, let us (two) go-to-Manila; *tafan***malag***manila*, let us (all) go-to-Manila (pl.); *utafan***malag***manila*, we shall go-to-Manila; **malag***manila yô*, I went-to-Manila; **malag***manínila yô*, I am (or was) going-to-Manila; **falag***isadog*, go-to-the-river; **malag***isadog gui*, he went-to-the-river; **malag***isásadog gui*, he is (or was) going-to-the-river; *ta***falag***ihalomtáno*, let us (thou and I) go-to-the-woods; *tafan***malag***ihalomtano*, let us (all) go-to-the-woods; **malag***halomtátano gui*, he is going-to-the-woods; *man-***malag***halomtátano ham*, we (they and I) are going-to-the-woods.

HÉKUÂ. This verb, which signifies 'I do not know,' is used only in the first person singular.

BÉA. — This is also used in the first person singular. It may be translated 'I am going to'; as **béa** *hufanaitai*, I am going to pray; I am going to say my prayers. The verb following it is in the future.

HANAO. — This verb, signifying 'to go,' requires before the name of the direction an adverb of place with *gi* (to) if it is an apellative noun, and with or without *gi* if it is a proper noun. When, however, *hanao* is followed by *falag*, the preposition *gi* is not used: *Humanao guato giya hame*, he went thither to our home; *hanao falagisadog*, go, go-to-the-river. It is intransitive and is so conjugated.

DEBE. — This verb, derived from the Spanish, is used with the future, with the Spanish preposition *de;* as *debe de huhanao*, I have to go.

LAMEN. — This signifies 'to be good for'; as, *Haf u***lamen** *i pluma?* What good will the pen be? Of what use is the pen? *Haf un***lamen** *guini?* What use will you be here? Why have you come?

SINA. — This verb, signifying 'it is possible,' 'it is permitted,' 'it can be,' 'it may be,' as a defective impersonal verb governs the future with or without the connective particle *nu;* as **Siña** *unguasâ*, Is it possible for you to whet? Can you whet?

UHO. — This verb, signifying 'take', is used only in the definite imperative, second person singular; as, *uho*, take thou. It may be considered an interjection.

35. VERBS WITH IRREGULAR DUPLICATION (*Guáguato and Mailâ*). **Guáguato** is formed by reduplication from the *verbal directive* **guato** (thither, German *hin*), which is etymologically identified with the Samoan *atu* and the Hawaiian *aku*. It signifies 'to go to' (German, *hingehen*): **Guáguato** *yô*, I went (thither); *guáguato hit*, we two went (dual); *manguáguato hit*, we went (pl.); *uguáguato*, he will go. The present and imperfect, or copresent, are formed by reduplication, as *guáguaguato yô*, I am or was going (thither).

Mailâ, which is slightly irregular in its reduplication, is conjugated very much like an intransitive which forms its infinitive with the infix *um*. It is possible that the form *mámailâ* for the infinitive is a corruption of *mumailâ;* as it is, it appears to be a reduplication of the primitive form. The conjugation follows:

IMPERATIVE MODE

DEFINITE	INDEFINITE OR SUSPENDED
SINGULAR	
Mailâ, Come;	**Máma***mailâ*, Be coming; (always) come.
Uma*mailâ*, He shall come;	**Umáma***mailâ*, Let him come.
DUAL	
*Ta***má***mailâ*, Let us (two) come;	*Ta***máma***mailâ*, Let us (two) be coming.
Mailâ, **má***mailâ*, Come (ye two);	**Máma***mailâ*, be coming (ye two).
*Uha***má***mailâ*, The two shall come;	*Uha***máma***mailâ*, Let the two be coming.
PLURAL	
*Tafan***má***mailâ*, Let us come;	*Tafan***máma***mailâ*, Let us be coming.
*Fan***má***mailâ*, Come ye;	*Fan***máma***mailâ*, Be ye coming.
*Uhafan***má***mailâ*, They shall come;	*Uhafan***máma***mailâ*, Let them be coming.

INDICATIVE MODE

PRETERITE, OR PAST DEFINITE — PRESENT AND IMPERFECT

SINGULAR

Má*mailâ yô*, I came or did come; **Máma***mailâ yô*, I am (or was) coming.

Má*mailâ hao*, You came or did come; **Máma***mailâ hao*, You are coming.

Má*mailâ gui*, He came or did come; **Máma***mailâ gui*, He is coming.

DUAL

Má*mailâ hit*, We (two) came, etc.; **Máma***mailâ hit*, We (two) are (or were) coming, etc.

PLURAL

*Man***má***mailâ hit*, We came, etc.; *Man***máma***mailâ hit*, We are (or were) coming, etc.

FUTURE

DEFINITE — INDEFINITE

SINGULAR

*Hu***má***mailâ*, I shall come; *Hu***máma***mailâ*, I shall be coming.

*Un***má***mailâ*, You will come; *Un***máma***mailâ*, You will be coming.

*U***má***mailâ*, He will come; *U***máma***mailâ*, He will be coming.

DUAL

*Uta***má***mailâ*, We (two) shall come; *Uta***máma***mailâ*, We (two) shall be coming.

*In***má***mailâ*, We (two) shall come; *In***máma***mailâ*, We (two) shall be coming.

*En***má***mailâ*, You (two) will come; *En***máma***mailâ*, You (two) will be coming.

*Uha***má***mailâ*, They (two) will come; *Uha***máma***mailâ*, They (two) will be coming.

PLURAL

*Utafan***má***mailâ*, We shall come; *Utafan***máma***mailâ*, We shall be coming.

*Infan***má***mailâ*, We shall come; *Infan***máma***mailâ*, We shall be coming.

*Enfan***má***mailâ*, You will come; *Enfan***máma***mailâ*, You will be coming.

*Uhafan***má***mailâ*, They will come; *Uhafan***máma***mailâ*, They will be coming.

36. Denominative Verbs. — These verbs, formed from nouns or adjectives, are conjugated like intransitive verbs without the prefix *fan*. Examples:

Malango, ill, or to-be-ill;	*Tata*, father, to-be-a-father.
U*malango*, Let him be-ill;	**U***tata*, Let-him-be-a-father.
ta*fanmalango*, Let us be-ill;	**Ta***fanata*, Let-us-be-fathers.
Malango yô, I am-ill;	*Tata yô*, I am-a-father.
Malango hit, We (two) are-ill;	*Tata hit*, We (two) are-fathers.
Manmalango hit, We are-ill,	*Manata hit*, We (all) are-fathers.
Gine malango yô, I have-been-ill;	*Tum**ata yô*, I was-a-father.
Hagas malango yô, I was-ill;	*Hagas tata yô*, I was formerly a father.
Hu*malango*, I shall-be-ill;	**Hu***tata yô*, I shall-be-a-father.
Uta*fanmalango*, We shall-be-ill;	**Uta***fanata*, We-shall-be-fathers.

Reduplication. — With denominative verbs, reduplication, instead of expressing the present time, or the imperfect, diminishes the force of the verb; thus, *malálango yô* signifies I am-inclined-to-be-ill; I am not very well. It also expresses continuation, as *malálangoha si Magalahe*, the Governor is-still (being)-sick. With verbs derived from nouns it may be considered to express pretense, or as playing the part of some one or something; as, *tátata yô*, I am-acting-as-father, I am-fathering (some one); *manatata hit*, we are-playing-the-part-of-fathers; *uhafanatata*, they-will-act-as-fathers (to the children). In the above examples the plural prefix *man* becomes *fan* in the plural of the future and imperative.

ANCIENT PUEBLO AND MEXICAN WATER SYMBOL

By J. WALTER FEWKES

The student of designs on ancient Pueblo pottery cannot fail to recognize two forms of decoration, known as the linear and the conventionalized animal forms. These sometimes grade into each other, but as a rule they can readily be distinguished. Among the problems before the student of our southwestern archeology there is none more important than the discovery of the meaning of these forms of decoration. Areas characterized by special symbols can be determined, and thus the Southwest may be divided into ceramic zones indicative of local centers of art development.

Linear figures on old Pueblo pottery vary but little in different regions of the Pueblo country. Geometrical figures of the same types are found on ceramic vessels from cliff-houses of southern Colorado and of central New Mexico, and they are repeated with startling identity on pottery from the Hopi ruins and from the Gila valley. They occur with little change on the more modern specimens as well as on the ancient, and are not limited to our Southwest but extend into the northern states of Mexico. The fact that these geometrical designs are so widely distributed, as compared with specialized symbols of animals confined to constricted areas, and the evidences of their great age, tell strongly in support of a belief in the former homogeneity of Pueblo art, indicating that the Pueblo culture in the Southwest was more uniform in ancient times than after these local differences had developed in the relatively modern period.

The great multitude of these widely spread linear figures may be classified in a few types for comparative study.

One of the best defined of these types is the straight line encircling a bowl or vase but broken at one or more points. At first glance it might be supposed that this break was an imperfec-

tion or that the potter had failed, without purpose, to connect the extremities of the line; but closer examination and comparison show that it was intentional. This break had a meaning which will not now be considered.

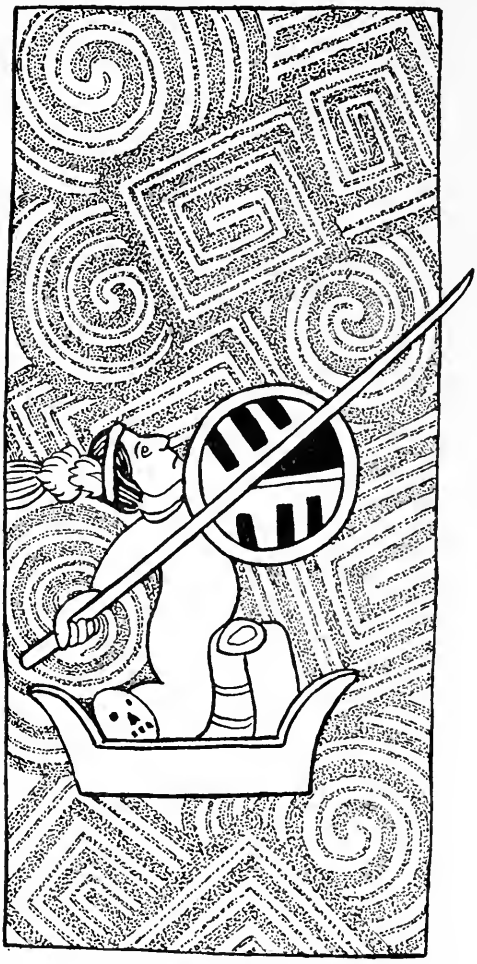

FIG. 10.—Native Mexican picture showing water symbols.

A similar break occurs in geometrical designs on Pueblo pottery which are more complicated, where curved or spiral lines replace the straight ones. It occurs also in rectangular meanders, so abundant in the ruins within the Zuñi ceramic zone. In examples of spirals the figure consists of two lines or bands, one generally broader than the other, parallel with each other, and with their central ends close together but not joining. The interval between these extremities corresponds to the break in the straight line mentioned above. A similar condition is true of meanders, the many modifications in which may be made out by a little study.

The signification of this type of geometrical decoration on Pueblo pottery has not been satisfactorily determined, but the spiral is generally interpreted by the modern Hopi of Arizona as signifying whirling wind or water. A confirmation of this interpretation, as regards the

latter element, is found in a few old paintings made by a Mexican Indian. This evidence seemed to me so important that I briefly mentioned it in my report on the ruins of the ancient Hopi pueblo of Sikyatki.[1] It deserves more attention than I gave to it at that time, and on this account I have made it the basis of this brief article.

In commemoration of the discovery of America by Columbus the Mexican government published, in 1892, a collection of important codices and Indian pictures accompanied with text by Dr Alfredo Chavero.[2] Besides the codices, this publication contains a reproduction of the Lienzo de Tlaxcala, a series of pictures by a native artist illustrating the conquest of Mexico by Cortes.

Three plates (17–18, 18 *bis*) of this series furnish significant information regarding the symbolism of simple and double spiral and rectangular meanders in Mexican pictures. The likeness of these symbols to designs on ancient Pueblo pottery corroborates the Hopi explanation of their meaning. The artist has represented in these plates, two of which are evidently parts of one drawing, canals or waterways on which are figures of boats with warriors attacking the Spaniards. These canals are covered with rectangular and spiral figures painted in light green, which are evidently symbols of water. The accompanying illustrations (figures 10, 11), which show a section of one of these canals and a design from an old Pueblo vase collected by Dr Walter Hough, bring out clearly the identity of form in these symbols. As there can hardly be a doubt that the Mexican artist intended to represent water by these designs, it may be concluded that the Pueblo potter, unless she was a copy-

FIG. 11.—Design from an old Pueblo vase, showing water symbols.

[1] *Seventeenth Annual Report of the Bureau of American Ethnology*, p. 569.

[2] *Antiguedades Mexicanas, publicadas por la Junta Columbina de Mexico*, Mexico, 1892.

ist who used symbols the meaning of which had been lost, had the same thought in mind when she painted identical figures on her pottery. Although it is possible that the same symbol may have had different meanings in the two regions, it is highly improbable that such was the case.

BOOK REVIEWS

Adolescence: Its Psychology and its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education. By G. STANLEY HALL, PH.D., LL.D., President of Clark University, and Professor of Psychology and Pedagogy. New York: D. Appleton and Company, 1904. 2 vols. xxi, 589; vi, 784 pp. Indexes of Subjects and Names. (Price, $7.50.)

This is the *opus magnum* of a distinguished psychologist, the leader in the "child study" movement in America, a man of science, who will be remembered as a man of genius. The basal conception of the work is that the mind and the soul of man have had an ontogenetic and a phylogenetic origin and development as surely evolutional as has been that of the body. The mind and soul, too, are still plastic, and though we can see the end of some of the organs and functions of the body, hardly the beginnings of many of a psychic order are yet to be discerned. With justice the author may claim to set forth a Darwinism,— one of his own students might be permitted to say a *Hallism*,— of the mind, destined to relieve psychology alike from "academic isolation" and from "dishonorable captivity to epistemology." The wide range of the author's survey of his subject may be seen from the titles of his chapters: Growth in height and weight; growth of parts and organs during adolescence; growth of motor power and function; diseases of body and mind; juvenile faults, immoralities and crimes; sexual development: its dangers and hygiene in boys; periodicity; adolescence in literature, biography and history; changes in the senses and the voice; evolution and the feelings and instincts characteristic of a normal adolescence; adolescent love; adolescent feelings toward nature and a new education in science; savage pubic initiations, classical ideals and customs, and church confirmation; the adolescent psychology of conversion; social instincts and institutions; intellectual development and education; adolescent girls and their education; ethnic psychology and pedagogy, or adolescent races and their treatment. Much of the material here accumulated, boiled down and sugared off will be of interest to the anthropologist *vom Fach*, although not all the conclusions arrived at will be as valid for him as for the psychologist of the newer order, though he may well rejoice at some of the blows dealt out to the metaphysician and the pseudo-philosopher. To all

real students of man and of the mind of man these volumes must be most suggestive and stimulating. The epigrammatism of the author reveals itself throughout in innumerable brief and pithy statements, alike of his own position and ideas and those of others. A few may be cited here: We must go to school to the folk-soul. The child and the race are each keys to the other. The adolescent stage is the bud of promise for the race. Puberty is not unlike a new birth. The non-volitional movements of earliest infancy and the later childhood are the "bad lands" of the state of man-soul. Play is the purest expression of motor heredity. Alas for the young people who are not different with the other sex than with their own! Men grow old because they stop playing. Puberty is the birthday of imagination. Youth is the age of folly. Crime is cryptogamous. The intoxication habit is polygenetic. There is a kind of reciprocity between life and death. The very definition of precocity involves inversion. Each woman is a more adequate representative of her sex than a man is of his. Ephebic literature should be recognized as a class by itself. Ultra-idealism I hold to be pathological. Psychic is even more upsetting than biological evolution. Soul is life. Our souls are phyletic long before and far more than they are individual. Early adolescence is the infancy of man's higher nature. Psychic adolescence is heralded by all-sided mobilization. Man early became the wanderer and the exterminator *par excellence*. Adolescence is the great revealer of the past of the race. Modesty is at root mode, and woman is its priestess. Reproduction is always sacrificial. Man learns to live by dying and his life is at best a masterly retreat. Religion and love rise and degenerate together. Knowledge at its best is a form of love. Fear, or anticipatory pain, is probably the great educator in both the animal and the human world. Too much adult invasion makes boys artificial. Youth is in the ethical far more than in the spiritual stage. Youth is not only the revealer of the past but of the future. Overaccuracy is atrophy. The baby Latin in the average high school class is a kind of a sanctified relic, the ghost of a ghost. In modern pedagogy there is an increased tyranny of things. The very isolation of student life weakens the sense of reality. Nothing so reënforces optimism as evolution. Man is best adapted to the present; woman is more rooted in the past and the future. To be a true woman means to be yet more mother than wife. The bachelor woman is the very apotheosis of selfishness. The heart and soul of growing childhood is the criterion by which we judge the larger heart and soul of mature womanhood. Our opinion of Indians is too analogous to that of Calvinists concerning the depravity of infants. Conquest will not vivify Asia.

What a few overgrown nations call civilization seems likely to be forced upon the entire world. Race hygiene is yet to be developed. Cross-fertilization seems to be the law of human races. Is there any barbarism that equals that caused by premature and forced civilization, or any fallacy greater than that those are not cultured who can not do or do not know or revere what we do? Does might so make right that the worst in the victor is better than the best in the victim?

The attractive and masterly way in which the rich literature of the subject is treated, the wealth of conclusion and inference, the remarkable skill with which the parallelism between the individual and the race is maintained and interpreted, the inherent optimism that makes light the darkest corners of the man and woman and of men and women, the sympathetic grasp of childhood and savagery, etc., stamp this work unique in the annals of psychology. It is to be hoped that the author will find time and occasion to issue a primer edition, so that the great truths and wise words contained therein may come more within the reach of those beyond whom an expensive book must always lie.

Indexes of names and subjects complete these well-printed volumes. Some misprints, due more to the publisher than to the author, will doubtless be corrected in a future edition.

