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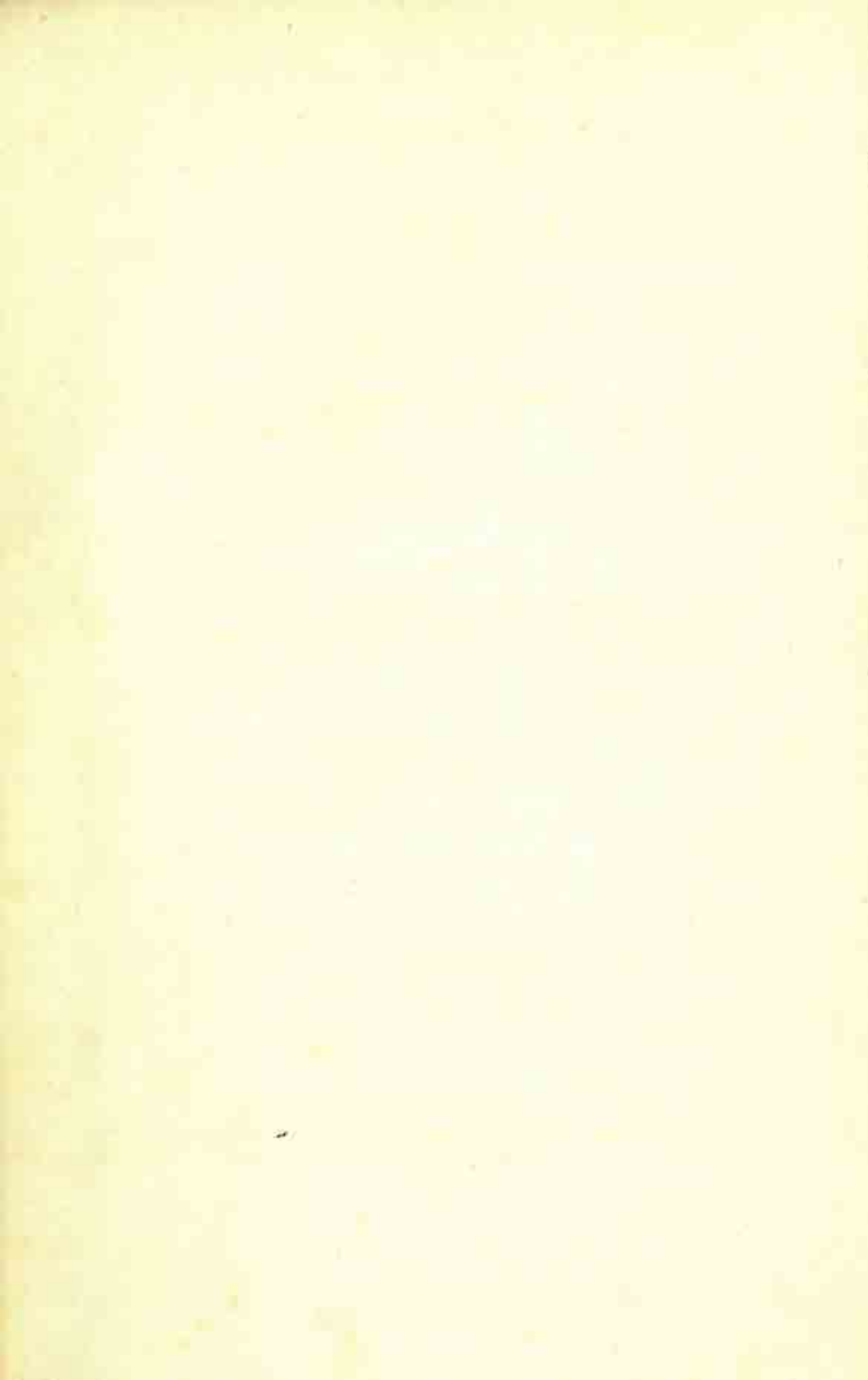
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ETHNIC FACTORS IN EDUCATION¹

By EDGAR L. HEWETT

The eminent place accorded education in our social organization makes imperative the closest investigation of every factor in educational practice. Instruction is a scientific work of the highest order. Pedagogy has no special body of facts or phenomena of its own as material for investigation; it depends for its structure on the conclusions of contributory sciences. Its "sphere of influence" being coextensive with all human welfare, no necessity exists for examining limits, but emphasis must constantly be placed on organization. On the clear apprehension of the relation of the contributory sciences of biology, psychology, sociology, and anthropology to pedagogy depends the efficiency of the educational system.

Before proceeding to the direct investigation of the subject announced in the title, it will be necessary to consider briefly the results of the long discussion of the aims of education. The keen analysis to which this question has been subjected in recent years does not disclose any real antagonism between the individual and the social aims. In practice in American schools the individualistic ideal is unquestionably predominant, notwithstanding the fact that in the great majority of our schools for the training of teachers, emphasis is placed on the interest of society, and the normal school that gives no place to the social sciences in pedagogical training is not in the professional class. A just conception of the relation between the individual and society affords no ground for placing especial emphasis on the interests of either.

¹ Read before the Section of Social and Economic Sciences, A. A. A. S., at the Philadelphia meeting, December, 1904-January, 1905.

In every normal individual of any stage of culture there exists a feeling that the activities which yield him the greatest satisfaction are those which involve the interests of his fellow men. He finds no happiness in habitual isolation. For the pleasure of association with his kind he submits to the social will. In primitive stages of culture he unconsciously accepts the esthetic, the economic, the social, the religious traditions of his tribe. In civilized society he does not surrender his consciousness to the group. He examines and criticizes social conditions; seeks to accelerate or retard social progress; strives to establish, annul, or modify customs and beliefs; pits his individual reasonings against public motives, opinions, and acts; yet withal submits to what society sanctions. But while apparently emphasizing the interests of society, he knows that society is the great efficient agent for benefitting, developing, perfecting himself. Its interests are his interests. In the self-renunciation incident to social service he realizes his highest happiness and highest individual perfection. His individualization and his socialization proceed simultaneously by like processes. Antagonism to the social order carried to the extent of destructiveness is an aberrant condition. On the general acceptance of this fact of the identity of individual and social interests depends the happy adjustments of most of our social, economic, political, and educational problems.

Since an individual aim in education, standing for the highest development of the powers of the one, and a social aim, emphasizing the interests of the many, proceed by simultaneous and similar processes to a common end, it is not necessary to accept any dictum as to the educational aim. It is individual, social, ethnical. A sound, commonplace aim to keep in view in educating Americans is *to make better Americans*; in educating Indians *to make better Indians*; in educating Filipinos *to make better Filipinos*; and it should especially be noted that when the term is applied to the process of improving any race or group or individual that is not formally praying to be absorbed into the citizenship of the United States, it in no sense implies *to Americanize*.

The phenomena of the four sciences previously mentioned as contributing data for the scientific study of education are so interdependent that they cannot be definitely separated. The purpose

of this paper is to examine anthropological facts and conditions which are vital in the development of the American system of public education. But I am aware that some of the material chosen for consideration may justly be claimed to be in the domain of psychology, and all of it in sociology. This delightful elasticity and inclusiveness of our several sciences is not altogether regrettable. The cross-fire to which a proposition that falls within these overlapping spheres of influence is subjected, compels a certain agility and alertness not incident to the study of closely isolated and definitely limited sciences.

It is possible that the use made in this paper of the term "ethnic mind" may not be acceptable to experimental psychologists. While not in accord with the extreme views of many European scholars on this subject, I accept the opinions of Wundt and Brinton that ethnic psychology is a valid science — a branch of the great unmapped field of anthropology that awaits close investigation. The hypothesis of an ethnic mind is most serviceable in the study of culture history, constructive sociology, and race pedagogy. Any needed justification of its use will, I hope, be accomplished as we examine causes and conditions of ethnic development.

It is a trite saying that "the teacher must understand human nature," but we do not always consider the vast significance of that requirement. It presupposes all the usually expected knowledge of man as an individual, with all his physiologic and psychic characters and the immediate effect thereon of meteorologic and dietetic influences. It demands an understanding of the modifications affected by society on individual psychic states. Furthermore, it requires a comprehension of the environmental influences that have worked through the ages to affect man's distribution over the globe, to control his occupations and social organization, and to compel the thoughts which dominated his primitive life and fixed in every group of savage men a unified, collective, psychic state. The individual was a cipher. He lived, worked, thought, prayed as did his tribe. Nature was as regardless of the individual in humanity as in the lower life forms. An ethnic mind, an ethnic character, a race of men was the goal. Fixed environmental conditions compelled men to certain activities, to certain beliefs and customs, equally coercive whether

true or false, good or bad. Such was the fatalistic yet effective discipline by which nature shaped men into ethnic groups, by virtue of which we have Hun or Gaul, or Apache or Hopi. Such was the origin of ethnic mind — "a blind, unreasoning, natural force" that rules primitive men absolutely and to a marked degree dominates the acts of civilized nations. The investigation of these phenomena is the province of anthropology; the determination of their use in education is the province of pedagogy.

The teaching of forty children of a single race is a comparatively simple problem. But the teacher in an American city school may have under her instruction representatives of half a score of ethnic divisions with ethno-psychic characteristics that are as distinctive as are their physical differences. The work of the teacher is to Americanize all these elements; to inculcate our best ideals of personal and civic righteousness; to eradicate as far as possible ideals that are foreign or adverse to our own. This is a complex process. The street does its part. The general exercises of school and class advance the unifying process. That day is lost in which the teacher finds no occasion for upholding some ideal of lofty patriotism, of civic virtue, of family life, of personal honor. But daily the necessity arises for dealing directly with individuals who fail to come under the influence of the collective spirit, with whom lawlessness (which may be a misunderstanding of our social order), or incipient crime (which may be but lack of comprehension of our ideals of decency) and the disasters incident to conflict with law or prevailing ethical sense, seem inevitable. The teacher must know that Italian and Bohemian, and Celt and Hebrew, and Anglo-Saxon and African look upon questions of honor, morality, and decency out of separate ethnic minds under the coercion of centuries of fixed racial customs and ideals. What is to us criminal tendency may be but a survival of a custom which, in the view of a more primitive race, was a strictly moral act. Much that we call evil, malevolent, was in primitive mind altogether beneficent. What is to us an indecent act is often in primitive practice a religious rite. A case of stubborn resistance to a necessary truth may be a matter of racial difference of opinion. So countless perplexing problems of the teacher root in ethnic mind and can be solved only when the ethnic factors in the equation are

duly considered and the inheritance from savagery or foreign national life is given its proper value.

Before considering further the educational aspects of the subject, let us inquire into some fundamental causes of static racial conditions. As previously indicated in this paper this must be primarily an inquiry into the influence of physiographic environment on the human mind.

Dr Edwin G. Dexter has shown, in an eminent contribution to psychological knowledge, the influence of definite meteorological conditions on mental states. These researches pertain to the immediate psychic response to weather influences, and the results are such as to suggest an important application in the study of racial character development under the influence of fixed climatic conditions. I believe that Dexter's method might be extended to the field of racial psychology with excellent results.

Ample facilities exist for the study of this subject by direct observational methods. We may select one element of human nature that is practically universal, namely, the religious element, and see how science accounts for its variations. Race religion is almost as persistent as race physiology. All people have beliefs concerning the supernormal. Speaking in a very general sense, these beliefs constitute their religion. It is a peculiarly fruitful field of study, with abundance of material for investigation. The religious ideas of primitive men are preserved in myths, in symbolic ornament, in pictography in its various forms, in games, the interpretation of which calls for the keenest insight of which the anthropologist is capable. The system of religious thought of every primitive tribe is embodied in ritual which can be studied by direct observation.

A remarkable series of field studies on the Hopi Indians of Arizona by Dr J. Walter Fewkes of the Bureau of American Ethnology, extending over a period of twelve years, the results of which are embraced in numerous contributions, afford such a comprehensive exposition of the evolution of the religion of one primitive tribe in response to climatic influences that, with his kind permission, I quote here at some length his own words on the subject:¹

"In physical features this province [Tusayan] is a part of the great arid zone of the Rocky mountains. On all sides it is isolated by a dreary

¹ A Study of Tusayan Ritual, *Smithsonian Report*, 1895.

extent of mountains, mesas, and arid plains about 6,000 feet above the level of the sea. No permanent streams of water refresh these parched canyons or fields, and the surroundings of this isolated tribe, organic and inorganic, belong to those characteristic of desert environment. The rains are limited in quantity—liable to fail at planting time. Springs of permanent water are small and weak. . . . Uncompromising as was the soil for agriculture, the resources of the hunter were much less, and in this region man was forced to become an agriculturist. . . . He adopted the life which environment dictated, and accepting things as they were, worked out his culture on the only possible lines of development.

"Accepting the inevitable, man's ritual became a mirror of that part of his environment which most intimately affected his necessities. The irregularity of the rains, and the possibility that the corn may not grow, developed the ritual in the direction indicated. In a bountiful soil which never fails the farmer, where the seed dropped in the ground is sure to germinate, and the rains are constant, no ritual would originate to bring about what was sure to come. But let natural processes be capricious, awake in a primitive mind the fear that these processes may not recur, let him become conscious that the rains may not come, and he evolves a ritual to prevent its failure. . . . The cults of a primitive people are products of their necessities. . . . The two needs which sorely pressed the Hopi farmer were rain to water his crops and the growth and maturity of his corn. My problem, therefore, is to show by illustrations that the two components, rain making and growth ceremonials, characterize the Tusayan ritual, as aridity is the epitome of the distinctive climatic features of the region in which it has been developed. . . .

"In Tusayan the Great Plumed Serpent is a powerful deity to bring the rain, and is associated with lightning, his symbol. By simple observation the untutored mind recognizes that rain follows lightning, and what more natural than that it should be looked upon as the effect. He therefore worships lightning because of this power. The course of the lightning in the sky is zigzag as that of the snake, both kill when they strike. The lightning comes from the sky, the abode of the sun and rain god, and the simple reasoning of the Tusayan Indian supposes some connection between the lightning, snake and rain. The sustenance of the primitive agriculturist comes from the earth, and if the soil is non-productive the sun and rain are of no avail. The Tusayan Indian thus recognizes the potency of the earth and symbolically deifies it as the mother. Consequently earth goddesses play important rôles in his mythology. . . . No better ceremony could be chosen to illustrate the effect

of the arid environment than the well-known Snake Dance, the most weird rite in the Tusayan calendar. This dance occurs every summer on alternate years in five of the Tusayan villages, and although a dramatization of an elaborate sun-serpent myth, is so permeated by rain ceremonials that it has come to be an elaborate prayer for rain. . . .

"The reptiles are believed to be elder brothers of the priests, and they are gathered from the fields on four successive days to participate in the ceremonies. It is believed that these reptiles have more power to influence supernatural beings than man, and as the acme of the whole series of nine days' observances they are thrown in a heap on the ground in a circle of sacred meal, and the chief of the Antelopes says a prayer to the struggling mass, after which they are seized by the priests and carried to the fields commissioned to intercede with rain gods to send the desired rains. In fact, the whole series of rites which make up the snake celebration is one long prayer of nine days' duration. . . .

"Another component of the Tusayan ritual which occurs each year in the month following that in which the Snake Dance occurs, is the ceremony of the women priests for the maturation of the corn. I refer to the September rites called the Lalakonti, celebrated by a priesthood of the same name.

"The ceremony for growth of the crops, which is practically for the harvest of maize, is directly the outgrowth of those climatic conditions which have made the Tusayan people agriculturists. A failure of this crop means starvation, and maize is far from a spontaneous growth in those desert sands. Hence the elaborate nature of the appeals to the supernatural beings which control this function. This great ceremony is naturally of special concern to women, the providers. . . .

"The influence of arid climatic conditions is shown in the character and intent of symbols. The conventional figure of the rain clouds and falling rain is depicted more than any other on various paraphernalia of worship. It is painted on the altars, drawn in sacred meal on the floor of his sacred rooms, or kivas, embroidered on ceremonial kilts. . . . By a natural connection it is often replaced by figures of animals or plants associated with water. The frog and tadpole appear when the rain is abundant, and for that reason the priest paints the figures of these animals on his medicine bowl, or places effigies of it on the altar. . . . The dragon-fly which hovers over the springs, the cottonwood which grows near the springs, the flag which loves the moist places, becomes a symbol of water. Water itself from the ocean or from some distant spring, in his conception, are all powerful agents to bring moisture. There can be but one

reason for this—the aridity of his surroundings. The clouds from which rain falls are symbolized by the smoke from the pipe in his ceremony, and he so regards them. He pours water on the heads of participants in certain ceremonials, hoping that in the same way rain will fall on his parched fields. Even in his games he is influenced by the same thought, and in certain races the young men run along the arroyos, as they wish the water to go filled to their banks. . . .

“The necessities of life have driven man into the agricultural condition and the aridity of the climate has forced him to devise all possible means at his control to so influence his gods as to force them to send the rains to aid him. Wherever we turn in an intimate study of the ceremonials of the Tusayan Indians we see the imprint of the arid deserts by which they are surrounded, always the prayer for abundant crops and rains for his parched fields.”

In thus attempting to epitomize briefly some results of this investigation, I have done scant justice to the eminent student who conducted it. In this series of researches principles are derived which are capable of wide application. There is no reason to doubt that the same method will show that primitive social organization, economic systems, and esthetic life are in great measure results of definite physiographic environment.

Everything in human nature must be regarded as a product of growth. Ideas and ideals that have been rooted for ages in the ethnic mind can not and should not be eradicated in a generation. Biology has demonstrated that no appreciable increment of brain power can be effected in the lifetime of an individual. Ethnology has shown how ideals of religion, of welfare, of morals that have become ingrained in racial character, along with color of skin and shape of skull, are likewise persistent under the artificial environment of civilization. With a race a thousand years are as yesterday with an individual. Nature will not be hurried.

There are facts that are particularly applicable to the great task to which we have set ourselves in the education of alien races. The education of the Indian is a work that we have had on hand for many years, and much diversity of opinion exists as to the value of our results. Apparently the idea of educating the Indian away from his native environment is losing ground. The trans-

planting of isolated specimens of primitive races to a totally new environment has never been productive of happy results. The reservation Indian school is successful so far as its ideal is to make of the Indians better Indians. Unhappily, Americanization is often thought to be education.

Probably no one will be considered better qualified to express the ideals that have dominated our Indian educational policy and to speak of the difficulties which have beset it than Dr W. H. Hailmann, for some years national superintendent of Indian schools. Dr Hailmann says¹ (*italics are mine*):

"There can be no doubt that *an education which inculcates the tastes and establishes the ideals of current civilization constitutes the proper first step in the work of introducing the Indians into American citizenship.* It is equally evident that the cultivation of these tastes and ideals is well nigh impossible under the conditions and influences of tribal life on Indian reservations.

"The mere recital of a few of the leading differences between the two civilizations will sufficiently emphasize these difficulties. *The Indian civilization looks upon the tribe or family as a unit; with us it is the individual. With the Indian he is richest who gives most; with us it is he who keeps most.* The Indian claims hospitality as a right until the means of the host are exhausted; and this hospitality is freely granted. To the Indian land is as free as the water he drinks; proprietorship continues only so long as the land is tilled or otherwise in use. The Indian prizes the worthless pony, whilom his companion and friend in the lost occupations of the chase and war. The cow is to him only a poor substitute for the buffalo; he knows nothing of her value as a giver of milk and a breeder of cattle. *Woman in Indian civilization is a producer and possesses in full Indian life an economic value and independence to which in our civilization she is largely a stranger.* His religious rights and ceremonies afford the Indian, in addition to a certain degree of spiritual elevation, opportunities for intense social enjoyment for which he looks in vain in the new civilization. Add to this that the wants of the Indian are few and easily gratified by simple forms of homely skill in which the industries and other acquirements of the Indian school find little application; that chiefs and medicine-men in the very nature of things look with distrust

¹ *Education of the Indian*; Monographs on Education in the United States, No. 19, by W. H. Hailmann.

and disdain upon a civilization which robs them of power and influence ; that time-honored tradition imposes upon the young Indian silence and obedience,—and you have an array of adverse conditions which is appalling.

“Against these odds the Indian schools are pitted.”

Might it not have been better if the Indian schools had never been *pitted against* these conditions at all, but rather, devoted to the cultivation of just what could be found in the Indian that was worthy of stimulation? Like ourselves, the Indian possesses many traits that are worthy of the highest nurture and, like ourselves, many for which the world would be better if eradicated. A system of practical education must recognize in the subjects to be educated, potentialities worthy of development. If such potentialities do not exist, then education will be futile. That the Indian is a worthy subject for education, all will agree, but that his potentialities are along the lines of our peculiar culture is not disclosed by history or ethnology. He takes rather kindly to education, but resists the overthrow of his religious and social customs. The need for the overthrow of these (with few exceptions) is not apparent.

I know of no persistent attempt on the part of government or philanthropy to develop the inherent Indian character by stimulating him to the perfection of his own arts, his own social institutions, his own religion, his own literature. When the Indian wants citizenship and prays for absorption into the body politic, then will be time to Americanize. After centuries of contact with us he chooses to remain an Indian. Candid investigation from his point of view as well as ours might lead us to approve his choice. At great cost to childhood we have learned that about all we can do for the young mind is to stimulate, direct, accelerate, or retard its unfoldment. All that we attempt to impose on it that is foreign to its nature can only work to its detriment. It is likewise with a race that is in its childhood. Its development must be from within. An ethno-educational experimental station on the reservation of one of our most isolated tribes, which should have for its task the development of Indian character (which is inherently noble) along strictly Indian lines ought in a few generations to yield us definite knowledge on the subject of educating and governing primitive races.

We are now attacking an ethno-educational problem of enormous proportions, the education of some millions of subjects in the Philippine islands. In the evolution of our national life, our frontier has moved westward to the other side of the earth. We are in possession of a new domain, peopled mainly by the Malay race, consisting of numerous tribes, in every stage of culture from absolute savagery to semi-civilization. Of these ethnic groups, none of which approaches the Caucasian race, we know but little. With their customs, morals, ideals, religious beliefs, modes of reasoning, which have arisen and become ingrained through ages of relation to definite conditions, we are just beginning to become acquainted. We are carrying to them an exotic civilization, developed under environment as different from theirs as it is possible for this planet to afford. We propose to prepare them for self-government, and to that end have placed over them, in slightly modified form, our highly specialized American public school system, our only guide to the efficacy of this, when imposed upon other races, being the results of our experience with the American Indians.

The purposes and expectations of the government in this respect are officially set forth in the report¹ of Dr David P. Barrows, General Superintendent of Education for the Philippine islands, under date of September 15, 1903.

"The definite purposes in introducing this educational system are unique in the history of colonial administration. Professedly, openly, and with resolute expectation of success, the American Government avowed its intention through public schools to give to every inhabitant of the Philippine islands a primary, but thoroughly modern education, to thereby fit the race for participation in self-government and for every sphere of activity offered by the life of the Far East, and to supplant the Spanish language by the introduction of English as a basis of education and the means of intercourse and communication."

In justification of this purpose Dr Barrows says:

"Such an educational plan would never have been practicable had it not been in fact the demand of the Filipino people themselves. Thoroughly American as our school system is, it represents the ideas

¹ *Report of the Philippine Commission*, 1903, part III, p. 694.

which theoretically command the desires of the Filipino. His request was for free, secular schools, open to all inhabitants and teaching the English tongue and the elementary branches of modern knowledge." Again we are told that the Filipino father is desirous that the intellectual advance of his child "should be unaffected by ecclesiastical control, and that the instruction of the church shall be separate from that of the school. . . . For common intercourse, as well as for education, the Filipino demands a foreign speech. To confine him to his native dialect would be simply to perpetuate that isolation which he has so long suffered and against which his insurrection was a protest. Opponents of English education find no sympathizer among the Filipino people."

These desires, if accurately portrayed, reveal on the part of the Filipino people a profound insight into the causes and conditions of both individual and national progress—an intelligence already equal to that of the most enlightened nations, and difficult to reconcile with other statements made in the same discussion, of which the following are examples:

"The race lends itself naturally and without protest to the blind leadership and cruel oppression of its aristocracy. . . . It is in these rural spots that the great mass of the population finds its home. These are the centers of ignorance, the resorts and recruiting ground for the *ladrones*, and they perpetuate the ignorance and poverty of the race, which has remained constant for three hundred years."

It is somewhat difficult, too, to share the buoyant enthusiasm of Dr Barrows for the value of the English language to the Filipino:

"It is without rival the most useful language which a man can know. It will be more used within the next ten years, and to the Filipino the possession of English is the gateway into that busy and fervid life of commerce, of modern science, of diplomacy and politics in which he aspires to shine. Knowledge of English is more than this—it is a possession as valuable to the humble peasant for his social protection as it is to the man of wealth for his social distinction. If we can give the Filipino husbandman a knowledge of the English language, and even the most elemental acquaintance with English writings, we will free him from that degraded dependence upon the man of influence of his own race which made possible not only insurrection but that fairly unparalleled epidemic of crime which we have seen in these islands during the past few years."

The above statement of occupations in which the Filipino aspires to shine should be considered in connection with the following statements as pointing to some obvious conclusions concerning him as a subject for education :

" American investors and promoters in the Philippines at the present moment are deeply disgusted with the Filipino as a laborer and are clamorous for the introduction of Chinese coolies. They claim that the Filipino hates and despises labor for itself, will not keep a laboring contract, and cannot be procured on any reasonable terms for various enterprises in which Americans desire to invest effort and money. When, however, we looked a little more closely into the demands of these men, it is apparent that what they really want here is a great body of unskilled labor, dependent for living upon its daily wage, willing to work in great gangs, submissive to the rough handling of a boss, and ready to leave home and family and go anywhere in the islands and to labor at day wages under conditions of hours and methods of labor set by their foreign employers . . . Now, the Filipino detests labor under these conditions. It is probably true that he will not work in a gang under a ' boss,' subjected to conditions of labor which appear to him unnecessarily harsh and onerous."

These are interesting conditions, pointing to entirely different lines of development from those possible to the Chinese and Japanese and to a commercial civilization, with a leaning to science, diplomacy, and politics, yet unsupported by any sturdy laboring class comparable to our Irish and Italian citizens who have made possible our vast mining, railroad building, and other great constructive enterprises.

It must be admitted that our present knowledge of the Filipino does not warrant very deep convictions with reference to his future possibilities. His habitat is the zone that has not produced sturdy civilized races. Climate and physiography are decidedly against him. He is of a race, the Malay, that has as yet produced no strong ascendant ethnic groups. Ethnology has little to promise in his favor.

There is really much in science and history to guide us in this matter — enough to teach us that it is questionable whether we can prepare any primitive people for self-government by placing them under our institutions. Every nation on the globe that is fit for

self-government prepared itself for it by centuries of racial experience.

I do not wish to be understood as being opposed to an educational policy for the Philippine islands, but I do regard it as premature and wasteful to establish there a public school system in advance of any considerable scientific knowledge of the mind and character of the Malay race. A number of educational experiment stations there, where for some years educational policy, based on the ascertained capability and desires of the people, could be carefully wrought out and the best of their young people stimulated to lead in their intellectual and social life, thus developing such inherent qualities of leadership as may exist, would be economical and sensible, would determine if there are any strong ascendant ethnic groups and develop the methods by which the racial potentialities could be brought out. Such a policy is fraught with no possibility of injustice to our subjects. These people have waited some thousands of years for Americanism. Let us not inaugurate another "century of dishonor" by malpractice on another alien race. There is really no cause for haste. It is hardly time to put the Filipinos to school to us. Let us go to school to them for a while. We can learn much from them that will be for their good and ours. We should study the social order, the religious beliefs, the ethnic mind of these subjects, and accept the fact that we have here a problem in which we must count results by generations and not by years.

These are conditions which suggest a wide extension of the functions of the Bureau of American Ethnology and of the Bureau of Education. Our vast educational interests call for some constructive statesmanship. The present system is wasteful and inefficient. Education in the Philippines was organized by the War Department and is conducted by the Philippine Commission. The Office of Indian Affairs shapes a policy of Indian education. The Bureau of Education takes care of all educational interests not otherwise let out. It is difficult to understand how, under any consideration of efficiency, economy, or businesslike management, such a system should be tolerated. This condition is best known to those who have been intimately connected with it. I quote again from Dr Hailmann's monograph on Indian Education :

"The direction and supervision of the Indian schools rest with the Indian office which, in its turn, is under the direction and supervision of the Secretary of the Interior. In the Indian office the details of the work are intrusted to the education division, now probably the most important division under its control. The education division consists of a chief clerk, with a corps of subordinate clerks, stenographers and copyists. To this division all reports are made; by it all directions and orders are drafted and issued.

"The education division is aided in its work by the superintendent of Indian schools and by five supervisors, assigned in their work to five districts respectively. These officials constitute a branch of the Indian school service which occupies a very uncertain position, which can be designated neither as subordinate nor as coordinate, and which in its effectiveness depends wholly on the force of character of the incumbents and the good will of the commissioner. They have duties, but no rights; and even their efforts to perform these duties may be rendered practically nugatory by the ill-will of the education division or of the commissioner."

This is a statement of the condition in one of our several great uncorrelated departments of education. The American people claim to have supreme confidence in our democratic educational system. They would look with favor upon a more definite recognition of education by the national government, and the organization of the educational system upon an equal footing with commerce, agriculture, and war. No executive department of government has in its care interests more vast and important than our combined educational interests would be. The organization of these interests demands the elevation of the Bureau of Education to the status of an executive department.

The conclusions of this paper may be summarized as follows:

1. Ethnic mind, character, ideals, and motives are developed primarily by definite physiographic conditions of age-long duration. Ethnic traits persist through generations of new influences. This fact is of vital importance to teachers in the management of individual cases.

2. The development of a race must be from within. A civilization imposed from without is usually harmful, often destructive, and always undesirable. This fact is the keynote to all that should be attempted by way of educating alien races.

3. Normal schools and other institutions for the training of teachers should give a prominent place to anthropological sciences.

4. A rational educational policy for the various primitive races now under our care must be based on specific scientific knowledge of racial mind and character. This suggests a wide extension of the functions of the Bureau of American Ethnology and the establishment of ethno-educational experiment stations.

5. Our national educational interests have been greatly increased and complicated by the acquisition of new races. The system of distributing these interests among unrelated departments is wasteful and inefficient and calls for the organization of an executive Department of Education.

PREHISTORIC SURGERY—A NEOLITHIC SURVIVAL

By GEORGE GRANT MACCURDY

Our knowledge of prehistoric surgery is limited to operations that affected the bony tissue. One of the best known and most remarkable operations performed by our neolithic ancestors is without question that of trepanation, the evidence of their skill and success in the use of rude instruments being nothing short of marvelous.

The object of this paper is to call attention to a peculiar type of prehistoric surgery having certain points in common with trepanning, and which have been brought to light during the last decade. So far as at present known, this type occurs in France over a limited area lying to the north of Paris, between the Seine and the Oise. The history of the series of discoveries, as well as of Prof. L. Manouvrier's successive observations and attempts at an explanation until finally the correct solution was reached, forms an interesting chapter in methods of arriving at scientific facts.

The crania bearing marks of the operation in question are not only from a limited area, but are also from dolmens belonging to the neolithic period. The Dolmen de la Justice at Epône, near Mantes (Seine-et-Oise), had been known since 1833—in fact so long that, owing to its dilapidated condition, it was supposed to have been already robbed of its contents. However, M. Perrier du Carne, of Mantes, thought it worth while, in 1881, to obtain from the owner, Madame Piot, a permit to excavate, and was very much surprised to find the sepulture intact. In addition to pottery, stone implements, and ornaments, he obtained portions of about sixty skeletons, including twelve crania. Professor Manouvrier, to whom the human bones were referred for examination, observed that three of the female crania were marked by curious and similar mutilations in the region of the vertex. In every case the cicatrice is T-shaped. The antero-posterior branch begins just above the anterior curve of the frontal, extends along the sagittal suture, and terminates near the obelion where the transverse branch is encountered. The

latter descends on either side to a point back of the parietal protuberances. The scars are evidently the result of lesions of the scalp made during life, and deep enough to affect, directly or indirectly, the periosteum.

Searching through the Broca collection, Manouvrier found three other examples of the cicatrice in T, and all three on feminine subjects. They came from three dolmens in the neighborhood of the dolmen of Epône, namely, Vauréal, Conflans-Sainte-Honorine, and Feigneux, all in the department of Seine-et-Oise. In one of these three cases the cicatrice was very slight, in another the diploë was uncovered by either the wound or the suppuration.