While the reviewer finds himself in general accord with most of the positions taken, there are several points on which he fails to agree with the author. One of these is the overestimation of the "fighting instinct." The statement on page 217, vol. I, for example, seems harsh in consideration of the fact that Darwin practically confesses that he was a "milk sop." The virtue in fighting is, probably, like that of classical education, a thing of the age and not of the race. Another point is that the author is apparently not so willing to allow full liberty to woman as he is to man,—absolutely liberal he is in all other respects. In the opinion of the reviewer, evolution limits woman no more than man *per se*, and the restrictions *per virum* are artificial.

ALEXANDER F. CHAMBERLAIN.

The Navajo and His Blanket. By U. S. HOLLISTER. Denver, Colo. [1903.] Roy. 8°, 144 pp., 10 colored plates, 25 figures and plates.

From a mechanical point of view this book is handsomely made. Barring a veritable nightmare (figure 8) bearing the title "Navajos Worshiping the Elements," together with figures 6 and 10, which do not depict what they pretend, the illustrations are in the main admirable, the ten colored plates of Navaho blankets being worthy of high praise. But

here the merit of the book practically ceases, for in content it is one of the most misleading and inaccurate publications on the southwestern tribes that has ever appeared (which is saying a good deal), notwithstanding the author, during his twenty years' residence in the Rocky Mountain country, has had "many opportunities to learn something about the aboriginal people of Colorado, Utah, New Mexico, and Arizona, having frequently visited the wigwams and the wickyups of the Utes and of the Apaches, the adobe villages of the Pueblos, and the hogans of the Navajos." So much excellent ethnologic and archeologic work has been done in the Southwest during the last twenty years, that had the author remained at home and confined his attention to the published results of these researches, his book could not have failed to be more profitable from an educational point of view. As it is, the volume contains so much that is unintentionally, though still inexcusably, untruthful or misleading as to overshadow the little good to be found in it.

Within reasonable limits it would be impossible to point out all the glaringly erroneous statements which Mr Hollister has made; nevertheless, attention should be called to a few of the pitfalls into which he has fallen and into which others might be likely to follow. For example, there is no evidence whatsoever that war songs among the Navaho take precedence over all others, or that legends of war are "the most enduring of any subject with which the Indian has to deal." Contrary to the author's belief, Navaho legend abounds in allusions to the cliff-dwellers, a fact which overthrows his argument concerning the latter people. His unfamiliarity with southwestern archeology is shown by his estimate of the number of rooms represented by a certain ruined pueblo, which he computes at one hundred for each of seven stories, regardless of the fact that the pueblo was terraced, each successive story receding, so that the uppermost story could not have contained more than one-seventh the number of rooms on the first floor. There is no rock in the Navaho country which the Navaho designates "Ship Rock," such a conception being foreign to his very thought. The true Navaho name is *Ts*é' bi*t*aï, from *ts*e, 'rock,' bi*t*á 'its wings,' hence "Winged Rock" which has quite another meaning to a people who never saw a ship. (See Matthews, *Navaho Legends*, 119, 120, 235.) And there is only a filament of truth in the many so-called legends to which the author calls attention. After the splendid scientific work of Dr Washington Matthews among the Navaho, there is no excuse for most of the many misstatements concerning Navaho mythology that Mr Hollister's book contains, and students who have spent years in an endeavor to spread the truth about American ethnology have every cause

to regret that such falsities continue to be perpetrated. There is scarcely a line concerning Navaho myth and legend throughout the book that is not either entirely fallacious or grossly misleading.

Proceeding, we learn for the first time, if we are inclined to disregard fact entirely, that the Navaho sweat-house is erected for a single individual, an assertion apparently inspired by figure 6, "A Navajo 'sweat-house'", which in reality belongs to the distant Havasupai of Cataract cañon, Arizona. Navaho sweat-lodges, indeed, are sometimes large enough for half a dozen Indians at a time. The statement that the medicine-men live in the medicine-lodges is untrue, as is of course the assertion that "most authorities agree that the Navajo is not a particularly religious Indian" because he has no public ceremonies — which further shows how little the author has profited by his twenty years of contact with this highly religious and ceremonious people. The further absurd assertion is made that the Navaho's "only conspicuous appliance of worship is the altar in the medicine-lodge"; on the contrary, such an object is foreign to Navaho religion, the fantastic altar paraphernalia which is described evidently having its origin in the fertile imagination of the author's informa

As one would expect, the only strength which the book possesses lies in its description of the Navaho blanket, yet even this is unsatisfactory. Of the reed fork, that important implement of the Navaho weaver, the author seems to know nothing. The yellow dye, to which he refers as being derived from "rabbit wood," is actually made from *Rumex hymenosepalum*, as Dr Matthews has pointed out; and it is extremely doubtful if Brazil-wood was ever used in New Mexico or Arizona as a dye — at any rate it is unknown to a prominent trader with an experience of thirty years among the Navaho Indians. Gray in blankets was not always effected by the mixture of black and white wool, for the Navaho have gray sheep whose wool is used for this purpose. The author is likewise mistaken in supposing that amole removes the natural oil of the wool, and in presuming that bayeta was last used in 1875, for the reviewer saw it woven into blankets by the Zuñis in 1889 and noticed it in at least one Arizona trading store as late as 1897. We find also the statement that in certain old blankets occurs a red which antedates the native red and which may be traced to "the scarlet coat of the infantry" — thus leaving those who are unaware that Mackinaw blankets have long been in use in the Southwest to surmise that the infantry coats are probably a relic of the invasion of New Mexico by the British. As to the symbolism of Navaho blankets, the author is equally at sea, as everyone familiar with Dr Matthews' studies will readily observe.

Mr Hollister presents a new theory of the supposed Spanish origin of the term "Navajo," but untenable, as it is directly opposed to the statements of the early Spaniards themselves. He discusses the marvelous genesis and migration tradition of the Navaho tribe, laboriously recorded by Dr Matthews, as apparently unworthy of consideration, although he does allude to "many mythical stories of their origin." Among these, evidently, is "a vague tradition among them that they came [to this world] by water," in which the author finds evidence to support an Asiatic origin. These foolish traditions, it should be noted, are dismissed as practically unworthy, and the important and far-reaching researches that have been conducted among the Navaho are waved aside with the simple statement that "about the only things we certainly know of their history is their Athapascan origin and that they have been in our Southwest for a long time."

Far astray as the author is in his observations of the Navaho, of whom he might be expected to have some knowledge, his general interpretations of southwestern ethnology and history are even more startling. After all the progress made in American ethnology and archeology during the last quarter century, the author asserts that the cliff dwellers and the mound builders were "certainly far antecedent to our Indians in their occupation of our country." The threadbare theory of the status of Indian woman, excusable half a century ago, is once more resurrected, and readers are again asked to believe that the Indians "are in no sense emotional, and anything like sentiment is entirely foreign to their nature." The time-worn story, "on very good authority," of the finding of corn embedded in lava, which every frontiersman has heard of but no one has ever seen, is again revived; "the grain was calcined by volcanic heat that raised the temperature of the atmosphere above the scorching point, and destroyed all life," we are told. The tale almost equals that of the petrified bird which sang the petrified song. The author presupposes the contemporaneous occupancy of all the now-ruined pueblos in the Southwest by making the assertion that "to-day all the arable land in that [Navaho] country, even if supplied with irrigating ditches wherever water could be conveyed, would not support one-tenth the population that once flourished there."

The Seven Cities of Cibola were "mythical," we are told; and again is repeated, as though it were truth, that marvelous fable of the enslavement by the Spaniards of the Indians of New Mexico, several hundred of whom were smothered in mines which they were compelled to work. We learn that Cabeza de Vaca was the first European to enter New

Mexico, "which he penetrated to its central part"; that Marcos of Niza made an expedition to the Pueblos in 1528; that Oñate built the first church at "San Ildefonzo"; and that Taos, Acoma, Zuñi, and Moqui are names given to the Pueblos by the Spaniards — all of which misstatements must tend to make Bandelier feel that to some quarters at least the results of his years of labor have not yet penetrated.

Other of Mr Hollister's conclusions are of absorbing interest. He calls attention to certain parallels between Old and New World culture, but kindly leaves to the reader's decision whether or not they are significant of connection between the Navahos and the Greeks, Hebrews, Hindus, or Babylonians.

There are many poor books relating to the Southwest, but each has its redeeming feature. Of *The Navajo and His Blanket* the best that can be said is that its colored plates are excellent; in text, taken altogether it is worse than worthless. F. W. Hodge.

Die Abstammung des Menschen und die Bedingungen seiner Entwicklung. Für Naturforscher, Aerzte und gebildete Laien dargestellt von Dr Moritz Alsberg. *Mit 24 Abbildungen im Text.* Cassel: 1902. Verlag von Th. G. Fischer & Co. 8°, xii, 248 pp.

The various sections of this book, which has been much discussed on the continent of Europe, treat of: The Neanderthal race; the problem of descent; the *Pithecanthropus* and the relation to man of the lower apes and the anthropoids; Australia and the "Urmensch"; climatic influences, isolation and race-formation; intellectual development and intellectual regression; sex differences; inheritance, interbreeding and mixture. Dr Alsberg considers proved the former existence of a "diluvial human race," lower than and essentially different from the present race of man. The Javan *Pithecanthropus* is no direct ancestor of man, but a shoot from a side line. The ancestry of man (as his hand, for example, shows) goes back to a relatively lowly-developed branch of the mammal stem,— this is the chief point of Alsberg's theory. He favors Schoetensack's view that the change from the precursor to *man* took place in Australia, whose environmental conditions were most likely to produce such an evolution,— there the particularly human foot had its origin. The migrations of primitive man gave probably the first impulses toward the origins of the oldest race-type. Isolation had also its rôle, and the glacial epoch was likewise of great significance in modifying a creature born of the tropics. Alsberg disagrees with Kollmann's theory of man as a "permanent type." The "Aryans" are a linguistic, not a racial group.

No absolutely pure race-type now exists. The section on the brain and its relation to culture-evolution advocates a close connection theory,—in another edition the author should make use of the material of Hrdlička and Spitzka. Dr Alsberg thinks that "the bounds set by nature" warn us against the "new woman." And he believes, *contra* Weismann, in the inheritance of recently acquired characters. To inbreeding of the brain-cells, producing "culture ganglia," corresponds the intermixture of races and peoples, propagating and spreading the indispensable basis of progress in civilization. But interbreeding is a two-edged sword, and its unskilful use means degeneration instead of perfection.

This little volume deserves a place among the more interesting and valuable literature of the newer evolutional sort, expressive of some of the more recent turns of Darwinism in Germany.

ALEXANDER F. CHAMBERLAIN.

Catálogo de la Colección de Antiguedades Huavis del Estado de Oaxaca existente en el Museo N. de México, formado por el Profesor de Etnología, DR NICOLÁS LEÓN. México: Imprenta del Museo Nacional, 1904. 55 pp., map, 1 pl. (physical types).

The list of the Huavi collection in the Mexican National Museum, numbering 91 items (pottery; stone and clay human and animals figures, heads, idols, etc.; stone objects) occupies but a portion of this interesting pamphlet. On pages 16–42 is given linguistic material from Brasseur de Bourbourg, Starr, and Belmar (the vocabulary of the last containing some 1,350 words), and on pages 44–48 a bibliography of 62 titles. Preceding these is an ethnographic sketch of the Huavis with a map of their habitat, extracts from the earlier authorities, etc. The anthropometric data (pages 15–16) are from Starr. The Huavis, who live in four (earlier five) villages on the southern lagoons of the Isthmus of Tehuantepec, a large extent of which region was formerly in their possession, numbered, according to the census of 1895, 1,742 males and 1,706 females, total 3,448. They are chiefly a fisher folk, and among the products of their country is the shell-fish furnishing a much-used purple dye. The name Huavi is said to be of Zapotec origin, and has been spelled Huavi, Huave, Wabi, Huabe, Guavi, Huabi, Juave, etc. Its exact significance is doubtful, though a common interpretation is "rotten through dampness," a nickname, doubtless. Of the Huavi language Brinton (*American Race*, 1891, p. 159) said, the vocabularies of their tongue are too imperfect to permit of the comparison of the tribe with other stocks to which it may have been allied. This condition is

remedied by the vocabulary of Belmar. Dr León prints also (pp. 20–21) the Lord's Prayer in Spanish-Huave, furnished by Dr D. José María Mora, formerly bishop of Tehuantepec, now of Tulancingo. The Huavi numerals merit particular examination. A hasty glance at the new material makes the Huavi retain its position as an original stock.

ALEXANDER F. CHAMBERLAIN.

Massasoit's Town Sowams in Pokanoket. Its History, Legends and Traditions. By VIRGINIA BAKER. Warren, R. I. The Author. 1894. 8°, 43 pp.

This interesting brochure is a brief story of a famous sachem, noted in early New England annals, but of whom little is known, owing to his peaceful life, which is in strong contrast to that of his warlike son, Philip, who is also referred to in this work.

When the Plymouth colonists landed on their rock, in 1620, Massasoit was the chief sachem of the Wampanoags, whose territory lay at the head of Narragansett bay, in what is now Bristol county, Rhode Island. The exact site of his principal village has been the subject of considerable discussion by several writers; but the question does not yet seem to be fully settled, and perhaps never will be decided to the satisfaction of all. Miss Baker's booklet is a further contribution in favor of Warren as the site, but without adding new material or new evidence in support of that locality. Some have located it at the town of Barrington, others at Mount Hope, but the fact is that the whole territory bordering the bay was known as Sowams and that the name originally did not refer to any particular village. In support of this statement, there are some matters that have come before us from a linguistic study of the works of early writers, such as Winslow, Mourt, Morton, Prince, and Smith, which have never been fully explained or noted, although Miss Baker, as well as others, have drawn freely on these authorities for their information.

Let us analyze some of these hints in the light of common reason: Morton tells us that when Samoset, the first native interviewed, came to greet the colonists at Plymouth in the spring of 1621, he spoke of "the great sachem, named Massasoit," an expression in common use by the early writers mentioned, for the two terms are synonymous, i. e., *Massasoit* = *massa* 'great,' *-ass8t* 'king,' 'ruler,' — a title retained by the colonists without regard to its significance, as has happened in other instances. It was afterward learned that this sachem's true name was *Woosamequin*, or *Ousamequin*, = 'the yellow-feather,' from *ousa* 'yel-

low,' *-mequin* 'a feather'; and so his name always appears in the early deeds.

Imperfect knowledge of the language caused the same trouble with the name *Sowams*, *Sowamset*, or *Sowansett*, the variations in spelling being quite numerous. The colonists were informed that Massasoit's country was at Sowams, which, as the variations show, is the equivalent of *Sowan-es-et*, 'to or at the southwest,' — the direction it lay from the Plymouth settlement, — and so it became a proper name without the application intended by the Indians. I am aware that Trumbull suggested the meaning 'a place of beech-trees,' but there is too much to account for in this derivation. The real name for the village, as related by Winslow and others, was Pacanoket, or Pawkunnawkit, — *Pauqu-un-auk-it*, 'the cleared country,' which describes its appearance, as seen by Dermer and Winslow. The latter, in his first visit, went to Pacanoket, but he says not a word about Sowams. In the records, however, the two names are used synonymously, as "Pacanoket alias Sawamset," etc. Wood (*New England's Prospect*, 1634) places on his map a palisaded village named *Pacanokick*, which is represented as being situated on the eastern side of a neck, a situation that favors Mount Hope more than either Barrington or Warren.

Miss Baker is certainly mistaken in saying that Winslow's first visit, in 1621, was the second visit by a white man, for the locality was visited some years previously by both Dutch and French traders. The Wapanoos are laid down as a tribe, and an anchorage shown in front of their country, corresponding to Mount Hope, on the *Carte-Figurative* of 1616, the tribe having been visited by Hendricks in the "*Onrust*," in 1614.

Miss Baker deserves the thanks of all students of the subject for her researches, and it is hoped that she will continue them until the disputed sites are definitively determined. WM. WALLACE TOOKER.

Traditions of the Arapaho. Collected under the auspices of the Field Columbian Museum and of the American Museum of Natural History. By GEORGE A. DORSEY, Curator Department of Anthropology, and ALFRED L. KROEBER, Department of Anthropology, University of California. Chicago, U. S. A., October, 1903. 8°, x, 475 pp.

The tales of the Arapaho possess an especial interest because of the general friendliness of this tribe with all the other tribes of the plains. Their collection of stories is thus likely to be larger than that of almost any other tribe, except perhaps the sedentary village community which has so long resided near Fort Berthold on the Missouri river. Closely

associated from time immemorial with the Cheyenne, the Arapaho were long ago brought into extended and friendly contact with the Missouri river tribes — Mandan, Minitari, and Arikara, — while their alliance with the Sioux covered a very long period and was never seriously interrupted. Besides this, the Arapaho have had close intercourse with the tribes of the south, and even during the period (in the first half of the last century) when the Cheyenne were at bitter war with the allied Kiowa, Comanche, and Apache, there was still frequent intercourse with these tribes by the Arapaho, although their relations with the Cheyenne often obliged them to take part in war journeys — and sometimes to move the whole tribe — against Kiowas, Comanches, and Apaches in a general attack.

The northern section of the tribe, the Atsena — early called "Minitaries of Fort de Prairie," — was long associated on terms of close friendship with the Prairie people — the three tribes of the Blackfeet nation and the Sarsi of the farther north, the story of whose separation from the parent tribe, the Beaver Indians, still remains a vivid tradition. Further, in the implication which is partly traditional but which is expressed also in the common English name Arapaho (Pawnee *tī răp'* to trade, *tī răp' a hū* a trader), we have good reason for thinking that among the Arapaho should be found all the tales of the central plains region, together with some from the north and many from west of the mountains, since we know also that the Arapaho were often on friendly terms with the Shoshoni.

The excellent collection of traditions recently published by the Field Columbia Museum under the joint names of Dr G. A. Dorsey and Dr Alfred L. Kroeber confirms such an inference. In them we find a multitude of stories which belong to the Siouan, Caddoan, and Algonquian families, together with many others that possess a currency extending far beyond the plains.

The volume is of considerable size — nearly 500 pages — and contains 146 tales. Of these a considerable number deal with Ni ha^{n} ça^{n}, the analogue of the Siouan Unhktomi, the Blackfoot Nápi, the Cheyenne Wihio, and the Shoshoni Coyote. But it must be remembered that with many of the plains tribes there are two individuals called "Old Man" or "White Man," or "Spider," one of whom may be the principal god, while the other is the smart but foolish subject of tales like those given in the first part of this book, for the hero of which the people themselves feel a genuine contempt. Thus, the Blackfeet pray with the utmost reverence to that Nápi who is the Old Man, the Creator, the Sun; but treat with contemptuous ridicule the suggestion that they could pray to the Nápi who is the fool.