In every instance the lines forming the T were broken at intervals, giving the appearance of successive operations. The operation on the scalp, however, may have been performed at one time and in a continuous line without affecting the skull at all points. None of the crania presents pathological characters. As to the meaning of these marks, Manouvrier suggested that an explanation might be found in practices connected with religion, war, penal justice, mourning, therapeutics, or coiffure. While admitting that the peculiar shape of the scar might be due to the hieratic value attributed to T, he expresses preference for a simpler and more rational explanation. What could be more simple, for instance, than to suppose that a surgical operation on the scalp should follow the natural partings of the hair. One of these is the median line from the forehead to the whorl at the crown; the other descends laterally from the crown on either side, and they account for a feminine fashion of combing the hair which is still in use.

Dolmens to the north of Paris and within a radius of 50 kilometers were searched for further examples, and they were soon forthcoming. Of eighteen crania found by M. Fouju in the dolmen of Menouville, near l'Isle d'Adam (Seine-et-Oise), one bore the antero-posterior branch of the lesion in question, one was marked by an enigmatical oval scar in the region of the bregma (evidently to be classed as a variation of the same general type of operation), and three were unquestioned cases of trepanation—a large percentage for a sepulture containing not more than forty skeletons. The reduction of the so-called "sincipital T" to a line in the one

instance and to an oval in the other led Manouvrier to substitute for the name first chosen that of "sincipital marks"; and the presence in the same dolmen of crania thus scarred, in juxtaposition with trepanned crania, supported his favorite hypothesis that the sincipital marks were, like trepanation, the result of therapeutic treatment.

Verneau's description¹ of certain skull fragments from the Dolmen des Mureaux, published five years before the discovery of the Epône specimens, when viewed in the light of Manouvrier's contributions, is invested with a new interest. The fact that the fragments of a right parietal and a left parietal were "trepanned" along the line of the sagittal suture, points to the most persistent feature of the sincipital markings in question. One operation would account for both, in case the two pieces could be referred to the same skull. The strength of the supposition would not be impaired even if they belonged to different skulls. It might be worth while to reexamine these fragments, particularly as the *allée couverte des Mureaux* is situated near the dolmens that furnished all the specimens described by Manouvrier in a series of papers the titles of which appear in the appended list of references.

As regards the methods employed in the operation, Manouvrier had this to say in 1902:

"L'hypothèse d'une cautérisation par brûlure ou autrement me paraît être la plus satisfaisante et corroborée par l'existence non douteuse chez la peuplade néolithique qui vécut entre la Seine et l'Oise, de chirurgiens dont les ressources thérapeutiques ne devaient pas être bornées à la terrible trépanation."

The oval scar in the region of the bregma cited above recalls precisely similar ones observed by von Luschan,² of Berlin, on ancient Guanche crania from the island of Teneriffe. Of the 210 Teneriffe crania in the museums of Berlin, Leipzig, and Braunschweig, 25 have suffered scarification in the region of the grand fontanelle, two of these being completely perforated by the operation or as a result of it. Von Luschan regarded the operation as surgical and related to trepanning proper. In his opinion the bone was removed

¹ R. Verneau. *L'allée couverte des Mureaux*; *L'anthropologie*, 1890, 1, 157.

² *Verhandl. Berliner Ges. f. Anthr.*, 1896, p. 65.

by scraping. To show that similar results could be obtained by the use of a counter-irritant, Virchow produced the skull of a patient who was treated about the year 1846 at the Charity Hospital (insane ward), Berlin. When, as a young man, Virchow¹ was assistant at the Hospital, Professor Ideler, the physician in charge, often applied tartar-emetic ointment (*Brechweinstein-Salbe*) to the scalp of demented patients in order to drive out supposed inflammation. The unguent caused suppuration that occasionally attacked the skull even to the extent of producing a perforation.

Von Luschan was the first to point out the analogy between the oval lesions on the crania from the Canary islands and the T-shaped lesions on neolithic crania. This analogy became all the more evident with Manouvrier's description of the two Menouville crania, calling forth a timely article by Lehmann-Nitsche² in which he quotes from the ancient chroniclers of the Canaries as cited by Chily Naranjo.³ The passage describing the operation is as follows:

"They made large scarifications with their stone knives on the skin of the part affected, and then cauterized the wound with roots of Malacca cane (*jone*) dipped in boiling grease; preference being given to the use of goat's grease."

Almost coincident with the appearance of Lehmann-Nitsche's paper, Manouvrier had the good fortune to find in a recent work by M. Auguste Brachet,⁴ quotations from ancient books on surgery that not only serve as an explanation of the sincipital marks on neolithic crania, but also prove that similar operations were performed during the Dark Ages by the successors of Galen.

The texts are:

(1) Under the title "Purgatio capitis"; Avicenna. Canon I, III, tr. 4. cap. x (T. I, p. 485, col. 1): "De curâ Melancholiæ et quandoque oportet ut caput ejus secundum crucem cauterizetur si nihil aliud confert."

¹ *Verh.*, etc., p. 327.

² Notes sur des lésions de crânes des îles Canaries analogues à celles du crâne de Menouville et leur interprétation probable; *Bull. et mém. de la Soc. d'anthr. de Paris*, 1903, p. 492.

³ Mémoire sur l'origine des Guanches ou habitants primitifs des îles Canaries; *Congr. intern. des Sciences anthropologiques tenu à Paris du 16 au 21 août, 1878*, pp. 167-220.

⁴ *Pathologie mentale des rois de France: Louis XI et ses ascendants*; Paris, Hachette, 1903.

(2) *Glossula quatuor Magistrorum super chirurgiam Rogerii et Rolandi*, ed. Daremberg, Naples, 1854, p. 163: "De maniâ et melancholiâ ac epilepsiâ et de similibus et cauteriis earum."

(3) *Ibid.* p. 201. . . "Potest etiam fieri cauterium in summitate capitis."

(4) *La Chirurgie d'Albucasis* (trad. Dr Leclerc, 1861, p. 12-13, chap. 1: De la cautérisation de la tête): Cette cautérisation est utile quand l'humide et le froid sont en excès dans le cerveau, ce qui est cause de la céphalalgie . . . afin que les vapeurs du cerveau, s'exhalent en ce point."

(5) *Ibid.*, p. 20, chap. XI: Cautérisation dans la mélancholie: "Si elle a pour cause un excès d'humeur tournant à l'atrabile . . . vous pouvez appliquer le cautère en pointes nombreuses mais légères . . . Cette sorte de cautérisation rend au cerveau son humidité normale."

(6) Avicenna. Canon I, 111, cap. XI: De curâ epilepsiæ: "Et ex eis quidem quæ ipsum juvant sunt ventosæ super caput positæ et cauterium super ipsum calefaciendo cerebrum."

(7) Albucasis, op. cit., pp. 19-20. Chap. X: Cautérisation dans l'épilepsie: "On rasera le crâne du malade. On cautérifiera sur le milieu de la tête, sur l'occiput et sur les bosses frontales."

(8) *De secretis mulierum*, etc., ed. Daremberg, Naples, 1855, p. 55. Cap. XXXII, etc.: "Post talia caute partibus occipitis prerasis, ustio fiat in fontinellâ sub nodo in concavitate."

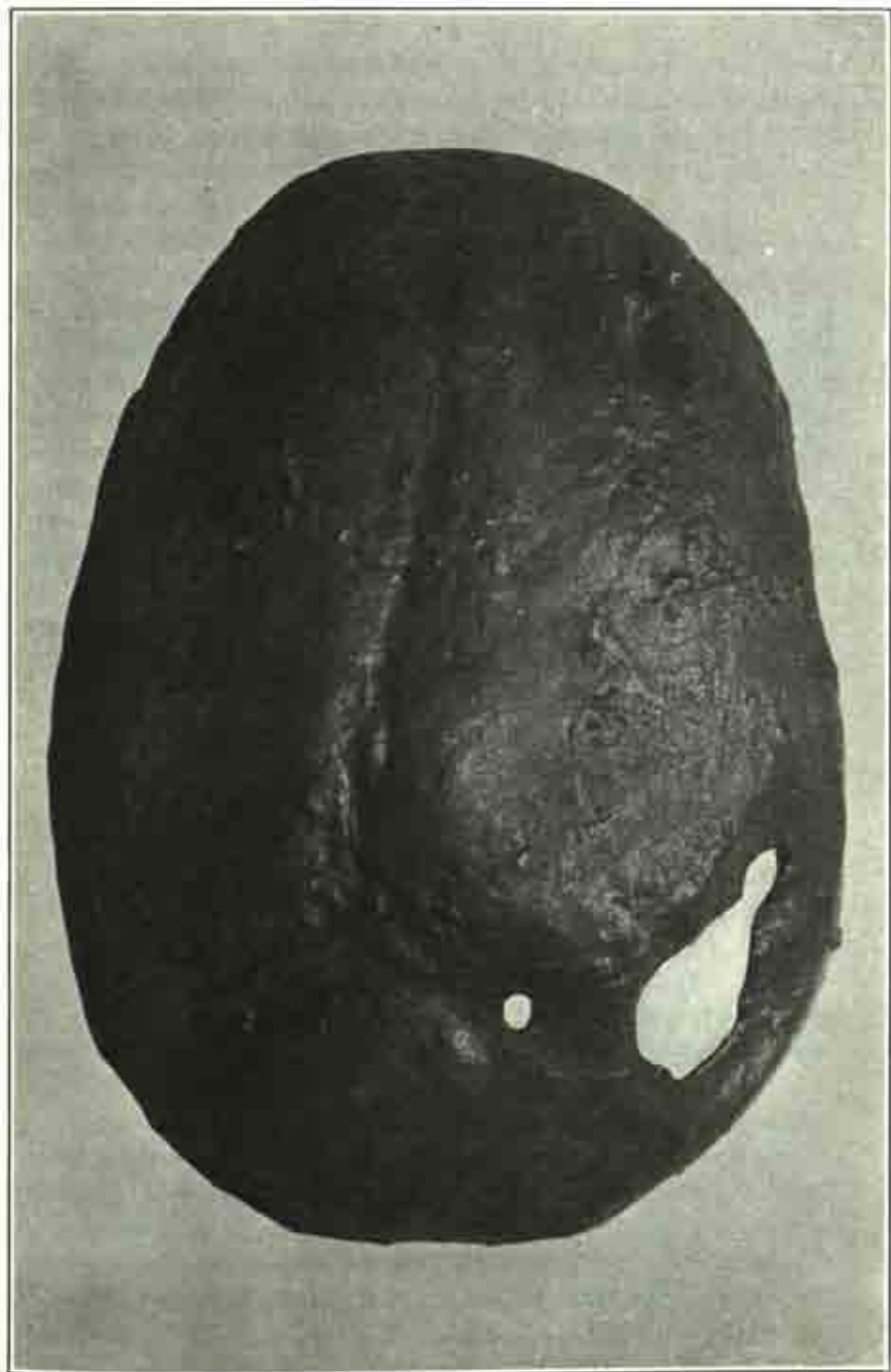
Glossula quatuor, op. cit., p. 202: "Item melancholici et epileptici incenduntur sic: in summitate capitis fit incisio usque ad craneum; hâc facto inscidatur craneum ad modum dictum ut inde humores et spiritus exire possint, et teneatur apertum per XI dies.

That this surgical lore was handed down through successive ages there can be little doubt. The cemeteries of the Middle Ages have preserved their share of the records that still await investigation. Unfortunately, some of the links in the chronological chain may be forever missing, owing to the practice of incineration in post-neolithic times.

The last link in the chain of evidence furnished by the dolmens and connecting the neolithic treatment of cephalic ailments with teachings of the Galenic school is perhaps the most important of all, described as it is so perfectly by the ancient texts cited above, and uniting as it does in a single specimen the various sincipital marks hitherto encountered. The skull in question (plate 1), a cast of which was given to the Yale University Museum by Professor

Manouvrier on the occasion of his recent visit to America, is from the dolmen of Champignolles (Seine-et-Oise). Like all but one or two of the seven or eight previously noted, it is that of a female. The character of the lesions indicate that they were made in early life. In the first place there is the sincipital T with a medial branch 13 centimeters long, not perfectly straight but continuous. It is narrow, and suggests an incision of the periosteum rather than a cauterization. The short transverse groove terminates at either extremity in an oval pit large enough to hold the ball of the thumb. The one on the right actually penetrates the skull, forming a perforation 3 to 4 millimeters in diameter with sharp margins. Near the latter, and in a line with the transverse groove, is an extensive lesion, 6 centimeters in diameter, with irregular, oval contour. The central perforation is of the same shape, and fully 3 centimeters in diameter. In aspect, whatever the intention of the operator may have been, it is a veritable trepanation. Of the bony area attacked, almost one-half was completely destroyed. The perforation is surrounded by a zone of practically uniform width, composed of the inner compact layer of the skull wall; and beyond this zone rises the surrounding rim measured in height by the thickness of the external compact layer. The irregular outlines are not such as would be produced by cutting, sawing, or scraping. There is still another oval cicatrice to be noted. It is sufficient in size to lodge the tip of the little finger; is on the frontal bone 3 centimeters to the right of the medial incision, and does not amount to a perforation.

That these oval lesions are the result of cauterization would be evident even without the support of the ancient authors whose documentary evidence must have come as an agreeable surprise to the finder—all the more so because it was unexpected. It would seem incredible were it not for the fact that any primitive art is apt to remain unchanged until transformed by the growth of its complementary science. When we consider what scientific limitations are imposed on the twentieth century art of healing nervous and mental diseases, there is little wonder that Avicenna, Albucasis, et al. should have made so little progress over the neolithic surgeons. Rather do the latter command anew our admiration because of their skill and courage. Their success, too, may be measured by the



SKULL FROM THE DOLMEN OF CHAMPIGNOLLES (SEINE-ET-OISE)

number that survived treatment, even if they were not cured. That they had courage in daring to operate on cases that would now be regarded as hopeless seems to be abundantly attested by the Champignolles example, where the hardihood of the surgeon was certainly equaled by the fortitude of the patient.

What could better explain the marks on these skulls, especially the one from Champignolles, than Avicenna's prescription for melancholia: "When nothing else avails, the head is to be cauterized in the form of a cross"; or that of Albucasis for the same disease, which is even more explicit: "When there is a tendency toward hypochondria, the cautery is to be applied lightly but at numerous points. . . . This kind of cauterization restores to the brain its normal humidity." For epilepsy, the same authority says to "cauterize on the vertex, on the occiput, and on the frontal protuberances" (forehead). Cephalalgia being caused, as he thought, by an excess of cold and humidity in the brain, the proper corrective would be found in heat, and the resulting noisome vapors would pass by exhalation through the points cauterized. Such was the doctrine of Albucasis, and it tallies perfectly with neolithic practice.

The list of papers by Professor Manouvrier:

1. Le T sincipital — Curieuse mutilation crânienne néolithique. *Bull. Soc. d'anthr. de Paris*, 1895, 4^e sér., VI, 357 (see also p. 273).
2. Conjectures sur le T sincipital, mutilation préhistorique. *Assoc. franç. p. l'av. des sciences*, Bordeaux, 1895, p. 712.
3. Nouvelle mutilation crânienne néolithique. Le T sincipital. *Rev. mensuelle de l'École d'anthr. de Paris*, 1896, VI, 57.
4. Note sur un cas de T sincipital incomplet et sur une autre lésion énigmatique du crâne. *Bull. et mém., Soc. d'anthr. de Paris*, 1902, 5^e sér., III, 601.
5. Les marques sincipitales des crânes néolithiques considérées comme reliant la chirurgie classique ancienne à la chirurgie préhistorique. *Ibid.*, 1903, 5^e sér., IV, 494. (See also *Revue de l'École d'anthropologie de Paris*, 1903, XII, 431, and *l'Assoc. française p. l'av. des sciences*, Angers, 1903.)
6. Incisions, cautérisations et trépanations crâniennes de l'époque néolithique. *Bull. et mém., Soc. d'anthr. de Paris*, 1904, 5^e sér., V, 67.

THE SEX-COMPOSITION OF HUMAN FAMILIES

By JOHN BENJAMIN NICHOLS

It is the purpose of this paper to present the results of a study of the sex-composition, that is, the number of sons and daughters, respectively, of 3,000 human families of six or more children each.

The data for this study were obtained from the genealogical records presented in the *History of Hingham, Massachusetts*, published by the town; in S. Judd's *History of Hadley, Massachusetts*; in D. M. Hoyt's *Old Families of Salisbury and Amesbury, Massachusetts*; in J. O. Austin's *Genealogical Dictionary of Rhode Island*; in W. W. Ingraham's *History of the Castle Family*; from manuscript genealogical and other data in my possession; and a few data (enough to complete the 3,000 families) from James Savage's *Genealogical Dictionary of First Settlers of New England*.

In order to avoid the disturbing numerical influences in small families, the study was confined to large families, of six or more children each. Only those families derived from a single pair of parents are included in the enumerations; for instance, if a man were married more than once and had six (or more) children by one wife and fewer than six by another wife, the six born to the one couple were counted in as a complete family, and the others were disregarded. In a few instances where a man or a woman had more than five children by each of two wives or husbands, the two sets of children were taken as two separate families. Each family in this series therefore represents the progeny of the same father and mother. The families were taken as they came, without any selection whatever.

The vast majority of the families enumerated—probably more than 95 per cent.—were of Anglo-Saxon race and located in New England. An insignificant proportion were of Irish, Scotch, or other origin; no colored families were knowingly included. The period of time embraced by these families covers more than three hundred years, from the year 1600 (and even earlier) to the present

time. A large majority of the families enumerated date between the years 1640 and 1800.

For the purposes of a study of this kind the sex of premature and stillborn infants is of as much importance as that of those born living; family records are, however, inevitably incomplete in this respect, and the unrecorded stillborn children must be ignored in the enumeration. In a few instances children whose sex was not recorded or not determinable from their first names were omitted from the count. The possibility of some — probably only a small proportion — of the family records being incomplete must also be admitted. Late marriages, or the death of either parent during the mother's childbearing period, also cause possible abbreviation of potential families. The necessary omission of occasional missing, unrecorded, or indeterminate individuals from this enumeration can not materially affect the general results, since the numbers of males and females thus omitted will in the long run very nearly balance each other.

The material here utilized, in spite of its partial antiquity, is probably as reliable for its purpose as can be practicably obtained or demanded. The data required in this study were sought mainly from records of a century or two back, first, because in those days the large families here contemplated were more numerous than now; and, second, because family records for that period are more accessible, more abundant, and quite as accurate as the records of the present time.

With these remarks on the source and character of the data, the actual results of the enumeration of the number of males and females in each of the 3,000 families are presented in Table I. In this table the first three columns show the different numerical combinations of the two sexes making up the various families, while the fourth column gives the total number of families of each combination enumerated. Thus, there were 11 families consisting of 6 sons and 0 daughters, 71 of 5 sons and 1 daughter, 154 of 4 sons and 2 daughters, etc.

In all, 3,000 families were enumerated, embracing 12,935 males and 11,941 females, or a total of 24,876 individuals. The average number of members in each family was 8.3, — 4.3 sons and 4.0

daughters. The proportion of males to females was as 108.3 to 100. This proportion of males is somewhat higher than the usual general ratio at birth, which is ordinarily in the neighborhood of 105 or 106; thus, in 59,350,000 births in Europe there was a ratio of 106.3 boys to 100 girls; and of 2,063,386 births in the United

TABLE I. *Statistics of Sex-composition of 3,000 Families*

| Number in Family. | | | Number of Families. | Probable Number of Families. | Number in Family. | | | Number of Families. | Probable Number of Families. | Number in Family. | | | Number of Families. | Probable Number of Families. | Number in Family. | | | Number of Families. | Probable Number of Families. |
|-------------------|----------|--------|---------------------|------------------------------|-------------------|----------|--------|---------------------|------------------------------|-------------------|----------|--------|---------------------|------------------------------|-------------------|----------|--------|---------------------|------------------------------|
| Males. | Females. | Total. | | | Males. | Females. | Total. | | | Males. | Females. | Total. | | | Males. | Females. | Total. | | |
| 6 | 0 | 6 | 11 | 12 | 9 | 0 | 9 | 1 | 1 | 4 | 7 | 11 | 25 | 29 | 10 | 4 | 14 | 3 | |
| 5 | 1 | 6 | 71 | 66 | 8 | 1 | 9 | 12 | 10 | 3 | 8 | 11 | 10 | 14 | 9 | 5 | 14 | 2 | |
| 4 | 2 | 6 | 154 | 152 | 7 | 2 | 9 | 37 | 38 | 2 | 9 | 11 | 9 | 4 | 8 | 6 | 14 | 4 | |
| 3 | 3 | 6 | 186 | 188 | 6 | 3 | 9 | 79 | 82 | 1 | 10 | 11 | 0 | 1 | 7 | 7 | 14 | 1 | |
| 2 | 4 | 6 | 128 | 130 | 5 | 4 | 9 | 118 | 114 | | | | 207 | 207 | 6 | 8 | 14 | 5 | |
| 1 | 5 | 6 | 45 | 48 | 4 | 5 | 9 | 94 | 105 | | | | | | 5 | 9 | 14 | 4 | |
| 0 | 6 | 6 | 8 | 7 | 3 | 6 | 9 | 73 | 65 | 11 | 1 | 12 | 0 | 1 | 4 | 10 | 14 | 1 | |
| | | | 603 | 603 | 2 | 7 | 9 | 23 | 26 | 10 | 2 | 12 | 2 | 3 | 3 | 11 | 14 | 1 | |
| | | | | | 1 | 8 | 9 | 11 | 6 | 9 | 3 | 12 | 11 | 8 | | | | 21 | |
| | | | | | 0 | 9 | 9 | 0 | 1 | 8 | 4 | 12 | 17 | 17 | | | | | |
| 7 | 0 | 7 | 5 | 7 | | | | 448 | 448 | 7 | 5 | 12 | 23 | 25 | 10 | 5 | 15 | 2 | |
| 6 | 1 | 7 | 43 | 42 | | | | | | 6 | 6 | 12 | 31 | 27 | 9 | 6 | 15 | 2 | |
| 5 | 2 | 7 | 119 | 118 | | | | | | 5 | 7 | 12 | 22 | 22 | 8 | 7 | 15 | 3 | |
| 4 | 3 | 7 | 200 | 181 | 9 | 1 | 10 | 5 | 5 | 4 | 8 | 12 | 8 | 12 | 7 | 8 | 15 | 1 | |
| 3 | 4 | 7 | 161 | 168 | 8 | 2 | 10 | 27 | 19 | 3 | 9 | 12 | 5 | 5 | 6 | 9 | 15 | 1 | |
| 2 | 5 | 7 | 78 | 93 | 7 | 3 | 10 | 40 | 47 | 2 | 10 | 12 | 2 | 1 | 5 | 10 | 15 | 1 | |
| 1 | 6 | 7 | 31 | 29 | 6 | 4 | 10 | 81 | 75 | | | | | | | | | | |
| 0 | 7 | 7 | 5 | 4 | 5 | 5 | 10 | 69 | 84 | | | | 121 | 121 | | | | 10 | |
| | | | 642 | 642 | 4 | 6 | 10 | 71 | 65 | 13 | 0 | 13 | 1 | 0 | 11 | 5 | 16 | 1 | |
| 8 | 0 | 8 | 3 | 3 | 2 | 8 | 10 | 13 | 12 | 11 | 2 | 13 | 0 | 1 | 8 | 8 | 16 | 2 | |
| 7 | 1 | 8 | 24 | 22 | 1 | 9 | 10 | 3 | 2 | 10 | 3 | 13 | 3 | 2 | | | | 3 | |
| 6 | 2 | 8 | 70 | 70 | | | | 343 | 343 | 9 | 4 | 13 | 4 | 5 | | | | | |
| 5 | 3 | 8 | 114 | 130 | | | | | | 8 | 5 | 13 | 4 | 8 | 10 | 8 | 18 | 1 | |
| 4 | 4 | 8 | 154 | 150 | 10 | 1 | 11 | 1 | 2 | 7 | 6 | 13 | 9 | 10 | | | | | |
| 3 | 5 | 8 | 128 | 111 | 9 | 2 | 11 | 2 | 7 | 6 | 7 | 13 | 12 | 9 | 11 | 9 | 20 | 1 | |
| 2 | 6 | 8 | 45 | 51 | 8 | 3 | 11 | 30 | 20 | 5 | 8 | 13 | 6 | 6 | | | | | |
| 1 | 7 | 8 | 13 | 14 | 7 | 4 | 11 | 41 | 37 | 4 | 9 | 13 | 3 | 3 | 5 | 16 | 21 | 1 | |
| 0 | 8 | 8 | 2 | 2 | 6 | 5 | 11 | 43 | 48 | 3 | 10 | 13 | 2 | 1 | | | | | |
| | | | 553 | 553 | 5 | 6 | 11 | 46 | 45 | 2 | 11 | 13 | 2 | 1 | | | | | |
| | | | | | | | | | | | | | 46 | 46 | | | | | |

States during the census year 1900 there were 104.9 males to every 100 females. The figures of Janse and of Geissler¹ both show that in large families the proportion of sons at birth is greater than in small families, and the high rate of sons found in my series is probably due, in part at least, to the fact that this series is based on large families.

¹ See references at the close of the article.

In looking over the relative numbers of sons and daughters making up the various families, we find all gradations from those families in which the sexes are evenly divided to unisexual families in which the children are entirely of the same sex, all sons or all daughters.

By applying the theory of probabilities to the observed sex-composition of large numbers of families, an interesting and important relation is brought out.

To illustrate the method of elaborating and applying this theory, suppose (what is not quite true) that the general chances of any child being born a boy or a girl are equal. Then the chances of the first child being, say, a boy are $1:2$; the chances of the second child being a boy are also $1:2$, but the chances of both being sons are $\frac{1}{2} \times \frac{1}{2}$, or $1:4$. Similarly, in a family of 6, the chances of all being sons is $1:2^6$, or 1 in 64. In families of 6 children, there are 64 possible arrangements or permutations or order of birth of sons and daughters, any one of which would be as likely to occur as any other; or the chance of each would be $1:64$. Of these permutations there are six presenting the combination of 5 sons and 1 daughter, according as the daughter is the first, second, third, fourth, fifth, or sixth child; and the chances that a family of six would consist of 5 sons and 1 daughter would be 6 in 64. By applying this method of calculation, out of every 64 families of 6 children each the general probabilities (regarding the two sexes as having equal chances) are that there would be

| | | | | | |
|----|----------|---------------------------|---|---|--|
| 1 | family | of 6 sons and 0 daughters | | | |
| 6 | families | of 5 " " " | 1 | " | |
| 15 | " | " 4 " " | 2 | " | |
| 20 | " | " 3 " " | 3 | " | |
| 15 | " | " 2 " " | 4 | " | |
| 6 | " | " 1 " " | 5 | " | |
| 1 | " | " 0 " " | 6 | " | |
| 64 | " | " 6 children each | | | |

The chances that a child born will be a son or a daughter are, however, not quite equal, but are slightly in favor of the male sex. The general average ratio of the sexes in the families here enumerated being about 108:100, for the purposes of this study the

chances of a child being a son are taken as 108 : 208, and of being a daughter as 100 : 208. Each permutation of m sons and n daughters would, then, have a chance of occurring $108^m \times 100^n$ times in 208^{m+n} families. This ratio makes the calculations more cumbersome, but gives a more accurate result. In Table I, along with the number of families of each combination as actually observed is given, in the fifth column, the number called for by the theory of probabilities, calculated on the basis of 108 : 100. Thus, out of 603 families of 6 children, 11 consisting entirely of sons actually occurred, while the theory of chances called for 12; 186 families actually consisted of 3 sons and 3 daughters, while the probable number was 188; and so on.

It will be immediately seen on examination of Table I that there is throughout a very close correspondence between the number of families actually observed and the number called for by the theory of probabilities. In other words, the sex-composition of families practically agrees with the laws of chance.

After completing this enumeration and arriving at the results stated, I found on searching the literature two and only two other studies of the same subject, those of Janse and of Geissler.

Janse gives statistics of 2,412 families of Middelburg, Holland, of 1 to 16 children each, aggregating 8,818 children. He gives (pages 125-142) the numbers of families not only of each combination of sexes but also of each permutation or order of birth of sons and daughters; he does not, however, apply the theory of probabilities to the subject.

Geissler, having at his command the unexampled facilities and data of the vital registry bureau of Saxony, has presented an analysis of the statistics of no fewer than 4,794,304 children, of 998,761 families, born in Saxony, 1876-1885. In a careful comparison of the various sex-combinations in his families of 2 to 12 children each he found an extremely exact correspondence of the actual numbers with the numbers called for by the theory of probabilities, except that in the case of families entirely of the same sex the actual numbers slightly exceeded the probable. He also gives an exhaustive study of the actuality and probability of the sex of children born after given sex-combinations already exist, and concludes that in general there is a tendency toward the equalization of the number

of the two sexes in each family; excepting, again, that in a small proportion of cases there appears to be a definite tendency to the generation of children all of the same sex.

Large unisexual families always attract attention, and nearly every one has noted instances within his own knowledge of large families consisting entirely or mainly of sons or of daughters. My series includes a family of 13 children all of whom were sons. Rauber (page 79) cites a family of 14 girls, born to a single pair of parents; and Geissler's statistics include one family of 14 sons and another of 16 daughters. Although such families are conspicuous, the tendency to the generation of large unisexual families is no greater, according to my statistics, or only slightly greater, according to Geissler's hundredfold more extensive statistics, than the theory of probabilities calls for.

It may be accepted as fairly demonstrated that the actual sex-composition of human families practically corresponds with that called for by the theory of chance. Is this correspondence to be taken as an indication that the determination of sex and the sex-composition of families are entirely fortuitous? Or is it not rather consistent with the view that real forces are at work in the parents or germ cells governing sex determination, such that the correspondence noted is simply the arithmetical expression of the varying strengths of these sex-determining forces in different families yielding the general average ratio of 108:100 (or whatever the exact ratio at conception is) as representing the relative strength of the forces tending to produce males and females respectively?

If terms would be useful in this connection to denote the tendency in parents to produce male or female children, the following might be employed:

Arrhenogenic, = male-producing, or the tendency in a parent (either father or mother) to produce male children; from ἀρσεν, male, ἀρρενόγονος, producing male children.

Thelygenic, = female-producing, the tendency in a parent to produce female children; from θήλυς, female, θηλυγόνα, producing female children.

Rauber uses the terms *Arrhenotokie*, *Thelytokie*, etc., (τόκος, child-birth).

Supposing that every parent has a special power toward the

determination of the sex of his or her offspring, the sex-composition of any family born to a single pair of parents would be the resultant from the fusion of the sex-determining powers of the two parents. Opposite sex-determining influences in the two parents would tend to neutralize each other, while similar influences would be strengthened. With a single pair of parents it is not possible to form a judgment as to the special sex-determining power, arrhenogenic or thelygenic, of either parent. A study of families resulting from multiple marriages, in which one parent was married more than once, might reveal a constant sex-determining influence on the part of the parent multiply married that would be manifest in the offspring by different consorts. It is not often that a father has six or more children by each of two wives, so that in this study there are too few families of this sort from which to draw any satisfactory conclusions. The data obtained, so far as they go, are as follows: Fourteen fathers who had more than five children by each of two wives, and each of whom by the first marriage had more sons than daughters, had by the first marriages a total of 79 sons and 34 daughters, and by the second marriages 66 sons and 42 daughters; if in this series the predominance of sons in the first marriages can be interpreted as due to a dominant arrhenogenic power in the fathers, then the same dominant tendency to the generation of males is in general observable in the second marriages. On the contrary, 7 fathers, each of whom by his first marriage had more daughters than sons, had by the first marriages 16 sons and 37 daughters, and by the second marriages 33 sons and 29 daughters; the dominant thelygenic tendency in the first unions in this series was not maintained in the second unions. These data are insufficient for generalization; but a study of larger series, embracing mothers as well as fathers and not limited to large families, might yield some reliable conclusions as to the possession of special sex-determining powers by individuals.

If there is any special sex-determining influence, in either an arrhenogenic or thelygenic direction, inherent in individuals, and this tendency is transmissible to the offspring, then a study of the different families or generations descended from the same common ancestors might reveal traces of the existence of such tendency.

Table II gives the aggregate sex-composition of numbers of families (of more than five children each) descended in the male line from common ancestors.

TABLE II. *Aggregate Sex-composition of New England Families (of 6 or more Children each) Descended in Male Line from Common Ancestors.*

| Name of Common Ancestor. | Number of Families. | Total Number of Sons. | Total Number of Daughters. | Total Number of Children. | Number of Sons for 100 Daughters. |
|-------------------------------------|---------------------|-----------------------|----------------------------|---------------------------|-----------------------------------|
| Leavitt, John..... | 11 | 55 | 31 | 86 | 177 |
| Barnes, Thomas..... | 11 | 64 | 38 | 102 | 168 |
| Cushing, Matthew..... | 47 | 259 | 169 | 428 | 153 |
| Humphrey, Thomas..... | 13 | 59 | 42 | 101 | 140 |
| Loring, Thomas..... | 26 | 119 | 89 | 208 | 134 |
| Smith, Joseph..... | 18 | 81 | 65 | 146 | 125 |
| Nash, Timothy..... | 18 | 82 | 66 | 148 | 124 |
| Dickinson, Nathaniel..... | 49 | 218 | 177 | 395 | 123 |
| Hobart, Edmund..... | 28 | 131 | 108 | 239 | 121 |
| Sprague, William..... | 27 | 119 | 100 | 219 | 119 |
| Thaxter, Thomas..... | 15 | 71 | 60 | 131 | 119 |
| Stodder, John..... | 43 | 210 | 180 | 390 | 117 |
| Lincoln, Thomas ¹ | 8 | 34 | 29 | 63 | 117 |
| Burr, Simon..... | 14 | 64 | 56 | 120 | 114 |
| Smith, Samuel..... | 57 | 261 | 229 | 490 | 114 |
| Bates, Clement..... | 24 | 104 | 92 | 196 | 113 |
| Lane, William..... | 17 | 67 | 60 | 127 | 111 |
| Gardner, John..... | 25 | 111 | 100 | 211 | 111 |
| Nichols, Thomas..... | 16 | 75 | 68 | 143 | 110 |
| Tower, John..... | 22 | 103 | 96 | 199 | 107 |
| Warner, Andrew..... | 11 | 50 | 47 | 97 | 106 |
| Kellogg, Joseph..... | 23 | 101 | 96 | 197 | 105 |
| Hastings, Thomas..... | 10 | 49 | 47 | 96 | 104 |
| Fearing, John..... | 17 | 67 | 66 | 133 | 102 |
| Lincoln, Stephen ¹ | 17 | 67 | 67 | 134 | 100 |
| Dunbar, Robert..... | 16 | 68 | 69 | 137 | 99 |
| Hersey, William..... | 36 | 142 | 143 | 285 | 99 |
| Lincoln, Thomas..... | 18 | 77 | 78 | 155 | 99 |
| Stowell, Samuel..... | 13 | 52 | 54 | 106 | 96 |
| Montague, Richard..... | 13 | 53 | 56 | 109 | 95 |
| Whiton, James..... | 42 | 161 | 174 | 335 | 93 |
| Porter, Samuel..... | 14 | 57 | 61 | 118 | 93 |
| White, John..... | 22 | 83 | 89 | 172 | 93 |
| Jones, Robert..... | 10 | 39 | 42 | 81 | 93 |
| Lincoln, Samuel..... | 28 | 111 | 123 | 234 | 90 |
| Lewis, George..... | 11 | 44 | 49 | 93 | 90 |
| Lincoln, Daniel..... | 11 | 41 | 48 | 89 | 85 |
| Beal, John..... | 37 | 145 | 174 | 319 | 83 |
| Jacob, Nicholas..... | 11 | 35 | 48 | 83 | 73 |
| Wilder, Edward..... | 29 | 109 | 152 | 261 | 72 |
| Total..... | 878 | 3838 | 3538 | 7376 | 108.5 |

The first item of this table shows, for instance, that in 11 families descended in male line from John Leavitt there were in all 55

¹ Brothers.

sons and 31 daughters, a ratio of 177 sons to 100 daughters; and so with the others. The total number of families enumerated is 878, with a total of 7,376 individuals, and an average ratio of 108.5 males to 100 females, practically the same ratio as in my entire series of 3,000 families. The different families are arranged in the order of the ratios of sons to daughters, and range from the Leavitt families, averaging 177 sons, to the Wilder families, averaging only 72 sons, to every 100 daughters. These statistics are perhaps too limited to warrant any very positive conclusions; but they serve as a contribution to the subject, and in some of the cases, as the 47 Cushing families with a ratio of 153 sons, or the 37 Beal families with a ratio of 83 sons, the number of families appears sufficiently large and the departure from the average ratio of the sexes sufficiently marked to eliminate chance and show that in some individuals and families there is a hereditary tendency to the production of sons, and in others of daughters. This table necessarily presents the influence of only one line, the male; the female lines coming in at each marriage of course affect the sex-determining tendency, but both parental influences can not be exhibited in this method of presentation, and a markedly predominant tendency to produce all children of one sex even if on one side only ought to be brought out by this method. On the whole, the data exhibited in Table II would seem to show that in different families there are marked hereditary differences in the sex-determining tendencies. Other observers (von Lenhossék, Lorenz) also have expressed a belief that in some families there are hereditary tendencies to a predominance of sons, in others of daughters.

If there is a special parental sex-determining power shown by the data in Table II, it is exerted, be it noted, on the male or paternal side; and, contrary to recent theories that sex is determined exclusively through the mother, indicates that in the case of man at least the paternal side has some sex-determining influence.

If there is a heritable sex-determining power, it would be natural to expect that the members of large unisexual families, in which the children are all or nearly all of the same sex, would themselves show a marked tendency to produce children predominantly of that sex. This, however, is often not the case.

Thus, in one case, a couple had 9 sons and 1 daughter; eight of these sons had an aggregate of 34 boys and 30 girls (one of them having 5 sons and 0 daughters, another 2 sons and 8 daughters); so that although in the first generation males overwhelmingly predominated, in the second generation the two sexes were nearly evenly divided. In a second case, of a family of 8 sons and 1 daughter, four of the sons had 18 boys and 16 girls. In a third case, out of a family of 2 sons and 10 daughters, eleven had 39 boys and 35 girls. In a fourth case, out of a family of 1 son and 8 daughters, five of the daughters had 13 boys and 11 girls, while the son had 6 boys and 1 girl; total, 19 boys and 12 girls.

One remarkable case to the contrary, however, is included in my data. A couple still living in Essex, England, had a family of 13 children, all sons; to the present time, five of these sons have had children, aggregating 10 boys and only 1 girl. This case is perhaps to be regarded as one in which a powerful arrhenogenic influence in the parents was transmitted to the sons.

Geissler's finding that in a small proportion of families there appears to be a definite tendency to the generation of children all of the same sex, over and above what the laws of probability would call for, would point to the existence of positive sex-determining powers in parents.

In view of the foregoing considerations, we might speculate on the question as to the apparent operation of pure chance in the determination of sex and the sex-composition of families in this way: Two opposite sex-determining powers are resident in parents, one arrhenogenic or male-producing, the other thelygenic or female-producing. These two powers occur in individuals in definite absolute and relative strengths, capable, were the fundamental cellular forces completely known, of being quantitatively expressed; and they vary widely in strength in different individuals, from strong arrhenogenesis to strong thelygenesis. Each pair of parents possesses a definite net sex-determining power or coefficient, the resultant of the combined sex-determining powers of the two individual parents; and the number of sons and daughters generated may be taken as a result, and as a quantitative expression or measurement

of the comparative strengths of these two forces in the parents. For instance, suppose one parent to have a net arrhenogenic power twice the strength of a net thelygenic power in the other parent; then the net resultant sex-determining power in the pair would be such that there would be a tendency to produce two sons for every daughter. For the race at large the general average relative strengths of the arrhenogenic and thelygenic forces are at conception approximately in the ratio of 115 : 100 (Rauber), or 111 : 100 (von Lenhossék), respectively, which after allowing for the excessive intrauterine mortality of male fetuses yields the ratio at birth of from 105-108 boys to 100 girls. The net sex-determining powers or coefficients vary through a wide range in different pairs of parents, and, considering that in each pair they result from the fortuitous union of individuals with differing or unknown coefficients, these varying powers are probably distributed among the parental pairs in such a way quantitatively as to agree with the numerical expression of the theory of chances. According to this hypothesis, then, the sex-composition of families agrees with the laws of chance, not because the determination of sex is a pure matter of chance, but because the cellular forces that govern the determination of sex and tend to produce males and females respectively are distributed among the various pairs of parents in arithmetical agreement with the theory of probability.

In a comparatively small number of families included in my enumeration (771) the sex of the firstborn child was noted. Similar statistics have been collected and presented by Geissler and by Orschansky. The three series of data are shown in Table III.

These three series of data agree with one another in showing that there is a general agreement between the sex of the first child and the sex of the majority of the children in families; in families beginning with a son there is in general an excess of male over female children, and vice versa. After deducting the firstborn children, however, the remaining children of the families present, as shown by the last column of the table, the usual proportions between the sexes. The general agreement between the sex of the first child and the sex of the majority of the children, therefore, is a purely arithmetical result of the method of classification employed, and

arises from the numerical advantage to each sex resulting from arranging the families according to the actual sex of the first child. A similar agreement would doubtless be found if the families were classified by the sex of the second, third, last, or any child. Aside from this accidental correspondence, the idea that the sex of the first child in any potential sense dominates or characterizes the sexual type of the family does not seem warranted.

TABLE III. *Statistics of Sex of Firstborn*

| | Number of Families. | Number of Sons. | Number of Daughters. | Number of Sons for each 100 Daughters. | |
|--|---------------------|-----------------|----------------------|--|----------------------|
| | | | | Including Firstborn. | Excluding Firstborn. |
| Geissler : | | | | | |
| Families in which firstborn was male.... | 5,143 | 22,484 | 16,518 | 136 | 105 |
| Families in which firstborn was female.. | 5,000 | 16,797 | 21,232 | 79 | 103 |
| | 10,143 | 39,281 | 37,750 | 104 | |
| Orschansky : | | | | | |
| Families in which firstborn was male.... | 1,246 | 3,907 | 2,768 | 141 | 96 |
| Families in which firstborn was female.. | 1,196 | 2,768 | 3,831 | 72 | 105 |
| | 2,442 | 6,675 | 6,599 | 101 | |
| Nichols : | | | | | |
| Families in which firstborn was male.... | 415 | 2,042 | 1,456 | 140 | 112 |
| Families in which firstborn was female.. | 356 | 1,367 | 1,658 | 82 | 105 |
| | 771 | 3,409 | 3,114 | 109 | |
| Aggregate : | | | | | |
| Families in which firstborn was male.... | 6,804 | 28,433 | 20,742 | 137 | 104 |
| Families in which firstborn was female.. | 6,552 | 20,932 | 26,721 | 78 | 104 |
| Total..... | 13,356 | 49,365 | 47,463 | 104 | |

In the 13,356 families embraced in the aggregate of the foregoing series the ratio of the families in which the firstborn was male to those in which the firstborn was female is as 103.8 to 100, practically the same as the general ratio of the sexes (104 : 100) in the entire number of individuals belonging to these families.

Summary: In this study, covering 3,000 families of six or more children each, aggregating 24,876 individuals, the average ratio of the sexes born was 108.3 males to 100 females. In the

sex-composition of the various families all gradations were found from those exclusively or preponderatingly male, through those in which the sexes were mixed in various proportions, to families preponderatingly or exclusively female. It was found that the actually observed numbers of families of each sex-combination correspond very closely with the numbers required by the theories of probabilities, calculating on the basis that the general chances that any given child would be a male would be as 108 in 208. This correspondence, however, was not taken as necessarily indicating that the determination of sex in families is entirely a fortuitous matter, rather than under the government of forces resident in the parents or germ cells; although these sex-determining forces might be distributed in varying strength among the various parents in quantitative agreement with the laws of chance. A compilation of numerous families in various generations descended from common ancestors seemed to show that parents may possess definite and specific sex-determining powers that are transmissible to offspring, and vary in different individuals and different families. As in this compilation the lines of descent were shown on the male side only, it would seem that in the case of man at least the father has some influence in the determination of the sex of his offspring. It was also shown that in general the sex of the firstborn child agrees with the sex of the majority of the children in families, but simply as an arithmetical result from the numerical advantage arising from arrangement of the families according to the sex of the first child.

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SOME CHEYENNE PLANT MEDICINES

By GEORGE BIRD GRINNELL

Among Indians, as indeed to some extent among the whites, the healing of the sick is two-sided—evil spirits must be driven away and good spirits brought near, and besides, remedies good for the body must be administered. The Cheyenne Indians make use of many plants in healing, and while it may be questioned if they have any real knowledge of the medicinal properties of these plants, long experience has undoubtedly taught them that some are efficacious. Thus some plants are used because they act directly on the organs of the person treated; others, in their belief, possess spiritual power and are administered in order that they may impart to the patient their own qualities. The light powder made from the dry flowers of the prairie "everlasting" when rubbed on the body is thought to protect the warrior from the bullets and arrows of enemies by making him light and quick in his movements, just as this powder is light in weight and is easily stirred by the wind. Properly applied to a horse, it enables it to run for a long time—perhaps by reducing his weight.

Healing by the administration of herbs is practised by men and women alike. Almost every woman possesses certain plants, used as medicine, which are peculiarly her own, and the secrets of which she alone knows. These are usually carried about in a small buffalo-skin sack, often one of those used so commonly for the carrying of stakes for gambling or of sewing materials. Often to each little bundle of an individual medicine is tied some mark of identification, so that the woman may recognize what it is without being put to the trouble of opening it and inspecting the contents. To one bundle may be tied a blue bead, to another a white one, to a third the claw of a bear, to a fourth the part of the beard of a turkey, and others still may be tied with strings of different colors. Sometimes these objects, which at first were attached to the bundles purely for purposes of identification, have come to possess a

more or less sacred character; so that in some cases where the medicine is mixed with water before it is administered, it is necessary to stir the mixture with the identifying article — with the claw of the animal, or the beard of the turkey, or the little stone arrow-head which may be tied to the bundle. Favorite objects for stirring such fluid medicine are the claw or the tusk of a bear. This no doubt has relation to the very common belief in the bear's invulnerability and in its power as a healer.

Formerly almost every man carried about with him, tied to his necklet, his shoulder girdle, or perhaps to his hair, one or more little bundles containing medicine. Some men have herb medicines of which they alone possess the secrets. These may be what we would call drugs, or they may be merely *ma-i-yu'* (mysterious, or spiritual). The old stories tell us that the people learned of the various medicinal plants, and of the uses to which they were to be put, by means of dreams; and that in other cases certain mythological heroes went out with them on the prairie and pointed out plants which they explained were to be used for certain diseases.

MEDICINAL PLANTS

From my old "mother," Wind Woman, of the Northern Cheyennes, I have received a number of specimens of plants used in healing by these Indians. The collection by no means includes all the plant medicines used by the Cheyennes, yet it was difficult to secure even so small a collection and to properly identify the plants. The species procured have been very kindly named for me by Mr Frederick V. Coville, Botanist of the United States Department of Agriculture, and also have been submitted to Dr H. H. Rusby of the College of Pharmacy of the City of New York. Dr Rusby has been kind enough to comment on some of the uses to which these plants are put, and I have introduced his remarks under the different species. To the list of plants used in healing, two dyes are added at the close.

Htā'ne' htsse' èyo, Bark Medicine (*Balsamorhiza sagittata* Nutt.). This is used for stomach trouble and for headache. For pains in the stomach, boil the leaves, roots, and stems together and drink the infusion. For headache, steam the face over the boiling

tea, covering with a cloth the head and the vessel containing the fluid. Some of the tea should be rubbed on the painful part. Another doctor recommends it in cases of sore mouth and sore throat, in which case the patient must chew the root and let the saliva run down the throat. To chew the root is good also for toothache, while the root chewed and rubbed over the body is efficacious in any sickness. A tea made of the root is good also for fever, and a little of the root cut into small pieces, boiled and made into an infusion, is given to a woman when she begins to have labor pains, in order to insure easy delivery.

This medicine, which is also called Black Medicine, *móhk'tákwts-sé'tyo*, is thus commented on by Dr Rusby: "This is not a highly important medicinal agent, yet at the present time it is attracting considerable attention as a carminative, antispasmodic, and alterative. It is interesting to note that these are the very properties indicated in the Cheyenne uses." The root of this plant is called Bark Medicine; the leaves are called Black Medicine.

Hé'héyuts'tshtss'óts, Vomiting Medicine (*Mentha canadensis* L.). To prevent vomiting, grind the leaves and stems fine, boil them in water, and drink the tea slowly.

One of the varieties of this plant is a source of menthol, which latter is largely used as an antiemetic; hence much interest attaches to its use by these Indians.

Mata'mints'tóhtssé'héyo, Nose-bleed Medicine (*Pterospora andromedea* Nutt.). Used to prevent nose-bleeding and bleeding from the lungs. Grind the stem and berries together, make an infusion in boiling water, and let it cool. When cold, snuff some of the infusion up the nose and put some of it on the head for nose-bleed, and drink it for bleeding at the lungs. This drug is moderately used as an astringent, but is not of commercial importance.

Móhktak'wánósts, Black Sagebrush (in name only) (*Ambrosia psilostachya* DC.). This is used for cramps in the bowels and to stop bloody stools. Grind the leaves and stem fine and make a tea, using a pinch of the powder to a cupful of water. Drink this, and the pains and bleeding will cease.

Ó'twítsse'héyo, Scabby Medicine (*Chrysothamnus nauseosa* (Pursh) Britton). (Has been known as Bigelovia.) This is used to heal

sores which may break out on the body. The leaves and stem are boiled together, and the affected parts are washed with the infusion. If this does not speedily effect a cure, the fluid must be rubbed on hard. In severe cases some of the tea must be drunk; it is used in this way to cure smallpox. The plant has no medicinal properties known to science.

Tò'wányáhk'is, Fever Medicine ("to-make-cold medicine") (*Psoralea argophylla* Pursh). This is used to reduce fever. The leaves and stems are ground fine and boiled in water, and the tea is drunk. To cure a high fever, the leaves and stem ground to powder are also mixed with grease and rubbed all over the body.

The medicinal properties of this plant are not known to science, but it is a near relative of species having active and important properties, though not much used in medicine. Its use to reduce fever is of great interest and very suggestive.

Mahkha'nówas, Poison Weed Medicine (*Astragalus nitidus* Dougl.). This plant is used in cases of poisoning by ivy or other noxious plants. The leaves and stems are ground fine, and when the poisoned skin presents a watery appearance the powder is sprinkled on the afflicted parts.

The use of this plant is also interesting, and if a really efficient and reliable remedy could be found for ivy poisoning (and it is possible that this plant might be such) it might become a very important article of trade. This plant is closely related to the famous loco weed.

Hoh'ahéānōis'tat, Paralysis Medicine (*Lithospermum linearifolium* Goldie.). This is used for paralysis, and also in cases where the patient is irrational from any sickness. For paralysis the leaves, roots, and stems are ground fine, and a very small quantity of the powder is rubbed on the paralyzed part. It causes a prickling sensation of the skin. It is also said to be sometimes used green, the doctor wrapping some of the leaves in a cotton cloth, then crushing them with her teeth and rubbing the affected parts, when the same prickling or stinging sensation is felt. Where the person is irrational by reason of illness, a tea is made of the roots, leaves, and stem, and rubbed on the head and face. The plant is also used when a person is very sleepy—hard to keep awake. It is chewed

fine by a doctor, who spits and blows the medicine in the patient's face and rubs some of it over his heart.

The prickling sensation referred to is probably largely mechanical and is due to the extremely fine hairs which will account for the counter-irritant effect. Beyond this the borage family is very little understood, though many of its members are used as diuretics.

No'änyän, Smoke Leaves (*Arctostaphylos uva-ursi* Spreng.). Used for pain in the back, and especially for sprained back, when the pain remains for some time. The stems, leaves, and berries are boiled together and the infusion drunk. The wet leaves should also be rubbed on the painful part.

This is the well-known bear-berry and is a standard officinal drug. It is used as a diuretic in cases of congested kidney and is very effective. In view of the qualification as to its persistence, the pain in the back to which the Indians allude is undoubtedly referable to disordered kidneys, so that we have again a remarkable confirmation of the keenness of these people in appreciating the properties of their drugs.

Motstn'ist, Sore-throat Medicine (undetermined). Used for sore-throat; the root is chewed and the saliva swallowed.

Wohkōn'tsse'äyo, White Medicine (unidentified). An herb or weed which grows to about two feet in height. The root is generally ten or twelve inches long, and from a quarter to half an inch in diameter. The root, which alone is used for medicinal purposes, is cut in small pieces, boiled, and the tea drunk for diseases of the stomach. A stronger decoction is made for allaying inflammation by external application. The name is derived from the color of the root. The plant does not grow in the country now occupied by the Northern Cheyennes, and I have been unable to identify it.

Tatawisse'hēyo, Blue Medicine (*Lygodesmia juncea* Pursh), or *Matanā'itssē'hēyo*, Milk Medicine. An infusion made of this plant is drunk by women who have had children and have an insufficient supply of milk, for the purpose of increasing the flow. With this is often used the following:

Mōtsi'hīyān (*Actæa arguta*). Boiled with the blue medicine. Either can be used alone, but it is better to mix them. The last-named medicine is said to have been brought to the tribe when *Mōtsiyū*, the Culture Hero, brought the arrows, hence the name.

Mōwe' hēmōlk' shtn, Elk Mint (*Agastache anethiodora* (Nutt.) Britt.). Used as tea by boiling the leaves and forming a pleasant drink. An infusion of the leaves when allowed to get cold is good for pain in the chest (as when the lungs are sore from much coughing), or for a weak heart.

Wi' nkhkltssē' hēyo, Bitter Medicine (*Acorus calamus*). An infusion made from a bit of this root boiled in water is drunk for pain in the bowels, and the root chewed and rubbed on the skin is good for any illness. A bit of the root tied to a child's necklet, dress, or blanket, will keep the night spirits away.

This plant does not grow in the northern country, but is obtained by the Cheyennes from the Sioux. In former times they smoked it with red-willow bark.

Sihyā' indōwēhtssē' hēyo, Strong Medicine (*Anaphalis margaritacea* or *subalpina*). If a gift, to be left on a hill, is to be made to the sun or to the spirits, this "strong medicine" is used to smoke and purify it before it is taken out. The leaves of the medicine are scattered over a burning coal, just as sweet grass or sweet pine is used in smoking other things. In one of his little medicine bundles each man carries some of the dried and powdered flowers of this plant, and formerly, when going into battle, he chewed a little of it and rubbed it over his arms, legs, and body, for the purpose of imparting strength, energy, and dash, and thus protecting him from danger. A man still puts a little of the powder on the sole of each hoof of the horse he is riding, in order to make it long-winded, and he also blows a little of the powder between the animal's ears also for the purpose of increasing its wind. The reason for rubbing the medicine on the body is that the warrior may be hard to hit by an enemy. Spotted Wolf warned his sons that after this medicine had been rubbed on them, they must let no woman touch them, for to do so would render the medicine powerless.

The dried flowers of the plant are made into a very fine light dust, which is easily blown away or moved by any force, and the qualities that it is believed to impart to one treated with it probably have reference to this readiness with which it is moved.

Mōlk' shtn, Mint (unidentified). This mint is used in making a tea for drinking, chiefly for the sick. A little of the plant may be used with the bark medicine to give it a pleasant flavor.

To the list of medicinal plants I add the following two vegetable dyes:

Má'ttúkóhé' (*Rumex venenosus* Pursh). Roots and dried leaves of yellow and red dye. The roots are cut in small pieces and boiled. After the infusion has cooled, the feathers, quills, or hair to be dyed are put in the water. If a deep color is desired, the articles are left in a covered vessel of dye all night; soaking for a shorter time produces a paler color. When a red dye is required, ashes are put into the yellow dye liquor, which is boiled again and allowed to cool, when it becomes red. The strength of the color is varied by longer or shorter immersions. If a black dye is needed, the bark is taken from red-willow shoots, scorched and pounded fine, and put in the red or yellow dye and boiled again. Though the Cheyennes never use it for that purpose, cloth may be dyed with these mixtures.

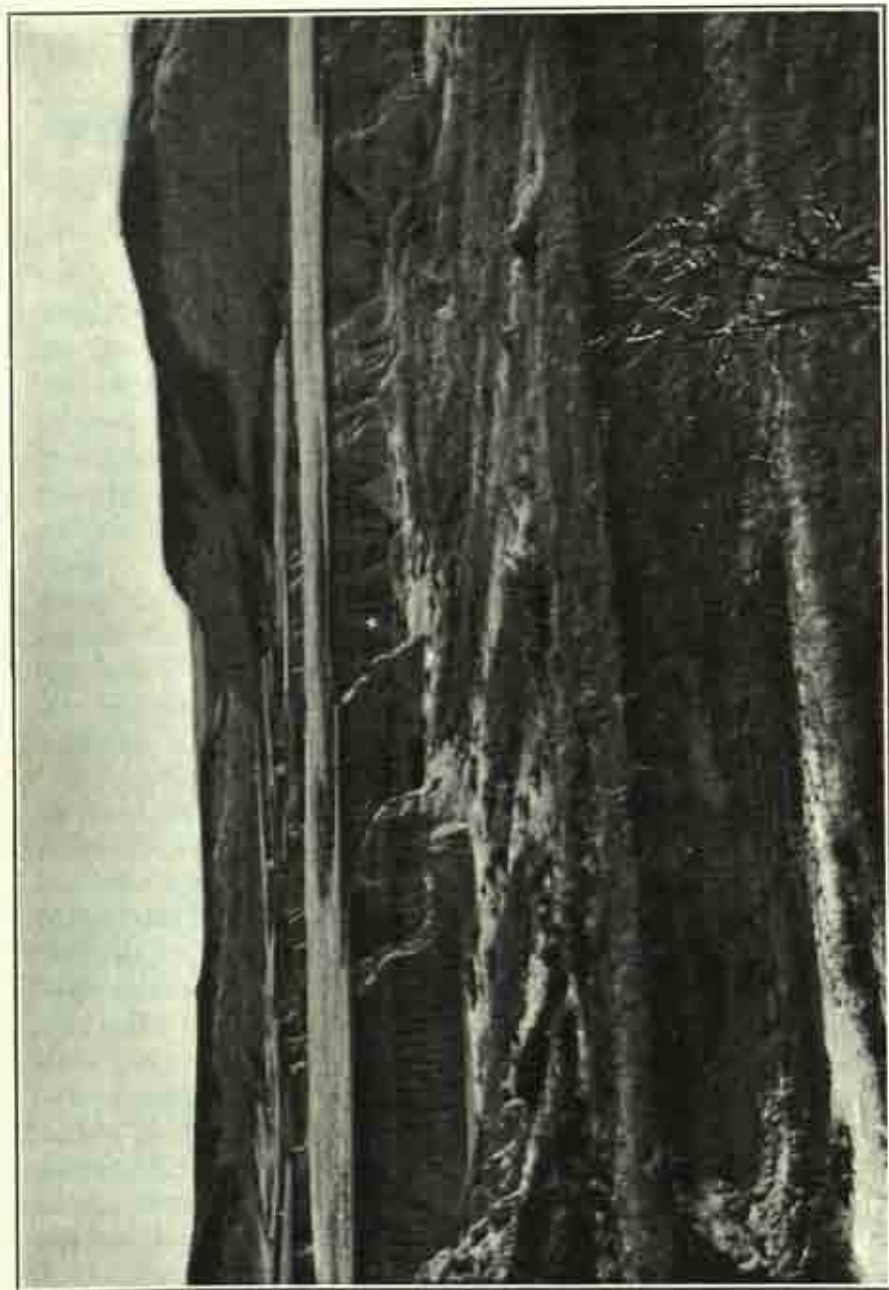
Héhyówó'ists (*Evernia vulpina* Ach.). Yellow Dye, or Yellow Root. This plant is boiled in water, and articles steeped in the liquid are dyed yellowish green.

ANCIENT INDIAN FIREPLACES IN SOUTH DAKOTA BAD-LANDS

By A. E. SHELDON

In the Bad-lands region of South Dakota, on the south side of White river, about 150 miles above where that stream empties into the Missouri, flows the small stream now called Lost Dog. Before 1891 it had no name; the region was wild and uninhabited by white men or Indians. It was in December, 1890, that Big Foot's band of Sioux from Cheyenne River agency crossed White river and followed an old trail along the bank of the little stream on their way to the scene of the Ghost-dance disturbance at Pine Ridge. The first night across White river they camped by a little spring, since called Big Foot spring; their second encampment was beneath the evening shadow of picturesque, pine-crowned Porcupine butte. Here they were located by scouts of the Seventh cavalry, and the next day were halted on their march and forced to surrender. The third night both soldiers and Indians camped on Wounded Knee creek. The attempt the next morning to disarm the band led to a fight in which thirty soldiers and more than a hundred Indians were killed in what became known as the battle of Wounded Knee, to be remembered as the last serious conflict with Indians within the United States. The Indian survivors fled from their camp to the hills; their tipis were set on fire by the soldiers in order to drive lingering hostiles from their shelter, and when the fight ended some dozens of homeless dogs sniffed about the ruined, blood-stained camp. History records the fate of the fleeing Sioux—how some of them were killed and others captured in their hungry and homeless flight. One of the vivid recollections of the writer is that of the churches in Pine Ridge which, a few hours later, became improvised hospitals for the mangled men, women, and children brought in from the field.

A few days after the battle some cowboys from a ranch on the north side of White river were searching the Bad-lands for stock



General view of Lost Dog cañon, showing surrounding tablelands, the filled-in plateau, the stratified walls where erosion has cut them, and the present creek bed in the foreground. The star marks the spot where Fireplace No. 6 is situated. The kitchen refuse is slightly to the left, at about the same level.

driven south by a snow-storm which came the day after the fight. On their way home in the evening they followed the trail of Big Foot's band down the little unnamed stream, when they heard the pitiful howling of a dog that touched a tender spot in the cowboy's bosom. The dog was picked up, carried through the long night ride to the distant ranch, and the next day, besides the single dog there was a family of puppies in the ranch stables. As peace was restored the stream came to be known, in cowboy society, "as the creek where we found the lost dog," and then, by contraction, as "Lost Dog," a name which now seems to be firmly fixed, although not yet recognized by the maps.

In 1893 John Farnham and family located on the Lost Dog at a point where it breaks through the outermost rim of Bad-lands and flows tranquilly across a mile of smooth bottom to White river. So far as known this was the first family to establish a home on the little stream within historic time. Mr Farnham, when a young man, came from Massachusetts to the plains as a member of a United States regiment. After the expiration of his term he married a Sioux woman, daughter of Big Mouth, a prominent Sioux who was killed about twenty years ago by other Sioux during a tribal feud.

Mr Farnham has had wide experience as an army scout under General Miles and Colonel Carr, and also served as guide to Prof. F. V. Hayden in his geological expeditions to the Bad-lands. Several years ago there came to live in his family his wife's nephew, Ulysses Big Mouth, or Ulysses Farnham as he is more generally called — a full-blood Indian lad of studious habit. It is to him that we owe the discovery of these singular evidences of remote aboriginal homes in the Bad-lands. Riding after his uncle's cattle in the lonely and almost inaccessible broken country of Lost Dog canyon, in the fall of 1902, Ulysses first noticed a black mass, having the appearance of charcoal and burned stones, pocketed in the side of the canyon wall some 40 feet above the bed of the stream and 8 or 10 feet below the top of the cliff. The crumbling Bad-lands clay had fallen away from the sides and bottom of this fireplace, leaving an urn-shaped mass of burned material to adhere to the side of the canyon wall. Ulysses examined the deposit sufficiently to convince him that it

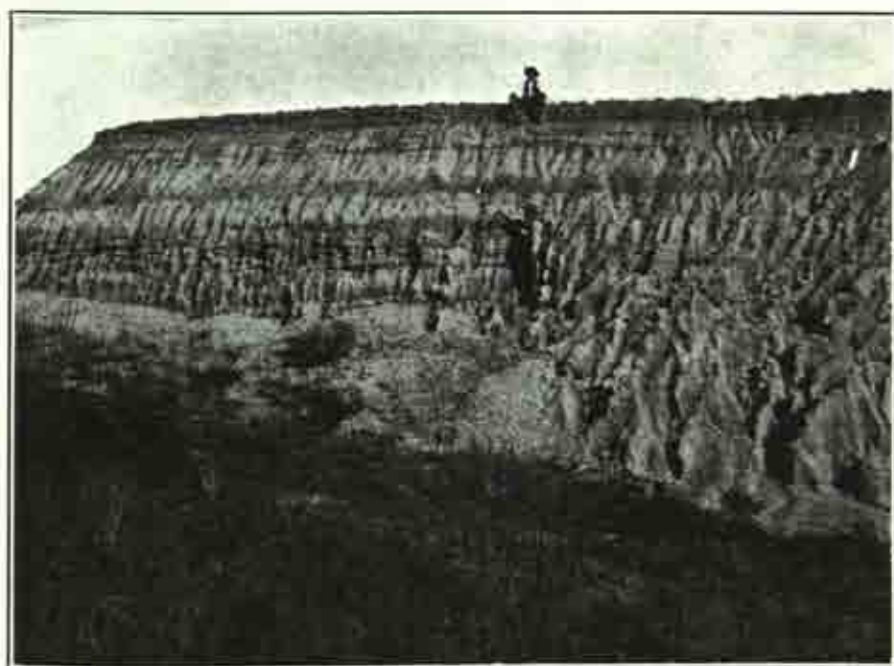
was the result of fire, and then informed his uncle, who went into the canyon and examined the find, wondering whether it was an Indian "sweat-house" and if so how it came to be fastened against the side of a disintegrating clay wall so far below the top.