It is impossible to comment at length on the tales here given. Many of them in slightly different form are familiar to all students of plains folk-lore, and the authors of this collection have done exceedingly well to give us all the different variants of each tale that they have been able to collect. Too often the tendency among collectors is to select the best or most interesting of the different forms offered, and to be satisfied with giving that alone.

The story of Ni ha^{n} ça^{n} and the whirlwind possesses a rather special interest. The center of the whirlwind with the Arapaho appears to be the caterpillar, while with the Cheyenne it is the dragon-fly, and with the Blackfeet the moth-miller. The importance of squatting down when a whirlwind approaches one is recognized by the Blackfeet, but among them this is done by one sex only, and for an entirely different reason from that which influences the Arapaho.

The story numbered 106, dealing with "Big Owl, Owner of Bag," is an interesting and unusual form of obstacle myth. The mother whose boy has been carried away by Big Owl prepares a number of elaborately ornamented articles of clothing, which she carries with her when going to rescue the child. As she flees after having secured him, she drops these articles of clothing one after another, and the bad spirit is obliged to stop and walk about each and to fully count the quills with which it is adorned. He is thus delayed, defeated, and finally killed. The tale has relation, of course, to the sacredness of the quilling work in which skill and success are rewarded, and we may imagine that it belonged originally to the quilling society.

The "Found in Grass" or "Star Boy" tale has many variants and is found all over the plains and elsewhere. The story of the man who had the buffalo wife is also widely distributed, and sometimes this man is made the inventor of the bow and arrows.

Concerning the manner in which the tales are related, it must be said that while some are admirably told and preserve much of their aboriginal flavor, others have largely lost their Indian character. They are not always given with the direct simplicity with which an Indian commonly tells his story.

It is to be regretted also that the word "beef" is constantly used when the flesh of buffalo, elk, deer, and antelope is intended, and that buffalo are often spoken of as "steers."

The volume closes with abstracts of all the tales. It represents a vast amount of hard work and is of great value and high importance to the study of primitive mythology. GEORGE BIRD GRINNELL.

Traditions of the Crows. By S. C. SIMMS, Assistant Curator, Division of Ethnology, Field Columbian Museum. Chicago, 1903. 8°, pp. 281–324.

So little ethnological work on the Crows has been published, that the myths here given are very welcome. They were collected by Mr Simms during the summer of 1903 and come from the second oldest man of the tribe, known as Bull That Goes Hunting.

Many of the tales deal with Old Man Coyote, the analogue of the Algonquian Manabozhu, Nápi, or Wihio, the wise foolish hero so often confused with that other Old Man who is the creator. In the traditions before us the origin myth tells us of the Old Man who was the creator, while other myths, Nos. 2 to 16 inclusive, deal with Old Man Coyote, the fool and the fooled. Most of these possess much in common with tales related by other tribes of the northern plains. In No. 10 the wolf teaches Old Man Coyote to make holes in the ice through which buffalo fat should stick up, but Old Man Coyote, slipping and falling on the ice, sticks fast there under the overhanging branches of the buffalo and gooseberry bushes which are still bearing fruit — a mixing up of summer and winter. No. 12 is a form of the familiar story of the southern plains, telling of the young man who had two wives, one of them an elk and another a buffalo. No. 13 deals with the boy who was found and who afterward helped the people to food, working against Old Man Coyote. In the Blackfeet and Cheyenne story his opponent is the raven.

The myth of the girl who reached heaven by following a porcupine up into an ever-growing tree ends differently from the same tale among Algonquians or Caddoans; while the story of Bones Together is closely similar to the Cheyenne tale.

These Crow tales contain elements common to those of all the plains tribes, many of which we may conjecture to have come to the Crows by way of their relatives the Minitari, or from the Gros Ventres of the Prairie (Atsena) with whom they were long allied. In the name of Old Man Coyote, however, we see evidence of Crow association and alliance with the Snakes, for, so far as we know, the name Coyote is applied to the supernatural hero only west of the mountains. In the plains country the Coyote, while universally acknowledged to be "more subtile than any beast of the field," is alternately the companion and the opponen of the mischief-maker.

On the first page of the Origin Myth, page 281, we see that the creator told the first man to make a bucket from the "pouch" of the buffalo — no doubt a typographical error for paunch. It would be inter-

esting to learn just what was intended by the monster described as an alligator by Mr Simms, for we can hardly imagine that the Crows know what an alligator is. It is presumably merely an "under-water" monster.

The collection is a very interesting contribution to our knowledge of a little-known tribe. GEORGE BIRD GRINNELL.

The Exploration of Jacobs Cavern, McDonald County, Missouri. By CHARLES PEABODY and W. K. MOOREHEAD. Phillips Academy, Andover, Massachusetts, Department of Archæology, Bulletin I. Norwood, Mass.: The Norwood Press, 1904. 8°, iv, 29 pp., 11 pl., map.

This publication, the first of what gives promise of being a noteworthy series of memoirs from a recently established but already important archeological museum, gives the result of careful research in Jacobs Cavern and is a satisfactory description of American caves as a whole. The text is elucidated by a plan of the cave floor, laid off in sections of one meter, and by several half-tone plates. It is regretted that the illustrations of the implements unearthed are not of higher grade, for without consulting the text it would be impossible to determine, even approximately, the material of which they are made. The results of the work in Jacobs Cavern is similar to that of American caves generally east of the Mississippi. It was not so rich in material as others have been, and, like every other cave thus far investigated, it failed to give satisfactory evidence of any great age of human occupancy or any evidence at all of the presence therein of the remains of an extinct fauna such as have been found in certain instances in Pennsylvania. In Jacobs Cavern the bones of many wild animals were found, as were evidences of human burial, but the only suggestion of great age thought to have been brought forth was in the shape of certain artifacts and in the discovery of a breccia which the writers appear to think indicated ancient human occupancy. Geologists, however, have demonstrated that this combination of wood ashes and carbonate of lime, called breccia, and often containing artifacts, may form in a comparatively short period. The discovery of this formation, so well known in many of the caves of Europe that have produced evidences of a long period of human occupancy in association with a fauna now entirely extinct, raises the expectation among American archeologists that further investigation may develop a similar period of cave occupancy by man in this country; in fact, this similarity of conditions in the surfaces of American caves with those of Europe and the few feet in depth to which any considerable excavation has been made in

America, appear to promise favorably for future important American discoveries. It is in the caves, if anywhere, that we may look for a determination of the earliest period of human occupancy of this continent for the evolution of artifacts, the direction of the earlier aboriginal migrations, and possibly the origin of the human race itself.

The suggested difference in the shape of the implements found in Jacobs Cavern from those found in its neighborhood may be explained in many ways other than as indicating age. This is emphasized by the finding of pottery, of ground stone implements and of a minié ball and the bones of domestic animals. Like puzzles have been met by others. For example, silver-plated copper buttons, a jack-knife, a padlock, and other objects of metal were found by the reviewer at Cavetown, Maryland, in the same horizon as that of the oldest objects unearthed, all of which makes the ultimate solution of the problem one of extreme interest to archeologists.

In America, where the consensus of opinion is directly opposed to the recognition of a paleolithic as distinct from a neolithic age, the use of the term "neolithic implements" is of rather questionable propriety.

JOSEPH D. MCGUIRE.

PERIODICAL LITERATURE

Conducted by Dr Alexander F. Chamberlain

[Note.—Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending direct to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — Editor.]

GENERAL

von Andrian (F.) Virchow als Anthropologe. (Mitt. d. Anthr. Ges. in Wien, 1903, xxxiii, 336–343.) Résumés Virchow's varied anthropological activities and investigations.

—— Die xxxiv. allgemeine Versammlung der deutschen Anthropologischen Gesellschaft zu Worms vom 10–13. August. (Stzgb. d. Anthr. Ges. in Wien, 1903, 110–113.) Résumés very briefly proceedings and chief papers.

Anthony (M.) Rapport sur le concours du Prix Goddard. (Bull. Soc. d'Anthr. de Paris, 1903, v^e^ s., iv, 613–615.) Prize awarded to Dr Huguet for his MS. *La valeur physique générale et l'aptitude au service militaire des indigènes sahariens*, with very honorable mention of Niceforo for his anthropological study of Lausanne school-children.

Edson (E. R.) Swedenborg's vortex-rings and some of their applications in the realm of natural science, with especial reference to the subject of thought. (N. W. Med., Seattle, 1904, ii, repr., pp. 1–22, 10 figs.) The author of this curious article believes that "animals are usually possessed of more clairvoyant power than are human beings," that "intellectual light emanates from the sun," etc.

Giuffrida-Ruggeri (V.) Una spiegazione del gergo dei criminali al lume dell etnografia comparata. (Arch. di Psich., ecc., Torino, 1904, xxv, estr., pp. 1–10.) Author cites existence of secret-language at harvest-time (Alfuros of Celebes), of elephant-hunters (Laos), camphor-seekers (Borneo), tin-miners (Malacca), fishermen (Shetland), etc., to show that normal individuals, savage and civilized, make use of secret languages, as a defense against spirits (or a means of communication with them), or against society. In like manner criminals. Their jargons have the same defensive, mystic origins.

—— Il profilo della pianta del piede nei degenerati e nelle razze inferiori. (Ibid., estr., pp. 1–9.) Compares the form of the soles of 23 feet of Italian degenerates studied by the author with those of 40 Wakissi and 47 Wanyamwanga published by Fülleborn in his *Anthropologie der Nord Nyassa-Länder* (Berlin, 1902). Dr Giuffrida-Ruggeri believes that the influence of boots and shoes in modifying the form of the foot has been overestimated. The common form of the European foot is not an artificial result but a spontaneous product of evolution, belonging to the higher races.

Féré (M.) Rapport sur le concours du Prix Fauvelle. (Bull. Soc. d'Anthr. de Paris, 1903, v^e^ s., iv, 615–616.) Prize awarded to Dr E. Rabaud for his *Contribution à l'étude des lésions, spinales postérieures dans la paralysie générale* (Paris, 1898) and other studies on embryology and teratology.

Götze (A.) Ueber einen Böschungsmesser. (Z. f. Ethn., Berlin, 1904, xxxvi, 115–117, 1 fig.) Describes a new instrument (compass with plumb-line and graduated scale) for use in archeological work.

Kraemer (H.) Die Abstammung des Bernhardiner. (Globus, Brnschwg., 1904, lxxxv, 104–108, 119–122, 171–174, 184–186, 13 figs.) Discusses in detail, historical, archeological, osteologi-

cal, and philological evidence as to the origin of the St Bernard dog and related types. Dr Kraemer considers that the mastiff was a race introduced by the Roman settlers and from it in the St Bernard region, by reason of Alpine environment, a "regeneration to the old and original type" took place and the St Bernard was evolved. The ancestor of the St Bernard is the Tibetan dog which spread *via* Asia Minor, and the dog of Vindonissa is a sort of link between the Tibetan and the old Molossus types. The Roman type from which the St Bernard sprang may be that of Vindonissa.

Lang (A.) The origins of marriage prohibitions. (Man, Lond., 1903, 179–182.) Reply to critique of author's *Social Origins* at pp. 121–124 of the same journal. Lang maintains that totemism arose when the name was still taken from the mother.

Lasch (R.) Die Landwirtschaft der Naturvölker. (Z. f. Socialw., Berlin, 1904, VII, 25-47, 97–115, 190–197, 248–264.) This valuable and well-documented monograph on primitive agriculture, etc., treats of primitive methods of clearing the ground and making it productive, loosening and working the soil, improvement of soil (manuring, artificial irrigation, rotation and fallow, sowing and planting, protection of seed from weeds, injurious animals, etc., harvest and subsequent proceedings, division of land among primitive agriculturists, methods of work and division of labor, size of crops, their value, disposal, etc. Dr Lasch finds it difficult to say what is the cardinal difference between primitive agriculture and ours. The working of the soil is as intensive with the one as with the other. The stability of place is overestimated for the modern peasantry and underestimated for primitive people. Frequent change does not interfere with high development of methods of work. Higher culture has the combination of agriculture and cattle-breeding, the plow, etc.

Lewis (A. L.) Some notes on orientation. (Man, Lond., 1903, 88–91.) General discussion. Propitiousness of cardinal points and the reverse held to be the result of ceremonial turnings and facing, also right and left.

—— "The nine stones." (Ibid., 116–117.) Argues that "the nine stones," in rude stone monuments, means "the stones of the nine ceremonies, or nine gods, or it may be of both, or in other words, the holystones."

McKenzie (K.) An Italian fable, its sources and its history. (Mod. Philol., Chicago, 1904, I, repr., pp. 1–28.) A thorough-going comparative study of "The Lion and the Man," from a MS. of the fifteenth century, the original of which, the author thinks, was composed in India some time before the eleventh century. Some "Uncle Remus" incidents appear to belong to the cycle of this fable, which is very widespread, and has undergone many variations.

Myers (C. S.) Note on a method of radial craniometry. (Man, Lond., 1903, 12–13, 1 fig.) Describes apparatus and the preparation of polyhedral figures from skull measurements.

Myres (J. L.) Rudolf Virchow. (Ibid., 1–4, 1 pl.) Appreciative sketch with portrait.

—— John Wesley Powell. (Ibid., 23–25, 1 fig.) Brief account of life and scientific labors.

von Negelein (J.) Die Stellung des Pferdes in der Kulturgeschichte. (Globus, Brnschwg., 1903, LXXXIV, 345–349.) Contains data additional to those in the author's recent work *Das Pferd im arischen Altertum*. Treats of domestication, use in war, life and qualities under domestication, horse in religion, mythology and folklore, the "white horse" and "black horse," spirit horse, etc. In Prussia in the time of the Orders horses were still beasts of the chase and in use as food. Very ancient is the use of the male horse for battle and riding only, the mare for breeding purposes alone.

Niewenhius (A. W.) Kunstperlen und ihre kulturelle Bedeutung. (Int. A. f. Ethnogr., Leiden, 1903, XVI, 136–154, 1 pl.) Interesting historical-ethnographical account of artificial beads and the culture-significance, based on material in the museums of Leiden, particularly from certain tribes of Borneo, the Bahau, Kenya, etc. The glass, faience, and porcelain beads of Borneo come from Singapore (thither from Gablonz in Bo-

hemia, Birmingham, Murano near Venice, — some perhaps also from China). Among these people beads enter into every social and religious ceremony; they are also offered to the spirits and protective genii. Ancient Egypt (Flinders Petrie's find dates from 2800 B. C.) seems to have been the center of the early glass industry, upon which later developed the Phenician. Stone beads were known to the ancient Egyptians as to the modern Borneans. The spread of beads through the ancient world is attributed to the Phenicians and they were known to the Swiss lake-dwellers. The beads of culture-races exhibit a remarkable coincidence in form, color, marking, etc. Of the chevron pattern of bead 500 varieties are known in Venice.

Rathgen (F.) *und* **Bowmann** (R.) Trän kung von Gipsabgüssen zur Konservierung. (Z. f. Ethn., Berlin, 1904, XXXVI, 163–165.) Notes advantage of baths for plaster casts which do not give watery solutions.

Sanielevici (H.) Le travail de la mastication est la cause de la brachycéphalie. (Bull. Soc. des Sciences de Bucarest, 1903, XII, 390–395.) In briefer form this article was noticed in *American Anthropologist*, 1904, N. S., VI, 346.

Schliz (A.) Der Bau vorgeschichtlicher Wohnanlagen. (Mitt. d. Anthr. Ges. in Wien, 1903, XXXIII, 301–320, 14 figs.) Treats of form and variations of human dwellings during the diverse prehistoric periods — choice of site, form and grouping of individual residences, build of individual houses, etc. No dwellings have been found in the old stone or cave-epoch. In the later stone age appear the plain and river villages, and the contracted fortified mountain settlements. The former is represented at Grossgartach (details are given). No regular evolution from the earliest to the latest period is apparent; each period has suited its dwellings to its needs and the tools it possessed. Artistic taste appears in all epochs.

Schmidt (P. W.) W. Wundt's Völkerpsychologie." (Ibid., 361–389.) Critical review of the first volume (on language) of Wundt's *Völkerpsychologie* (Leipzig, 1900).

Sergi (G.) Le illusioni dei sociologi. (Riv. Ital. di Soc., Roma, 1903, VII, estr., pp. 1–19.) Criticises the view of certain sociologists that human society is "a phenomenon opposed to nature." Such ideas are illusions sprung from the brains of these theorists. Seeks to show that independence from nature in social phenomena, opposition between them and biological phenomena, does not and cannot exist. Individual interest is not opposed to social, for coöperation is a better evolutional means for survival of self. Justice is not an anti-biological phenomenon. The survival of the weak through justice among men may be compared to mimicry — survival among insects, etc. The human will is not outside the bonds of nature. The rôle of consciousness of voluntary acts and their scope is not large.

Welcker (H.) Die Zugehörigkeit eines Unterkiefers zu einem bestimmtten Schädel, nebst Untersuchungen über sehr auffällige, durch Auftrocknung und Wiedereranfeuchtung bedingte Grössen- und Form-veränderungen des Knochens. (A. f. Anthrop., Brnschwg., 1902, XXVII, 37–106, 37 figs.) Detailed discussion of the relation of lower jaw to skull, with account of experiments on striking changes in size and form of the bone induced by drying and re-moistening.

Wright (W.) A method to facilitate the recognition of Sergi's skull types. (Man, Lond., 1903, 114–116, 4 figs.) Describes "construction of a simple geometric figure on a photograph of the skull," — to aid the eye and avoid the vagaries of the personal equation.

Zuckerkandl (E.) Zur vergleichenden Anatomie der Gehirnwindungen. Zur Morphologie der Insel. (Stzgb. d. Anthr. Ges. in Wien., 1903, 87–88.) Author concludes that the ground-form of the *insula* is to be looked for in arch-forms of this part of the brain in the bear and other carnivora.

EUROPE

Abercromby (J.) Excavations at Meikle, Perthshire, in May, 1903. (Man, Lond., 1903, 119–120.) Describes excavation of two prehistoric sites and objects found. Whether the interments and earthworks are contemporary is uncertain.

Andree (R.) Ueber einen Feuersteinknollen vom Wohlenberge. (Z. f. Ethn.,

Berlin, 1904, XXXVI, 107–108.) Describes a flint core, used perhaps as a hand-stone.

Annandale (N.) Notes on the folklore of the Vestmanneyjar. (Man, Lond., 1903, 137–139.) Brief notes on sea-goblins, bird-lore (raven, puffin), the skerry priest cairn, the stone boat, rock-spirits, etc.

Bericht über die im Jahre 1902 in Österreich durchgeführten Arbeiten. (Stzgb. d. Anthr. Ges. in Wien, 1903, XXXIII, 59–84, 10 figs.) Résumés archeological discoveries in the various parts of Austria during 1902.

Brandstetter (R.) Die altschweizerische Dramatik als Quelle für volkskundliche Forschungen. (Schw. A. f. Volksk., Zürich, 1904, VIII, 24–36.) Points out the folklore material to be gleaned from the old Swiss drama: Echoes of old legends and myths, legal customs, plays and amusements, folk food and drinks, figures of speech, oaths, euphemisms, forms of greeting, loan-words, dialect, gestures, etc. The old Swiss drama is a national, indigenous product.

Brunšmid (J.) Hrvatske sredovječne starine. (Vjes. hrvats. Arheol. Drust., Zagreb, 1903–4, N. S. VII, 30–97, 51 figs.) Describes Croatian medieval remains, coins, ornaments, rings, bracelets, beads, necklaces, bells, etc.

Bünker (J. R.) Die Haſneröfen in Stoob. (Mitt. d. Anthr. Ges. in Wien, 1903, XXXIII, 329–335, 10 figs.) Detailed account of the pottery-kilns of the village of Stoob near Oben Pullendorf in the Alpine region of Ödenburg.

Casement (R.) Remarkable wells in the country of Antrim in the year 1683, as described by Richard Dobbs, Esq., of Castle Dobbs. (Man, Lond., 1903, 76–77.) Gives extracts from a MS. intended to form part of an English atlas, part of which only was published.

Cazalis de Fondonce (M.) Les cromlechs de la Can de Ceyrac, Gard. (Soc. Préh. de France, 1904, extr., pp. 1–11, 2 figs.) Detailed description of the two large cromlechs of Can de Ceyrac, compared with other similar monuments.

Celestin (V.) Grčki i ninski kolonijalni novci nadeni u Osijeku. (Vjes. hrvats. Arheol. Drust., Zagreb, 1903–4, N. S. VII, 15–29.) Lists and describes numerous Greek and Roman colonial coins found at Essek.

Čermak (K.) Neolithische Stationen in der Umgebung von Čáslau und iher Alter. (Stzgb. d. Anthr. Ges. in Wein, 1903, 102–104, 1 fig.) Brief notes on neolithic stations at Drobovitz and somewhat later ones on the Hluboky brook near Čáslau.

Clinch (G.) On some ancient subterranean chambers discovered at Waddon, near Croyden, Surrey. (Man, Lond., 1903, 20–23, 1 fig.) Describes a very important find. The Waddon chambers resemble in some respects those of Palmella in Portugal (late neolithic) and those of La Tourelle in Brittany. They were probably sepulchral, though no human remains have been discovered. The Waddon chambers copy the ordinary surface hut of neolithic times.

Cunningham (D. J.) Cornelius Magrath, the Irish giant. (Ibid., 49–50, 1 pl.) Brief sketch of life, description of skeleton of famous giant (d. 1760.). The skeleton "exhibits in a marked degree all the conditions of an advanced phase of acromegaly."

Daucourt (A.) Les sobriquets des villes et villages du Jura bernois. (Schw. A. F. Volksk., Zürich, 1904, VIII, 49–52.) Gives the *blason populaire* (nicknames) for 120 towns and villages of the Bernese Jura. This article ought to interest Andrew Lang in connection with his totem theory.

Elworthy (F. T.) On perforated stone amulets. (Man, Lond., 1903, 17–20, 1 pl.) Describes and discusses amulets from various parts of England. Naturally-holed stones have particular virtues. One of their names is "holy (for hóled) vlints."

Evans (E. J.) Pre-Phenician writing in Crete, and its bearings on the history of the alphabet. (Ibid., 50–55.) Treats of primitive picture-writing and Cretan pictographic script, the linear script of Minôan Knossos. Cretan scripts and "signaries," and the Phenician alphabet. Author identifies the Philistines with "a highly-civilized Ægean race, far advanced in that art of writing." From them *ca.* 1400 B. C. the Phenicians may have derived their alphabet.

Folmer (H. C.) De volkomen overeenstemming in anthropologisch type tusschen de vroegste bewoners langs de Noordzee-kusten met de andere Germaansche stammen iut her Merovingische tijvak. (Hand. v. d. Nederl. Anthrop. Ver., Den Haag, 1904, I, 26–32.) Argues upon craniological evidence for the complete identity of the earliest inhabitants of the North Sea coast with the *Reihengräber* type of central Germany, the dolichocephalic Merovingians, etc.

Fuchs (K.) Rosengärtchen; das Kronstädter Junifest. (Stzgb. d. Anthr. Ges. in Wien, 1903, 104–106.) Brief account of a folk-festival at Kronstadt in Transylvania. A horseman's festival, dendrophors (youths on horseback with fir-taps), *busogán*-throwing (a sort of club). The festival seems to be the rudiment of a once greater event.

—— Ueber Rolande. (Ibid., 106.) Brief note on the "town Roland" — the Roland with naked sword in hand before the door of the town house indicated the exercises there of the *jus gladii*, a right given certain towns by the Hungarian monarchs.

von Gabnay (F.) Ungarische Kinderspiele. (Globus, Brnschwg., 1904, LXXXV, 42–45, 60–63, 5 figs.) Treats of tops, *pintzga*, catapults, whips, ball-shoving, toy-wagons, wind-wheels, and like toys, cross-bows, squirts, whistles, boats, fiddles, bows, hammers, sleds, mortars, cradles, furniture, dishes, implements and utensils, dolls, etc. Also children's games, ball-games. In the Ung valley girls make no dolls. Truancy is frequent here because several school-children have only one jacket in common. At Tschornoholowa hardly any children's toys are to be found. Toys and games differ noticeably with environment.

Gaidoz (H.) De l'influence de l'Académie Celtique sur les études de folk-lore. (Rec. de Mém. Soc. d. Antiq. de France, 1904, 135–143.) According to M. Gaidoz the linguistic labors of the Celtic Academy, which held its first session in 1804 and made its exit in 1827, causes a smile today, its archeology is more than archaic, but it will be remembered for its activities in relation to the collection of folklore (the work of its secretary, Johanneau, etc.). Its influence upon Jacob Grimm in particular was considerable. In France the study of folklore practically died with the Celtic Academy, to be resurrected more than fifty years later.

Gebhardt (A.) Ueber eine neugefundene Höhle auf Island. (Globus, Brnschwg., 1903, LXXXIV, 389.) Brief account of a new cave (occupied in the Middle Ages by robbers or exiles) discovered in the Thingvallasveit in the summer of 1903.

Götze (A.) Monolithgräber. (Z. f. Ethn., Berlin, 1904, XXXVI, 111–115, 5 figs.) Brief description of three neolithic graves with boulders lying upon the skeletons. This was perhaps due to belief in vampirism. For graves of this sort the author proposed the name *Monolithgräber*.

Gray (H. St G.) Relief model of Arbor Low stone circle, Derbyshire. (Man, Lond., 1903, 145–146, 1 pl., 2 figs.) Brief account of construction of mahogany model made in 1902.

Gray (*Rev.* J.) Some Scottish string figures. (Ibid., 117–118, 4 figs.) Describes the bunch of candles, the chair, the pair of trousers, the crown, the leashing of Lochiel's dog (or tying dog's feet).

Hingston (Margaret A.) "The candles" string figure in Somerset. (Ibid., 147.) Brief description of the string-figure to the story of the man who stole candles, as current some forty years ago.

Hoffiler (F.) Antikne bronsane posude iz Hrvatske i Slavonije u narodnom muzeju u Zagrebu. (Vjes. hrvats. Arheol. Drust., Zagreb, 1903–4, N. S., VII, 98–133, 13 figs.) Describes ancient bronze vessels, casseroles, Roman cyathi, amphoræ, etc., in the Zagreb Museum.

Klaatsch (H.) Fossile Knochen aus der Heinrichshöhle bei Sundwig. (Z. f. Ethn., Berlin, 1904, XXXVI, 117–119.) Describes bones of cave-bear, etc., from the Heinrich cave near Hönnetal, — no human remains have yet been discovered here.

Klaič (Vj.) "Castrum antiquum paganorum" kod Kasine u gori Zagrebackoj. (Vesj. hrvats. Arheol. Drust., 1903–4, N. S., VII, 10–14.) Treats of the ancient "heathen castle" near Kašina in the Zagreb mountains, mentioned by the medieval chroniclers, etc.

—— "Indagines" i "portae" u Hrsvatskoj i Slavoniji. (Ibid., 1–9.) Treats briefly of the *indagines*, hedged moats, with their *portæ* (gates cut through), a species of fortification common on the borders of Croatia and Slavonia under the Arpad régime.

Kofler (*Hr*) Ein eigentümliches Hügelgrab aus der Bronzezeit. (Z. f. Ethn., Berlin, 1904, XXXVI, 108–112, 1 fig.) Detailed description of a mound grave in the park of Castle Kranichstein, with a double circle of wooden piles. Possibly a "house-like" burial-place.

Kulka (*Dr*) Ueberblick über die Vorgeschichte Öster.-Schlesiens. (Stzgb. d. Anthr. Ges. in Wien, 1903, 90–95.) Résumés data concerning prehistory of Austrian Silesia. Man was present here apparently not before the latter part of the neolithic culture-period. The chief "station" is Kreuzendorf.

Künstlichen (Die) Höhlen Mitteleuropas, ein ungelöstes Rätsel. (Globus, Brnschwg., 1903, LXXXIV, 349–352, 7 figs.) Résumés Karner's *Künstliche Höhlen aus alter Zeit* (Wien, 1903). Numerous theories as to the origin and use of these artificial holes (the peasantry use them for storage purpose) in the *löss* regions of Austria, Moravia, and adjoining Bavaria, have been put forth. Karner looks upon them as "cult-places" of a prehistoric people. They may have been rather temporary dwellings or refuges.

Lejeune (C.) La religion à l'âge du renne. (Bull. Soc. d'Anthr. de Paris, 1903, V^e^ s., IV, 628–632.) Discusses a recent article by Reinach. Author concludes that the men of Chelles and Moutier were not devoid of religion.

Lewis (A. L.) Stone circles in Derbyshire. (Man, Lond., 1903, 133–126, 2 figs.) Describes Arborlow, the "Wet Withins," and the "Nine Ladies" on Stanton Moor. These do not seem to have been primarily sepulchral.

Lüdtke (W.) Brettchenweberei in Karthago. (Z. f. Ethn., Berlin, 1904, XXXVI, 106–107, 2 figs.) Compares perforated bone plates found at Carthage by Delattre with Swedish weaving boards and suggests like use.

Lustig (Die) Trichtergruben (Mardellen) vom Zobtenberge in Schlesien. (Globus, Brnschwg., 1904, LXXXV, 85–89, 4 figs.) Résumés briefly data concerning *mardelles* (the corresponding term in English seems to be *pen-pits*) and describes particularly those of the Zobtenberg and their contents—stone-plates, unfinished mortar-stones, potsherds, etc. These pits (of which 5000 are said to exist in the Lorraine forests alone) are probably the work-places of handmill-stone makers belonging to the late Slavonic epoch or early middle ages.

M. (E.) Sprichwörter der Oberlausitzer Wenden. (Ibid., 1903, LXXXIV, 353–357.) Gives 557 proverbs of the Wends of Upper Lausatia, concerning man in his social relations (1–246), human properties and qualities in relation to animate and inanimate nature. (1–311.)

Mehlis (C.) Neolithische und spätzeitliche Silex- und Kieselware. (Ibid., 361–362, 8 figs.) Brief account of neolithic flint and later quartz implements found together in the Hassloch wood, near Neustadt. Evidently a La Tène population was still using stone implements for certain purposes.

Meier (S.) Wettersegen (Schw. A. f. Volksk., Zürich, 1904, VII, 47–49.) Gives text of a weather-charm in family use in the Frei- und Kelleramt.

Meyer (*Hr*) Der Bürgereid der alten Chersoneser. (Globus, Brnschwg., 1904, LXXXV, 32–34.) Gives, after Latyschew, the (German) text of the Greek inscription found in 1890–1891 at old Cherson in the Crimea, containing the citizens' oath dating from perhaps the first half of the third (or end of fourth) century, B. C. Among the evils invoked in case of breaking the oath is that "the women bear no beautiful children."

Morgenländische Götterdarstellungen in Europa. (Ibid., 45–46.) Résumés a lecture by Dr Blinkenberg. The bronze hands found in various places in central Europe are thought to represent the Phrygian Zeus Sabazios.

Olshausen (O.) *und* **Rathgen** (F.) Untersuchungen über baltischen Bernstein (Succinit) und andere fossile bernsteinähnliche Harze. (Z. f. Ethn., Berlin, 1904, XXXVI, 153–163.) Résumés results of investigations of Helm and Aweng, Klebs, Conwentz, etc., and gives results of numerous experiments as to the melting-point of many varieties of amber and amber-like resins.

Prætorius (C.) Note on an old Welsh gorse-cutter. (Man, Lond., 1903, 186, 1 fig.) Describes a *cyrw eithin*, or "knocker of gorse," in use in Anglesey some fifty years ago.

Reid (E.) Note on the paleolithic gravel of Savernake Forest, Wiltshire. (Ibid., 55–57.) The Knowle gravel is contemporaneous with the Southampton water, Bournemouth and Avon Valley deposits. Occurrence of water holes determined the sites of camping grounds in the bare and dry chalk downs.

Rutot (A.) Les découvertes de Krapina, Croatie. Les trouvailles paléolithiques de Krems. Découvertes de poignards Chelléens à Mesvin, près de Mons. Découverte de crânes paléolithiques en Angleterre. (Bull. Soc. d'Anthr. de Bruxelles, 1903–4, XXII, extr., pp. 1–8.) Résumé and critique of article of Dr K. Gorjanovič-Kramberger (See *American Anthropologist*, 1902, N. S., IV, 160). Rutot considers Krapina to belong to the Montaigle type (upper Quaternary). The "station" of Krems he considers intermediate between the Eburnian and the Magdalenian. Rutot thinks that a hiatus comprising all the lower and middle Quaternary lies between the Pithecanthropus of Java and the Neanderthal-Spy-Krapina type. Some of the ancient skulls recently discovered in England may help to bridge this gulf.

—— Le premier instrument paléolithique rencontré in situ aux environs de Bruxelles. Nouvelles observations dans la plaine maritime Belge. Trouvailles dans la tourbe de l'époque moderne, à Bruxelles. (Ibid., extr., pp. 1–8.) Describes the finding of a fragment of a hatchet of the Achulean type at Etterbeek. The nearest previous find of Achulean implements was at Soignies, 36 kilom. farther off. While at Ostend M. Rutot examined the medieval relics uncovered by the sea on the Belgian coast and now in the Royal Museum of the Decorative Arts. Notes the find of human sacrum and three flints in the peat of the rue des Chartreux, Brussels. The peat of the maritime plain and of the valley-bottoms contains remains of the neolithic, bronze, iron, and Belgic-Roman periods.

—— Communication préliminaire relative à la pointe moustérienne et à la taille du silex. Sur un peson néolithique. Nouvelles découvertes à Soignies. Note préliminaire sur les silex paléolithiques de la vallée du Nil. (Ibid., 1902–1903, XXI, extr., pp. 1–7.) M. Rutot holds that the implement called "pointe moustérienne" is no tcharacteristic of any period, and what is termed "taille du silex" is most frequently only a result of its use. Describes stone weight (possibly originally a muller), of the Robenhaus period, near the river Haine. At Soignies a mammoth-tusk was found in the Hainaut quarry. The last note relates to Dr G. Schweinfurth's materials.

—— Esquisse d'une comparaison des couches pliocènes et quaternaires de la Belgique avec celles du sud-est de l'Angleterre. (Bull. Soc. Belge de Géol., Bruxelles, 1903, XVII, 57–101.) Interesting comparative study, with table, of the Pliocene and Quaternary strata of Belgium and S. E. England. M. Rutot finds a place in his scheme for the "eoliths."

Schmidt (H.) Die spätneolithischen Ansiedelungen mit bemalter Keramik am oberen Laufe des Altflusses. (Z. f. Ethn., Berlin, 1904, XXXVI, 145–146.) Author agrees with Teutsch that the clay stamps with patterns found by the latter near Kronstadt were used for body-tattooing. The painted pottery is not, as Teutsch thought, a barbarous imitation of Mycenean vase-painting (indeed the latter is later in time), but rather has to do with Ægean culture.

Schnippel (*Hr*) Prähistorische Brettchenweberei. (Ibid., 137–138, 1 fig.) Note on use of weaving-board by Russian peasant women of Suprasl near Bialystok (Grodno).

Schoener (*Hr*) Die Insel Gotland. (Globus, Brnschwg., 1904, LXXXV, 112–115, 8 figs.) Describes briefly ruins, fortifications, etc. The name *Wisby* indicates the former existence there of a heathen place of sacrifice (*vi*).

Schoetensack (O.) Zur Nephritfrage. (Z. f. Ethn., Berlin, 1904, XXXVI, 141–143.) Brief description of three nephrite implements from a pile-dwelling in the lake of Zug. Their origin is probably from the glacial debris of the central Alps.

Tetzner (F.) Die Kroaten. (Globus, Brnschwg., 1904, LXXXV, 21–26, 38–42, 12 figs.) Ethnological sketch: Culture, house and yard and related things (plans

are given), clothing and ornament, customs and usages (birth, marriage, death and burial, friendship, "Wahlschwestern"), folklore and folk-literature, etc. The archbishop of Djakowo has been a sort of Mæcenas. Belief in witches, the *mora* and the *vukodlak* or grave vampire is on the wane, but that in the *vilas* and *sudjenice* (Parcæ) seems to have taken on a new lease of life. Croatian folk-literature is rich in proverbs, legends, and songs.