Later in the year Mr Farnham informed Dr Walker, surgeon at Pine Ridge agency, of the discovery, and from this gentleman the writer, then engaged in a scientific expedition to the Sioux reservation, received an account of what had been reported to him. In August, 1903, I reached Mr Farnham's place with a camera and made the first photographs of what was found to be a remarkable series of prehistoric fireplaces. Before my arrival, Ulysses had discovered four similar deposits scattered along the canyon within two miles of the first one, and after my appearance on the ground we discovered two more, making seven in all. Their common characteristic was a mass of charcoal, burned stones, and occasional fragments of pottery, clay, and bone, covering a space about two feet in diameter and two or three feet in height. The first fireplace found was about six feet below the top of the wall to which it adhered; the others occurred from three to ten feet below the present surface of the soil. Near the fireplace which lies at the maximum distance from the top there occurs a mass of kitchen refuse consisting of ashes, charcoal, a dozen different kinds of bones, and flint chips. This mass, which is about fifteen inches thick and extends back an unknown distance into the cliff, is visible along the side of the canyon for a distance of five or six yards. From this *débris* I took two fragments of pottery and an arrowpoint. (See plates II-V.)

The soil above these fireplaces exhibits from eight to twelve distinct strata, each four inches to fifteen inches in thickness and varying in substance from black loam to yellow gumbo clay and soft, sandy grit. A careful vertical section of these strata was taken out and is now preserved in the museum of the Nebraska Historical Society at Lincoln. It was observed that the stratum of soil at the level of the fireplaces was uniformly of a black humus material, with stray root-fibers here and there, indicating clearly that this was the surface of the ground at the time the Indians built the fires and scattered the *débris* from their kitchens. One or two feet above this layer of black soil is a thick stratum of fine, gray silt, indicating



Fireplace No. 1, the first discovered, now nearly washed away. The boy, Ulysses Farnham, at the left, pointing to the spot where he found an arrowpoint embedded in the soil.



Fireplace No. 3 and kitchen refuse at the spot designated by the man's hand. Bed of creek about 40 feet below where the man stands.



Fireplace No. 6, showing stratification, height of filled-in soil, and mass of burned stones and charcoal clinging to wall. Large deposit of kitchen refuse around the point to the left.

a deposit in comparatively still water. Scattered thickly through the silt are the shells of several varieties of periwinkle and other fresh-water mollusks.

Lost Dog creek heads about 12 miles from White river and flows northeastwardly into that stream. It is about 70 miles north of Merriman, Neb. Its canyon, or Bad-lands tract, is about ten miles long by three miles wide; it is depressed from 100 to 150 feet below the level of the surrounding high prairie, and its walls are carved and gashed into thousands of fantastic forms by the action of the waters upon the soft deposits which form the basin through which the stream has deeply cut its way. The alternating strata which lie above the fireplaces extend almost horizontally across the entire basin, appearing and reappearing in a hundred places where the water from the hills has eaten out side ravines that feed into the main canyon. (See plate 11.)

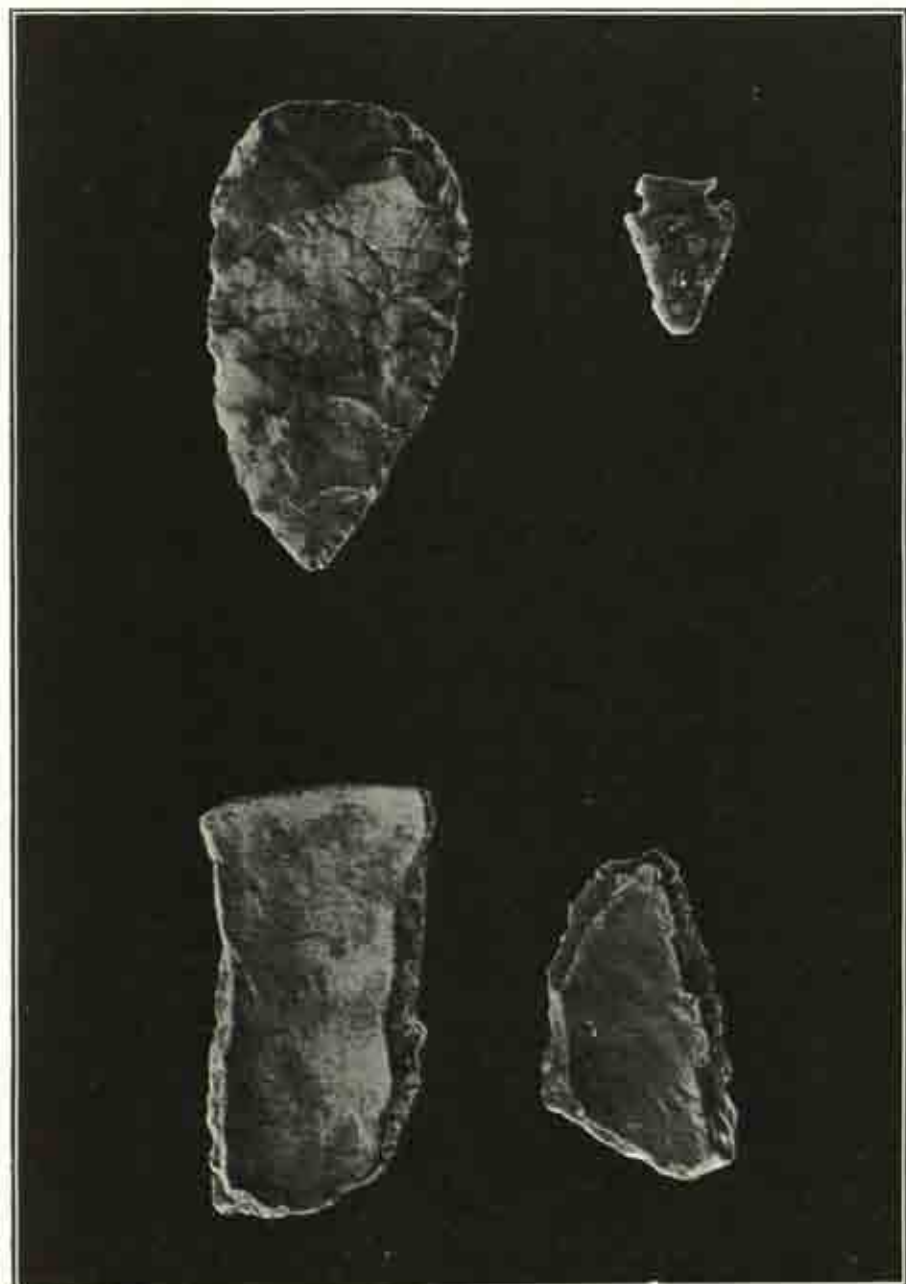
The problem presented is this: At some time in the past these fireplaces and deposits of kitchen refuse were made by primitive people who were wont to camp on what was then the superficial level of the country. Since that time the entire basin, covering an area of three by ten miles, has been filled with soft Bad-lands clay, regularly deposited by the action of water in eight or ten distinctly marked strata, some of which are filled with the shells of fresh-water mollusks. After the basin had been filled above the old level, where the ancients camped, to a depth of at least ten feet, erosion began its work, since which time the entire basin of horizontal strata has been cut into gullies thirty to sixty feet deep, so that the present creek with its lateral ravines is that much below the top of the surface which extends from one side of the basin to the other. In this process of erosion these ancient fireplaces have been exposed to view.

The data available for determining how many years have been required to fill the basin from ten to fifteen feet or more above its old level and to cut ravines through these deposits to a depth of fifty or sixty feet are very shifting and unsatisfactory. Everyone familiar with the Bad-lands region knows that enormous masses of its soft soil are moved by a single heavy rain-storm, in some cases a road being completely obliterated by a deposit of three or four

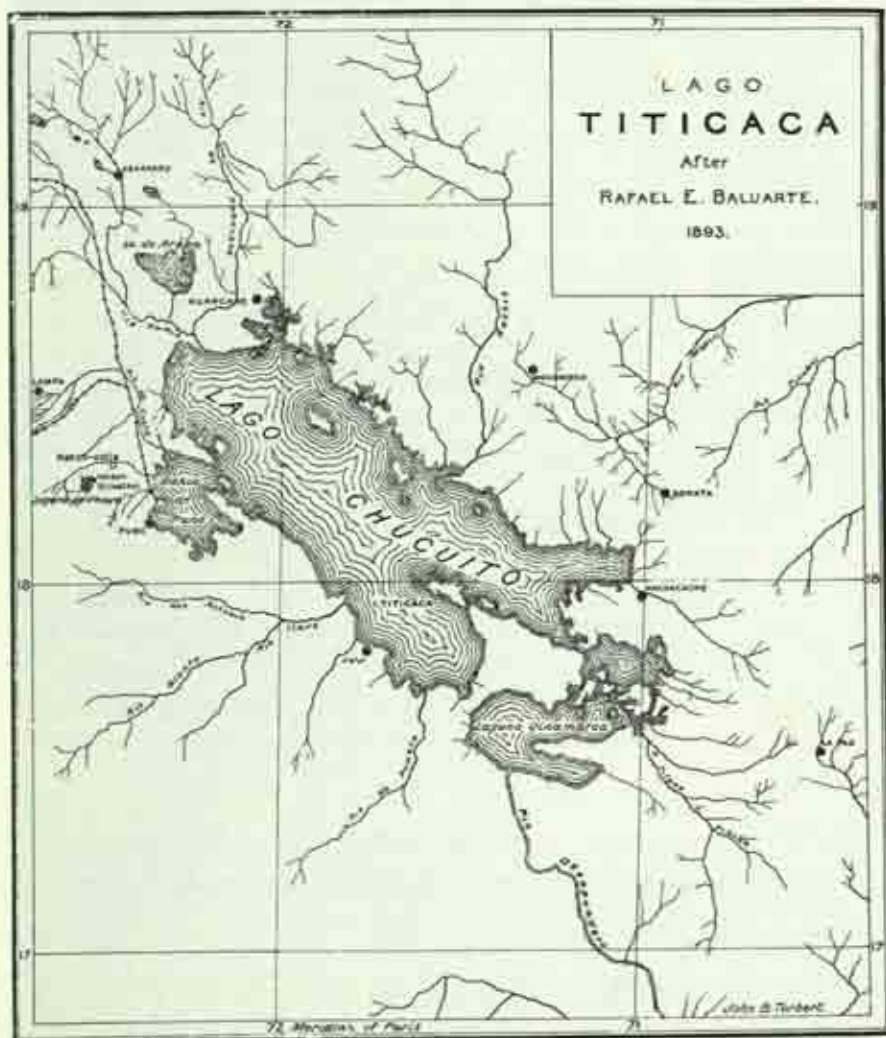
feet of gumbo soil during a single night. On the other hand, the filling of a basin covering three by ten miles with uniform horizontal strata is manifestly a different task from that of burying a road in a narrow canyon. I have talked with many of the earliest trappers, traders, and Indians, some of whom have been familiar with this region for fifty years. They all say that half a century ago the appearance of these Bad-lands basins was practically the same as it now is — dissected by gullies and ravines from forty to fifty feet below the surface of the basin deposit. I am satisfied that their testimony is correct, having tested it in many different details. If half a century has made no marked difference in the topography which the eye of an experienced man would notice, it must have required a great many centuries to accomplish the changes that have taken place in these Bad-lands basins since the ancient fire-places were centers of social groups.

I sent prints of the accompanying photographs to Prof. J. E. Todd, State Geologist of South Dakota, informing him of the circumstances and asking his judgment of the probable period covered by deposits and subsequent erosion in basins similar to that of Lost Dog canyon. In reply Professor Todd expressed deep interest in the finds and added:

"I regret that I have never made a careful study of the rapidity of changes in the Bad-lands, but I doubt not that there, as elsewhere, they vary much according to the succession of wet or dry years. Having had a little experience in a thunder-shower in Indian Draw, I am prepared to believe your succession of strata may be traces of annual aggradations, yet they may mark much longer intervals. Whether a particular area is aggrading or degrading depends upon its local base level, and that may be the result of 'river piracy,' land slide, amount of rainfall, or length of rainy season. As to the geological age of your finds, they cannot be earlier than late Pleistocene and more likely are quite recent. The gravel beds on top of Cedar mountain and Sheep mountain I look upon as Pliocene or early Pleistocene. They are about 300 feet above present streams. I should think a few centuries, and possibly considerable less, would cover the antiquity of your finds. To answer any particular case, the relations to present and former drainage channels and the rate of changes must be carefully considered. Judging from other cases, different minds are likely to come to widely different conclusions."



Flints and potsherds from Lost Dog cañon fireplaces. The large flint and the two sherds from the kitchen refuse at Fireplace No. 6; the small flint from Fireplace No. 1.



MAP OF LAKE TITICACA AND ITS SURROUNDINGS

THE ABORIGINAL RUINS AT SILLUSTANI, PERU

By ADOLPH F. BANDELIER

The hacienda of Umayo lies five leagues in a northerly direction from the little city of Puno, capital of the department of that name in southeastern Peru, and not far from the northwestern shore of Lake Titicaca. Its elevation above the level of the Pacific ocean is nearly 13,000 feet. Situated on a narrow neck of land between two extensions of the Umayo lagoon, it nestles at the base of a rocky promontory called Sillustani, or Silustani. The origin of this name is not clear. If *Sillustani*, it may be derived from *Sillu*, 'Nail,' in Quichua as well as in Aymará. Before the conquest the territory was held by the Colla, a large group of Aymará Indians; to-day Quichua Indians inhabit it. It may be that *Sillustani* is the proper orthography and the term is of Aymará origin; but so far as known the place is not mentioned by name in any early Spanish document, printed or in manuscript, hence it may be a Quichua term introduced subsequent to the sixteenth century, when the Quichua Indians began to encroach on the Aymará range.¹

The promontory called Sillustani is a plateau of red sandstone, with a number of blocks of volcanic material, possibly andesite, scattered over its surface. Its elevation above the hacienda is 200 feet, and it covers a surface of approximately 110 acres. The accompanying plan (plate VII, 3) will give a better idea of the shape and topography than a verbal description. Shrubby vegetation is scattered over the slopes descending to the east and north, and along the

¹ At the present time the boundary (an ideal one) between the two linguistic stocks extends from east to west through the market place at Puno. North of this line are the Quichua, south the Aymará. The local names north of Puno to a considerable distance are Aymará—even the names of prominent peaks, such, for example, as the Kunnu-Roma, at Santa Rosa. As is often the case, the word appears to be composed of both languages, *kunnu* meaning 'snow' in Aymará, and *roma* or *runa* being the Quichua name for 'man.' The form of the peak fully justifies the etymology. That the Colla, who held the site of Sillustani at the time of Pizarro, were Aymará, is well known.

low natural steps traversing the plateau like faint contour lines. The southeastern point is highest; it is rocky and abrupt to the south and east.

The great altitude above sea level gives to Sillustani a chilly climate. The proximity of Lake Titicaca and the waters of Umayo, which almost surrounds the peninsula, render the atmosphere very moist, and frequent thunderstorms occur at all seasons.¹ At the foot of the plateau, near the hacienda, and in the surroundings in general, the only crops are potatoes, oca, and barley, the last-mentioned, of course, being of Spanish introduction. Maize cannot thrive on account of the cold. Near the hacienda, as well as on the small island in Lake Umayo, a few wild olive trees grow, but as elsewhere on the Puna they are stunted and scrubby. Everywhere the country traversed from Puna, and which may be viewed for some distance from the plateau, is bleak and apparently deserted; but ruined, tower-like structures loom up on monotonous hills. The barrenness of the Puna has made of it a dismal landscape indeed.²

The peninsula of Sillustani has been known for some time as the site of Indian ruins of remarkable construction, and about which no information was obtainable. As before remarked, the name Sillustani (or Silustani), so far as known, does not appear in any Spanish source. Rivero and Tschudi, in their *Peruvian Antiquities*, mention them and give a picture that is very inadequate.³ The best description is that by E. G. Squier in his work on Peru, and his views of the ruins are correct.⁴ Charles Wiener hardly deserves to be alluded to, his views of the towers of Sillustani being as inaccurate as the little he tells about them.⁵

¹ During our first stay at Umayo we had a thunderstorm nearly every night, although it was winter (June). Each storm discharged one or more thunderbolts on the cliffs east of the hacienda. The people of Umayo, as well as those of Puno, assured us that this was always the case.

² Cieza de León (*Primera Parte de la Crónica del Perú*, in Vedia, *Historiadores primitivos de Indias*, vol. II, cap. XCIX, p. 442) says of the Puna in that region: "Caminando con viento es gran trabajo andar por estos llanos del Collao; faltando el viento y haciendo sol da gran contento ver tan lindas vegas y tan pobladas; pero, como sea tan fría, no da fruto el maíz ni hay ningún género de árboles, antes es tan estéril, que no da frutas, de las muchas que otros valles producen y crían."

³ See the Atlas to *Antigüedades peruanas*, lámina, and text pp. 293, 326.

⁴ *Peru*, cap. XX, pp. 376-384.

⁵ *Pérou et Bolivie*, pp. 386 and plate.

Ascending from the hacienda in the direction of the highest point of the peninsula, we are soon among vestiges of artificial facings of natural gradients, somewhat leveled by the hand of man so as to represent broad terraces, or *andenes*, common in Peru, and modern as well as ancient. There are several of these wide steps, but while there is much débris of fallen masonry, only a few huge blocks, set into the thin soil at intervals, remain to indicate that there may have been something akin to parapets raised along the edge of the facings. There are places where a narrow entrance may have existed, but the remains have been too much disturbed to permit definite conclusions on this point. The last third of the ascent is steep, and we noticed each time we went to the ruins, on every morning for seven days, that not only respiration, but the whole organism was affected, and this feeling of mountain sickness (called *soroche* in Bolivia and *veta* in northern Peru) continued as long as we remained on the plateau. A cleft (plate VII (3), *e*) with traces of stone steps by which access to the top is gained, is flanked on the right by two small round towers; on the left a quadrangular structure occupies the point, and beyond it, along the edge of the cliff, follows a line of circular edifices terminating in the largest structure of all, a stately inverted and truncated cone, one side of which has been torn down. As far as this *chullpa*¹ the cliff has a low rim and the terrace below is fairly well preserved. South of this gateway the cliff becomes steeper and indented, while at the same time it recedes to the southwest until it reaches another crevice with a graded ascent to the plateau. To the left of this ascent stand two handsome stone towers. Westward along the southern edge of the peninsula, it is very rocky and steep, in

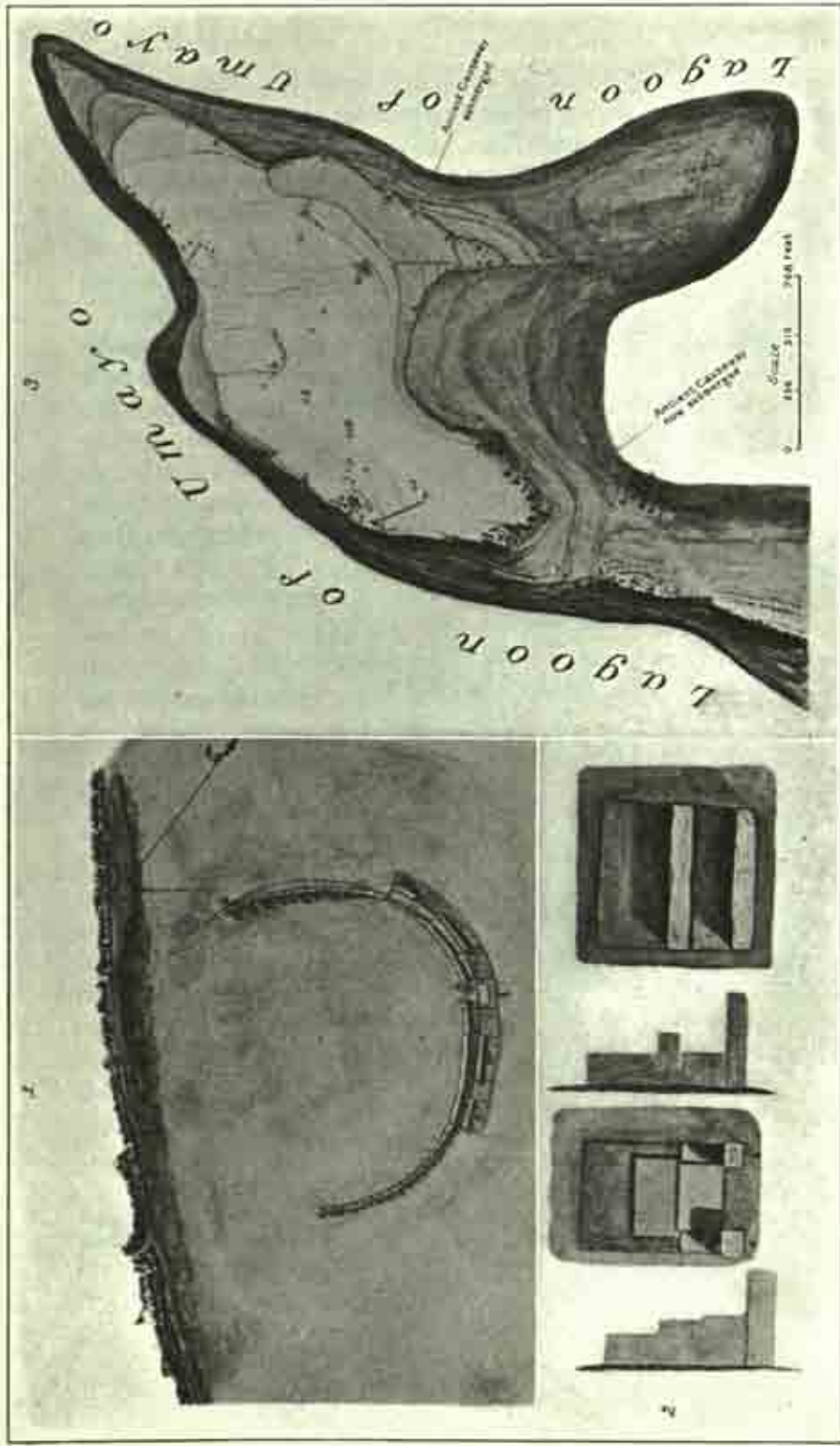
¹ The late Jimenez de la Espada has given the correct etymology of the term *chullpa*. He says in his note (1) to page 236, vol. IV, of the *Historia del Nuevo Mundo*, by F. Bernabé Cobo, S. J.: "Llámanse generalmente *chulpas* estas torres mortuarias, en mi concepto con impropiedad; porque *chullpa* es voz aimará que significa la envoltura tejida de *ichhu* ó de *totorá* a modo de cesto, en que enfundaban los cadáveres, como se hace con algunas vasijas, ajustándola al cuerpo y cabeza y dejando la cara solamente al descubierto." In other words *chullpa* means "the sack or bag of grass in which the bodies were placed for sepulture." This is fully confirmed by Bertonio, *Vocabulario*, 1612 (part II, p. 92): *Chullpa* — "entierro o seron donde metían sus difuntos." From the bag or sack the name passed, through misunderstanding, to all buildings containing dead bodies, buried, after the Aymara custom, in such pouches of straw.

places vertical; yet there is hardly any natural obstacle to scaling the rocks from the lake side, and if there were artificial defenses they have completely disappeared. Along the edge, and sometimes almost on the brink, towers and quadrangles are disposed at varying distances from each other. They form two larger groups and three smaller ones, the last one of which stands some 750 feet from the extreme northwestern point of the peninsula.

The central area of the plateau has fewer buildings. With the exception of the round ones at *h* (plate VII, 3) and a group lying west of *m*, they are quadrangular. But the northern edge, from a point 500 feet east of the western end to its eastern extremity, supports nineteen round structures, the most easterly group of which is connected with a wall, more than 280 feet long, running west to east, toward the edifice *m*. Near the lake shore and on the northeastern spur of the peninsula is a group of much ruined structures, and an isolated tower rises near the northern beach. In all (except the vestiges of what appeared to be small rectangular cysts, which we were not allowed to open), the peninsula at Sillustani was found to support at least ninety-five buildings, more than eighty of which are circular, not including scattered walls and the so-called "sun circles" of which there are at least five.

It will be observed that the majority of the towers stand on the edge of the plateau, while most of the rectangular structures are away from it. The largest and best built occupy prominent positions. Low and indifferently constructed walls exist in connection with one or the other group of towers, and in a few places they also extend along the brink of the plateau. But, as already remarked, nowhere is there a trace of breastworks or walls of circumvallation. The *andenes* on the eastern flanks of the mesa (for the plateau is but a mesa) recall the terraced lines around ancient villages in the Bolivian cordillera, and could have afforded a stand for warriors fighting with the sling, but without protection. This is in harmony with the mode of warfare and the weapons of the aborigines.¹

¹ The use of the sling made ramparts inconvenient, whereas a platform that placed the defenders on a plane higher than the assailants was an advantage. The ruins in the cordillera of Bolivia nearly always show such a platform, or a series of platforms, with hardly any trace of parapets. Wood or brush were out of the question.



ABORIGINAL RUINS AT SILLUSTANI

1. Stone "circle" (the dotted line indicates the deviation from the true arc); scale, 1 in. = 3 1/2 ft. 2. Structural details of the stone-work of the stone circle; scale 1 in. = 3 1/2 ft. 3. General plan of the Sillustani promontory, showing the distribution of its aboriginal remains.

East of the peninsula, on the ridge due south of the hacienda, are remains of quadrangular buildings (*p*) overlooking the lake from a sharp crest. Towers, not so well constructed as those on the mesa, are scattered through the valley east of the hacienda and on slopes and ridges far and near. They are usually accompanied by artificial terraces, but it is difficult to tell whether these are modern or ancient.

Of the circular edifices there are two kinds, according to the material and mode of construction. There is the circular tower, narrower at the base than at the top and built of stones carefully rubbed to smoothness. Of these only a few are complete. The largest one is marked *a* on the general plan. It is the best example of the circular stone structures at Sillustani.

This *chullpa*, which stands on a projecting point due west of the hacienda, is a most conspicuous object. Its height is 35 feet, its diameter at the base 24 feet, and at the top 28 feet, so that it presents the appearance of a steep, inverted, truncated cone. It is faced outside with handsomely cut blocks of andesite. As shown by the drawing (plates VIII, 1; IX, 13), this outer shell consists of two tiers. The lower tier, which rests on the surface of the rock, is 25 feet high, 8 feet thick at the base, and 9 feet at the top; it is made of blocks superposed without binding material, is wider at the top than below, and no attention was paid to breaking joints. The inner surface of this lower tier is vertical. Upon this main structure rests another of cut stone, of less thickness than the lower one and forming the upper tier to the full height of the *chullpa*. So much for the outer shell. With the surface inclining outward, and the projecting cornice, it was impossible to reach the top of the edifice from without.

The interior of this *chullpa* (pl. VIII, 1), as of all the others at Sillustani (pl. VIII, 2, 3, 4), is divided into two sections, corresponding to the exterior divisions. As far as or nearly to the top of the main tier, a dome-shaped chamber is built of common rubble. Sixteen feet above the floor, in the apex, is an aperture two feet in diameter, with a rim of projecting slabs, above which the opening widens for five feet or more. The upper tier has no core of rubble or other material, nor was it provided with windows or loopholes; the top is open, but the hole in the core was probably originally covered with slabs.

At the base of the chullpa is a tiny rectangular entrance measuring about two feet in width and height (plate ix, 3, 4, 6, 7, 8). I could not crawl into any of these chullpas myself, and my wife had considerable difficulty in entering even the largest of them from the base. These structures were absolutely empty, nor could I learn that anything had ever been found in them.

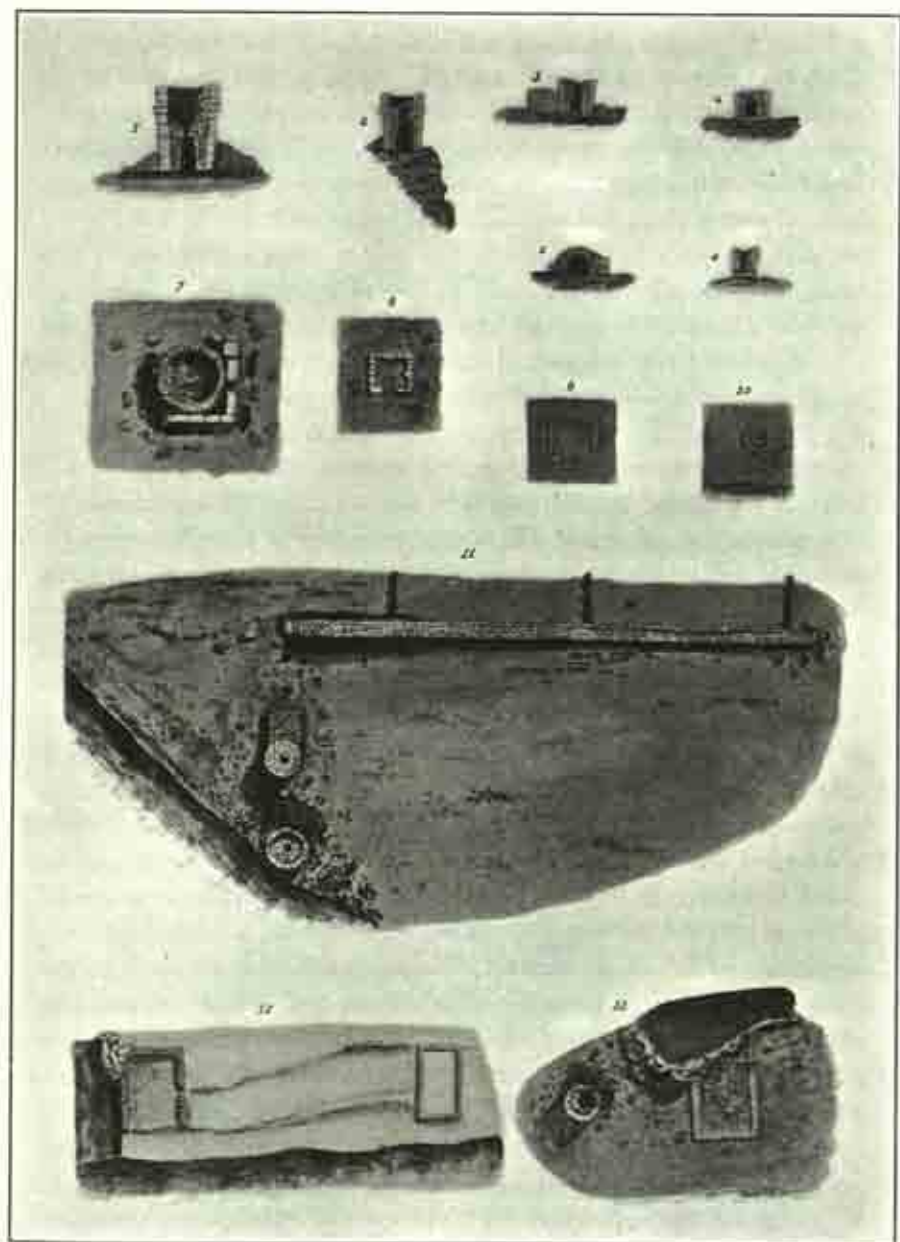
The upper tier of this chullpa was probably never closed; only the lower chamber could have been used. It is not large, since the facing and the core have an aggregate thickness of eight feet below and ten feet above, so that two-thirds of the diameter of the structure are occupied by its walls.

Chullpa *c* (plate viii, 2) also is completed to the top. Like the former, it stands on the brink of the plateau, but on the southern instead of on the eastern edge. It is much smaller than chullpa *a*, its elevation being only 22 feet, of which 16 feet form the lower or main part. Its width at the bottom is 16 feet, at the top 18 feet; its other dimensions are proportional. Like *a*, the upper chamber has for its sides only the armor of polished andesite blocks. There is a neck through the upper part of the core down to the hole in the apex of the main chamber; the hole has the same dimensions as that in chullpa *a*. These interior chambers with the necks recall the form of a bottle.¹

Several features of these chullpas attract attention:

1. The great solidity of construction, obtained by closely fitting the heavy blocks forming the outer facing or armor, and by the massiveness of the lower part of the structure.
2. The great thickness of the walls encasing the main chamber.
3. The diminutive size of the apertures, both above and below. A child alone could pass through the upper orifice, while the largest of the doorways are not four feet square.

¹ It is interesting to compare the form of the interior with the bottle-shaped underground cells so numerous in the ruins of Cajamarquilla, near Lima. These are well described by Squier, *Peru*, pp. 92-93. Mr Squier very appropriately calls them "granaries," adding (p. 94): "and were no doubt intended for the storage of household supplies." The towers of Sillustani resemble such granaries, except that they are above ground. Compare also the bottle-shaped structures of clay which Dr Lumholtz has described from cave-villages in northwestern Chihuahua (*Unknown Mexico*, vol. 1, pp. 58, 62, 64, 110).



STRUCTURAL DETAILS OF THE SILLUSTANI RUINS

(Scale 1 in. = 64 ft.)

From these facts it is apparent that the object which the builders of the chullpas had in view must have been the protection of their contents from moisture and the weather in general, as well as from depredation. This object they fully attained. When the interior was filled, ingress must have been almost impossible from the base; perforation of the massive walls within reasonable time was beyond any mechanical means at the Indians' command, and the smoothness of the exterior, the height of the wall, and the inverted cone shape would have rendered futile any attempt at scaling. Only by tearing down the towers was it possible to get at their contents.

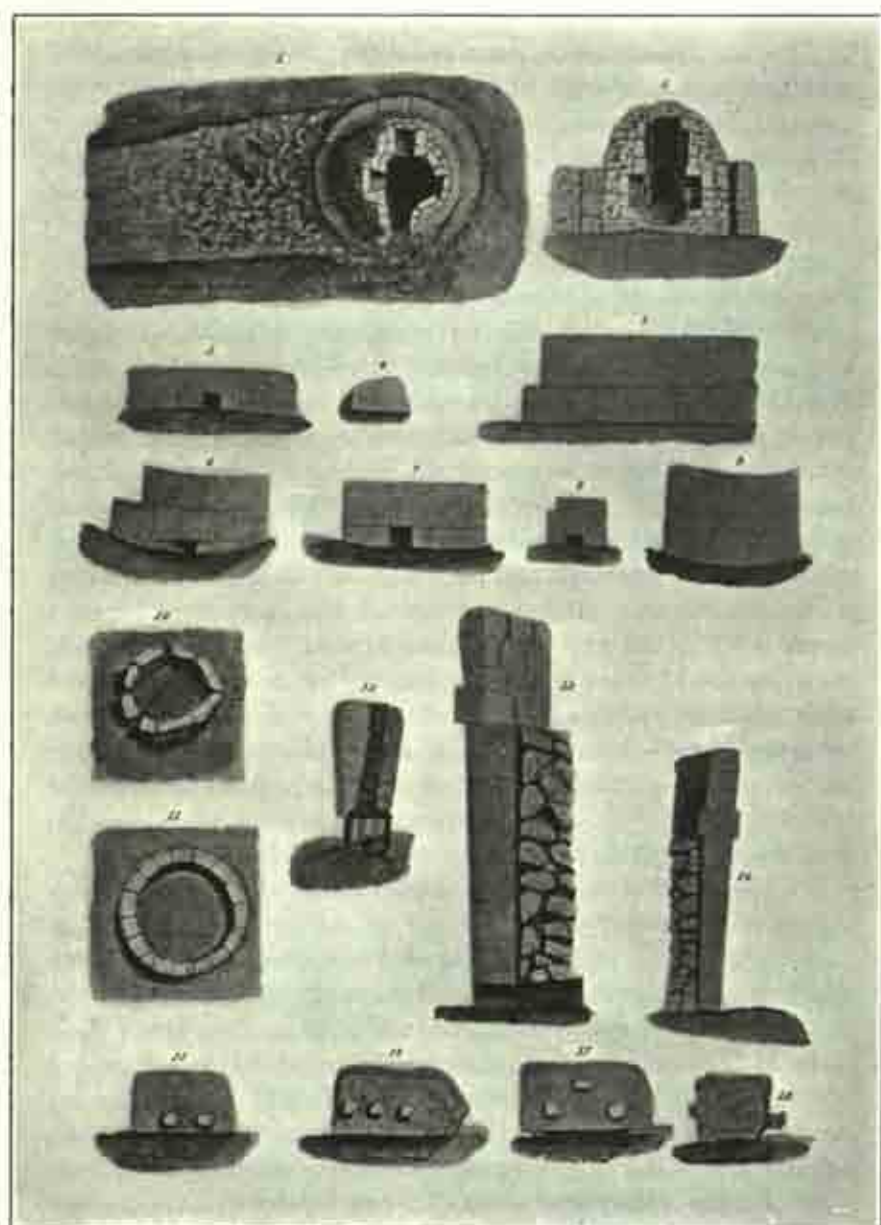
The core of rubble was manifestly first raised—a comparatively easy process. Plate VIII, 4, 5, represent stone chullpas begun, the inner chamber being already inclosed in the dome-shaped vault. This was kept closed at the top until the andesite facing had reached a height sufficient to give it solidity. Then the upper opening was made as seen in *d*, which shows the chullpa reared to the elevation of the main tier. The most difficult part of the work consisted in obtaining the blocks of andesite for the armor, their transportation, shaping, raising to the height required, and final smoothing.

East of the hacienda of Umayo a small grassy valley opens. Following this trough for about half a mile one reaches the foot of a rocky slope of andesite that continues into cliffs of moderate elevation. These cliffs have furnished the material for the outer casing of the stone chullpas at Sillustani. Parts of the cliffs are constantly falling down through erosion, but chiefly from the effect of lightning-strokes, for hardly a thunderstorm passes without sending one or more bolts at the ridge and its rocky edge. The plateau of Sillustani is higher than the andesite cliffs and more isolated, but its situation between two extensions of Lake Umayo renders it immune, for the electric discharges strike the water¹ instead of the promontories on which the ruins stand. This is a well-established fact, known to everyone familiar with the locality.

¹ We frequently observed the effect of an extensive sheet of water on electric discharges at Titicaca island previous to our visit to Sillustani, in the same year (1895). The buildings of the hacienda of Challa, on that island, where we dwelt for many months, lie on a sandy isthmus not 300 yards wide, between two coves of the lake, and thunderstorms are common. During one of these, lightning struck the water in our immediate vicinity twenty-seven times in the course of half an hour, but never the neck of land. The Indians assured us of the apparent invulnerability of Challa against thunderbolts.

It may therefore be said that the andesite used at Sillustani was quarried chiefly by lightning. At the foot of the cliffs many large stones lie about, rudely chipped and ready for transport. A number of such blocks are also scattered through the valley, between the cliffs and the hacienda, as if abandoned in transit. Plate ix, 16, 17, 18, represent three sides of the largest one seen by us, and figure 15 of this plate shows the front view of a smaller one. The former is nearly 12 feet long, 7 feet thick, and 6 feet in height. On its face (turned toward the ruins) protrude three knobs, about 18 inches long, curved upward so as to afford a fair hold. On the rear are three stubs. The knobs suggest the idea of pulling, wooden levers being applied behind. These knobs, protruding from the face of the blocks and also from the rear, are still seen on some of the partly cut stones lying about the towers. They seem to be, if not strictly peculiar to Inca architecture, at least a constant feature of it. I have here introduced a view of some of the ruins of Ollantaytambo, near Cuzco (plate XIII), on which the knobs are shown on many parts of the walls. The blocks thus abandoned on the way have stone props under them in the rear, so that by pulling, pushing, heaving, and upsetting, with the characteristic disregard of time consumed, the huge stones were moved from the cliffs to the plateau, where the work of cutting, placing in position, and smoothing was completed.

The tools employed in these processes no longer exist at Umayo and Sillustani, but we are sufficiently acquainted with the implements of the ancient inhabitants of Peru and Bolivia to safely assert that, for breaking and chipping, stone mauls and hammers were used. Andesite can easily be worked with bronze, or copper, and even with chisels of harder stone. Knowledge of the implements of the Quichua and Aymará, before iron was introduced by the Spaniards, sheds abundant light on the work performed at Sillustani. The smooth finish was obtained by simple patient attrition, and there is no necessity of resorting to hypotheses of artificial stone or tempered copper. Each block was finished on the ground as far as possible, but the final close fitting and the removal of the knobs were done after the blocks were placed in position in the walls. This is proved by courses of the masonry and even of sections of walls in which the



STRUCTURAL DETAILS OF EILUSTANI RUINS

(Scale 1 in. = 16 ft.)

knobs still protrude. That the curve was last effected is shown by the upper tier, where the outer edges of the blocks *appear* to form a circle, when seen from below, but on closer inspection it is seen that the courses are *polygonal*, with as many sides as there are blocks in each.

So long as the stones had not to be raised above the second course, their placement was easily accomplished, but they are placed as high as thirty-five feet above the ground. Windlasses were not known to aboriginal Americans, but the ruins at Sillustani fortunately preserve examples of the devices by which the raising of the blocks of andesite was achieved. Plates VIII, 11, and IX, 1, exhibit the remains of inclined planes of rubble, one of them 215 feet in length (*n*), on which the blocks of stone were gradually moved up to the required elevation in the wall. The incline abuts against the tower and was raised as the building of the latter progressed. It must also be considered that the size of the blocks was reduced by cutting, and that the largest ones were always used in the lower courses. In addition, a device was adopted for diminishing the weight of the blocks. As seen in plates XI and XII, 1, the ends of each block were hollowed out, and, once in place, these cavities were filled with small pieces of stone. This allowed the blocks to be handled with greater facility, while the subsequent filling practically restored their original weight.

The round and handsomely constructed chullpas are the least numerous, and only one of them is ornamented on the outside. The tallest of all (plate XI) has the figure of a lizard carved on its surface about midway between the base and the top.

The condition of the stone buildings at Sillustani leads to the inference that work on them was abandoned before completion. This is particularly the case with the quadrangular structures, all of which are unfinished. Their condition is not the result of demolition or of decay. The masonry is like that of the towers, well laid and nicely joined. The building *m*, shown in plates VIII, 7, and XIV, 2, was further advanced in construction than the others, part of its walls being 8 feet high. Some of the blocks are 9 to 11 feet long, 4 feet thick, and 6½ feet high. Only two sides were reared, one of which measures not quite 28 feet and the other more than 35 feet in length. Inside,

and touching the walls of the rectangle, is a circle of upright slabs, 38 inches in thickness, set without mortar, alongside of each other. On the longer side of the rectangle is an entrance 52 inches wide.

Quadrangle *k* (plates VIII, 8; XV, 1) has all four walls, measuring, respectively, 17.3, 17.3, 17.4, and 17.5 inches. The building, therefore, is nearly square; but the opposite sides are not of exactly equal length, there being a difference of one and two inches, respectively. An entrance 50 inches in width is provided in one of the walls. The outer surface of the stones is as well cut and smoothed as any in Sillustani, but the blocks are not so large as those in building *m* (plates VII (3), *m*; VIII, 7; XVI, 2).

Structure *l* (plates VII (3), *l*; VIII, 9) is still less advanced in construction; two sides are partly laid, and on the other side a few blocks only are in position. It should be stated that not a single building at Sillustani is provided with a foundation; every structure rests on the surface of the ground, the size and weight of the stones alone insuring solidity.

Building *o* (plate VIII, 13) is in as unfinished a state as tower *b* near which it is situated. Only two feet of a wall of cut stone are visible; its average width is 31 inches. This structure suggests the commencement of a dwelling. It resembles, in size and ground-plan, the houses of Inca origin which our excavations brought to light at Kasapata, on the Island of Titicaca.

Several other quadrangular structures, some of them nearly obliterated, are found here and there on the plateau. These differ but little from those described, and, judging by the first course of stones lying on the ground, they were to have been built in the same manner and of the same material.

I have purposely delayed mentioning certain details in the construction of the stone buildings for the reason that they exist in both the quadrangles and the towers. First, it was observed that, although the workmanship is far superior to that of any buildings outside of actual Inca settlements, it is not so accurate as it appears to be—angles are nearly but not absolutely true, the towers are only approximately circular, and the stones themselves not perfectly squared. Rule of thumb here guided the primitive artisan; he did much better than the builders of the Aymará structures, but



1. Group of Circular Chullpas from *a* to *h*, as seen from Base of Plateau near the Hacienda.



2. Chullpas *e* and *d*.

CHULLPAS AT SILLUSTANI

not so well as any European would have done. The moving of heavy masses was certainly an achievement, if we consider the means at the command of these builders, but to compare the results favorably with European building of the time is benevolent exaggeration. Superabundance of leisure was a prime factor. Where a block presented obstacles, the troublesome part was taken off, and another stone cut to fill the lack (plate IX, 5, 9). Such pieces were not inserted for decorative effect nor to increase the solidity of the structure; they are simply indications that each block was independently cut, not according to a definite plan, but to suit the immediate occasion. The doorways are usually an open space left between two blocks in a course (plate IX, 6, 7); but where the block was too high, a rectangular opening was cut through it (plate IX, 8). This shows that the small size of the doorways had a definite purpose. In the quadrangular structures (plate VIII, 7, 8) there are, as before stated, wider entrances, but these were designed to afford access to round buildings within. In the case of rectangular building *m*, this circular structure had been commenced; in *k* there is strong probability that it was the intention to erect one also.

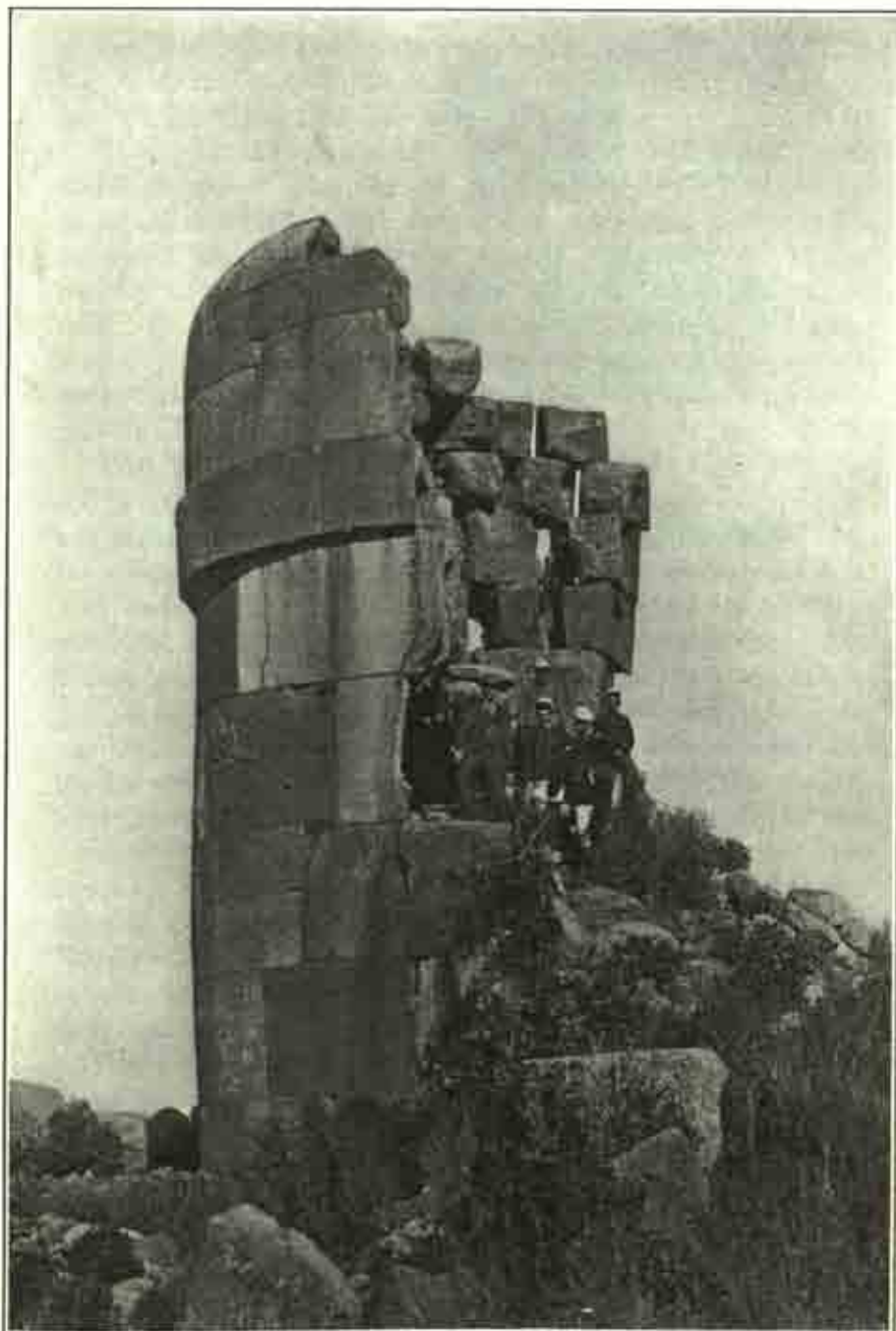
The singular edifice *i* (plate IX, 1, 2) is also in a half-finished condition. This building is unique among the ruins at Sillustani; it is dome-shaped, and the apex of the cupola approaches a true arch, a wedge-shaped keystone being set in *horizontally* to complete a circle (see plate IX, 2). The structure marked *i* is 10 feet in height and consists of two tiers, each of which has four niches so placed that the upper ones are not immediately above those below. The lower tier is pierced by an entrance 21 inches wide. The inside of this building is lined with spalls forming a thin, fairly smooth wall. The cupola varies in thickness; its outer diameter is about 12 feet, and the inside, in size as well as in its niches, recalls the basements of rectangular chullpas found on the peninsula of Huata in Bolivia, called *Chinkana* by the Aymará. Around the cupola a stone casing, like that of the towers, has been erected to an elevation of six feet, indicating that it was intended as a facing to the rubble core. An inclined plane 21 feet long, 12 feet wide, and 6 feet high (where it abuts against the armor), shows that the structure was abandoned before completion. The niches are not symmetrical;

their height varies from 40 to 44 inches, and other dimensions are also unequal. Of the probable purpose of this building we shall treat later.

There is another class of round buildings, and the most numerous of all. They differ from the chullpas described in being far less elaborate and considerably smaller. Plates VIII, 6; IX, 12, show two examples. The motive in these is the same as in the towers, but the outer finish is a coating of white clay, mixed with grass, and formed in irregular cakes, varying in thickness from two to three feet according to the structure. One of these "white towers" is 13 feet high and 48 feet in circumference. The interior forms a vault with rubble walls 8 feet high, 7 feet in diameter below, and $4\frac{1}{2}$ feet at the top. Where completed, these white towers are closed above with heavy slabs covered with rubbish and some clay; hence there is no neck as in the stone chullpas, and the interior is an imperfect cupola. We could not detect an opening at the bottom. The structure rests on a base of well-cut andesite blocks eleven inches thick, showing that these clay-covered chullpas were erected by the people who built the other ones, and for a similar purpose.

Some of these white towers stand in the valley near the cliffs whence the andesite was obtained, and on ridges and slopes round about. We could not examine any of those farther away from Sillustani, but plates VIII, 10; IX, 10-12, show the base and section of one that may be regarded as typical. All that remains of the lower portion is a circle of rough slabs resting on four upright stones three feet high. The wall (11 inches thick at the base and 30 inches at the top) rises ten feet above this circle and is constructed of rudely superposed slabs coated inside with clay mixed with *Puna* grass. The elevation of this structure on stone posts may have been for the purpose of protecting the contents from moisture, as the bottom of the valley is sometimes flooded.

The much ruined structures forming group *r* (plate VII, 3), on the extreme northeastern spur of Sillustani, are in such condition that little can be said about them. Most of them appear to have been circular chullpas of the clay-faced variety. One building may have been a rudely constructed house of three or four rooms and with rounded corners. The artifacts found there were potsherds, both



CHULLPA A

of the Cuzco type and of the ruder kind attributed generally to the Aymará Indians. We also found skulls of both males and females, the former artificially flattened frontally.

Finally, on the ridge south of the hacienda, there stand the few buildings marked *p* on the general plan (plates VII (3); VIII, 12). In regard to these I do not feel justified in asserting that they are aboriginal, nor can I affirm the contrary. The walls are built of roughly broken volcanic stones from 24 to 33 inches wide, laid in mud. No tradition as to their origin could be obtained, and while they may have been designed as Indian dwellings, begun and abandoned before completion like the others on the plateau, they may also be of Spanish construction.

With few exceptions, the buildings at Sillustani were unfit for abode. Only groups *o* and *p* (provided the latter are ancient), and perhaps some of group *r*, bear the character of dwellings. All the others, except *i*, are so constructed as to indicate that they were designed to shelter and preserve, as carefully as possible, materials of the nature of which we have no knowledge. Had it been possible for us to open one or more of the white chullpas, we might know something of their contents, but permission was unobtainable. The belief that valuable objects of metal are therein concealed is deeply rooted in the minds of the people, although there is no authentic recollection of the finding of any "treasure" at Sillustani. Many of the towers were partly torn down and searched long ago, but no tradition in regard to what was found in them was obtainable by us. The universal opinion, published and unpublished, is that the towers of Sillustani were designed as sepulchers, burial towers, or funeral monuments, and we held the same opinion ourselves.

One point is certain: these towers were, so to say, hermetically closed, or were built with the view of so closing them as soon as filled. It is also evident that they could not be opened or entered except with considerable difficulty, and that they were carefully guarded against such intrusion is shown by their massive construction. The towers cannot be scaled, and the aperture above is too small to admit an adult person. The opening below is equally contracted, and if the interior were closely packed it was practically

inaccessible. To break in from the outside was beyond the power of Indians within a reasonable time. Hence the contents of these towers must have been of such value to the builders that they exercised every effort to preserve them, as is evidenced by the massiveness of the walls, the smooth finish which made scaling impossible, and their inverted conical shape. Mortuary monuments they cannot have been unless, as is generally supposed, they were designed to receive a number of corpses. But the question arises, How could corpses have been introduced? The opening above is entirely too small, and while the aperture below might have given passage to an Indian of small stature, such a mode of burial is completely at variance with what is known of the mortuary customs of both the Quichua and the Aymará; and to fill the chamber with dead bodies would have been a very long and arduous task.

A question intimately related to that of the contents of these towers is that of the builders of the Sillustani structures. There is no known tradition in which the place is mentioned, and the name Sillustani nowhere appears in books or documents of the period of early Spanish colonization. Hence it might be supposed that these buildings, like those of Tiahuanaco, must be attributed to some tribe the record of which is lost. Although we search in vain for data in regard to Sillustani, we meet with positive information concerning a site called *Hatun-Colla*. This place (or rather Kolla) lay close to Umayo, and while there exist some ruins there which Squier has described,¹ nowhere in the vicinity are there any of the type and importance of those at Sillustani. Cieza de León, who visited Hatun-Kolla in 1540, speaks of it as follows:

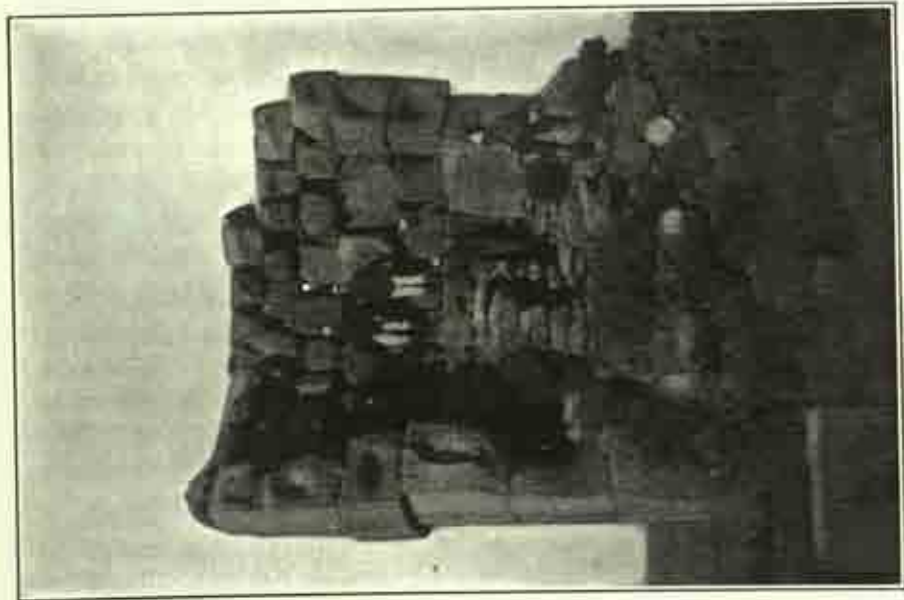
"From Pucara to Hatuncolla there are something like fifteen leagues; in their neighborhood are some villages, as Nicasio, Xullaca and others. Hatuncolla, in times past, was the chief thing of the Collas . . . and afterwards the Incas embellished the village with an increased number of edifices and a great number of depositories, where, by their command, was put the tribute that was brought from the country around." . . .²

Garcilasso de la Vega also mentions the construction by the Incas of edifices at Hatun-Kolla.³

¹ *Peru*, p. 384 et seq.

² *Primera Parte de la Crónica del Perú*, cap. CII, p. 445.

³ *Comentarios reales*, Primera parte, 1609, lib. II, cap. XIX, f. 45.



1. CHULLPA B



2. WHITE TOWER ON EDGE OF PLATEAU

Herrera certainly copied Cieza de León, and perhaps other sources of which, as yet, we have no knowledge. He mentions, although not very clearly, the construction by the Incas of edifices in what was then called *Collasuyu*,¹ and it seems clear that these structures were in the vicinity of Hatun-Kolla.

The architecture and masonry at Sillustani bear the stamp of Inca work. They resemble structural remains at Huánuco in central Peru, on the island of Koati, and also the quadrangular towers of well-fitted stones at Kalaki on the shores of Lake Titicaca. The edifices in the latter two localities are clearly of Inca construction — there is abundant evidence to that effect. In regard to Huánuco it is stated that the buildings (of large, nicely fitted, and smoothed blocks) are also of Inca origin. The Indians who inhabited Hatun-Kolla, before the Inca came in contact with them, built with much less care and regularity. It is more than likely that by the structures at Hatun-Kolla those at Sillustani are meant by Cieza. The two places are very near each other, and the remains of Hatun-Kolla can not be compared in importance with the former. Hence, also, it is not improbable that the name Sillustani is comparatively modern, otherwise Cieza would certainly have known of it, for he must have seen the ruins when at Hatun-Kolla. Even the white chullpas are of Inca origin.²

¹ *Historia general de los Hechos de los Castellanos en las Islas y la Tierra firme del Mar Océano*, 1726, vol. II, libro II of dec. V, p. 73. The Jesuit Bernabé Cobo, who lived in the Peruvian and Bolivian highlands from 1615 to 1618 (or 1621, if Arequipa is included in the sierra, by Enrique Torres Saldamando, *Los Antiguos Jesuitas del Perú*, Lima, 1885, p. 99), also mentions ancient buildings formerly serving as storage rooms, in his *Historia del Nuevo Mundo* (Sevilla, 1902, vol. III, lib. XII, cap. xxx, p. 254):

"Edificaban de ordinario estos depósitos i almacenes fuera de poblado, en lugares altos, frescos y airosos, cerca del camino real, cuyas ruinas vemos hoy al rededor de los pueblos en los collados y laderas de los cerros; eran muchas casas cuadradas y pequeñas como aposentos ordinarios, a manera de torrecillas, desviadas unas de otras dos i tres pasos y puestas en hilera con mucho orden y proporcion; en partes eran más, y en partes menos, segun la necesidad lo pedia; . . . A veces eran las hileras de veinte, treinta, cincuenta, y mas casas, y como estaban en sitios altos y por orden, parecian bien, pues aun lo parecen hoy las paredes que en algunas partes están en pié y tan enteras que no les falta más que el techo. El asenta en lugares altos estos depósitos lo hacian los Indios para que lo que en ellos se guardaba estuviere defendido de las aguas y humedad y seguro de toda corrupcion." Cobo also speaks of larger and smaller *depósitos*, but does not mention circular ones.

² Cieza, *Primera Parte*, p. 429: "Enlo que llaman Guanuco habia una cassa real de admirable edificio, porque les piedras eras grandes y estaban muy solidamente asentadas."

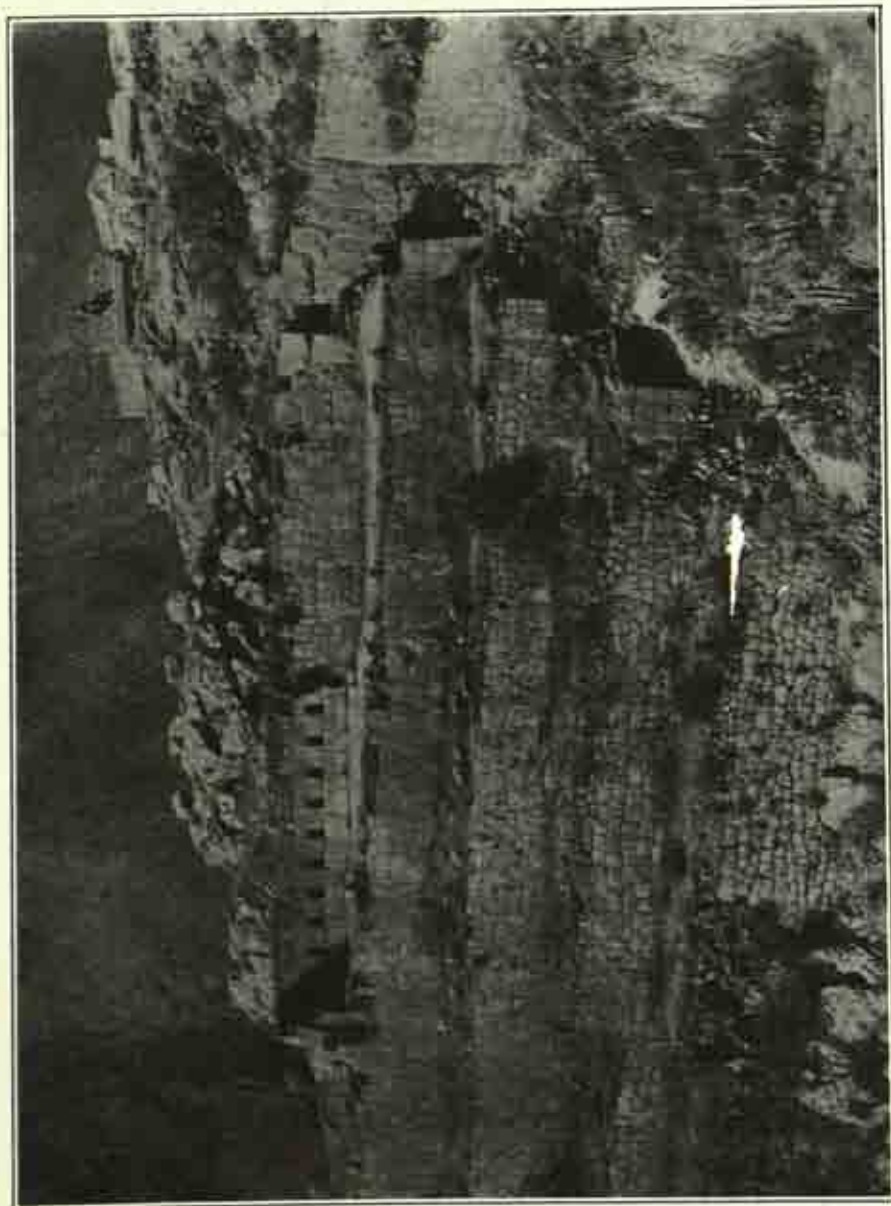
I would also add that the larger proportion of the potsherds found are of the type of Cuzco pottery, which is *sui generis* among Peruvian and Bolivian ceramics. This is another indication in favor of the assumption that the builders of Sillustani were Incas.