Tobler (A.) Der Volkstanz im Appenzellerlande. (Schw. A. f. Volksk, Zürich, 1904, VIII, 1–24.) Historical and descriptive account, with musical notes, of the folk-dances of Appenzell — "the people are passionate dancers." The dance was often the subject of governmental restriction and even prohibition.

—— (G.) Gedichte aus der Zeit des Berner Oberländer-Aufstandes des Jahres 1814. (Ibid., 37–47.) Gives texts, with explanatory notes of 5 historical songs from a MS. of 1815–1816, dealing with the insurrection of 1814.

Vollgraff (C. W.) De opgravingen te Argos. (Hand. v. d. Nederl. Anthr. Ver., Den Haag, 1904, I, 2–14.) Résumés results of excavations at Argos in 1902–1903. Complete study of this ancient and important place will reveal the nature and condition of a Hellenic city, as well as the development of Argive art.

Wenden (Die) in Sachsen. (Globus, Brnsschwg., 1904, LXXXV, 126–127.) Résumés the government statistics of 1900. In 1849 the Saxon Wends were 26 percent. of the total population, in 1900 only 16 percent. The German language and the schools are factors here. There are at present only 7 "pure Wend-speaking" villages in Saxony — 28,727 have Wendish as their mother-tongue, and there are 18,282 bilinguals.

Wilke (*Dr*) Archäologische Parallelen aus dem Kaukasus und den unteren Donauländern. (Z. f. Ethn., Berlin, 1904, XXXVI, 39–104, 120 figs.) In this important monograph the author treats of the relations of the ancient culture of the Caucasus with that of the lower Danube region: Fibulæ, spirals, buttons, needles of various types, finger-rings, ear-rings, arm-rings and bands, neck-rings, pendant ornaments of several sorts, bronze tubes, spiral tubes, *pincettes*, amber, weapons and implements, sickel-shaped saws, arrow-heads, spears, daggers and swords, ornamentation, symbols, *Émail en champlevé*, plastic art, antimony, dolmens, craniology, etc. The author holds that these numerous and remarkable parallels are to be explained by immigration (of a people already acquainted with metal) from the Danube region to the north Caucasus.

Zindel-Kressig (A.) Reime und Redensarten aus Sargans. (Schw. A. f. Volksk., Zürich, 1904, VIII, 57–60.) Cites counting-out rhymes, dance-songs, lullabies, children's songs, calls for domestic animals, idiomatic expression, folk and children's sayings.

AFRICA

Atgier (H.) Les Maures d'Afrique. Origine ethnique du mot "Maure" et ses diverses significations successives. (Bull. Soc. d'Anthr. de Paris, 1903, Ve S., IV, 619–623.) Discusses the name *Maure* ("Moor") and its derivatives and cognates in various European tongues. Derives it from Greek Μαῦρος (Μωρος) — Mauritania having designated a land of blacks, just as Nigritia does now. The term, Moor was first applied to the pre-Berber population. See *Bloch*.

B. (H.) Aus dem Süden Deutsch-Südwest Afrikas. (Globus, Brnschwg., 1904, LXXXV, 7–11, 5 figs.) Describes briefly Keetsmanshoop and its population.

Balfour (H.) "Thunderbolt" celts from Benin. (Man, Lond., 1903, 182–183, 3 figs.) Describes a bronze celt, imitative of stone celts, which are regarded as "thunder bolts," "lightning stones," etc. Also two little bronze models of celts, semi-conventional symbols of the real article. See *Dwyer*.

Beddoes (H.) Hausa notes. (J. Afric. Soc. Lond., 1903, 451–453.) Replies to 25 queries regarding property-inheritance, funeral-customs, family, judges-"big men," axes, slavery, etc., by a Hausa interpreter.

Bent (*Mrs* M. V. A.) The monoliths of Aksum. (Rec. of Past, Wash., 1904, III, 35–42, 11 figs.) Describes these monoliths visited by Mr and Mrs Bent

in 1892–3. They are of religious purport and had sacrificial altars below them. Their style indicates Greek upon Sabæan art before our era. Aksum was of old a very sacred place.

Bertholon (*Dr*) *and* **Myres** (J. L.) Note on the modern pot fabrics of Tunis. (Man, Lond., 1903, 86–88, 5 figs.) Describes briefly the various types of hand-made and wheel-made pottery. On the island of Gerba there were in 1902, chiefly in two villages, 129 potteries (formerly 144). The Kabyle type seems confined to Kabylia, the other regions of North Africa having each its local type of pottery.

Bloch (A.) Étymologie et définitions diverses du nom de Maure. (Bull. Soc. d'Anthr. de Paris, 1903, v^e^ s., IV, 624–728.) Discusses Phenician, Greek, African, and Arab etymologies. Bloch favors deriving the name from Greek Μαῦρος, "black," the word having originally signified a negro. See *Atgier*.

Blyden (E. W.) West Africa before Europe. (J. Afric. Soc., Lond., 1903, 359–374.) Treats of the moral and religious questions connected with British West Africa. The development of Africa and the African must be "on educational and industrial lines, conducted 'in a scientific spirit.'" To make Mohammedans better Mohammedans, not to convert them, is best.

Boas (F.) What the negro has done in Africa. (Eth. Rec., N. Y., 1904, V, 104–109.) Treats of the negro's ancient and noteworthy skill in metallurgy, the legal trend of his mind, commercial ability, power of organization, power of assimilating foreign culture. The remarkable kingdoms of Ghana and Songhai are referred to; also the Lunda empire. The author concludes that the achievements of the negro in Africa show that the race is capable of social and political progress, and that in America it will produce, as it has done in Africa, its great men.

Brower (C. De W.) The beetle that influenced a nation. (Rec. of Past, Wash., 1904, III, 73–79, 2 figs.) Treats of the Egyptian scarab, whose use as a sacred emblem dates back to perhaps 5000 B. C. On them the earliest decorative art appears. They bear an immense variety of devices and inscriptions. They were buried with the dead as emblems of life.

Chadwick (H.) The African Training Institute, Colwyn Bay. (J. Afric. Soc., Lond., 1903–4, 104–106, 1 pl.) Treats chiefly of the education of Charlie Stewart, an ex-slave, now a missionary.

Christy (C.) Sleeping sickness. (Ibid., 1903–4, 1–11, 4 pl.) Discusses nature and distribution of this disease, which, until 1891 was known only "in certain parts of West Africa, mainly on the Congo, and amongst African slaves shipped to the West Indies during the first half of last century." So far no European has contracted it, but tsetse fly may turn out to be the conveyer of the trypanosoma of "sleeping sickness."

Dalton (O. M.) Note on an unusually fine bronze figure from Benin. (Man, Lond., 1903, 185, 1 fig.) Describes bronze figure of a retainer, of fine workmanship.

David (J.) Ueber die Pygmäen am oberen Ituri. (Globus, Brnschwg., 1904, LXXXV, 117–119.) Describes briefly the pygmies of the Upper Ituri, — the author has been five months in the midst of the pygmy country, — Wambutti, Wabira, etc. Many of these pygmies have been "Bangwanized," or influenced by the semi-Arabized Bangwana (negro slaves). These "little Beduins of the woods" are much feared by their neighbors. These dwarfs use less ornament, embellishment and disbellishment, the more primitive they are. Their culture is the simplest. A Wambutti chief measured 1405 mm.

Dehérain (H.) Les Hereros. (R. gén. d. Sci., Paris, 1904, XV, 113.) Brief ethnographic notes on habitat, type, culture, habits, etc. The Hereros live on sour milk. Their culture bears everywhere the marks of the cattle-raiser, even their dances and funeral rites. An extreme individual has developed from pastoral life.

Dwyer (P. M.) On the thunderstones of Nigeria. (Man, Lond., 1903, 183–184.) Résumés religion of Shonga, the god of thunder and lightning and his wife Oya (the river Niger.) The *adura*, or thunderstones, which are objects of worship, are ancient ax-heads or celts, said to come from Shonga. Their actual provenance is unknown. See *Balfour*.

Engelhardt (Ph.) Eine Reise durch das Land der Mweleund Esum, Kamerun. (Globus, Brnschwg., 1904, LXXXV, 1–6, 73–76, map, 9 figs.) Contains notes on the natives and chiefs of Mwele and Esum — dress, dwellings, slavery, etc. These negroes have a sort of telephone drum language.

F. (B.) Nord-Nigeria. (Ibid., 140–143, 8 figs.) Contains notes on the Fulas, their towns, etc.

Garstang (J.) Excavations at Beni-Hasan, 1902–3. (Man, Lond., 1903, 97–98, 129–130, 2 pl.) Gives brief account of tombs and contents belonging to a necropolis of the Middle Empire (2,000 B. C.) — in all 492 tombs were examined, largely those of officials and retainers of the princes buried in the rock tombs of the upper gallery. The boats from several of the tombs are interesting, also a "man with a hoe." A series of models from the tomb of a chief physician represents the whole process of brewing. This Beni-Hasan find is a valuable one. The tomb of Antef, a courtier, is particularly described.

Gates (E. A.) Soudanese dolls. (Ibid., 41–42, 3 figs.) Brief accounts of dolls (of Nile mud, native gum and sticks) from Khartum.

Gentz (*Leut.*) Die Mischlinge in Deutsch-Südwestafrika. (Globus, Brnschwg., 1903, LXXXIV, 336–337, 1 fig.) Brief notes on "the Bastard-native," and other half-breeds — the former are descendants of Boers and Hottentot women. They often perpetuate only the bad qualities of both sides. They are very fond of music — a specimen melody is given.

—— Beiträge zur Kenntnis der südwestafrikanische Völkerschaften, III. (Ibid., 1904, LXXXV, 80–82, 5 figs.) Treats of the Hereros – houses, weapons, musical instruments (bow in particular). Notes used by Hottentots of the mineral *burmeester* as a medicament.

—— Der Herero-Aufstand in Deutsch-Südwestafrika. (Ibid., 133–134, 2 figs.) The uprising was probably supported, if not stirred up, by the Ovambus.

Gibson (A. E. M.) Slavery in Western Africa. (J. Afric. Soc., Lond., 1903–4, 17–52.) General discussion of voluntary and enforced servitude in various parts of West Africa. Author thinks that "voluntary and hereditary slavery might well be permitted to continue." The social fabric of Africa is based on domestic slavery.

Hall (H. R.) Note on the early use of iron in Egypt. (Man, Lond., 1903, 147–149, 1 fig.) Shows that iron, as Petrie's recent discovery settles, was known to the Egyptians as early as the fourth dynasty (3700 B. C.) and after, though its use was by no means common till toward the end of the "new empire," its use becoming more or less general during the nineteenth dynasty. The oldest literary mention of iron, *ba-n-pet*, goes back to 1300 B. C.

—— Caphtor and Casluhim. (Ibid., 162–164.) Author seeks to show that Egyptian *Keptar* is a Ptolemaic transcription of Hebrew *Caphtor*, the ancient equivalent being the *Keftiu* of the eighteenth dynasty, while the Ptolemaic *Kasluhet* may be a corruption of the ancient Egyptian equivalent of *Casluhim*.

Hobley (C. W.) Notes concerning the Eidoboro of Mau, British East Africa. (Ibid., 33–35.) Treats of type, family, food, hunting, fire-making, language — a vocabulary of some 100 words is given. By use of the Nandi language on the part of many natives their own tongue is on the way to extinction.

Hudson (A.) The missionary in West Africa. (J. Afric. Soc., Lond., 1903, 454–455.) Thinks Timne-Mendi rising of 1898 was intended to stamp out the missionary and all his works.

Johnson (H. H.) Presidential address. The work of the African Society. (Ibid., 349–358.) Treats generally of Africa and things African — diseases, races and languages, etc.

Joyce (T. A.) Note on a carved door and three fetish staves from northern Nigeria. (Man, Lond., 1903, 177–179, 1 pl., 2 figs.) Describes a carved wooden door (some of the figures are Europeans), the design of which resembles the castings from Benin; three carved wooden fetish staves, a chief's axe, etc. The door and staves are from the town of Akarré.

—— On a ceremonial mask and dress from the Upper Zambesi, now in the British Museum. (Ibid., 75, 1 fig.) Describes

a *chizaluke* (fool) mask used by the Valovale in their boy-initiation ceremonies — it is supposed to be the dress of a resurrected spirit.

Karutz (A.) Weitere afrikanische Hörnermasken. (Int. A. f. Ethnogr., Leiden, 1903, XVI, 121–127, 1 pl., 1 fig.) Describes African horned masks from the Sankuru river (Congo State), from Kuango, Kongo, Kamerun, Loango coast, now in the museum at Lübeck. Dr Karutz finds in this new material confirmation of his theory of the origin of the horns of these masks from antelope horn trophies. The faces of the masks are human (negro) and afford no ground for animalistic views as to the origin of these masks.

Keller (I.) Knowledge and theories of astronomy on the part of the Isubu natives of the western slopes of the Cameroon mountains, in German West Africa. (J. Afric. Soc., Lond., 1903–4, 59–91, 2 pl.) Notes on beliefs, etc., concerning day-star, moon, etc. Translated from *Deutsche Kolonialzeitung* by Miss M. Huber. The drawings are by a native.

Klose (H.) Industrie und Gewerbe in Togo. (Globus, Brnschwg., 1904, LXXXV, 70–73, 89–93.) Treats of iron-working (swords, spears, arrowheads, etc.), spinning and weaving, pottery, wood-work and carving, carpentry, leather-work and tanning, basketry, rope, soap and beer making, barbering, tailoring, shoemaking, etc. The Bassari and the Kabre are notable weaponsmiths; outliers of the Mohammedan Sudan are found also in Togo. Spinning is a house-industry of women, weaving belongs to the men. In Nkunya great pots are used for "granaries." In wood-work appear the beginnings of sculpture. Women make soap out of palm-oil and banana-ashes.

Marokkanische (Das) Heer. (Ibid., 1903, LXXXIV, 337–339, 2 figs.) Gives briefly the composition of the Moroccan army.

Martin (E. F.) Notes on the ethnology of Nigeria. (Man, Lond., 1903, 82–86.) Brief notes on the Kukurukus, Igara, Lokoja (the commercial center of northern Nigeria) and its people, the canoe population (Kedda and Kokanda), the Hausa, the Fulah, etc. Except the Hausa the native of the Niger is "not a noted trader." The Fulahs are the ruling Mohammedan power in northern Nigeria. The Hausa is the great trader of the Sudan.

—— Notes on some native objects from northern Nigeria. (Ibid., 150–151.) Describes briefly coat of mail, horse-collar, ostrich feather slippers (worn by chiefs), lamps, "poker work," grass-work (hats, mats, baskets), etc.

Molinier (L.) Croyances superstitieuses chez les Babemba. (J. Afric. Soc., Lond., 1903–4, 74–82.) Treats of religious system (god, spirits, prayers, etc.), beliefs and practices relating to accidents, disease, death, witchcraft, poison-tests and ordeals for discovering guilt, auguries good and bad, diverse superstitions (lions, wer-lions, evil spirits, comets). All incidents of life are the work of the *mipashi*, or spirits.

Myres (J. L.) A Tunisian ghost-house. (Man, Lond., 1903, 57–58, 2 figs.) Describes a ghost-house at Enfida. The type is pre-Roman with subsequent Roman additions, Mohammedan modification into the cupola-crowned chapel of Arab Africa, etc. Modern Mohammedan custom has caused it to cease being the actual house of the dead. An excellent example of how "the dwellings of the dead recapitulate the characters of those of the living."

Perregaux (W.) A few notes on Kwahu (Quahoe), a territory in the Gold Coast Colony, West Africa. (J. Afric. Soc., Lond., 1903, 444–450.) Historical account, according to chiefs, with popular version of events.

Plea (A) for the scientific study of the native laws and customs of South Africa. (Man, Lond., 1903, 70–74.) Memorial and correspondence between the Anthropological Institute and the Secretary for the Colonies on this matter.

Quilliam (A.) A chapter in the history of Sierra Leone. (Ibid., 1903–4, 83–99.) Author, who is a Mohammedan, discusses Protestant missionaries' relation to Islam in Sierra Leone, etc., the disabilities of its adherents, etc. Remedies are proposed.

Raum (J.) Ueber angebliche Götzen am Kilimandscharo, nebst Bemerkungen über die Religion der Wadschagga und die Bantuneger überhaupt. (Globus,

Brnschwg., 1904, LXXXV, 101–105.) Author criticises Thomé's attribution of generally worshiped *idols* to the Wadjaga, no East African Bantu people possessing such. The god-idea of the Bantu is the deified spirit of the primitive ancestor. The southern and eastern Bantu tribes have no priests, only shamans, sorcerers, rain-makers, prophets, whose power is all the greater. Bantu religion is half ancestor-cult, half witchcraft.

Rogozinski (S.) Characteristic features of the Bantu dialect "Bakwiri," used in the Cameroon mountains, compared with some other related dialects. (J. Afric. Soc., Lond., 1903, 400–415.) Translated by Miss A. Biggs. Based on three years' study *in loco*. Phonetics, singular and plural prefixes, alliteration, contraction, past tense, descriptive elements, compound words, onomatopœia, borrowed words, proper names, color words, reckoning of time, interjections, gestures, are considered.

Soirées (Les) littéraires des Babemba. (Ibid., 62-73.) Written by the French Fathers of the Awemba mission of N. E. Rhodesia. Gives French text of the adventures of "Rabbit" (rabbit [i. e. hare] and fox [jackal]; rabbit, elephant and hippopotamus; rabbit and lion; rabbit and two lions; rabbit and elephant hunters).

Todd (J. L.) Note on stone circles in Gambia. (Man, Lond., 1903, 164–166, 3 figs.) Describes circles at Kununko, Manna, Maka, etc., The present natives attribute them to "the olden people." The Mohammedan blacks sometimes use them as praying places, but often "have no compunction in planting their crops near and around them."

Vivian (W.) The missionary in West Africa. (J. Afric. Soc., Lond., 1903–4, 100–103.) Critique of article of Hudson (q. v.). The Mendi rising was due to the Protectorate and the hut-tax.

Warner (L. C.) A recent discovery in Egypt and the care of antiquities. (Rec. of Past, Wash., 1904, III, 116–117, 1 fig.) Note on a supposed statue of Sen-nofer, wife and child, perhaps 3,400 years old and of marked artistic value. The statue was found in connection with the restoration of the fallen columns of the Hypostyle Hall at Karnak.

Watt (J.) Notes on the Old Calabar district of southern Nigeria. (Man, Lond., 1903, 103–105.) Brief notes on farming, fishing, hunting, trade, houses, canoes, etc. The Efik are the chief people. Fresh fish, apparently, are not eaten, only dried. The tombs are often models of houses; some very elaborate. The dead bodies are thrown into the bush. The canoemen paddle to time set by a boy on a hollow piece of wood with two hardwood sticks.

Werner (*Miss* A.) Note on clicks, in the Bantu languages. (J. Afric. Soc., Lond., 1903, 416–424.) Lists and discusses click-words. Holds that "the clicks which occur in Xosa, in Zulu, and to a limited extent in Sesuto, have been borrowed from the Hottentots." Endeavors to discover in Mañanja the anologues to Zulu click-words. An "editorial note" appended to this article discusses the symbols in use in European dictionaries, etc., to represent clicks.

ASIA

Annandale (N.) Notes on the popular religion of the Patani Malays. (Man, Lond., 1903, 27–28.) Notes on the non-material elements in man according to native belief: *Nyawa* (life-breath), *semangat* (directing spirit), *ru* (what goes out of man when asleep), *badi* (wickedness or devilry in man), *jinn puteh* (Mahommed's parrots, — one in the liver of every Mahommedan, to prevent him being wicked). The highest type of magicians do not die, but "live on in the words and in the dreams of men."

—— A magical ceremony for the cure of a sick person among the Malays of Upper Perak. (Ibid., 100–103, 1 fig.) Describes the treatment by a *bômor*, or "medicine man," of a girl sick through being eaten by a witch's familiar. The latter was ultimately tied to the roots of a Ficus tree.

Bartels (P.) Ueber ein Os præbasioccipitale, Sergi (Os basioticum, Albrecht) an einem Chinesenschädel. (Z. f. Ethn., Berlin, 1904, XXXVI, 147–152, 2 figs.) Description with cranial measurements of skull of young Chinese with os præbasioccipitale. References to literature of this rare phenomenon.

—— Die Sojoten. (Globus, Brnschwg., 1904, LXXXV, 127.) Résumés a recent

account of D. A. Klemenz. The Sojotes or Uranchai of the Upper Yenesei valley between the Tannuola and the Sajani mountains are Buddhists with underlying shamanism. The Russian trade relations began in the last quarter of the last century.

Duckworth (W. L. H.) Note on a skull labeled "Semang-Schädel ♂," "Bukit-Sapi," Upper Perak, 1902; now in the Museum of the Royal College of Surgeons. (Man, Lond., 1903, 34–37.) Detailed description with measurements (index 85). Probably an example of the brachycephalic negrito type.

Englische (Die) Einfallspforte nach Tibet. Globus, Brnschwg., 1904, LXXXV, 122–125, 6 figs.) The illustrations are of ethnologic interest.

Foy (W.) Ueber alte Bronzetrommeln aus Südostasien. (Mitt. d. Anthr. Ges. in Wien, 1903, XXXIII, 390–409.) Discusses types of southeastern Asiatic bronze drums, with particular reference to F. Heger's two volume work *Alte Metalltrommeln aus Südostasien* (Leipzig, 1902). Foy does not agree with Heger's classification and looks to the Kambuja-desa as the home of the oldest type. See *van Hoëvell, Schmeltz, von Rosthorn.*

Ghosal (*Mrs* J.) The Taj Mahal, India. (Rec. of Past, Wash., 1904, III, 47–49, 2 figs.) Brief general description of the "crown of the world," and wonder of Agra.

Gray (J.) Measurements of the coronation contingent. (Man, Lond., 1903, 65–70, 2 figs., tables.) Gives results of measurements (stature, length, and breadth of head) of 266 members of the Indian coronation contingent, representing races of the N. W. frontier, great plain (Aryan), Himalayan, eastern Deccan, western and central Deccan. The resemblance of the Himalayan (Gurka, etc.) and Tamil heads leads the author to think that the Aryan invasion was wedge-like. Influence of Aryan on Dravidian and vice versa is seen in headform.

Hartland (E. S.) Two Japanese "Boku-to," or emblems of the medical profession. (Ibid., 81–82, 1 pl.) Describes briefly the *boku-to*, or wooden swords, which doctors as pacific gentlemen used to wear — are not common now.

Hughes-Buller (R.) Notes on some tribes of Baluchistan. (Ibid., 119.) The tribes mentioned are Afghans (whose old home is on the slopes of the Takht-e-Suleman), Baluch, Brahuis, Jats and Jāts (one camelmen, the other cultivators), Loris of two kinds, Méds, etc. The author observes that he has recently obtained "a copy of the book on which the religion of the Dakis or Zikris is founded."

Leder (H.) Ueber den Buddhismus in Tibet. (Stzgb. d. Anthr. Ges. in Wien, 1903, 95–98.) Treats of origin and development of Buddhism in Tibet, — nine-tenths of all modern Buddhists have had their religion more or less shaped for them in Tibet, particularly by the monk Tsonkhapa (XVI. century). The spread of Buddhism in China is considered. There priesthood, temple and sculpture go back to Buddhistic influences.

Müller (F. W. K.) Ethnologische Objekte aus Japan. (Z. f. Ethn., Berlin, 1904, XXXVI, 144–145.) Lists, with brief descriptions, 26 objects (images, pottery, models of boats, ornaments, stone implements, etc.) presented to the Berlin Museum für Völkerkunde, and four others purchased.

Myres (J. L.) An archaic bronze tripod from southern Persia. (Man, Lond., 1903, 39–40, 1 fig.) Describes a specimen, "reminiscent of the bronze age technique," and post-Achæmenid in origin through bearing traces of pre-Achæmenid symbolism.

Oppert (G.) Buddha und die Frauen. (Globus, Brnschwg., 1904, LXXXIV, 357–358.) Critical résumé of M. Schreiber's *Buddha und die Frauen* (Tübingen, 1903). In order to reach the dignity of a Buddha, woman, a lower being, must be born again as a man. Buddhism has a lower ideal of woman by far than the Old Testament.

Quick (R.) Diya-holmana, or Singhalese hydraulic scare crow. (Man, Lond., 1903, 136–137, 2 figs.) Describes briefly an ingenious and effective hydraulic noise-making scare crow from Kandy, Ceylon.

Read (C. H.) Note on a collection of gold objects found in Sarawak, in the possession of His Highness the Rajah of Sarawak. (Man, Lond., 1903, 4–6, 8 figs.) Describes briefly inscribed and uninscribed finger-rings, ear ornaments,

neck-chain, penannular rings, pendants, beads, etc. Most of these objects are of Javanese origin.

Redlich (R.) Vom Drachen zu Babel. (Globus, Brnschwg., 1903, LXXXIV, 364–371, 384–388, 6 figs.) Treats of the Babylonian Zodiac with which is connected the ancient Greek astrology, the dragon and his eleven helpers, the pandemonium of hell, orient and occident, death and redemption. The dragon of Istartor is the primeval water snake Tiamat, and represents the changing year. its relation to Mithraism and Christianity is briefly discussed.

von Rosthorn (A.) Ueber südchinesische Bronzepauken. (Stzgb. d. Anthr. Ges. in Wien, 1903, 107–110.) Résumés the studies of Hsie Ch'i-k'un, who in his *Yüe-hsi chin*, *shih-lüe* (1801), treated of the bronze kettle-drums of the province of Kwangsi of which he was governor. Kwangsi and Yunnan are to be looked upon (with de Groot) as the home of these drums. See *van Hoëvell* (Indonesia), *Foy* (Asia), *Schmeltz* (Indonesia).

White (G. E.) The cavate dwellings of Cappadocia. (Rec. of Past, Wash., 1904, III, 67–73, 7 figs.) These cavate dwellings "represent the Christian religion, the Greek language and the Byzantine government." Some may have been in their beginning primitive, but most of them seem to have been completed and occupied by the early monks of the orthodox Eastern Church. The frescoes represent Bible and other religious scenes. Many forms of the cross occur. The position of the thumb in figures making the sign of the cross also varies.

Winter (A. C.) Die Mondmythe der Jakuten. (Globus, Brnschwg., 1903, LXXXIV, 383–384.) Gives, after Owtschinnikow, the (German) texts of two brief myths (one an amplification of the other) of the metamorphosis of an orphan maiden into the maiden in the moon from the Yakuts. Any one can see her with her shoulder-yoke and pails of water.

INDONESIA, AUSTRALASIA, POLYNESIA, ETC.

Alsberg (M.) Die ältesten Spuren des Menschen in Australien. (Ibid., 1904, LXXXV, 108–112, 1 fig.) The author discusses the Warrnambool stone with human (?) impress, the artefacts of Buninyong, the human teeth of the Wellington Caves (N. S. W.), etc., considering the last "indubitable evidence for the existence of man in Australia, either during the later Tertiary or during the transition between that period and the diluvium." The Warrnambool stone may also be genuine. Dr Alsberg also thinks possible the existence in the 17th century even of a dwarf race ("Mullas") in Australia.

Balfour (H.) On the method employed by the natives of N. W. Australia in the manufacture of glass spear-heads. (Man, Lond., 1903, 65, 1 pl.) Describes use of water-worn pebble and piece of bone in breaking off and flaking glass (from bottles, telegraph insulators, etc.) by Australian natives. There is a striking contrast between the simplicity of the tools and the effectiveness of the results.

Breitenstein (H.) Die Malaien auf Sumatra. (Stzgb. d. Anthr. Ges. in Wien, 1903, 114–123.) Treats briefly of the Malays in general (physical characters, feelings and their expression, animism and Islam, clothing and ornament, *sirih*-chewing, weapons, dwellings) and in particular the Malays of Menangkabau, the Achinese, the Battak, the Lampongs, the Nias, Enganese, etc. The Menangkabau Malays call Alexander the Great, Iskander Dzul Karnaem, their progenitor. Under their official Islam lies the old heathen animism. The coast Achinese have mixed their blood much with the Dutch. Their metal art is noteworthy; also their oral poetry. The culture of the Battaks is relatively high. The Lampongs seem more kin to the Sandanese.

Codrington (R. H.) On the stability of unwritten languages. (Man, Lond., 1903, 25–26.) From comparison of the Spanish data of 1567 concerning the languages of the natives of the Solomon islands and the missionary data of 1863–1871, the author concludes that "so far, then, as a short vocabulary is a test, it is plain that the Solomon Islands' languages have not undergone much change in 300 years." The present distribution of the dialects confirms this view.

Doherty (D. H.) Paper on the conditions in the Philippines. (58th Congr., 2d Sess. Senate Doc. No. 170, pp. 1–

20.) Gives results of three months' travel and study in the Philippines. Treats of economic, education, religion, race, character, capability, aspirations, public morality, administration of law, political problem. Author concludes that, while the Filipino possesses faults and vices, "he averages up, if not as high as the Anglo-Saxon, at least as high as the majority of civilized races." Practically all the Filipinos desire independence, and a formal statement by the United States is needed.

Edge-Partington (J.) Notes on the weapons of the Dalleburia tribe, Queensland, lately presented to the British Museum by Mr Robert Christison. (Man, Lond., 1903, 37–38). Describes wooden clubs, spears, wommera, boomerangs, stone tomahawks and daggers. In close conflict "a black fought with a *bibboo* (stone dagger) in each hand with a reserve one between his teeth."

—— Maori scroll-patterns. (Ibid., 40–41.) Résumés article by E. Tregear in the *Journal of the Polynesian Society*, vol. x., on the origin of these patterns from a lizard-form.

—— Food trough from Rubiana, New Georgia. (Ibid., 161–162, 1 pl.) Describes carved wooden food trough from the head-hunters of the Rubiana lagoon. Used for cannibal feasts.

—— A New Zealand flageolet. (Ibid., 186, 1 fig.) Describes briefly a *putorino*, or Maori wooden flute, now of rare occurrence.

Finsch (O.) Papua-Töpferei. Aus dem Wiegenalter der Keramik. (Globus, Brnschwg., 1903, LXXXIV, 329–334, 5 figs.) Describes raw material, treatment, various stages of manufacture (water-pots, cooking vessels, etc.), firing, ornamentation (with bamboo stick), trade, at the emporiums of Port Moresby and Tschas in New Guinea. Pottery is here woman's work and the pottery trade demands peace for a time at least. The author holds that the prehistoric pottery of Europe was made by women.

Hazen (G. A. J.) Eine "wajangbeber" Vorstellung in Jogjakarta. (Int. A. f. Ethnogr., Leiden, 1903, XVII, 128–135, 2 pl.) Brief account of a representation, in September, 1902, at Jogjakarta, in Java, of the only *wajang beber*, or picture-play current in that region — the illustrations are photographic. The *wajang beber* was once well known over all Java, but for more than a century it has been subordinate to other *wajang*. In this distant corner of Jogjakarta the *wajang beber* has been preserved in an ancient and primitive form.

van Hoëvell (*Baron* G. W. W. C.) Mittellungen über die Kesseltrommel zu Bontobangun, Insel Saleyer. (Ibid., 155–157, 2 pl., 2 figs.) New description of the kettle-drum dug up on the island of Saleyer in 1861, — the surface has a 16-rayed not a 24-rayed star. These drums are probably of Annamese or south Chinese origin. See *Schmeltz*.

Kerplus (*Dr*) Ueber ein Australiergehirn nebst Bemerkungen über einige Negergehirn. (Oberst. Arbeiten, IX, 18 ff.) Description of brain of Australian aborigine (weight, est., 1368 gr.). Only departure from normal type of convolution in right occipital. Author thinks brain approaches simian type.

Krämer (A) Weschelbeziehungen ethnographischer und geographischer Forschung, nebst einigen Bemerkungen zur Kartographie der Südsee. (Globus, Brnschwg., 1903, LXXXIV, 362–364.) Replies to criticisms of his recent work *Die Samoainseln*. Notes importance of knowledge of situations of native villages, their names (Stieler's atlas has many incorrect), tribal appellations, etc.

Mathews (R. H.) Das Kümbainggeri, eine Eingeborenensprache von Neu-Süd-Wales. (Mitt. d. Anthr. Ges. in Wien, 1903, XXXIII, 321–328.) Phonetics, grammatical sketch, vocabulary of 300 words. The Kümbainggeri possess important and imposing initiation ceremonies and a secret language in connection therewith.

—— Language, organization and initiation ceremonies of the Kogai tribes, Queensland. (Z. f. Ethn., Berlin, 1904, XXXVI, 28–39.) Grammatical sketch, vocabulary of 335 words, with brief notes on mystic language taught novitiates in the bush, phratries, and *bora* or puberty ceremony.

Myres (J. L.) On an ornament of unknown use and a quartzite knife from Moreton bay, Queensland. (Man, Lond., 1903, 33, 1 pl.) The ornament, probably a charm, consists of eight small skin bags, possibly *scrota* of animals.

Rascher (M.) Eine Reise quer durch die Gazelle-Halbinsel, Neupommern. (Globus, Brnschwg., 1904, LXXXV, 136–140.) Contains notes on the south-eastern Bainings, a people with a great *wanderlust*.

Reed (W. A.) The Negritos of the Philippines. (So. Wkmn., Hampton, 1904, XXIII, 272–279, 5 figs.) Brief account of names, physical characters, clothing and ornament, fire-making (by rubbing sticks, in less than a minute), weapons, food, agriculture (in Zambales), hunting, sickness, marriage (polygamy permitted), music and dancing. The number of Negritos is "probably 20,000," the most of whom are in Luzon. They do not bathe (it would "make them more susceptible to cold") and suffer from skin diseases. They smoke with the lighted end of the cigar in the mouth. Spirits are "appeased." Their morals are better than those of the Filipinos.

Schmeltz (J. D. E.) Einige vergleichende Bemerkungen über die Kesseltrommel von Saleyer. (Int. A. f. Ethnogr., Leiden, 1903, XVI, 158–161.) Discussion and comparison of Heger's, Ribbe's and van Hoëvell's accounts and descriptions, drawings, and plates of the Saleyer drum. Some points about the ornamentation, age, etc., of this relic are still doubtful. See *van Hoëvell*.

Seidel (H.) Palau und de Karolinen auf den deutschen Admiralitätskarten von 1903. (Globus, Brnschwg., 1904, LXXXV, 11–15.) Critique of the latest German admiralty maps of the Pelew and Caroline islands.

Thilenius (G.) Dr A. Krämer's Werk "Die Samoa-Inseln." (Ibid., 53–59, 6 figs.) Résumés the ethnological contents (physical characters, clothing and ornament, birth, childhood, puberty, daily life, industries, cultivation, medicine, dwellings, boat-building, colors and dyes, song and dance, war, etc.) of Krämer's *Die Samoa-Inseln* (Stuttgart, 2 vols., 1902–1903), a very valuable and interesting work. The political constitution of Samoa, Dr Krämer thinks, is rather recent, *i. e.*, about 500 years old. A unity of Samoan mythology exists.

AMERICA

Ambrosetti (J. B.) Antigüedad del Nuevo Mundo. (Rev. de Der., Hist. y Letr., Buenos Aires, 1903, extr., pp. 1–16.) Critique of Dr Latouche-Treville's article *L'Antiquité du Nouveau Monde L'Amérique avant Colomb*, published in the *Ancienne Revue des Revues*, vol. XLIV. Dr Ambrosetti résumés American ethnological and archeological investigations from 1836 to the present time to show the injustice of Dr Latouche-Treville's statements and his very limited knowledge of his subject.

—— Cabeza humana preparada según el procedimiento de los Indios Jivaros, del Ecuador. (An. d. Mus. Nac. de Buenos Aires, 1903, IX, 519–523, 1 pl.) Describes the head of a *chino*, a Christian peon, not a trophy of war, but prepared by the Jivaros, after their ancient manner of preservation, for commercial purposes. The zeal of collectors had stimulated this traffic. In the Museo de la Plata there are two fine specimens of Indian heads treated in the Jivaro fashion.