Stone towers as military constructions are not common among the ruins of Peru and Bolivia. There are a few on the coast, in positions indicating that they were lookouts. It is manifest that those at Sillustani were not for observation, still less for residence. They must have been intended for either burial-towers or store-houses.

The Aymará Indians sometimes buried their dead in structures, resembling quadrangular one-story towers, built of mud and rubble,¹ also of cakes of clay mixed with straw, just as are the walls of the white chullpas. Rectangular, but not circular, chullpas are very numerous on the Bolivian tableland, and in our examination of hundreds of them we invariably found that they had simply been the dwellings of the people, whose only building materials are stone and mud, for wood is entirely beyond reach in those vast treeless expanses. But the Aymará, like the forest tribes on the eastern slope of the cordillera, in the great basin of the Beni, to this day, formerly buried their dead *beneath the floors of their dwellings*, continuing to live directly over the remains of their departed. Even when a chullpa becomes deserted, it is still used for burial. A certain number of the white chullpas at Sillustani are completed and still absolutely closed, hence were not used as dwellings. The Incas buried their dead in a sitting posture, and separately. Moreover,

He also mentions: "y habia depósitos y aposentos de los ingas, muy bastecidos." It should be observed that the tendency of the Spanish chroniclers is to attribute to the Incas all edifices that are unusually well finished. Garcilasso de la Vega (*Histoire des Incas*, vol. II, p. 274) says in regard to Huánuco: "Ils y fondèrent une Maison de Vierges choisies." Herrera (*Historia general*, vol. III, dec. VII, lib. IV, p. 69) copies Cieza, adding slightly to the exaggerations of the latter and of Garcilasso. See also Squier, *Peru*, pp. 215-216 et seq.

¹ Cieza (*Primera Parte*, p. 443) describes clearly the *chullpas* of the Collao. "Por las vegas y llanos cerca de los pueblos estaban las sepulturas destes indios hechas como pequeñas torres de quatro esquinas, unas de piedra sola y otras de piedra y tierra, algunas anchas y otras angostas; en fin, como tenían la posibilidad las personas que las edificaban. Los chapiteles de algunos estaban cubiertos con paja, otros con unas losas grandes; y parecíame que tenían las puertas estas sepulturas hacia la parte de levante." Cieza did not examine closely the structures he describes, not having time for it; yet it is clear that he did not mean the edifices at Sillustani.



INCA RUINS AT OLLANTAYTAMBO, NEAR CUZCO

as above pointed out, the corpses could not have been placed in the towers from above, and from below it would have been a most tedious and difficult task to fill the chamber with squatting dead through the tiny doorways, which seem to be made rather for taking out small objects. The open space in the second tier afforded neither shelter nor convenience for human remains.

The statement by Cieza that the Inca erected *depositories* near Hatun-Kolla is significant. The Sillustani buildings cannot have been anything else but such depositories. There is no evidence of their having been depositories of the dead, and such was not the mode of burial either of the Aymará or of the Cuzco people; hence if they were depositories, it was of *stores*. The tribute which the Inca obtained on the tableland consisted of what could be raised on it, that is, potatoes (made into *chuñu*), *oca*, *quinua*, and a little maize. The bottle-shaped interior of the chullpas is as if made for receiving just such produce. A chullpa could readily be filled from above with *chuñu* and the like by pouring it through the orifice, and when the stores had to be used they could as easily be extracted from the small opening after removal of the block which closed it.

To those not familiar with the country and with the mode of life of its aborigines, it may seem improbable that such elaborate structures should have been erected simply for preserving potatoes and other produce, but before the Spanish colonization, and even to-day, food was and is much more important to the Indians in these cold and barren regions than what now is called treasure. The Inca had no standard medium of exchange, no currency or "money." Gold and silver were less indispensable to them than potatoes, *quinua*, and other products, for they could use the former only for decoration and as ceremonial offerings, whereas they depended on the vegetables for subsistence. Sillustani, therefore, as Cieza indicates, consisted of a cluster of storehouses erected by the Inca within the Aymará range for preserving tribute. From the Aymará of Hatun-Kolla the Inca had nothing to fear, and against extensive depredation the massive character of the storage tower was sufficient protection, so that it was not even necessary to guard or garrison the site. Such Inca magazines were established at intervals throughout Peru and they were always associated with buildings of a ceremonial character.

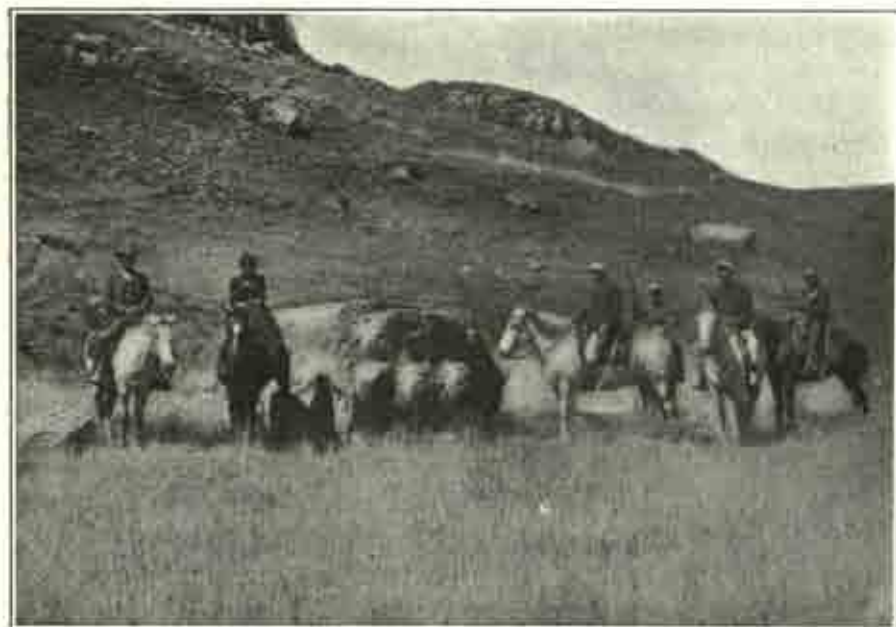
To these latter the structure marked *i* (plates VII (3); IX, 1, 2) must be referred. Its niches, its smaller size and larger entrance, make it appear as an Inca place of worship. On the peninsula of Huata, in Bolivia, there are structures with an analogous interior plan, but they are built underground, beneath square towers of Inca make. These *chinkanas*, as the Aymará call them, therefore appear to have been storage houses and chapels combined. At Sillustani a subterranean structure was out of the question. Building *i* was a place of worship such as we are told (with much exaggeration as to size and decoration) everywhere accompanied Inca storehouses.

The white towers are also of Inca construction. They could have been much more rapidly built than the towers of stone, and it is therefore possible that they were erected as temporary storehouses until the more solid ones were ready for use. The quadrangular structures were in part magazines also, and in part (as *o* and possibly *p*) dwellings. There was no need of permanent military occupancy of the site. Inca "garrisons" nowhere were kept, not even in the great refuge-place of Cuzco, the *Sacsahuaman*.

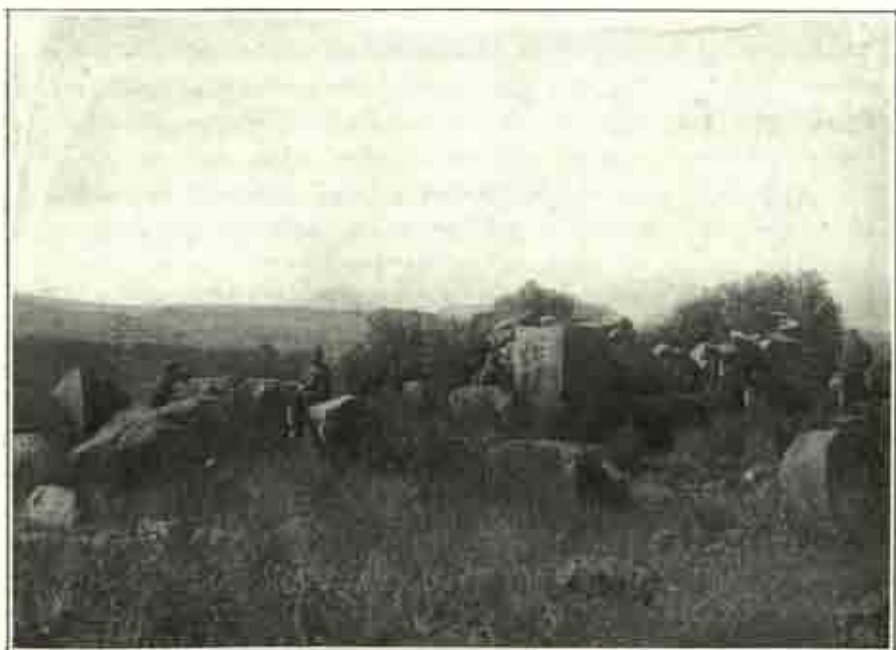
As already stated, work at Sillustani was interrupted and abandoned for some cause or other and never resumed. This may have been in consequence of the appearance of the Spaniards at Cuzco in 1534, but it is more likely that the abandonment occurred before or during the time that warfare between the Inca of Quito and those of Cuzco had thrown in confusion everything in the south. Under any circumstance it is probable that work on the edifices was begun in the second half of the fifteenth century and abandoned in the first third of the sixteenth.¹

We have yet to consider another class of structures—those marked *q* on plates VII (3); VIII, 12, of which there exist a group of

¹ The series of Inca head war-chiefs becomes positive only with Tupac Yupanqui, the third from the last (counting Huascar as the last and ignoring Ata Hualpa, who was an Indian from Quito). Previous to Tupac Yupanqui there is contradiction and confusion among the chroniclers and in the traditions. Tupac Yupanqui subjugated the Collas, or, what is just as likely, they confederated, in his time, with the Cuzco tribe. This took place in the second half of the fifteenth century. To him also are attributed the buildings said to have existed at or near Hatun-Kolla. The appearance of the Quito warriors at Cuzco and the great confusion occasioned thereby among the Incas occurred a few years prior to 1531, when Pizarro landed on the Peruvian coast. Quotations are superfluous, the facts being too well established.



1. Large Block of Andesite at Foot of Quarry, Showing Knobs or Stubs on its Face.



2. Quadrangular Structure *sw.*

BUILDING BLOCK AND QUADRANGULAR STRUCTURE

four at the foot of the cliff on which the largest chullpa (*a*) stands, while an isolated one is on the slope of the northeastern promontory. These are called *inti-huatana*, translated "place where the sun is tied up." Leaving aside etymology, it first strikes one that these circles are on the flanks instead of on the plateau, where they might be expected if designed for astronomical purposes. It is also singular that they are not truly circular (see plate VII, figure 1); indeed, they do not even approach geometrical accuracy. The "circle" proper is formed by upright slabs, little worked if at all. The total length of the curve from *c* to *f* is 84 feet, and the average height of the stones three feet. Around this "circle" was a ring of handsomely cut slabs laid flat and having an aggregate width of about two feet. Most of this stone ring is destroyed, but what remains distinctly shows a tendency to ornamentation (plate VII, 1, 2). The entrance (*b*), with its upright stone-posts (*c*, *d*), is a little more than two feet wide, and the well-cut block in front of it has two low steps. The whole is not symmetrical, but is fairly accurate for work done by "rule of thumb."

It is difficult to understand how such contrivances as these circles, situated as they are, and of such inaccuracy in form, could have been of use for astronomical purposes. It is conceivable that a slender cone (tall as at Cacha, or a mere stub as at Pisac) might have been serviceable for approximately determining equinoxes by noting the days when the sun shed its full light on the top about noontime; but, aside from the fact that it is very doubtful if the Indians of Peru ever paid much attention to the equinoxes,¹ the "circles" at Sillustani exhibit nothing to indicate that they could have been used for such a purpose.

It is equally difficult to conceive that the circular structures could have had other than a ceremonial object, but what rites were performed within them can only be conjectured. There are a number of such circles, less carefully built, on the height called Kajopi, above the village of Huata in Bolivia. Kajopi is 1,600 feet above

¹ The equinoxes are not well marked by meteorological phenomena in the highlands of Peru and Bolivia. The Indians barely pay attention to them, whereas the solstices are more easily noted. What Garcilaso and others say of ceremonies performed at the time of the equinoxes must be taken with allowance.

Lake Titicaca, toward which it descends in partly vertical cliffs. The top is to-day a resort for wizards, and the circles (which, be it said, lie entirely on the inclines and therefore could not have been of any use for astronomical determinations) are regarded with superstitious dread, offerings constantly being made there. The circles at Sillustani consequently seem to have been for some sacrificial purpose, and as such I shall regard them until evidence to the contrary is presented. These and the small building (*i*) appear to have been the only structures at Sillustani designed for ceremonial use.

Sillustani, therefore, presents the characteristics not of some ruin of very ancient date but of a cluster of buildings reared by and for the Inca of Cuzco for storage, and not earlier than the latter part of the sixteenth century. Few of the better constructed edifices are finished. The general condition, the evidences of mechanical contrivances for hoisting, the building stones abandoned by the roadside while under transportation, all prove that the work suddenly ceased for some cause unknown, but which was not necessarily the appearance of the Spaniards. Sillustani is perhaps one of the most instructive sites at which can be studied the strides made by the Inca in the art of building. The ceremonial structures, especially *i*, are of particular interest as the best-preserved specimens of Inca religious architecture thus far examined.



1. Quadrangular Structure 4.



2. Group of White Towers Overlooking Lake Umayo.

AN OJIBWAY CEREMONY

By D. I. BUSHNELL, JR

During the afternoon of October 5, 1899, while making a canoe trip on the lakes and streams of northern Minnesota and Hunter's island, Canada, I was enabled to witness an interesting ceremony of the Ojibways, held at one of their small settlements on the shore of Basswood lake. The boundary line between Canada and the United States passes through this lake, but whether the settlement was situated to the north or to the south of the border I was unable to ascertain.

The site of the village was well chosen, being situated on rising ground at the head of a small bay, protected from the northern and western winds by dense underbrush and timber. The wigwams were of two forms, circular and oval; all were constructed of strips of birch-bark attached to a framework of poles, the lower ends of which were planted in the ground. On the shore were twelve birch-bark canoes, only two of which were decorated—one with seven vermilion spots, about four inches in diameter, along each side; the other with four crosses painted in blue, one on either side of each end. Toward the east, not more than a hundred yards away, were a number of graves with their peculiar box-like covers of hewn logs.

Beyond the wigwams, a short distance from the lake shore, was the site selected by the Indians for their ceremony. It had first been cleared of brush and grass, then a circle of pine and cedar boughs, some forty feet in diameter and two or three feet high, had been formed. The circle had only one opening or entrance, which was toward the south. A few feet from the entrance, toward the east, on the outer edge of the circle, a rudely carved wooden representation of a kingfisher, the totem of the sub-chief who resided there, had been placed on the top of a tamarack pole twelve or fifteen feet high. The center of the circle was occupied by a large

drum surrounded by several men and boys who beat it in unison and with great vigor.

Within the circle a single row of mats had been placed on the ground next to the pine and cedar boughs. The men were seated on the western, the women and children on the eastern side. A pine log, the seat of honor, was placed on the northeastern side, and upon it sat the old sub-chief, Wahgistkeemunsit, who was later joined by my guide, Eniwewcihah.

Near the entrance stood a young man, who acted as master of ceremonies, to whom I shall refer as Keezhik. He held a piece of buckskin, about two or three feet in size, one side of which was covered with large eagle feathers placed in rows. Attached to two corners were strips of skin three feet or more in length and an inch in width. This apron, for such it closely resembled, was called *chippeezung* by the Ojibways. As the ceremony progressed it became evident that Keezhik alone was intrusted with the care of the feather-covered apron, which appeared to have been highly prized and so cared for that as each dance was finished it was hastily returned to him.

All being in readiness, the boys and men, several in number, began beating the drum, and the young man carrying the *chippeezung* entered the circle and, passing from left to right, stopped before the first woman to the left of the sub-chief. She immediately jumped up and assisted him in fastening the apron around her waist, allowing it to hang down behind. As soon as it was in position the woman commenced to dance, and immediately two men who were sitting opposite her arose. They then danced round the circle four times, always remaining separated and never touching one another. When the dancer stopped at her seat within the circle, the woman to her left assisted in removing the *chippeezung* and immediately carried it to Keezhik, who during the dance remained standing near the entrance to the circle.

The next ten or fifteen minutes were devoted to talking and laughing; apparently all were enjoying the event.

Suddenly the drumming was resumed and the sound of voices ceased, for the ceremony was to be repeated. Keezhik entered the circle and, passing from left to right, stood before the woman to

the left of the one who had previously danced. She arose and assisted in fastening the strings of the chippeezung around her waist. The same two men who had danced before repeated the performance, and all passed round the drum four times. When the woman stopped at her place, the one next to her, toward the entrance, untied the chippeezung and carried it to Keezhik. After five or ten minutes' intermission the ceremony was repeated, and thus it continued until six women had danced. At one time a young girl danced, but as she was rather small the chippeezung would have touched the ground had it been tied around her waist; hence it was fastened around her neck and hung down in front.

All the Indians present, with the exception of Eniweweihah were said to have belonged to the clan which has for its totem the kingfisher—no others were expected to participate in the ceremony. In other words, the Kingfisher people were holding a reunion. It was therefore considered by Eniweweihah a great honor to be invited by Wahgistkeemunsit to dance, and still greater was the honor to have Wahgistkeemunsit tie with his own hands the strings of the chippeezung. He then danced as had the others. During the dance all who passed round the circle did so from left to right, that is with their right side toward the drum. During every dance one or more would sing or chant.

Eniweweihah was the last to dance, and when he had returned to his seat upon the log, Wahgistkeemunsit arose and, taking a step forward, addressed the gathering. While he spoke no other sound was heard. Although an old man, his voice was strong and clear; his gestures were few but gracefully made; his bearing was that of a leader accustomed to commanding respect and attention. Although the writer understood but few of his words, it was apparent that those who fully understood him were greatly impressed. All remained attentive listeners, hardly taking their eyes from him while he stood before them.

Later I was informed by Eniweweihah of the purport of the speech. First he had spoken of their blessings and misfortunes since they had met during the previous autumn; of the friends who had died during that interval; then he expressed his desire and hope that all present might come together again, and he asked

them to seek their friends and bring them when they returned the following autumn. He hoped all might be prosperous and well during the coming seasons, and that they might be spared to meet again.

Keezhik then entered the circle, bearing two large copper kettles with their contents steaming. He had taken them from the larger of the long wigwams, in which they had been prepared by several old women whom I afterward saw. By the time Keezhik had placed the kettles on the mat before the log seat and removed the covers, every man, woman, and child within the circle had produced either a tin plate or a sheet of birch-bark upon which to receive his portion of the food. Wahgistkeemunsit was the first to be served; after him came Eniweweihah, then the men, boys, women, and young children in the order named. All remained seated, and Keezhik passed from one to another until every person was served. One of the kettles contained moose meat and rice boiled together until very thick; the other held a stew of dried blueberries. We left while they were still within the circle enjoying their repast.

A few days later the settlement was again visited, when we found that after the conclusion of the ceremonies many of the Indians had returned to their homes on the lakes to the north and west, so that few remained at the scene of the recent gathering. It was observed, however, that Wahgistkeemunsit and six or seven others who had been within the circle during the dance, were present within the largest wigwam, the interior of which presented an interesting aspect. It was more spacious than structures of that type usually are, being some eighteen feet in length and probably half as wide. Along the central line on the ground were four small fires, the smoke from which found egress through an opening at the top. The several women present were making moccasins of buckskin, and the men were equally busy smoking their pipes. Some well-made mats were spread on the ground near the walls, forming seats for all.

In one corner of the wigwam was the drum which had been used during the dance. This consisted of an ordinary wooden tub, about thirty inches in diameter and two feet deep, over which a

piece of untanned moose hide had been stretched and dried. The outside of the tub, or drum, was covered with pieces of cloth of different colors, and around the upper edge was a heavy fringe of colored yarn. Attached to the cloth covering were four bags or pouches, measuring five by seven inches, which faced the cardinal points when the drum was in use. The designs worked in colored bands upon the bags were very interesting. The decoration on the bag toward the east was a kingfisher encircled by a floral design. According to their legends, the clan having the kingfisher for its totem formerly lived in the eastern part of the country, near the "great water," for which reason the kingfisher bag was placed on the drum so as to face the east. The bag on the southern side was decorated with the figure of a man worked in white beads, because, they say, the first white man to visit them came from the south. The bag toward the west had four figures worked in blue beads, three men and one woman, but it was not possible for the writer to ascertain the meaning of this design. The figure on the bag to the north represented a man in red beads, and according to Eniwe-weihah referred to the "fire in the north," the aurora borealis.

At the intermediate points between the cardinal directions as represented by the bags, that is, toward the northeast, southeast, southwest, and northwest, were sticks, four feet high, stuck into the ground against the drum. A few inches from them, away from the drum, were four others, slightly higher, with the upper part bent outward and with several small brass bells fastened on the concave side. Each of the eight sticks was covered with mink skin. The sticks used in beating the drum were somewhat more than two feet in length; their handles were of smooth, plain wood, and to the other end were attached rolls of mink skin five or six inches in length. When the drum was struck a muffled sound was produced. The writer succeeded in obtaining two of the four beaded bags, but they were not removed from the drum until the women had made exact drawings of each on pieces of birch-bark, probably to enable them to make others to take their places.

FLORENCE, ITALY,
November, 1904.

A TALE IN THE HUDSON RIVER INDIAN LANGUAGE

By J. DYNELEY PRINCE

The following text is philologically of the utmost importance, because in it we have what is probably the last echo of the language formerly used by the Mohican Indians whose original habitat was along the shores of our own Hudson river.

It is well known that an extensive body of these people was settled for many years at Stockbridge, Mass., where Jonathan Edwards, Jr. studied and practically mastered their speech.¹ The members of this sub-tribe were first transferred from Stockbridge to a New York reservation, thence to Kansas, and have now found their final resting place on the so-called Stockbridge Reservation at Red Springs, Wisconsin, where some four hundred survivors still reside. Driven from one place to another among alien races as they have been, it is indeed surprising that there still remain members of the colony who know anything of their earlier language. A few of them, however, all old men and of failing memory, can still speak Mohican, and it was from one of these aged members that Mr J. F. Estes, an educated Dakota Indian with no knowledge of the Mohican language, obtained for me the following text and free translation. With the exception of the few broken words gathered by Mr Frank G. Speck in Kent, Litchfield county, Conn., this is apparently the only printed specimen extant of the modern Mohican idiom. Mr Speck's material I have codified and analyzed in our joint paper "Dying American Speech Echoes from Connecticut."² I regard it as most fortunate, therefore, that I have been able to obtain this longer connected specimen of a language which is historically so interesting and which in a few years' time will be quite extinct.

¹ See Pilling, *Bibliography of the Algonquian Languages*, s. v. J. Edwards, Jr. and J. Sergeant.

² Proc. Amer. Philos. Soc., XLII, pp. 346-352.

Mr Estes has written out the tale in the Dakota system of orthography, the key to which is as follows:

| | |
|--|---|
| <i>a</i> = <i>ah</i> . | <i>#</i> = the French nasal <i>-n</i> . |
| <i>b</i> as in English. | <i>o, p</i> , as in English. |
| <i>c</i> = <i>ch</i> . | <i>p'</i> = the voiceless tenuis. |
| <i>c'</i> = <i>sh</i> . | <i>r</i> as in English (I question the existence of <i>r</i> in modern eastern Algonquian). |
| <i>d</i> as in English. | <i>s</i> always hard as in <i>safe</i> . |
| <i>e</i> = <i>ay</i> . | <i>t</i> as in English. |
| <i>g</i> like English hard <i>g</i> . | <i>t'</i> = the voiceless tenuis. |
| <i>h</i> as in English. | <i>th</i> as in <i>thin</i> . |
| <i>h'</i> = a soft aspirated guttural. | <i>u</i> as in the proper English pronunciation of <i>rude</i> . |
| <i>i</i> = <i>ee</i> . | <i>w, y</i> (consonantal) as in English. |
| <i>j, k</i> , as in English. | |
| <i>k'</i> = the voiceless tenuis. | |
| <i>m, n</i> , as in English. | |

There are undoubtedly faults of transcription in the text, chiefly owing to the fact, as Mr Estes has pointed out to me, that his Mohican narrator was old and toothless and consequently most difficult to follow. On the whole, however, as will appear from the following etymological analysis, the words are given so correctly that I have been able to identify nearly all of them by a comparison with kindred dialects, chiefly with those of the Lenape, the Canadian Abenaki, the extinct Massachusetts Natick, and occasionally by means of the idioms of the eastern Passamaquoddy and Micmac. The Mohican dialect herein given bears close resemblance to the Munsee dialect as still used at Hagersville, Ontario.¹ The differences between this Mohican dialect and the Munsee language are about the same in degree as those which exist between Dutch and High German. The Mohican was evidently a branch of the Munsee and stands related in a lesser degree to the kindred Lenape idiom of Brinton's *Lenape Dictionary*, which I have been able to use, however, in most cases in my identifications.

There is something peculiarly melancholy in the thought that we probably have in this text the last specimen of the tongue which was heard for centuries in the neighborhood of New York

¹ Cf. Prince, *Notes on the Modern Minni-Dialect*, Amer. Journ. Philol., xxi, pp. 295-302; *A Modern Delaware Tale*, Proc. Am. Philos. Soc., xli, pp. 20-34.

City and along the shores of the great *Maik'aretuk*, or 'Mohican river,' as the original inhabitants called the Hudson.

MOHICAN TEXT

I. *Gut'e withk'enowak mawe p'ip'mat'owak ponak k'ot'awe ni thepo Maik'aretuk. Ait'an gamau p'ip'mat'it'. Gut'e wañkmau mawe p'ip'mat'owak. Psuk p'hānam gwēce dan hotawāñsman not'ek'āk. Kne ph'ānam ph'aktāmo. Arnē-kseih't-art'a nin ph'ak'ek'wat'an ne t'ane t'awāk'wuk ne waac'e ktep'anank ne t'awāk'wuk niu wicok niswa namedo awāne nebiik. K'aseeh't-at'a wosak'k'amonman. Onamiāñ sok'wā-awak wawēet'han wic'ē maat'ēk.*

II. *Kne anāmatho ne wikwañmañk. Aupaāñ nimāna wawēet'han arnē ien nañamp'p'nan nawāñ ne nip'aakwenāayerk. Kne paecondit-it'a p'ip'mauwinnowāk. Kne awot'añnānwan nimanā k'aāk'wae maa naam-ēet'ak' ne wañk'amak. Kne sañāñwa waspowāk nemanaāk wic'i ne p'aakwenaayerk. Kne awot'añnāwan ph'ānman pseek'ānc k'iiwa k'ce p'ot'a. Piit'in maawe ningāano ne p'aak'wenaayerk. Kne sañāñwā wāspo anāmatho ne paakwenaayerk. Kne ararne outhāme p'k'añnāk erst'ā k'ise wāmañk p'āawe. Kne ne mañsāñt'aman ne p'ik'wahāk. Kne aan nētaao ne-len-p'ic'ikwuthin p'ikwah'k'woerk.*

III. *Māac'e p'ic'ikwuthit'a op'ot'awāñ cinwaac'ik wawēet'an aninūomp'nan nan naawañ. Kne op'ot'awāñ pask'owāñ nemānan ou-wēenan aniwithit' ouwanthāk'amwok wadeao mah'okwaowinjannak. Kne māac'ino st'añmiik'ao māawe c'iit'mi. Kne māac'ino nethwak nemānak ne nihañ-p'ak' dwak ph'ānam maa knameāñna. Na ph'ānam aat st'aatwahañmañk āyiwi. Kne dwak p'et'at' no aut'ap'in no p'ek'wah'k'wōk. Kne pask'o mat'ōk awāau ounāt't'ookwun nan ph'ānman. Kne ou erst'ā no out'ap'et'wan. Kne anamithwak. Kne c'iit'mih'ein ph'ānam dan awañ-thith. Erstā gut' c'iinwawe kanet'pek'ak.*

IV. *Kne kaawan p'at'añpan k'cikwtho ph'ānam. Anāmatho wawēet'an ararnē kakh'ikammih'ak'ounae. No wic'i k'eseam sañpeetawañ sek'wiot'ke nuuci thañp'ein nihañpao at'anakañtak at'añnakoma. Kne thañ-dāñwa out'ānwan aanayak. Anē maac'e añañmañk no wicawotp'ane. Kne wāiawau anamañnak'ammau k'akse naci withk'enōwa āine-amowat'et'waac'ām mok'wamp'āk pañt'it' thañwamooce wac'ii p'añt'it' nok mamici anaik'ik' sikwiañt'it' no ph'ānman. Kni-maac'ino ph'ānmak dap'okkañk wac'cin met thondit'it' paecondit'it'a.*

V. *Kne maawe nok mok'wamp'āk kp'aothwāk wek'wameek'ōk danwa ph'ānam añh'ōāñ wāc'eam erstā nameañmok. Erstā meek'ao paecondowāk; kanwa paak wāiyawau out'añna mēet'thondiikw thañwa mat'thon-*

dowak. Kne wáiyawau anet-aññta kithpundowák. Kne ni-ut-an wa nemánaa ap-it. Kne ouk-wicimonan; k'ak-wai kt'inin ne kmah-okwao-wenjan? Kne out-añnan k'aakw-ai? Amoskw nathak'amok-win. Kne ph'anman ktañkcako out-anan: kañkna waahiñyañ ktañnamokwin. Kne kawamo p'asko. Kne maawe kt-añkcawak amusok-wanawañ. Kne p'askowan anao withk-enówan mawe amaama wáyawau ama knimána-mak mawe kwana. Aná niya nimánamak erstaám geese-k'wanawik. Awayethák art okat't-am mañwañ nemánama.

TRANSLATION

I. Once on a time some young men went hunting in the winter up river on the Mohican river (Hudson river). That was where they always hunted. One day all were hunting. One woman alone and her child were in the camp. Then the woman was hulling corn. When she was washing the hulled corn at the spring, where the spring comes out of the mountain, she saw some persons in the water. She was washing her corn when she saw them painted and she knew that was for evil (*i. e.*, a bad sign).

II. Then she went to where they (her party) were camping. She awaited the men (for) she knew that they were to be attacked that very night. Then when the men came, then she told the men what she had seen that day. Then they prepared—the men did—for that night. Then they said to the woman: "Do your best; do you go away and try to save (yourself). Perhaps we shall all be killed this night." Then, because it was so very dark, she could not go a great way. Then this (woman) remembered a certain hollow log. So she thought, "I will crawl into that hollow log."

III. After she was within, she heard them fighting (and) she knew that they were attacked. Then she heard one man call him (her husband) by name (and say), "The dog has bitten my thumb." Then not long afterward all became quiet. After that two men came (and) they said, "We certainly saw a woman. That woman cannot be a great way off." Then they said, "Perhaps she is inside this hollow log." One of them used a stick, feeling with it inside for the woman. Then he said, "She is not inside." So they went away. Then the woman and her child lay quite still. Not once did she make a sound the whole night through.

IV. Then, as soon as the dawn came, the woman crawled out. She went where she knew a cross-cut. For this reason she was able to head off the murderers (and) she got to her home and people before they

arrived. Then she told what had happened to her people; that all were killed who had gone with her. Then the chief sent all the young men around to notify the warriors that they should come at once. Those bad people had murdered the husband of that woman. Right after this, the women cooked (food) so that they (the murderers) might eat when they arrived.

V. Then all those warriors shut themselves up in the wigwams and the woman hid herself, so that they could not see her. Not long afterward they came; when they arrived, the chief said, "Eat ye," and they ate. Then the chief thought that they had eaten enough. So he went to where the man (murderer) was sitting. Then he asked him, "What have you (what is the matter) with your thumb?" And he said, "What? Why a beaver bit me." But the woman sprang out and said, "You liar, my husband bit you!" Then someone uttered the war-whoop. Then they (the hidden warriors) all jumped out and scalped them. Then (the chief) said to one of the young men, "Go tell the chief (of the murderer's clan) and say, 'Come bury your men.'" He (the chief) said to him, "My men I cannot bury. The wild animals have eaten my men up."