Bandelier (A. F.) On the relative antiquity of ancient Peruvian burials. (Bull. Am. Mus. Nat. Hist., N. Y., 1904, XX, 217–226.) From documentary and archeological evidence, etc., the author shows that long after the coming of the Spaniards the Indians not only buried their dead, as often as they could, according to primitive custom, but exhumed and reburied in like manner those of their fellows who had been buried with Christian rites. As late as the middle of the seventeenth century the cloth over the bodies and the vessels buried with them were periodically renewed. Artificial deformation of skulls continued almost as long. Hence many burials that seem so are not really pre-conquistorial, though the manner of burial is.

Baum (H. M.) Pending legislation for the protection of antiquities on the public domain. (Rec. of Past, Wash., 1904, III, 99–116, 143–154, 3 figs.) Gives copy of H. R. Bill 13349, 58th Congress, 2d session, with expressions of opinion from educational and scientific institutions, learned societies, etc. Also account of proceedings in Congress.

Breton (Adele C.) Some Mexican portrait clay figures. (Man, Lond., 1903, 130–131, 6 figs.) Describes mound near Etzatlan (Jalisco) and the clay figures and other objects found therein. These

portrait-figures seem to have been placed round a tumulus, "probably representing members of the deceased's household."

Bushnell (D. I.) The Cahokia and surrounding mound groups. (Papers Peab. Mus., Cambridge, 1904, III, 1–20, 5 pl., map, 7 figs.) Author's description and illustrations are intended to show the mounds as they were in pre-European times and as they are now. The Cahokia mound is "the largest prehistoric monument of the Mississippi valley." The mounds in Forest Park, St Louis, and a group near Long Lake, Illinois, also described. A catlinite pipe from a mound near Cahokia, obtained in 1879, is a very interesting specimen. The Cahokia and Tamaroa Indians inhabited part of this region, but it cannot be said that these mounds were their work.

Dorsey (G. A.) Traditions of the Osage. (Field Col. Mus., Anthr. Ser., Chicago, 1904, VII, 1–60.) Gives English texts (with abstracts) of forty animal tales, hero-legends and other stories, obtained by the author in 1901–1903 from the Osage of N. E. Oklahoma. The chief figures are buffalo, rabbit, wolf, skunk, raccoon, turtle, mountain-lion, grasshopper, etc. The boy-hero also appears. Other figures are the rolling head, the water baby, the old woman. The story of "the rabbit and the picture" is a varient of the "tar baby" type. In another tale a black man is being washed white.

Duty (The) of the United States government to investigate the ethnology and archeology of the aboriginal American races. (Rec. of Past, Wash., 1904, III, 19–28.) Treats of work of Bureau of American Ethnology, past and prospective, and the labors of Major Powell.

Fewkes (J. W.) A cluster of Arizona ruins which should be preserved. (Ibid., 3–10, 14 figs.) Describes the Pueblo ruins near the black falls on Little Colorado river, of Hopi origin. See *American Anthropologist*, N. S. vol. II, 1900.

Flom (G. F.) The gender of English loan-nouns in Norse dialects in America: a contribution to the study of the development of grammatical gender. (J. Engl. & Germ. Philol., Bloomington, Ind., 1903, V, repr., pp. 1–31.) Discusses theories of origin of grammatical gender (author accepts the pronominal theory of Wheeler) and particularly the gender of 475 English loan-nouns in the Norse dialects as spoken and written in America, and the causes which have brought about the preponderance of masculines. Dr Flom thinks that the Jutish dialect of Danish and modern English illustrate the origin and method of denoting gender in the demonstrative pronoun alone.

Förstemann (E.) Ueber die Lage der Ahaus bei den Mayas. (Z. f. Ethn., Berlin, 1904, XXXVI, 138–141.) Agrees with Seler as to equivalence of Ahau and Katun, but doubts whether such equivalence holds for all time and for the whole Maya region.

Gibbs (M.) Prehistoric hammers of Michigan. (Atl. Slope Nat., Narberth, Pa., 1903, I, 34.) Notes that "sledges," while common north of the 46th parallel, are absent from many sections of southern Michigan.

Hall (R. D.) Boys: Indian and White. (So. Wkmn., Hampton, 1903, XXIII, 269–272.) Indian boy is more tractable, fears authority and "outsiders" more, has stronger propensity to imitate, is a close observer, more susceptible to influences of his environment, has absolute confidence in those in authority (hence jokes are dangerous), does not so easily submit to control, has greater aversion to force, is rather wilful than obstinate, lacks determination, has much stronger imagination and less intellectual capacity, is fonder of narcotics, less given to secret vices, more gregarious.

Hamy (E. T.) Les voyages du naturaliste Ch. Alex. Lesueur dans l'Amérique du Nord, 1815–1837. (J. de la Soc. d. Amér. de Paris, 1904, V, 1–111, 17 pl., 14 figs.) This well-edited account, with bibliography, of Lesueur's travels contains notes on mounds at New Harmony (65–68), the bone-banks of the Wabash (74–76), etc.

Hauthal (*Hr*) Die Bedeutung der Funde in der Grypotheriumhöhle bei Ultima Esperanza (Südwestpatagonien) in anthropologischer Beziehung. (Z. f. Ethn., Berlin, 1904, XXXVI, 119–134.) Author describes the cave and his investigations, discusses the views of Nordenskiöld, Nehring, etc., and expresses the opinion that the deposit of excreta and the deposit containing human relics occurred

contemporaneously. All the data point, he thinks, to long-continued contemporaneous dwelling of man and the grypotherium in this cave — the animal in a semi-domesticated condition, perhaps. An interesting discussion followed this paper.

Hepner (H. E.) The Huichol Indians of Mexico. (So. Wkmn., Hampton, 1904, XXIII, 280–286, 5 figs.) Based on Lumholtz's works. Notes on habitat, physical characters, dress and ornament, agriculture, "rain making," mythology, ceremonies, hunting.

Herrmann (W.) Auftreten des Mongolenfleckes bei den Maya-Indianern. (Z. f. Ethn., Berlin, 1904, XXXVI, 137.) Brief notice of Starr's discovery. See *American Anthropologist*, 1903, N. S., V, 578.

von Ihering (H.) El hombre prehistorico del Brasil. (Historia, Buenos Aires, 1903, repr., pp. 1–12, 1 pl.) Treats of man of the caverns of Minas Geraës and of the *sambaquis* — of the physical anthropology of the mound-builders of the island of Marajó nothing is known. The crania of Lagôa Santa are like those of the modern Botocudos. The cranium of the *sambaqui* of Cidreira, which Koseritz described in 1874, belongs to the same race. Dr von Ihering holds that in southern Brazil, in prehistoric times, as today, both brachycephalic and dolichocephalic types were represented. In *The Anthropology of the State of S. Paulo, Brazil* (S. Paulo, 1904, pp. 22), written for the St. Louis Exposition, Dr von Ihering treats briefly of the existing tribes (Guaranís, Cayuás, Caingangs, Chavantes), historical traditions, archeology, etc. In the prehistoric period there "already existed in the south of Brazil, two families of Indians, whose descendants are even now found in the country." The author believes in the contemporaneity of man and the extinct mammals of Lagôa Santa.

Joyce (T. A.) On a silver vase from an ancient Peruvian burial ground, now in the British Museum. (Man, Lond., 1903, 99–100, 1 fig.) Brief description of human head vase from a Peruvian burial ground, "brought from the Pacific by Capt. Henry Byam-Martin, 1848." Squier mentions this type of vase and another specimen is in the Trocadero Museum, Paris.

—— Two ancient stone masks from Mexico. (Ibid., 113–114, 1 pl.) Brief notes on a mask belonging to the Christy collection and another also in the British Museum. The first is probably from Oaxaca, the other from some Mixtec locality.

ten Kate (H.) Neueste Publikationen von R. Lehmann-Nitsche. (Globus, Brnschwg., 1904, LXXXV, 96.) Résumés articles on *Tipos de cráneos y cráneos de razas* and *Hallazgos antropológicos de la caverna Markatsch Aiken*. See *American Anthropologist*, 1904, N. S., VI, 185–188.

Krebs (W.) Das Deutschtum in den Vereinigten Staaten von Nordamerika. (Ibid., 143–144.) Résumés a recent work by Professor Julius Goebel, on the Germans and German influence in the United States.

Kroeber (A. L.) The Arapaho. III. Ceremonial organization. (Bull. Am. Mus. Nat. Hist., N. Y., 1904, XVIII, 151–230, 5 pl., 25 figs.) This valuable monograph describes, from personal observation, the *bäyoa^{n}wu* of the Arapaho, which "consists of a form of the widely spread sun-dance and of a series of men's ceremonies graded by age, and a single but analogous ceremony for women." The sun dance and the age-ceremonies have fundamental differences as well as certain similarities of detail. Membership is limited only by age, and the basis of organization is tribal, not supernatural. The old war-life of the plains is reflected in these ceremonies.

Little (C. J.) The Chickasawaba mound, Mississippi valley. (Rec. of Past, Wash., 1904, III, 117–122, 4 figs.) Brief description of mound on Pemiscot bayou, Arkansas, and contents (graves, skeletons, pottery, images, pipes, pieces of shell, cooking vessels, water jars, etc.). No implements of war, except two buckhorn spearpoints, were discovered. Some of the objects have pictographs on them. The skulls are "extremely large," with flat frontal bones.

Lloyd (J. U.) When did the American mammoth and mastodon become extinct? (Ibid., 43–46.) Author was reared close to the celebrated Kentucky Big Bone Springs valley and argues for the credibility of the Indian legend "about that section of Kentucky, a short time

before the white man entered the land, a herd of those mighty beasts was to be found."

Mills (W. C.) Explorations of the Gartner mound and village site. (Ohio Arch. & Hist. Quart., 1904, XIII, repr. 65 pp., 70 figs.) Detailed account of the exploration of an important mound and village site in Ross county, Ohio, and the remains (skeletons, animal bones, refuse heaps of ashes and bivalves, stone and bone implements, shell and bone ornaments, pottery, etc.). Evidences of cremation and food-cooking are thought to be present. A good article. See *American Anthropologist*, 1904, N. S. VI, 341–342.

Muller (H. P. N.) The Mitla ruins and the Mexican natives. (Hand. v. d. Nederl. Anthr. Ver., Den Haag, 1904, I, 14–25, 3 figs.) Treats of the four groups of ruins, which the author attributes to the Mayas, "who have given the peculiar civilization by means of the Zapotecs to the Aztecs and the other Nahua tribes." The stone heads of serpents, animals, human beings, etc., are perhaps Nahuan. Dr Muller was impressed by "the occurrence of strong Japanese and Egyptian types (physical)" in northern and central Mexico, and also by the resemblance of figures in drawings and sculptors of natives in the whole of Mexico to Buddha-ornaments in southern and eastern Asia.

Peabody (C.) Exploration of mounds, Coahoma county, Mississippi. (Papers Peab. Mus. Amer. Arch. and Eth., Cambridge, 1904, III, 23–63, 17 pl., tables.) Treats of Dorr mound, Edwards mound (158 burials), etc., objects found, — the human bones are considered by Dr W. C. Farabee on pp. 52–54. The skulls seem to resemble those from the burial mounds in the St Francis river region of Arkansas, especially in artificial deformation. Both full-length and "bundle" burials occurred. Some of the pottery decorations suggest Mycenæ and the animal forms are interesting. Chipped and polished stone implements, bone articles, beads of several sorts, etc., were found. The finding of the turquoise pendant in the Dorr mound suggests trade relations (through the white man in early times) with the Pueblos. The presence in the Edwards mound of beads of glass and brass, a brass bell and other brass objects, indicate white contact. This is "a typical Indian mound of a later period placed within a typical village site." The surface finds are rich. The greater number of "bundle" burials are below "critical level," most of the pottery and manufactured articles above it. There is a paucity of worked shell. These mounds date probably from after 1541.

—— Notes on Negro music. (So. Wkmn., Hampton, 1904, XXXII, 305–309.) Reprinted from the *Journal of American Folk-Lore*.

Philippi (R. A.) Ueber die Nationalität der Südamerikaner, besonders der Chilenen. (Globus, Brnschwg., 1904, LXXXV, 126.) The northern part of Chile, during the Inca conquest, saw much intermingling of races. The handful of Spaniards who entered Chile with Almagro and Valdivia had but one woman with them. Among the officers of Valdivia was a German, named Lisperger. He married a cacique's daughter and it was said every family of prominence in Santiago had old Talagante's blood in its veins. This intermingling is still going on. Full blood Indians are becoming rarer and rarer and exist only in the interior.

Rotzell (W. E.) The smoking of red-willow bark by the American aborigines. (Atl. Slope Nat., Narberth, Pa., 1903, I, 34–35.) Cites evidence of J. A. Loring, J. R. Barton, and Dr R. W. Shufeldt, to show that American Indians (Crees, Stonies, Chippewa, Sioux) have smoked or do now smoke red-willow bark. See *American Anthropologist*, 1903, N. S., V., p. 170.

Simms (S. C.) Traditions of the Crows. (Field Col. Mus., Anthrop. Ser., 1903, II, 277–324.) Gives English versions of origin myth, 15 stories of "old man Coyote," 10 other legends (with abstracts of all), collected in 1902 from the Absahrokee Indians of Montana. The origin myth has the Algonquian diving episode. Many of the animal myths are of the Rocky Mountains cycle; some of considerable interest for the comparative folklorist. See *Am. Anthropologist*, this number, under Book Reviews.

Smith (H. I.) A costumed human figure from Tampico, Washington. (Bull. Am. Mus. Nat. Hist., N. Y., 1904, XX,

195–203, 3 pl., 3 figs.) Describes a remarkable object found in a child's grave, antedating the advent of the whites in this part of the country. The figure, carved on a piece of antler, presents in dress and ornamentation some resemblances to those of the Plains tribes as well as to paintings by Indians of the Yakima valley, antler fragments from Umatilla, a Dakota quill-flattener, etc.

—— Shell-heaps of the Lower Fraser river, British Columbia. (Rec. of Past, Wash., 1904, III, 79–90, 5 figs.) Résuméd from the author's monograph, *Shell-Heaps of the Lower Fraser River*, published by the American Museum of Natural History in 1903.

Spender (H. F.) The education of the Indians of Canada. (J. African. Soc., Lond., 1903, 425–432.) General discussion based on visit to Manitoba, with critique of Government policy. Advocates the "scattered home" system in place of the "barrack-schools," and state-control of all schools.

Voth (H. R.) The Oraibi Oáqöl ceremony. (Field Col. Mus., Anthr. Ser., 1903, VI, 1–46, 28 pl.) Well illustrated account of the nine-day ceremony of the *Oáqöl*, one of the three women's fraternities of Oraibi, the youngest and largest religious order in that pueblo, and of the preliminary rites. The native texts of many songs are given. The *Oáqöl* is celebrated every odd year (the last in 1903). The first day is of unusual importance. Any worry, sorrow, or anger disqualifies a Hopi, as a rule, from participating in a ceremony, and contentions and quarrels interfere with its efficacy.

ANTHROPOLOGIC MISCELLANEA

Anthropology and Education. — As a student and teacher of education, the writer has often been impressed by the extreme difficulty of making accessible to elementary students the data of anthropology necessary to the scientific study of education. Educational philosophy postulates a theory of cultural development in the race which is epitomized in the life-history of the individual, and on this establishes a system of practice, drawing largely on primitive culture for material for instruction and basing the course of study in the elementary school on the theory of cultural evolution.

Now, it would appear that the students of pedagogy stand ready to determine the limitations of the data of anthropology in the service of education and to make the wisest possible application thereof in educational practice. The National Society for the Scientific Study of Education was organized a few years ago. The writer, who was among the first to seek the benefits of membership in this organization, inferred the movement to be a declaration that students of education proposed to apply the methods of science to the investigation of pedagogical problems, to institute a closer study of the data of the sciences on which a science of education must be founded, in their relation to pedagogy, and to encourage scientific accuracy in the use of material furnished by the sciences in educational theory and practice. The papers brought forth by this movement have been an important contribution to the literature of pedagogy. Every student of education acknowledges their value. It may be questioned whether or not the assumption of the writer relative to the purpose of the Society was correct, for an examination of the titles presented before the Society up to date does not disclose any line of investigation undertaken which would not properly come within the domain of some previously existing department of the National Educational Association. This must not be interpreted as a criticism of the National Society for the Scientific Study of Education. It has moved along its line of least resistance. It cannot enter the province of a contributory science for original research, nor create a literature therein. It can only utilize the accepted data of such sciences in the scientific investigation of educational problems.

Now, it seems to me that scientific pedagogy must derive a more im-

portant mass of its data from the science of man than from any other, particularly from that side which we call culture history. To culture history we must go for the verification of a great body of educational theory; but an examination of a number of much-used text-books on pedagogy, produced in recent years, will hardly convince anthropologists that the data of anthropology are being correctly stated or correctly applied in pedagogy. And to primitive culture we must go for a vast amount of the material for instruction used in elementary education. Teachers are drawing continually on culture history for this material, but an examination of the matter selected, as embodied in many elementary books used in the public schools, will convince anthropologists that it is not their best nor most authentic material which is finding its way into the public schools.

The difficulty seems to lie in the existing state of anthropological science. It would be difficult to find ten anthropologists who would agree on what anthropology is on close definition. There is pressing need for a text-book on anthropology. This branch of science does not possess in its literature any great, up-to-date text-book. Some one must do for anthropology what Dana did for geology, James for psychology, Giddings for sociology.

Again, there is need for some great treasury of culture history. The student of education who is in need of facts and criticisms in Greek sculpture or ceramics, finds in Furtwængler or Overbeck great authoritative treatises. It would be a great service to education if the treasures of primitive American arts and industries, archeology, mythology, and folklore were made equally accessible, and by the same profound, critical study made available for the use of students from other fields.

In short, anthropology should enrich the course of study of every public school in the land, and the greatest line of progress now open to the science is in this direction. To this end the science needs closer definition by the masters, and its literature must be brought to a state that will place it in closer relations with education, through the schools of pedagogy, normal schools, and teachers' institutes. A joint meeting of the two national societies during the session of the American Association for the Advancement of Science might contribute to the progress of both.

EDGAR L. HEWETT.