ANALYSIS¹

I. GUT·E 'once' = Pass. *neqt* 'one' (see below, § I.). WITHKEN-OWAK 'young men' = *withke* 'young' (Abn. *uski*; Oj. *oshki*) + *linno* 'man'; Munsee *withkeelno* (see Prince, P. A. Ph. S. xli, 27). MAWE 'all' a metathesis for Del. *wemi*. P·IP·MAT·OWAK 'they hunt'; cf. Abn. *pib'ma* 'shoot'; N. *pummau* 'shoot.' PONAK seems to mean 'in winter,' although my translator gives it 'in the north'; cf. Abn. *pebôn* 'winter.' K·OT·AWE 'up there' = N. *kuhkuhqueau* 'he ascends.' Ni (dem. pr.) 'that' = Abn. *ni* 'that.' THÉPO = Abn. *sipo*, a common Algonquian word. MAIK·ANET·UK 'the Mohican river' or 'the Hudson'; cf. ND. p. 315, *Mohicannituck* 'Hudson.' Note that *-t·uk*, = Abn. *-tukw* 'river.' ÁIT·AN 'where' same element as Abn. *tôni*; N. *uttiyeu* 'where.' GAMAU 'always' = Del. *ngemetwi* 'always.' P·IP·MAT·IT· 'they hunt,' relative form, 3d pers., pl. GUT·E WASKMAU 'one day'; Abn. *nguddog'niwi*

¹ The following abbreviations have been used: Abn = Abenaki; the material for this language is drawn from Prince, *Abenaki-English Dictionary* (not yet published); Del. = Delaware; D. Lex. = Brinton, *A Lenape-English Dictionary*, Phila., 1889; Narr. = Narragansett; Roger Williams, *Key into the Language of America*; N. = Natick; ND. = J. Trumbull, *Natick Dictionary*, Washington, 1903; P. A. Ph. S. = *Proceedings of the American Philosophical Society*; Pass = Passamaquoddy (material from Prince's collections); Peq. = Pequot, discussed at length by Prince and Speck, *Am. Anthropol.*, v, pp. 193-212; vi, 18-45, and Speck, *Am. Anthropol.*, vii, pp. 469-476.

'one day.' PSUK 'one' = Abn. *pazego*, *pazekw* 'one.' PH'ANAM 'woman,' found only in Abn. *p'hanem*. That this is a real Mohican word is seen in De Forest, *Indians of Connecticut*, app., p. 491, where the form *p'ghainoom* is given. It is probably connected by metathesis with the stem meaning 'split,' i. e., *vulva*, seen in Del. *ochgeu*, Pass. and Micmac *épit*, Oj. *ikwe*, and also with Narr. and Pequot *squaw* = *s* + *qua*. I think *p-h* in *ph'anam* is a metathesis of *k(p)-w(h)* in the words just cited. GWEECE 'alone,' probably cognitive with N. *wukse* 'alone' (ND. p. 270). Is the *gw-* the same element as in *gut-e* 'one'? DAN 'and' = Abn. *ta*. HOTAW'ANSMAN 'her child.' I think Estes wrote *hot-* for *wot-*, i. e., the *w-* of the 3d pers. prefix + the intercalated *t* before a vowel; cf. Abn. *wid-awóssisma*. The *m*-element is the possessive suffix and the final *-n* is probably the obviative ending = Pass. *-l*, *-a* in Abn. NOT'EK'AK seems to mean 'alone'; cf. Abn. *nodega*, and not 'in camp' (so Estes). It is perhaps a redundancy for *gwéce*. KNE 'then' must contain the element *k-* = Abn. *ga* + *ni*, i. e., Abn. *ni-ga* 'then' (*ga-ni*). PH'AKTAMO 'she hulls corn' is probably cogn. with N. *wuh-hogkom-mineash* 'corn-husks.' ARNÉ = the relative 'when.' There is probably no *r* in this dialect (?)¹ I think this is Abn. *ali* = *ane*. See s. v. ARARNE, § II. Perhaps this is the same element as Abn. *t-ôni* 'when'? KSEIH'T'ARTA 'she washing' = D. *geschiechten* 'to wash' and Abn. *kazebaaldmuk* 'one washes.' The *-r-* is superfluous here = *-ata*, i. e., the ending of 3d pers. overhanging *-a*, seen in Abn. *piß'môdid-a* 'when they shoot.' NIN is the inanimate pl. of *ni* 'that,' and agrees with the following word. PH'AK'EK'WAT'AN 'husks of corn,' with inanimate pl. *-an*; cf. Pass. *-ul*. NE T'ANE is simply Abn. *ni dali* 'there' (lit. 'at that'); *l* = *n* as in the inan. pl. T'AWAK'WUK contains the element seen in N. *tohkekom* 'running water.' This is a cogn. of the stem of Abn. *tego* 'wave' and *-tukw* 'river.' See above MAIK'ANET'UK, § I. WAAC'E-KTEP'ANANK 'it emerges.' *Waac-e* is simply Abn. *waji*, *uji* 'out of' and *ktep'anank* = D. *ktschin* 'go out'; cf. Prince P. A. Ph. S., XII, p. 33. NIU, lit. *ni* 'that' and *u* 'this' is a strong dem. pronoun.

¹In Abenaki the consonants are pronounced as in English and the vowels as in Italian, except *ä*, which is the French nasal *-on*. In Delaware, Brinton has followed the German system of phonetics. In Narragansett and Natick, Williams and Trumbull have used the English system of spelling. In Passamaquoddy and Pequot the consonants and vowels are to be pronounced as in Abenaki.

The existence of *r* in modern eastern Algonquian is very doubtful. Mr Speck found a pure initial *r* in his broken Connecticut dialect of the Stockbridge Mohican in the word *rutig* 'crushed corn.' This, however, is an evident archaism and not to be taken as a correct specimen of spoken Mohican (see Proc. Am. Philos. Soc., XLII, p. 350.).

WICOK, locative of *wico* 'mountain' = Abn. *wajo*, a common Algonquian word. NISWA 'then' = Abn. *ni-sawa*, a usual resumptive 'then indeed.' NAMEAO 'she sees' = Abn. *w'namio*, Pass. *w'nimia* 'he (she) sees.' AWANE should be *awanen* with obviative ending -n. Cf. D. *awen*, Abn. *awani* 'someone.' NEBIK 'in the water' = Abn. *nebi*. K'ASEEH-T'AT'A 'while washing'; 'while' is expressed by overhanging -a. See above *kseih-t-art-a*. WOSAK-K'AMONMAN 'her corn' = Abn. *skamōnal*; OA. *skamān* 'corn' and N. *mesunkquammineash* 'husks.' The ending -an is inan. pl. ONAMIĀN 'she sees it' or 'them,' with definite ending -ān, cf. Abn. *w'nāmio* 'he sees him.' SOK-WĀAWAK 'them painted'; cf. Narr. *wusuckwhōmmen* 'he paints it.' WAWĒET'HAN 'she knows it'; cf. Abn. *uwawawinōwō* 'they know him.' WIC'Ē 'for' = Abn. *waji*, Pass. *weji* 'for.' MAAT'ĒK = Abn. *maji*, N. *matche*, D. *machtit* 'bad, ill, evil.'

II. ANAMATHO 'she went' = D. *allumsin* 'he goes away,' with *th* for *s*. WIKWAŠMAŠK 'the place of abode,' from root *wik*. Cf. Abn. *wig-wōm* 'dwelling,' and see below, § V. AUPAĀN 'she awaits' = D. *pehowen* 'wait.' NIMĀNA 'men'; the old Mohican word for 'man' was *nema-nao*; cf. De Forest, *op. cit.*, p. 491. ARNĒ-IEN seems to be *arne* + the suffix -ien. NAŠAMP-P'NAN I cannot explain. NAWĀN = Abn. *nawa* 'then.' NIP'AAKWENAAYĒRK 'that same night' = Abn. *nibōiwi*; D. *nipahwi* 'in the night.' PAEONDIT-IT'A 'when they came' ('when they' = *it-it'a*); cf. D. *paan*, Abn. *paio* 'come.' Awot-añnānwan 'she told them' probably contains stem of *aan* (see below) with intercalated dental. K'āā-k'wae 'what' = Abn. *kagui*, Pass. *kekū*, Del. *kolku*. Note the metathesis in N. *teagua* 'what.' MAA NAMEET'AT' 'what she had seen.' This *maa* may be the sign of the past, seen in N. *mahche* 'already' (cf. also Prince, Pequot glossary, Am. Anthropol., VI, 36). NAMEET'AT' is the inanimate form in -t'; cf. Abn. *namito* 'he sees it' (inan.). WAŠK'AMAK' 'on that day' must show the same element seen in Abn. *nasōg-wonakkiwik* 'three days.' SAŠAŠWA 'they' has the same element as in Abn. *sa-nōba* 'man.' WASPOWĀK 'they prepare' I cannot identify. PSEK'ANC 'everything' = Del. *tsigantschi* 'all.' K'IIWA = you Abn. *kiya* (?). K'CE P'OT'A I cannot identify. P'IT'IN 'perhaps' = Del. *pit*; D. Lex. 117, 15. See below on *pet-a-t*, § III. Has this any connection with the French *peut-être*? NINGĀANO 'we shall be killed'; Del. *nihillan*, Abn. *nihlō*. I am not certain of this. ARARNE 'because' perhaps = *a-a-ne* (?). See above on ARNĒ. OUTHĀME 'so very' = Abn. *uzōmi* 'too much'; Del. *wsamiechen* 'to have too much.' P-K'ASNAK 'it is dark' = Del. *pakenum*, D. Lex. 105, 10. ERSTĀ 'not,' see below on

stañ, stat, § III. Same element as Abn. *anda*, Del. *atta*, N. *mat*, Pequot *mud* 'not.' K'ISE 'she was able'; cf. Abn. *kizi* 'can.' WAANMAŠK 'go'; perhaps = Del. *aan* 'go.' P'AAWE 'far,' perhaps for *palliwi* with elision of *i*, so often seen in Pequot. MAŠŠAŠT'AMAN 'she remembers' = Del. *meschatamen*, D. Lex. 82, 3. P'IK'WAHAK 'hollow log' = Del. *puchtschessu* 'it is hollow'; N. *pukui* 'there is a hole'; Abn. *piguagen* 'it is hollow within.' Note in the next sentence the form P'IKWAH-K'WOER'K; -*erk* = -*ak* in Abn. -*akuam* 'tree.' AAN seems to mean 'she said,' probably cogn. with Munsee *owh*, Prince, *op. cit.*, p. 30. Cf. Oj. *iwa* 'he says.' NETAŠO 'I think' = Del. *ntite* 'I think'; *wditehen* 'he thinks,' D. Lex. 153, 12. NE-IEN-P'IC'IKWTHIN 'I will enter in.' The element *ien* here is probably Del. *aan* 'to go' + *pusihu* 'enter anything,' especially a canoe; D. Lex. 120, 20; cf. next sentence *p'ic'ikwthiit'a* 'when she had entered.'

III. MAAČ'E 'afterward' = N. *ne mahche*, ND. 219 b. *Ma* is same particle seen in Oj. *pa-ma* 'afterward.' See below MAAC'INO. OP'OT'A-WAŠ 'she heard them' (*waš*). Cf. Del. *pendamen* 'hear'; Abn. *podawaximuk* 'one takes council.' CINWAAC'IK 'them (*ik*) fighting.' I cannot locate this stem. WAWÉET'AN; note different writing here for WAWÉET'HAN above, § II. ANINUOMP'NAN NAN NAAWAN 'that they were being attacked.' I cannot explain this form. See above s.v. NAŠAMP'P'NAN, § II. PASK'OWAŠ, see above s.v. PSUK, § I. OU-WÉENAN 'he names him,' from root *wee* = Abn. *kdeli-wi-zi* 'you are named'; also Del. *wliwunsowagan* 'name.' ANIWITHIT' 'his name' a participial form in -*it* = 3d p. The -*ni*- element here = Abn. *li* in *liwisowōgan* 'name.' OUWANTHAK'AMWOK 'he bites me.' I connect the root *thak* with ND. 226 b, *sogkepuan* 'he bites.' Cf. Oj. *nin-takwange* 'I bite,' Abn. *sagamōmuk* 'bite,' with *s* for *th* as usual. WADEAO 'the dog' shows same root as in Abn. *wdamis* 'his dog'; Pass. *ndemis* 'my dog'; Old Peq. *nahtau*, see Prince, Peq. Glossary, p. 36; *nutteah*. MAH'OKWAOWINJANNAK 'the thumb' contains root seen in ND. 334 *kehtequanutch* 'thumb,' i. e. *kehle* 'big' + *uhquae* 'finger.' The Del. word was *kitthukquewulinschawon*, D. Lex. 55, 1. The root *inj* 'finger' appears in Oj. *omindjima* 'his finger.' MAAC'INO, see above on MAAČ'E. STAŠMIK'AO 'not long.' This is clearly *erstā* (see above, § II.) + *miik'ao* 'long' = Del. *miqui* 'far off.' See below on STAATWAHAŠMAŠK, § III. The Abn. *kweni* 'long' is the same stem as in *miik'ao*. Č'IT'MI 'silent' = N. *chegunnappu* 'he is silent,' ND. 322a. Cf. Č'IT'MIHEIN, § III. D. Lex. 146, 22 gives *tshitquihillen* 'he is silent.' Cf. Abn. *chigabi* 'be silent.' NETHWAK 'two,' pl. = Del. *nischa*, Abn. *nizwak*. NIHAŠP'AK 'they

approach' contains the element of *pacon* 'to come.' See above on *paconditita*, § II. O'WAK 'they say,' pl. of element *owh* seen in Munsee. See Prince, P. A. Ph. Soc., xli, p. 30, and cf. above on AWOTASNANWAN, § II. PH'ANAM MAA KNAMEASNA. This *maa* is probably the sign of the past (see above, § II.). KNAMEASNA 'we (inclusive) have seen her.' AAT probably = 'they say' participle of *aan*; see above AWOTASNANWAN, § II. ST'AATWAHANMANK AYIWI 'she is not far off.' *St'aat* is negative, see above on ST'ASMIK'AO, § III; *wahanmañk* = Del. *wahellemat*, D. Lex. 150, 15 'it is a great distance'; *ayiwí* is the neg. of the verb 'to be'; Abn. *anda aowí* 'he is not.' PEET'AT' 'perhaps' may be connected with *pit*, see above, § II. s. v. PHT'IN, but it looks suspiciously like the French *peut-être* used as a loanword? No is the demonstrative that one; cf. *ní* 'that' and NOK, § IV., OUTAPIN 'she is lying' or 'sitting,' from root *ap* = Abn. *ab* in *wadabin* 'he (she) is lying' or 'sitting.' P'EK'WAH'K'WOK 'in the hollow log,' loc. of P'EK'WAHAK, see above, § II. MAT'OK 'stick'; cogn. archaic form is *tachau*, D. Lex. 135, 8 'piece of wood.' AWAAU means lit. 'he uses,' cogn. of D. Lex. 24, 13 *awwaken* 'he uses'; cf. Abn. *awaka* 'he works.' OUNAT'T'OOKKWUN 'he feels inside with it' probably cogn. with D. Lex. 92, 5 *nattanamen* 'he seeks someone.' NAN P'HANMAN. Note the obviative *-n* in both words. OUT'AP'PEWAN 'she is not there' from root *ap* (see above *outapin*, § III), with neg. ending *-wan*; cf. in AYIWI, § III. ANAMITHWAK 'they went away' see above § II. on ANAMATHO. Note difference of spelling. C'IT'MIH'EIN 'she was silent'; a participial form. See above on C'IT'MI, § II, AWAETHITH, see above, § I., on HOTAWASMAN. I cannot understand why the sibilant should be lisped in this form and not in the first instance. Cf. KESEAM, § IV., and KITHFUNDOWAK, § V. The Abn. word is *awóssis* 'child.' GUT', see above on GUT'E, § I. C'INWAWÉ 'he did not make a sound.' Probably the same root as in C'IT'MI, § III. KANET'PEKAK 'all night.' For *t'pek'ak*, cf. Abn. *illitebakak* 'at night.' *Kane* here is simply Abn. *kweni* 'long, during'; thus, Abn. *kwenitebakak* 'all night.'

IV. KAAWAN 'as soon as' is probably a metathesis for *kwenan* = N. *quenan* 'as long as,' ND. 325a. P'AT'ASPAN 'daybreak' = Del. *pelapan*, D. Lex. 114, 4. K'CIKWTHO 'she comes out'; Cogn. with Del. *kut-schin* 'come out of a house,' D. Lex. 59, 5. KAKH'IKAMMIH'AK OUNAE 'a cross-road.' I cannot identify the first element; evidently from some root 'to cross over,' but *ounae* is good Delaware. Cf. D. Lex. 21, 3 *aney* 'road.' K'ESEAM she could = Abn. *kizi-* 'can.' SAÑPEETAWAN 'she heads them off.' The element *sañ-* is probably the same as in *sach-*

gaguntin 'to lead,' D. Lex. p. 123; Abn. *sa-osa* 'he goes forth.' Does the element *pet* = Del. *pet-on* 'bring' D. Lex. 114,20, also seen in *petschi* 'until' 114,21? SEK·WIOT·KE 'murderers.' I cannot explain this word unless it is connected with Del. *saqua, sakqua* 'troubles,' D. Lex. 123. NUUCI 'first' = D. Lex. 102,10 *nutschi* 'at first,' 'in the beginning.' THANP·EIN 'she came out, arrived'; same root as *sa-* in Abn. *saosa* 'he goes forth' and *paiō* 'come.' NIHAŃPAO, cf. NIHAŃPAK above § III. AT·ANAKAŃTAK and at·aŃnakoma, both cogn. with Del. Lex. 31,27 *el-angomat* 'a member of the family' and *langoma* 60,18 'relation.' THAŃAŃWA seems to mean 'what had happened?' OUT·ANWAN 'she relates'; cf. below § V. OUT·ANAN 'she told them.' AANAYAK seems to mean 'the people' and is the same word as ANAIK·IK, § IV. AŃAŃMANK 'they (are) killed'; perhaps cogn. with *-nalen* in Del. *gachto-nalen* 'he seeks (*gachto*) to kill,' D. Lex. 96,12? This is probably the same element seen in Del. *nihilla·n*, Abn. *nihlōn* 'kill.' WICA·WOTP·ANE 'those who went with her' = Abn. *wijawi* 'come with me'; D. Lex. 164,5 *witschawan* 'go along with.' WAIWAU 'chief' is a good Delaware word; cf. D. Lex. 167, 9 *wojawwe*, or Anthony's form *wēj-jaweu* 'chief.' ANAMAŃNAK·AMMAU 'he sends'; perhaps = Del. Lex. 17, 11 *allogalen* 'send someone,' cf. N. D. *annunau* p. 319a (*aŃna* = *allo*?). K·AKSE NACI 'all around.' *Kakse* perhaps = Abn. *kakastwi* 'rather, more' and *naci* may be cogn. with ND. 77b *nashawe* 'in between,' 'in the midst'? AINE·AMOWAT·ET 'that' (*aine* = Abn. *ai*); *amowatet* 'they should tell,' 3d per. pl. WAAC·IAM = Abn. *waji* 'in order to'; cf. WAC·II below, § IV., and *wice*, § I. MOKWAMP·AK 'warriors,' probably cogn. with D. Lex. 69, 8 *machtageoagan* 'war.' PAST·IT 'that they should come' = Abn. *paiōdit*; note the sing. for the pl. THAŃWA·MOOCE 'immediately' contains the element *schawi* 'at once,' Del. Lex. 127, 12. WAC·II, cf. above on WAC·IAM, § IV. NOK pl. of *no* 'those.' MAMICI, reduplicated form = Abn. *maji*, Del. Lex. 70, 10-11 *machtit*, Peq. *mudjee* 'bad.' ANAIK·IK 'people,' cf. above on AAN·AYAK, § IV. SIKWIAŃT·IT 'those who murdered her husband,' same element as in TEK·WIOT·KE above, § IV. DAP·OKKANK 'they cook' must be distantly connected with ND. 273 *appuan, apwan* 'he bakes.' WAC·EIN 'so that'; cf. *wac·iam, wac·ii* above, § IV. MET·THONDIIT·IT 'that they may eat' = D. Lex. *mizin*; Abn. *mitsi* 'eat,' a common Algonquian stem.

V. KP·AOTHWAK 'they shut themselves up' = D. Lex. 45, 18 *gop-hammen* 'shut, close'; Abn. *kbaha*; D. Lex. 56, 8 *kpahhi* 'shut (the door).' WEK·WAMEEK·OK 'in the houses'; Abn. *wigwōm-ikok*. Note

the pl. locative *-ikok*. DAN-WA 'and' = *dan* (§ I) + the asseverative element *-wa*. ANH-OÄNO 'she covers herself'; cf. ND. 238b *onkhum* 'he hides'; WACEÄM ERSTÄ NAMEÄNMOK 'so that they shall not see her' = Abn. *waji anda namidwak*. ERSTÄ MEEKAO 'not long'; cf. above on STAÑMIKAO, § III. PAEONDOWAK 'they came' = Abn. *paišwak*. KANWA 'when' = Abn. *kanowa* 'but.' PAAK 'they came' = *paiak*, aorist form. MEET-THONDIKW 'that you should eat'; 2d pers. pl. participle from same root as Del. *mizin*. MAT-THONDOWAK 'they ate' from same stem. ANET-ÄNÄNTA 'he thought' = Abn. *nde-laldam* 'I think'; ND. 333a *anantam* 'he thinks.' KITHPUNDOWAK 'that they had eaten enough'; *kith* = Abn. *kizi* sign of the past + root *pun-puin* D. Lex. 156. Note the lisped sibilant in *kith* in contrast with *keseam* above = *kizi*, § IV. The stem *pun, puin* is cogn. with Abn. *pol-didit* 'they eat.' NĪ UTAN 'that one (nī) went,' from D. Lex. 9, 2 *aan* 'go.' WA NEMÄNAA those men; note the obviative. A-FIT 'who sits' = Abn. *abit*. OUK-WICIMONAN 'he asks him'; cogn. ND. 222a *wehquetum* 'he asks it'; Abn. *wikomömuk* 'he seeks it.' KAAK-WAE 'what?' See above, § II. KTININ 'you have' = Pass. *ktyin* 'you have.' KMAH-OKWAO-WENJAN 'your (k') thumb'; see above, § III, on *mah-okwaorwinjannak*. AMOSKW 'beaver' = D. Lex. 58, 16 *amochk*. NATHAK-AMOK-WIN 'he bit me'; cf. above s. v. WANTHAK-AMWOK, § III. Note the 3d pers. suffix *-kwin*. KTAÑKCAKO 'she jumps out' = D. Lex. 60, 7, *laktschellen* 'jump over.' See below KTAÑKCAKWAK. ND. 286, *quehshau* 'he jumps' and Abn. *ujam'gwigidahen* 'he jumps over' are cognates. All these contain the root *tsch* = *kc*. KAÑKNA 'thou liest' = D. Lex. 10, 14 *achgalunen* 'to lie'; 37, 1, *gakelunenhen* 'to make a liar.' I find in this word the explanation of the Pequot *taiond-uksku* 'lie,' which I could not identify in Am. Anthropol., v, 205. WAHINYAN 'my husband'; probably cogn. with D. Lex. 158, 6 *wiwu* 'he copulates.' KTAÑNAMO-KWIN 'he bites you' (k'). See above *wanthak-amwok*, § III. KAWAMO 'he warwhoops' = D. Lex. 16, 21, *kowano*; Abn. *kwa'kwaömo*. AMUSOK-WANAWAN 'they scalped them' = D. Lex. 74, 6, *manoquen* 'to scalp'; Abn. *w'masokwömö* 'he scalps him.' MAWE 'go and tell' = D. Lex. 75b *mauwi* 'go.' KWANA 'bury' = Abn. *pos-kenömuk* 'one buries.' NIYA 'him' seems to be the obviative form of *nekama* 'him,' 'he.' ERSTÄ-ÄM GEESE-K-WANAWIK 'not can I bury them.' Note the neg. *-w-* in the verb-form. AWAYETHAK 'wild animals' = Abn. *awasis* 'animal.' ART = *aat* 'he says.' O-KAT-T'A-MAÑWAN 'they eat them' = Heckewelder *mohöan* 'eat' ND. 250b; also Abn. *mohömuk* 'one eats.' The element *kat-t'a* is the same that is seen in Abn. *w'gatahamowon* 'he cuts off (his ear)'.

TEXTILE FABRICS OF THE NEW ENGLAND INDIANS

By CHARLES C. WILLOUGHBY

Comparatively little is known of the indigenous art products of the New England Indians, especially of such perishable objects as garments and textile fabrics. In general the arts of these Indians resembled those of other eastern Algonquians, although little remains of the native culture of any of these tribes by which to judge their earlier and superior work. The bark and mat wigwams, bulrush and flag matting, bark receptacles, and a few other objects still made by the remoter Ojibwa are similar to those known to have been common in New England. The snowshoe and bark canoe of the Abnaki of Maine are, however, practically the only modern native artifacts of the New England Indians which remain unmodified.

For several generations the textile productions of the New England tribes have been limited almost exclusively to splint basketry, the manufacture and sale of which form the principal means of subsistence of many families. It may be assumed that modern examples of this work bear but slight resemblance to the earlier forms. The distribution of splint basketry at present among the Iroquois and widely separated Algonquian peoples seems to indicate a survival of this type from prehistoric times. It is the one style of Indian basketry which would be the most serviceable to the early colonists, and its demand by settlers would naturally stimulate its production and tend to modify the native forms. Still I find no mention of splint baskets by the earlier explorers and settlers of New England, although eight other varieties are noted, which seem to show that it was certainly not the prevailing type during the first part of the seventeenth century. The earliest authentic examples known to the writer belong to the first third of the nineteenth century, and are the work of the Scatacocks of Connecticut.

These have been described and figured by the Rev. W. C. Curtis in the *Southern Workman* for 1904, and may be classified as follows:

1. Handleless baskets with square or oblong base and rim more or less rounded, the height being usually much less than the diameter. These were commonly used as work-baskets by our grandmothers. This type may be indigenous.



FIG. 1. — Carrying basket of hickory splints. Mashpee Indians, Barnstable county, Massachusetts. (One-sixth natural size.)

2. Baskets similar to the preceding type, but, unlike them, being supplied with a handle. These are much like the ordinary splint hand-basket of commerce.

3. Baskets with a square base and circular upper portion, the diameter being about equal to the height. They are furnished with a snug-fitting cover, and were used by our colonial ancestors principally as storage baskets for small objects, such as yarn, colored worsteds, etc. Similar baskets may still occasionally be found in the attics of the older New England families.

It seems probable that these types, with the possible exception of the first, were made more expressly for the needs of civilized housekeepers, but it is difficult to determine just how much both form and method of construction are due to the exigencies of two centuries of trade. The more common modern examples of New England splint basketry of Indian make have probably lost all resemblance to primitive forms and need not be discussed here. Most of the splints from which they are constructed are machine-made and supplied by wholesale.

There are two baskets in the Peabody Museum of Harvard University (one being shown in figure 1) which may be regarded as purely aboriginal. They are the work of the Mashpee Indians of Barnstable county, Massachusetts. A few of the primitive customs of this tribe were retained until a comparatively late period, sedge-covered wigwams being constructed as late as 1802. Both of these pack-baskets are made of hickory splints woven in a simple checker pattern. There are four series of warp splints, the first series being long enough to cross and radiate from the center of the bottom of the basket and to reach the rim on each side. The second, third, and fourth series are less than half the length of the first and are added at the bottom only, at intervals of about two inches, so as to fill the interstices between the radiating splints, one end of each splint of the last three series being cut wedge-shape so as to fit snugly.

The foundation of the rim consists of three hoops. Each alternate warp splint is cut off flush, while the ends of the others are bent over the middle hoop and pushed under the upper two or three rows of the woof. Within and without this middle hoop are the two other hoops, the whole being bound securely together by a splint wrapping. Two splint rings are attached on opposite sides at the rim, and two others are placed in corresponding position near the bottom for the carrying strap which is also woven of hickory splints. The ends of the strap pass through the loops and are tied beneath the basket. De Bry figures a Virginia Indian carrying upon his back, by means of a carrying strap, a basket of this form filled with fish.

The process of preparing splints in the earlier days was as follows: Small hickory, ash, or elm trees, a few inches in diameter,

were cut in the spring. The logs were sometimes soaked in water, although this was not always necessary. They were then peeled and beaten with wooden mauls until the annual growth layers were separated one from another. These were split into various widths and assorted, strips of uniform sizes being bound together in bunches or coils.

Of the many varieties of baskets, bags, and other textiles made by the New England Indians during the seventeenth century almost nothing remains. A critical study of the records of the early writers and of the modern basketry of various American stocks will however give us an approximate idea of the types of that period.

Brereton¹ in 1602 saw, at Buzzards Bay, baskets made of twigs not unlike the English osier. When the Pilgrims² landed at Cape Cod they opened an Indian cache and found therein a storage basket holding three or four bushels of shelled corn. It was round, with a narrow opening at the top, and was "handsomely and cunningly made." In form it apparently resembled the storage basket of several modern tribes, notably the Pima. In one of the mat-covered lodges they found "baskets of sundry sorts, bigger and some lesser, finer and some coarser; some were cunningly wrought with black and white in pretty works." When Captain Underhill³ returned from his memorable expedition against the Pequot Indians, he brought several "delightful" baskets. Gookin⁴ refers to basket sieves for sifting cornmeal. According to this writer, rushes, bents (coarse grass), maize husks, silk grass, and wild hemp were used for baskets and bags, some of which were very neatly made and ornamented with designs of birds, beasts, fishes, and flowers. To this list Josselyn⁵ adds sparke and the bast of the lime tree, in their natural colors or dyed black, blue, red, and yellow. Wood⁶ writes: "In the summer the Indians gather hemp and rushes and material for dyes with which they make curious baskets with intermixed colors and portraitures of antique Imagerie." Some of the

¹ *Massachusetts Historical Collections*, Third series, VIII, p. 88.

² *Journal of the Pilgrims at Plymouth*, Cheever's reprint, pp. 34, 39.

³ *Capt. Underhill's Narrative*, Orr's reprint in *History of Pequot War*, p. 55.

⁴ *Massachusetts Historical Collections*, First series, I, pp. 150, 151.

⁵ *Two Voyages to New England*, Veazie reprint.

⁶ *New England's Prospect*, Prince Society's reprint, pp. 109, 110.

bags or sacks woven of Indian hemp would hold five or six bushels.¹ According to Champlain,² large bags woven of grass were used for storing corn. It is probable that some of the maize-husk baskets noted by Gookin were woven in the same manner as the baskets of this material still occasionally made by the Iroquois Indians for their own use. A low, broad, bottle-shaped receptacle is a frequent form, the neck being supplied with a corn-cob stopper. Another variety is pan-shaped with nearly perpendicular sides. Both styles are in twined weaving, for which the pliable husks are especially adapted.

Rushes, bents, silk grass, wild hemp, and linden bast are all adapted to twined weaving. Rushes were extensively used in making mats for lining and furnishing wigwams. According to Williams these mats were embroidered. Josselyn says they were painted. Mourt, in his *Relation*, informs us that they were of finer quality than those used for lodge-coverings.

The mats for both the exterior and the interior of the lodge were in all essential qualities like those now made by the Ojibwa, Menominee, and Winnebago. Morton³ and Vincent⁴ say the exterior mats of the New England lodge were made of reeds, large flags, or sedge, firmly sewed together with cords of Indian hemp, the needle used for sewing being made from the splinter bone (fibula) of a crane's leg. Modern mats of the western tribes above mentioned are usually made of flags strung together upon a series of bast cords in such a manner that each alternate leaf lies upon opposite sides and covers the junction of two other leaves. These mats are usually four or five feet in width and about ten feet in length. The ends are furnished with a strip of wood to which tying cords are attached.

The lining mats are woven of rushes in their natural color or dyed. Rushes are used for the woof only, the warp being composed of twisted cords of hemp or bast. The groundwork is usually the color of the undyed material, and artistic patterns are produced by

¹ Williams, *Key into the Language of America*, R. I. Hist. Coll., 1, p. 50.

² *Voyages*, 11, Prince Society's reprint, p. 121.

³ *New English Canaan*, Prince Society's reprint, p. 135.

⁴ *Vincent's Narrative*, Orr's reprint in *History of Pequot War*, p. 105.

weaving in rushes dyed in various colors. Both the simple in-and-out weaving and the more elaborate diagonal styles are followed in their construction.

Excellent examples of hexagonal weaving survive in the raw-hide "netting" of snowshoes made by the Penobscot and other Maine Indians. It is doubtful, however, if this weave was used in the basketry of this region.