Archeological Institute of America. — At a meeting of the Council of the Archæological Institute of America, held May 14, in New York City, the following action of interest to American archeologists was taken:

(1) A committee was created on the preservation of the remains of Indian antiquity. This committee is expected to have at least one member from each society of the Institute. The President and the Secretary of the Institute will be the chairman and the secretary of this committee. (2) The Committee on American Archeology was requested to consider and report on an enlargement of its membership, in view of the probable extension of its work, and to recommend some enterprise in its field to the council at its next meeting. (3) The chairman of the Committee on American Archeology (Mr C. P. Bowditch) was made a member *ex officio* of the executive committee. (4) The affiliated societies in the West were urged to take an active part in devising and obtaining the adoption of measures for the preservation of ancient monuments. (5) The sum of $300 was placed at the disposal of the chairman of the Committee on American Archeology for his use in procuring information with regard to the remains of Indian antiquity.

The following officers of the Institute were elected: President, Professor Seymour; Vice Presidents, Mr C. P. Bowditch, President D. C. Gilman, Mr Edward Robinson, Professor F. B. Tarbell, and President B. I. Wheeler. Professor Mitchell Carroll was elected a member of the Executive Committee, to serve for three years.

Dr Uhle's Researches in Peru. — Reports have been received from Dr Max Uhle, who sailed last November for Peru to carry on archeological explorations for the Department of Anthropology of the University of California through the generosity of Mrs Phoebe A. Hearst, and has since then excavated at the famous site of Ancon, near Lima. On his previous two years' trip for the University, Dr Uhle's chief explorations were on the coast of northern and southern Peru, in the vicinity of Trujillo and of Ica. His present excavations at Ancon were mainly at three points within the "necropolis," and on a level slope to the south, behind the modern town of Ancon. The explorations were in continuation of his previous lines of archeological investigation in Peru, as summarized in a recent paper in the *American Anthropologist* (N. S., IV, 753–759). At a point near the northern end of the enclosure forming the necropolis, not far from the lime-kilns shown on the map of Reiss and Stübel, objects of a late date down to the beginning of the Inca period, the pottery being of the Chancay type, were found. Burials excavated in the eastern part of the enclosure were generally older, of what may be called the middle periods of Peruvian culture. Excavations in the southern part of the necropolis, in the vicinity of the present Indian fishing village and the hill with large mill-stones, brought to light finds of various

age, some of the burials, as shown by their continuation under and beyond deposits of a later age of considerable depth, and by the character of the objects in the graves, being of a very early period.

The soil of the evenly sloping hillsides south of and outside the necropolis, though giving no superficial indication of being other than a natural formation, was found for a considerable area to be a refuse deposit three or four yards deep. Two trenches of some length were dug in this deposit. No mummies were found, but in the lower depths there were a few skeletons. The quantity of artifacts was small; they revealed, however, a new type of culture, evident especially in the pottery. Not a single object showing the characteristics of the ware of this peculiar culture was found at any other spot at Ancon, nor, in fact, so far as known, anywhere in Peru; and to complement this circumstance, not a specimen with the characteristics of any of the various cultures represented in the necropolis occurred in these southern hillside deposits. The age of these deposits, unless their culture should hereafter be found in association with remains of a known period, can therefore be determined only by the apparent absolute age of the finds and by the internal evidence of the objects. The style of the remains, which Dr Uhle describes as showing a certain freedom and development toward artistic greatness, approaches in some respects that of the pottery characterizing the early or "golden" period of Ica established by him on his last Peruvian trip and of which his collections for the University of California contain abundant illustration. This Ica period Dr Uhle is inclined to regard as contemporaneous with the period of Tiahuanaco or antecedent to it. The newly found Ancon ware differs, however, from the early Ica ware in being ornamented by incision instead of by painting, and on the whole represents a very distinct culture which is almost certainly of considerable antiquity.

Dr Taguchi's Brain-weight.—In response to a further inquiry concerning the brain of the Japanese anatomist, Kazuyoski Taguchi, the following communication was received from K. Yamagawa, president of the Imperial University of Tokio:

"In reply to your favor of May 9th, 1904, I am sorry to say that the figure for the weight of brain in the last information, sent to you through Miss Gardener about the postmortem examination of the late Professor Taguchi, was found to be wrong. It seems to me that the weight of his brain was put down as 1,920 instead of 1,520, which is the right figure, by mistake when it was copied from the original record. I apologize," etc.

The corrected figure places Taguchi's brain in the thirtieth place among

those of men notable in the professions, arts, and sciences, instead of in the second place, as first reported. See *American Anthropologist*, N. S., vol. v, 1903, pp. 595–596; vol. VI, 1904, p. 366.

EDWARD ANTHONY SPITZKA.

Dr Walter Hough, of the United States National Museum, has recently returned from an exploring trip in New Mexico and Arizona, bringing with him a collection of ancient pueblo, cliff, and cave material gathered principally on upper San Francisco river. Dr Hough started from Socorro, New Mexico, and crossed the country to Holbrook, Arizona, a distance of about 280 miles, visiting ruins at Magdalena, Datil, the upper Tulerosa river, Old Fort Tulerosa reserve, and near Luna, in New Mexico, and on Blue river in Arizona. One of the objects of this two months' reconnoissance was to locate and trace the lines of north and south migration into the basin of the Little Colorado and to learn more of the forebears of the people who inhabited the now-ruined pueblos explored by Dr J. Walter Fewkes and the Museum-Gates Expedition within the Colorado drainage. Much was learned during the trip regarding the distribution of several cultures. Extensive excavations were made in a group of ruins seven miles from Luna, New Mexico, on the Spur Ranch of Montague Stevens, Esq. These ruins proved to be exceedingly interesting for the reason that they occupy the margin of a fertile, enclosed valley which was once the bottom of a lake, and because they represent a rude and perhaps indigenous culture fostered in this favorable enclave. There is evidence also that an earlier culture, characterized by large, semi-subterranean, circular houses, was supplanted by that of a people who built rectangular stone pueblos. Two of the deeper excavations yielded fragmentary human bones and unchipped flint flakes in apparently undisturbed gravel, and a more extended research in this locality may furnish results of value in the study of early man in America. Numerous plans of the ruins were drawn and a fair collection obtained. A group of cliff-houses on Rita Blanca yielded, on exploration, many specimens illustrating the domestic life of their former inhabitants. A large ceremonial cave was also investigated and many ancient offerings of extreme importance were collected therefrom.

Study of Megalithic Monuments. — The greater part of the discoveries made during many years among the megalithic monuments of Morbihan, France, have proved that, although already explored, these monuments still contain archeological treasures. The excavations in the tumulus of Saint-Michel show that it contains many monuments besides

the principal crypt. It is therefore probable that other crypts are contained in the numerous tumuli of the Carnac region, thus rendering their complete scientific exploration of high importance. A committee on excavations has been formed at Carnac for this purpose, under the distinguished direction of M. d'Ault du Mesnil, president of the Commission of Megalithic Monuments of France and of Algeria, to which all are invited to send an annual contribution. Signatures and subscriptions are received at the Musée James Miln, Carnac (Morbihan), or by M. d'Ault du Mesnil, 228, Rue du Faubourg Saint-Honoré, Paris.

Congenital Digital Malformation in Negroes. — Dr D. S. Lamb, for Dr H. M. Smith, recently read before the Anthropological Society of Washington a brief paper on congenital digital malformation in a family of Virginia negroes. The malformation extended through three generations and the affected persons showed no other anatomical peculiarities.

The father had but two phalanges on each finger of each hand; the thumbs were normal, the nature of the nails is said to have been the same as in the next case. There was no indication that a similar malformation occurred in his parents or other relatives.

Second Generation: This man had five children, the eldest of whom was the only one to show malformation, which was just like that of her father, the thumbs being normal. There was a small nail on each index finger, but none on the others. This woman had nine children, six girls and three boys, of whom the six elder ones were malformed, but the three younger children were not.

Third Generation: In this generation six persons were affected. First, a girl; both hands; one phalanx absent from each finger; terminal phalanx of ring fingers rudimentary; ends of fingers clubbed; thumbs normal; small nails on index and middle fingers. Second, a girl; both hands; one phalanx absent from each finger; terminal phalanx of ring, middle, and little fingers rudimentary; thumbs normal; small nail on each index finger. Third, a girl; both hands; one phalanx absent from each finger; right hand rudimentary; terminal phalanx of index and little finger; thumbs normal; small nails on index and middle fingers of each hand; on ring finger of left the nail was shaped like a carpet-tack; right index, and middle and left index, middle, and ring fingers abnormally broad. Fourth and fifth, boys, and sixth, a girl, had hands like the third case except for slight differences in the nails.

Fourth Generation: Thus far the children of the fourth generation do not show malformation of fingers.

Dr Smith personally verified the information herein given in three of the cases and received a written statement in regard to the remaining five.

In discussing the paper Dr Lamb mentioned, as bearing on the hereditary transmission of malformations, that he knew of a woman who had what dentists call "underhung jaw," that is, the lower front teeth projected in front of the upper front teeth, instead of the reverse, which is normal. This woman's parents, as well as all of her brothers and sisters, had the same malformation.

Peabody Museum Researches. — The report of the operations of the Peabody Museum of American Archæology and Ethnology at Cambridge for the year 1902–03, submitted by its curator, Prof. F. W. Putnam, has recently been published. The report shows the usual increase in the collections of archeological and ethnological materials and in the facilities for displaying them, as well as in the usefulness of the Museum along the lines for which it was founded. Work in the field has been conducted by Mr Theobert Maler and Mr A. M. Tozzer in Central America and Mexico, Mr E. H. Thompson in Yucatan, Messrs M. R. Harrington and A. S. Parker in New York state, and Mr D. I. Bushnell Jr. in Missouri. The results of Mr Maler's latest explorations in Usumacinta valley were published, it will be recalled, in part III of volume II of the *Memoirs* of the Museum in 1903. Mr Thompson's archeological studies at Xul, Tzulá, and Chacmultun will be embodied in a report to be published by the Museum during the present year, accompanied with illustrations in color of several mural paintings. Mr Tozzer's researches have been in connection with the Maya-Quiche language as spoken by the Lacandones of Chiapas and the upper Usumacinta valley, whose dialect varies but slightly from that of the Mayas, while in their life and customs Mr Tozzer finds in the latter a striking instance of the effect of Spanish contact. Under the auspices of the Museum a grave, attributed to the Erie tribe, was explored by Messrs Harrington and Parker on the Cattaraugus reservation, New York, and several skeletons, a fine lot of pottery vessels, also characteristic pipes, stone and bone implements, ornaments, and many other objects were recovered. Some of the results of Mr Bushnell's excavations in Missouri were presented in a paper published in the last number of the *Anthropologist*. Professor Putnam acknowledges many gifts to the Museum during the year, and pays generous tribute to the work of the late Frank Russell and Howard B. Wilson, notices of whom appeared in these pages at the time of their unfortunate deaths.

Hopi Pottery Fired with Coal. — That the pottery of the Hopi Indians of Arizona, in prehistoric and probably early historic times, was fired by means of coal, has already been pointed out by Doctor Fewkes, who says: "There is evidence that the ancient people of Tusayan used coal for fuel, seams of which underlie their pueblos, but in course of time this substance has fallen into disuse, so that it is unknown as a fuel today. . . . This change probably took place at the introduction of sheep, whose dried droppings are now used in firing pottery." (Smithsonian Report for 1895, p. 580; see also p. 574." The evidence to which Doctor Fewkes refers is doubtless the occurrence of cinder heaps on the rocky ledges about the East Mesa, especially below Walpi pueblo, which could scarcely have originated in any other way. To this may be added the testimony of the pottery itself, for the ancient ware is far better in quality than that made during more recent times, although we may assume that the same materials have always been available, and the same methods, save that of the firing, practiced. In further support of the evidence that coal was used as fuel by the Hopi, I wish to direct attention to a statement by Fray Agustin de Vetancurt, in his *Cronica de la Provincia del Santo Evangelio de México*, 1697 (reprinted, Mexico, 1871, p. 321). Speaking of the mission of San Bernardino de Ahuatobi (Awatobi) among the Hopi, Fray Agustin says: "Hay piedra pomez en cantidad, y piedras que sirven de carbon; aunque el humo es nocivo por fuerte." ("There is pumice stone in quantity, and stones which serve for coal, but the smoke is noxious in its strength.") Bituminous coal is still found in quantity in the Hopi country, and steps have been taken in recent years to develop the deposits. It is reasonable to suppose that the Indians would soon have discovered its adaptability in pottery firing, especially as they had nothing, so far as known, before the coming of the Spaniards and the introduction of flocks and herds, that could have served their purpose so well.

It may be added that the use of coal by the Pueblos was apparently confined to pottery firing, and was not used for heating or for cooking. There was good reason for this. In pre-Spanish times the pueblo dwellings were not provided with chimneys, the hatchway in the roof serving the double purpose of entrance and smoke-hole, hence the use of coal, with its noxious fumes, would have been impracticable in such ill-ventilated houses, but could readily have been employed out-doors, where pottery is always fired. So far as I am aware, no coal ashes have ever been found in the fire-pits of pueblo dwellings.

It is interesting also to note that no Coal clan exists among any of

the Pueblo tribes, but Firewood clans are to be found among the Hopi, San Juan, Santa Clara, and San Ildefonso Indians, and the Hano people once had a Firewood clan also. F. W. HODGE.

Professor Frederick Starr, of the University of Chicago, has wisely taken advantage of the facilities offered by the Louisiana Purchase Exposition at St Louis, with its splendid ethnological collections and gatherings of primitive peoples, by forming a Louisiana Purchase Exposition class in ethnology. The work of the class began on September 1. Students in the University of Chicago, desirous of receiving credit for the course, presented their matriculation cards at the time of registering. Students from other institutions or outsiders, taking the course and passing the examination, will be given a certificate to that effect. For the full course the fee was $12.00; for full work for one week, $5.00; for the exercises of one day, $1.00; for single exercises, 35 or 50 cents. Following is a calendar of the lectures, visits, and demonstrations:

CALENDAR OF 9:00 AND 10:00 O'CLOCK LECTURES AND 11:00 O'CLOCK VISITS AND DEMONSTRATIONS.

Sept.	9:00 a. m.	10:00 a. m.	11:00 a. m.
1	The Tribes of the N. W. Coast.	Social Organization: Totem Poles.	Kwakiutl and Clahoquaht.
2	Southern Athapascans.	The Study of Games.	Navaho and Apache.
3	The Pueblos of Today.	Religion of the Pueblos.	Pueblos; also Pimas and Maricopas.
5	The Cliff Dwellers.	Archeological Theories.	The Cliff Dwellers. (Pike.)
6	The Sioux and Relatives.	Sign Language and Gesturing.	The Indian Congress. (Pike.)
7	The Cocopas and Desert Tribes.	Bodily Modifications.	The Cocopa Settlement.
8	South American Indians.	The Origin of the American Indian.	The Patagonians.
9	The Eskimo.	Adaptation to Environment.	Eskimo Village. (Pike.)
10	Pygmy Problems.	Cannibalism.	Batwa and other Africans.
12	Ainu of Japan.	Physical Characters of Race.	Ainu Group.
13	The Negritos.	Fire-making.	The Negrito Village.
14	The Igorots.	Head-hunting and Kindred Customs.	The Igorot Village.
15	The Visayans and Tagals.	The Peoples of the Philippines.	The Visayan Village.
16	The Moros.	Music and Musical Instruments.	The Moro Villages.
17	The Japanese.	Art Industries.	Japanese Commission Grounds; Varied Industries Exhibit.
19	The Chinese.	The Evolution of Writing.	Varied Industries Exhibit.
20	The Aztecs of Ancient Mexico.	Native American Sculpture and Architecture.	U. S. National Museum Exhibit.
21	The Indians of Southern Mexico.	The Exposition's Department of Anthropology.	The Anthropological Building.

The Department of Anthropology of the University of California, instituted in 1901 in order to organize and coördinate the numerous archeological and ethnological researches supported in behalf of the University by Mrs Phœbe A. Hearst, is under the direction of an executive committee consisting of Prof. F. W. Putnam, chairman ; Prof. J. C. Merriam, secretary ; President Wheeler, and Mrs Hearst. The Department is devoted primarily to research and the formation of a museum. The courses of instruction which follow are offered chiefly as training for anthropologists ; in addition, public lectures on anthropological subjects are given from time to time.

General Introduction to Anthropology: The Indians of California, Dr Kroeber. Athapascans of the Pacific Coast, Mr P. E. Goddard. Geological History of Man, Assistant Professor Merriam. North American Ethnology, Dr Kroeber. Experimental Phonetics, Mr Goddard. North American Languages, Dr Kroeber. North American Archeology, Dr Kroeber. The History of Art in Greece, Dr Emerson. Seminary Exercises in Classical Archeology, Dr Emerson. Advanced Work in Ethnology, Dr Kroeber. Advanced Work in Primitive Languages, Dr Kroeber.

Full information will be furnished prospective anthropologists and others on application to the Secretary of the Department at Berkeley, California.

Mr Volney W. Foster, of Chicago, who died suddenly in that city on August 15th, was a delegate from the United States to the International Conference of American Republics held at the City of Mexico in 1901–02. As hitherto announced in these pages, the Conference recommended the appointment of an International Archeological Commission, of which Mr Foster became a member on the part of the United States through appointment by the President, and later a representative on behalf of the government of Peru.

At the Cambridge Meeting of the British Association for the Advancement of Science, which adjourned August 24, the following grants were made for anthropological research: Age of stone circles, £40 ; Anthropometric investigations, £10 ; Excavations on Roman sites in Great Britain, £10 ; Excavations in Crete, £75 and unexpended balance ; Anthropometry of native Egyptian troops, £10 ; Glastonbury lake village, balance in hand ; Anthropological teaching, balance in hand.

Dr Friedrich Ratzel, professor of geography in the University of Leipzig, who died August 9th, will be remembered by students of Ameri-

can ethnology chiefly by his authorship of *Völkerkunde*, first published in 1885–88, revised and reprinted in 1894–95, and translated into English by A. J. Butler and published under the title *The History of Mankind* in 1896–98.

THE EIGHTEENTH SESSION of the Congress of the Archeological and Historical Federation of Belgium was held at Mons, July 30–August 6.

DR GEORG THILENIUS, professor of anthropology at Breslau, has been appointed director of the Hamburg Museum of Ethnology.

THE UNIVERSITY OF FREIBERG has conferred an honorary doctorate on the anthropologist, Otto Ammon of Karlsruhe.

The Anthropological Society of Washington will p
chase, at an advance rate, a few copies of Volume I, N
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