It is impossible to determine to what extent the finer textiles were used, but we know that the New England Indians made a serviceable closely-woven cloth of Indian hemp (*Apocynum cannabinum*) and probably also of the soft bast of the linden. Bags holding five or six bushels were woven of the former material, the prepared fibers of which resembled silk in softness.

Robes woven of grass and hemp, "scarcely covering the body and coming down only to their thighs," were seen by Champlain¹ in the vicinity of Wellsfleet Harbor. There is a drawing by John White, made in 1585, of a Virginia Indian wearing a "silk grass" mantle, which is probably identical with the New England specimens. It reaches only to the thigh and has an opening for the neck and another for the right arm. It is apparently twined woven, silk grass probably being used for the warp and cords of hemp for the woof. The twined woven, shredded cedar-bark capes of the Nootka are similar in form and style of weaving to these early Eastern examples.

The most beautiful garments produced by the New England Indians were made of the iridescent feathers of the wild turkey "woven with twine of their own making" in such a manner that nothing can be seen but feathers.² These cloaks or mantles were usually the work of old men,³ although they were sometimes made by women for their children.⁴

A few coarse feather garments are at the present time found among the California tribes. The Miwok of Calaveras county in particular construct a ceremonial cape by attaching the quills of

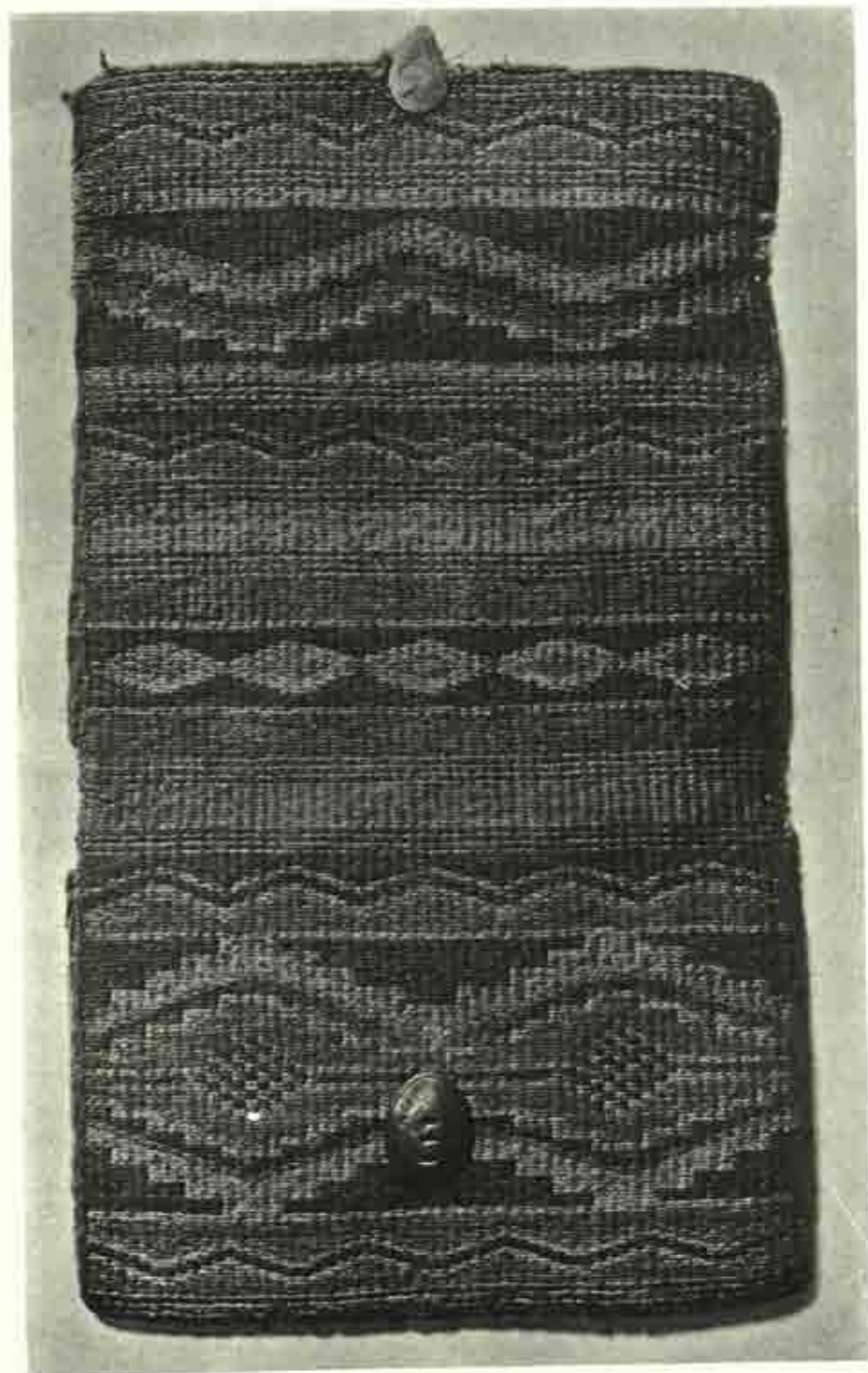
¹ Op. cit., p. 78.

² Morton, op. cit., p. 142.

³ Capt. John Smith, *True Travels*, 1, p. 129.

⁴ Williams, op. cit., p. 107.

⁵ Josselyn, op. cit., p. 78.



TWINED WOVEN WALLET OF INDIAN HEMP

The design is wrought by false embroidery with white moose hair in its natural color or dyed red, green, blue, or yellow. Anasagunticook Indians, Oxford County, Maine. Two-thirds natural size.

turkey feathers to a coarse netting of twine, the feathers overlying each other like shingles upon a house. According to Du Pratz in former times feather garments were made by the Louisiana Indians, old fishing nets or woven mantles of mulberry bark being used for a foundation.

Feathers were attached one over the other to the fabric, and covered both sides of the garment.¹ Lawson mentions a Santee (Siouan) doctor or medicine-man warmly clad in a mantle of turkey feathers, the feathers being selected and arranged to form figures.² Butel-Dumont writes that the fiber of basswood bark was used by the southern Indians to make a species of mantle which is covered with swan's feathers.³ The foundation of the feather cloaks of the Pacific islands is either netted or twined woven. Morton's remark that the New England feather mantles were "woven with twine of their own making" would seem to indicate that the feathers were fastened to a woven fabric and not to a netted foundation. There would be nothing inconsistent, however, in the employment of netting for the purpose, as fishing nets were in common use.

An example of indigenous textile work of a type probably not uncommon throughout New England during the early historic period is illustrated in plate xvi. So far as known it represents the highest development of weaving and embroidery among these Indians, and as a specimen of embroidered twined woven cloth it probably equals the productions of any North American tribe. It is a two-fold pocket-book of European pattern and is shown open. The side not illustrated is furnished with two pockets of green flannel. The front is supplied with a silver hasp with the date 1778 engraved upon it. The hasps were the work of a local silversmith. The form of the pocket-book, the green flannel, and the hasps are of course European. The heavy cloth forming the body of the book, the material of which it is made, the style of weaving, and the embroidered design are purely aboriginal.

This wallet was made by Molloket, an old Indian woman of considerable local fame, living in Oxford county, western Maine.

¹ Quoted by Holmes, 13th Rept. Bur. Ethnology, p. 27.

² *Ibid.*, p. 28.

³ *Ibid.*

She was one of the Anasagunticooks, a tribe claiming dominion over the Androscoggin valley. It was given by her to Eli Twichel of Bethel, Oxford county, about the year 1785, and is now in the collection of the Maine Historical Society, having been presented to that institution by Mrs Lucia Kimball in 1863. The wallet is in twined weaving, a style common among nearly all primitive people. The entire surface of one side of the closely-woven cloth is covered with an artistic design embroidered with the long white hairs of the moose in their natural color or dyed red, green, blue, or yellow. The design is excellent and the colors are well grouped.

The warp is formed of twisted cords of native fiber, probably Indian hemp. Each woof element consists of two cords of the same

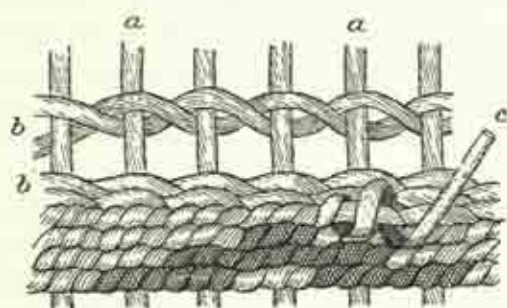


FIG. 2.—Detail of wallet. *a, a*, warp cords; *b, b*, twined woof cords; *c*, moose hair wrapped three times around each twist of the woof strand on the right side of the fabric.

material twisted once around each warp-strand as illustrated in figure 2. These double woof-strands are pressed close together, concealing the warp, and are in turn concealed beneath the embroidery covering the outer surface. A filament of moose hair is wrapped three times around each strand of the twisted woof elements where it comes outside. On the inside of the fabric there is no appearance of ornamentation, only the ends of the hair showing where they have been carried through.

Strictly speaking, the ornamentation is in what is termed false embroidery, the outer woof-cords being wrapped with moose hair during the process of weaving, and not after the cloth is finished, as in embroidery proper.

The technique is identical with that of the Tlingit basketry and the wallets of the Nez Percé Indians, except that these tribes wrap the coarser embroidery strand but once around the woof-twist instead of several times as in the New England work. Patterns of a character similar to the design upon the pocket-book, showing the wide distribution of the geometric and linear style of decoration among the Algonquians, are common upon the old quill-ornamented bark boxes of the Micmac and the rush mats and wool wallets of the Ojibwa. These wallets or bags are about twenty inches in length and fourteen in width, with an opening at one of the longer edges. In former times they were made of native material, bast or Indian hemp, but are now commonly woven of trade worsted, although the primitive style of weaving and decoration is followed. Similar bags, with the opening at one of the longer or shorter edges, were widely distributed, occurring among the Salishan tribes of the west coast, the neighboring Shahaptians, the Winnebago, Oto, and Omaha of the Siouan stock, the Ojibwa, and doubtless also among the more eastern Algonquians, including the New England Indians. Josselyn may have referred to wallets of this type when he wrote of woven bags of dyed porcupine quills.¹ The style of weaving and embroidery surviving in the pocket-book illustrated was probably applied by our eastern Indians principally to bags of the above general form.

In conclusion it is evident that the textile products of the New England Indians were of a relatively high order: that baskets, bags, matting, and twined woven cloth were made of a quality probably not excelled by any of the Algonquians, and so far as we can judge by existing examples it is doubtful if embroidered cloth of any North American tribe exceeded in workmanship or artistic merit that produced by the natives of New England and their neighboring kindred.

¹Op. cit., p. 111.

TYPES OF HAIDA AND TLINGIT MYTHS

By JOHN R. SWANTON

In recording more than two hundred and fifty stories of the Haida and Tlingit of the north Pacific coast the writer has found that many of them have very similar plots, and it has seemed to him that abstracts of the more important of these might be of interest to those engaged in comparative work. The story of Raven is of course similar to the stories of other transformers and need not be included. The same is true of the story of the brothers who traveled about overcoming monsters. Here it is evidently Tlingit, the heroes in all cases ending their career in an attempt to cross the Stikine, and from the Tlingit it has been transmitted to the Haida without losing its Tlingit names and atmosphere. Several other tales, repeated from end to end of the Haida-Tlingit area, are also strongly localized in certain towns or camps, and hardly fall into the present scheme. Such are the story of the man who was carried off by the salmon people, the story of the woman who was turned into an owl, the story of the man who obtained strength to kill sea-lions, the story of the man who made killer-whales out of wood, and the story of the hunters who changed into supernatural beings by putting themselves into the fire. A few of the plots given are so general that they can hardly be considered peculiar to the northwest coast, but others probably do not occur outside of that area.

1. The Man Captured by the Supernatural Beings. — A man out hunting is taken into the house of some supernatural being, usually on account of something he has said or done to displease the latter, and often it tries to turn him into an animal, especially if it be a land otter or a killer-whale. On the other hand the hero may be given a crest or a name, and such a story is told by the Haida to explain the origin of secret society performances.

2. The Man who Married the Grizzly Bear. — This is related to the above. A man out hunting hears his dogs bark in front of

a grizzly bear's den. When he comes to it the male bear throws him inside, but the female conceals him, marries him, and kills her previous husband. He has several children by her. By and by he returns to his own people, but his bear wife enjoins him to have nothing to do with his human wife or children. Every day after his return he spears seals and carries them up to his bear family, who are waiting at the head of an inlet. After a while, however, he disobeys her instructions, and they kill him. Then his children wage war on human beings, but are finally destroyed.

3. The Woman who Married the Supernatural Being. — A woman says something about an animal or object which angers the supernatural being connected with it, or else her father refuses for a long time to let her marry anyone. The offended being appears to the girl, and she marries it. Sometimes she goes off with it and lives among the animals for a long time, and sometimes her husband remains with her. In the former case she usually comes back to her father's people after a time, bringing food, and her father may recover her by killing the people she has been among.

4. The Kidnapped Wife. — A man's wife is washing a skin in the sea, when she is carried off by a killer-whale. Her husband follows, descends to the sea floor, and assists some being there who in turn directs him how to get his wife back. Then he goes behind the town where she is kept, causes the wedges of a slave coming out to chop wood to break, restores them, and so obtains the slave's assistance. When the slave carries water into the house, he spills it upon the fire, and while the house is filled with steam the man runs in and carries off his wife. He is pursued, but reaches home safely.

5. The Supernatural Helper. — A man who has been unsuccessful in gambling, hunting, or getting property, goes off into the forest or out on the sea, obtains assistance from some supernatural being, and is afterward fortunate, or,

6. A man or a woman leaves food for some animal or treats it kindly, and is afterward given plenty of food in return, thereby becoming rich.

7. The Supernatural Child. — A girl or a girl and her mother lose all their relatives and are left alone in the town. After a while

the girl gives birth to a child who has supernatural power, grows up rapidly, destroys the enemies who have killed his mother's people, and usually restores them to life.

8. *The Magic Feather.* — The popular form of type 7 is the following: While the people in a certain town are playing shinny on the beach, a feather or some similar object comes down from above, and those who seize it are carried up out of sight. In this way everybody disappears except one or two women. The younger of these swallows something and gives birth to a supernatural child who revenges and protects them.

9. *The Boy who was Abandoned.* — For some action, trifling or otherwise, a boy is abandoned by all his people, who leave him alone in the town. His youngest uncle's wife, however, being fond of him, conceals a little food for him and some fire enclosed in mussel-shells. Then the youth receives assistance in some supernatural way and stores a great quantity of food, while those who have abandoned him are starving. After a while slaves are sent over to see what has become of him. He feeds them, but warns them not to carry any of the food away. One of them, however, conceals a piece for his (or her) infant, and the night after they return gives it to the child. While eating this, the child cries out, often from being choked or from having dropped the food, and the chief or his wife makes an investigation, thereby discovering the truth. Then the people of that town return to the place where the boy was left. All of his uncles' daughters dress themselves up, hoping that he will choose one of them for his wife, but he selects the daughter of his youngest uncle, although she has not adorned herself and arrives last. He becomes a chief.

10. *The Boy and His Grandmother who were Banished.* — A boy and his grandmother were either abandoned or forced to live outside the town. In the former case the story sometimes proceeds like type 9. In the latter case the boy is assisted by some supernatural being and obtains a great deal of food, while the other people are starving. They are obliged to purchase food of him, and he becomes wealthy. Sometimes he becomes a great shaman and obtains his property in that way.

11. *The Ill-disposed Mother-in-law.* — A man is badly treated

by his mother-in-law because he lies in bed continually instead of working. After a while he goes to a lake behind the town and kills a water-monster living there by splitting a tree along the middle, spreading the halves apart, and tolling the monster up until its head comes between the two portions. He skins this creature and begins to catch all kinds of fish and sea animals. These he leaves on the beach where his mother-in-law can find them, and by letting her find them regularly, he induces her to think that she has become a great shaman. After a long time he reveals himself before all the people and kills his mother-in-law with shame. Sometimes a monster is killed in the way indicated merely that the hero may obtain its skin to wear when he performs great deeds, not with a view to personal revenge.

12. *The Goose Wife.* — A man finds two female geese, in human form, bathing in a lake while their skins hang on the limb of a tree near by. He seizes these skins and so compels one or both of them to marry him. When the goose tribe passes over, his wives get them to throw down food. By and by they leave him and rejoin their people. He follows them and remains with them for a while, afterward returning to his own place. On his way to find his wife he is sometimes made to encounter a man chopping, whose chips turn into salmon as they fall into the water.

13. *The Land Otter Sister.* — The sister of a certain man is carried away by the land otters and married among them. Once, when he is encamped by himself making a canoe, his sister brings him food. By and by she sends some of the land otters to launch his canoe for him, and afterward he goes to the land-otter town to finish it. While he is there his sister takes his smallest child on her lap and sings to it, making a little tail grow out of it. When the man objects, she sings another song and it goes back. Finally he returns to his town.

14. *The Eagle People.* — A man is set adrift in a box or on a plank by his uncle and lands among the eagles. He is found by two girls, marries them, and is given a suit of feathers by the eagle people in which he goes fishing. After some time he flies to his uncle's town, seizes his uncle by the head, and flies up from the ground with him. A person seizes his uncle's foot and is also

carried up. He in turn is seized by another, and the process is continued until all the people of that town are hanging in a string. He drowns them in the ocean.

15. Beaver and Porcupine. — Beaver carries porcupine out to an island from which he can not get ashore. Finally he sings for a north wind, the sea freezes over, and he walks home. Afterward he takes beaver up to the top of a tall tree and beaver gets down with difficulty. The two parts of this story are sometimes told in reverse order.

16. The Rival Towns. — (This story is usually localized in the neighborhood of Metlakatla or on Nass river, but it is also told of Sitka.) War breaks out between two towns, and all of the people in one of them are destroyed except a woman and her daughter who escape into the forest. Then the mother calls out, "Who will marry my daughter?" and the animals and birds present themselves successively. She asks each of these what it can do, and is dissatisfied with the replies she receives, so she rejects all. Finally she is answered by the son of a sky deity (given variously as sky, sun, or moon), whom she accepts; whereupon her son-in-law puts her into a tree, where she becomes the creaking of boughs or the echo, and carries his wife up to his father's house in the sky. There they have a number of children, whom their grandfather teaches how to fight when they are grown up. Usually there is one sister able to heal wounds. Finally their grandfather puts them inside of beautifully painted houses, or a fort, and lowers them down on their old town site. When the people of the town opposite hear the noises there, they say that they must be produced by ghosts; but seeing the houses next morning, they start across to gamble with the newcomers. During this game trouble breaks out, and the children of the sky are about to be overwhelmed. Their grandfather intervenes, however, and enables them to destroy all their foes.

17. The Doomed Canoemen. — Some men out hunting in a canoe are hailed by a supernatural being, who informs them that on their way home they will die successively, beginning with the man in the bow, and that when the man in the stern has reached home and related his story, he too will die. The death of a shaman or the destruction of a village is also sometimes foretold through him.

18. *The Protracted Winter.*—The people in a certain town so offend some supernatural being that snow falls and almost covers the houses. Finally a bird is seen sitting on the edge of the smoke-hole with a berry in its mouth. Suspecting something is wrong, the people, or those who have survived, climb out and go to another place, where they find that it is already midsummer and the berries are ripe. Similar stories relate how people were punished by a flood, by stormy weather which prevents them from getting food, and in one or two stories otherwise of type 17, by fire.

19. *The Magic Flight.*—A person is captured by some supernatural beings, as in stories of type 3. He or a friend of his obtains some objects from an old woman, and as they run away they throw these behind them and turn into obstructions through which their pursuers find difficulty in forcing a way. Usually this story is told of a woman who offended the grizzly bears. After she has exhausted her magic gifts, she comes out on the shore of a lake or the shores of the sea, where she is taken into a canoe, marries another supernatural being, and after a time returns to her father's people, bringing food. Sometimes the adventures of her son are also related, and again a story of type 4 may be added.

20. *The Grand Catch.*—A fisherman who has been long unsuccessful at length pulls up an enormous "nest" full of fishes, or else an enormous fish surrounded by smaller ones. All the canoes are filled, and the poor fisherman becomes wealthy.

21. *The Unfaithful Wife.*—Desiring to marry another person, the wife of a certain man pretends that she is about to die and is placed in the grave-box. Afterward her lover liberates her and carries her home or to another part of the country. By and by her former husband suspects the truth, goes to the grave-box, and finds her body missing. Then he goes at night to the house where she and her new husband are living and kills them by running pointed sticks into their hearts. Next morning he dresses well and goes out to gamble.

22. *The Rejected Lover.*—A man is in love with a woman who does not care for him. She induces him to pull all the hair out of his body and then leaves him. Too much ashamed to return to town, the man wanders off to another place, or climbs into the sky

country on a chain of arrows. By and by he meets a supernatural being who restores his hair and takes him to another town where he marries the daughter of the town chief. Then he returns to his father's town with his new wife and puts the woman who had rejected him to shame.

23. *The Woman who Went with the Animal* (Haida story).—A woman goes out after roots or shell-fish every day regularly until her husband becomes suspicious. By and by he pretends to start off hunting, lands not far off, and comes back behind the village. When he sees his wife start out, he follows her, and sees her come out on the sea at a certain place where she begins a song. Finally a whale, owl, or other animal comes and lies with her. Next day the husband sends his wife off in another direction, puts on her clothing, and goes to the same place. When the animal comes to him, he cuts off its penis. He takes this home, cooks it, and gives it to his wife to eat. After she has done this, he lets her know what she has eaten and makes her ashamed.

24. *The Blind Grizzly-bear Hunter*.—A man who has been a great grizzly-bear hunter becomes old and blind. One time his wife aims his arrow for him, and he shoots a grizzly bear, but his wife pretends that he has missed and leaves him. She begins cutting up the animal and cooking it. Meanwhile her husband is met by a supernatural being, usually a bird, which restores his sight. When he comes to her camp and looks in, he wishes that the bear head may bite her, and it does so. There are other stories of the restoring of a blind man's sight, but they agree with the above in that particular only.

25. *The Sleep Bird*.—A hunter is unsuccessful for a long time. One night he hears something buzzing about his canoe and knocks it down. It proves to be the bird that causes sleep, and when he reaches his town he finds the people lying dead just as they slept. Sometimes it is added that the hero himself could not sleep because the bird had died while he was awake.

26. *The Land Otter's Captive*.—A man is carried away by the land otters, but his people finally discover where he is, smoke the land otters out, and recover him.

27. *The Monster Devil-fish*.—While two or three brothers are

out hunting, a monster devil-fish sweeps the camp from which they had set out into the sea, and all the people with it. Then the older brother or brothers put the youngest ashore, toll the devil-fish to the surface, and destroy it, although they themselves are carried down when it dies. The youngest is left to tell what has taken place, and the devil-fish is found floating dead with the men inside.

28. The Sea-walkers. — A man marries the daughter of some supernatural being and takes her home. While there she lets no one bring her water except her husband, and as soon as he sets it down she puts a magic quill into it. If the water falls from this clear, her husband has been faithful to her; if it is slimy, he has been unfaithful. At last she sees that the water is slimy, and, getting up, starts to walk back to her father on the surface of the ocean. Her husband follows her, but presently she looks at him and he goes down out of sight.

29. The Shell-fish's Victim. — A man reaches under a rock, and a bivalve closes upon his hand so that it cannot be removed. When the tide rises, he is covered, and either disappears or is drowned.

30. Acquirement of Wealth by a Shaman. — A shaman sends diseases into the son of some wealthy man and afterward cures him, obtaining thereby a great quantity of property.

31. Visit of a Shaman to the Animals. — A shaman is sent for by some animals, usually land otters, to cure one of their number who has been wounded by hunters. He removes a spear-point and obtains some supernatural gift in payment. When he first comes among these people, they try to make him think that the patient is in another house by filling it with people, but he puts his rattle on the ground, and it goes up before him to the right place.

32. The Stolen Skin. — A man's friend dies and his body is placed in a grave-box, which his friend watches continually. By and by he sees some people come by canoe and carry off his friend's skin. The friend gets in along with them, and as they are on the way makes their chief sick by grasping him tightly around the body. When they reach home, these people send for shamans who practise upon him vainly, until a very powerful shaman is sent for who discovers what is wrong. He gets the skin for the dead man's friend and sends him home.

33. The Ground-hog Mountain. — A young man accompanies his uncle to a mountain that the latter owns, where there are many ground-hogs. Arrived there they find that the ground-hogs have left it and gone to a mountain farther back. When they get to this place the youth creeps into the cave where they are, ahead of his uncle, and he is suddenly possessed by spirits and becomes a shaman.

34. The Wild Man. — A man takes a notion to live entirely alone. He is met by people at various times, but refuses to go with them. He is said to live on raw food and to cut up and carry home very small birds as if they were large animals.

35. The Bug-a-boo. — A child is a great cry-baby. One time a supernatural being comes to the house, calls to it, and induces it to follow him. Its parents pursue and see their child carried down into the earth. Then they began to dig over the place where it has disappeared, but in vain. After some time the child comes back or is discovered, but soon dies. This story is used to frighten children into obedience.

36. The Fatal Misunderstanding. — A mother tells her little child to give the baby something to eat, but she understands that she is told to kill it, and obeys.

It is interesting to note how conventional expressions, or what might be called the "mythic formulæ," differ as used by Haida and Tlingit. Thus the Tlingit indicate that a town was large by saying "it was a long town," while the Haida equivalent is, "it was a town of five rows of houses." In Tlingit a girl is carried off by some supernatural being because she had said something to offend it; in Haida it is because (or after) her father has refused a great many suitors for her hand. In Tlingit a man kills his unkind uncle or aunt by wishing that what he or she eats will not satisfy, but in Haida he does it by feeding the person on nothing but grease. Although the myths of both peoples speak of traveling in canoes which are alive and have to be fed, in Tlingit these are always grizzly bears. Often it is said that the turnings in rivers were made by grizzly bears who began to turn round as soon as they were hungry. While four is nearly always the story or mystic number in Haida, two appears quite as often in Tlingit. After a child with

supernatural powers is born, the Tlingit story-teller is content to say that it grew up rapidly and hunted continually, but the Haida must add that it cried for a bow and arrows and was not satisfied until it obtained some made out of copper. Among the Haida, too, a supernatural being is usually killed by cutting its body apart and throwing a whetstone between, on which the body grinds itself "to nothing." To express plenty the Tlingit say that one could not see the inside of the house for the multitude of things in it; a child that has eaten something against the wishes of its elders has the inside of its mouth scratched; a medicine animal often appears in the shape of a bear; and it is always said of a supernatural being addicted to the habit of doing away with his wives periodically that "his wives do not last long."

POPULAR FALLACIES RESPECTING THE INDIANS

By HENRY W. HENSHAW

Since the day when Columbus miscalled the aborigines of America "Indians," believing that he had discovered India, popular fallacies respecting them have been numerous and widespread. Some of the more important of them will be discussed here.

Origin of the Indians. — As soon as, or even before, the newly-discovered continent was found to be not connected with Asia, theories of the origin of the Indians began to be formulated by the learned, and, consistently with the religious spirit of the age, a solution of the problem was sought in Hebrew tradition. In the Indians were recognized the descendants of the "lost tribes of Israel." The latest and most earnest supporters of the Hebrew origin are the Mormons, whose statements are alleged to have the authority of direct revelation. Absurd as the theory is in the light of present knowledge, anthropology owes to it several valuable treatises on the habits and characteristics of the Indians, which it could ill afford to lose, notably Lord Kingsborough's *Mexican Antiquities* and Adair's *History of the North American Indians*, the latter book being filled with fancied similarities to Jewish customs, rites, and even traditions.

Equally absurd, but less widespread, was the myth of a tribe of Welsh Indians, descendants of a colony reputed to have been founded by Prince Madoc about 1170. The myth located them, with their Welsh language and Welsh Bible, first on the Atlantic coast, where they were identified with the Tuscarora, and then farther and farther west, until about 1776 we find the Welsh, or "white," Indians on the Missouri, where they appeared as the Mandan (according to Catlin), later on Red river. Later still they were identified with the Hopi of Arizona, and finally with the Modoc of Oregon, after which they vanish.¹

¹ Mooney in *Am. Anthropol.*, IV, 393, 1891.

Other seekers of a foreign origin for the American aborigines have derived them in turn from Greeks, Chinese, Japanese, Phœnicians, Irish, Polynesians, and even from the peoples of Australasia. Most of these theories are based on fortuitous analogies in habits, institutions, and arts; but the attempt is frequently made to strengthen them by alleged similarities of language, language being confessedly the principal basis for classifying peoples. The general similarity of the human mind in similar stages of culture in every part of the world, with its proneness to produce similar arts, institutions, religious ideas, myths, and even material products, sufficiently explains the former class of facts, whilst the hypotheses of identity of language, based, as they invariably are, on a small number of verbal similarities in the nature of coincidences, are wholly disproved on adequate examination and analysis.

Indian Languages.—Indian languages are so utterly unlike European speech in sound and so different in structure and character that it is not surprising that erroneous conceptions concerning them should arise. The unlearned conceived the ideas that the speech of all Indians of whatsoever tribe was practically the same, that it was little more than a sort of gibberish, that it contained but a small number of words, that to eke out its shortcomings the Indian was compelled to use gestures, that it was hardly human speech, much less orderly and well developed language.

A comprehension of the manifold variety of Indian linguistic families, embracing a multitude of languages and dialects, of their rich vocabularies, flexible grammatical methods, and general sufficiency to express any and all concepts the Indian mind is capable of entertaining, above all, of their capacity, shared with more advanced tongues, of indefinite expansion corresponding to culture growth, was reserved for a later period and more complete study. The intricacies of Indian languages are even yet but partially understood; their proper study has hardly begun, so vast is the field.

Indians not Nomadic.—One of the common fallacies of early historians, by no means yet entirely dissipated, was the idea that the Indians were generally nomadic, having no fixed place of abode, but wandering hither and yon as fancy or the necessities of existence demanded. The term nomadic is not, in fact, properly ap-

plicable to any Indian tribe. Every tribe and every congeries of tribes, with exceptions to be noted, laid claim to and dwelt within the limits of a certain tract or region the boundaries of which were well understood and were handed down by tradition and never relinquished save to a superior force. Between many of the tribes, indeed, were debatable areas, owned by none but claimed by all, which from time immemorial formed the cause of disputes and inter-tribal wars. Most or all of the tribes east of Mississippi river, except in the north, and some west of it, were to a greater or less extent agricultural and depended much for food on the products of their tillage. During the hunting season such tribes or villages broke up into small parties and dispersed over their domains more or less widely in search of game; or they visited the seashore for fish and shellfish. Only in this restricted sense may they be said to be nomadic. The so-called "horse Indians" and the Plains Indians, at least after the latter acquired the horse, wandered very widely in search of their chief dependence, the buffalo. Though most of these had no fixed and permanent villages, they yet possessed clear ideas as to the extent of their own territory as well as that of their neighbors. The Athapascan and Algonquian tribes of the far north, where absence of agriculture, the wide expanses of desolate territory, and the nature of the game necessitated frequent changes of abode and forbade any form of fixed village life, most nearly approached nomadic life.

Indian Ownership of Land.—The exact nature of Indian ownership of land appears not to have been understood by the early settlers, and the misunderstanding was the fruitful source of trouble and even bloodshed. Neither the individual Indian nor the family possessed vested rights in land. The land belonged to the tribe as a whole. Individual families and clans might appropriate for their own use and tillage any portion of the tribe's unoccupied domain. Hence it was impossible for a chief, family, clan, or any section of a tribe legally to sell or to give away to aliens, white or red, any part of the tribal domain, and the inevitable consequences of illegal sales or gifts was bad feeling, followed often by repudiation of the contract by the tribe as a whole. Attempts by the whites to enforce these supposed legal sales were followed by disorder and bloodshed, often by prolonged wars.

Ideas of Royalty.—It is perhaps not strange that the early emigrants to America, habituated to European ideas of royal descent and kingly prerogative, should describe the simple village and tribal organizations of the Indians with high-sounding phrases. Early treatises on the Indians teem with the terms "king," "queen," and "princess," and even with ideas of hereditary privilege and rank. It would be difficult to imagine states of society more unlike than one implied by such terms and the simple democracy of most of the Indians. On the northwest coast ideas of caste had gained a foothold, principally founded on a property basis, but this was exceptional. Equality and independence were the cardinal principles of Indian society. In some tribes, as the Iroquois, certain of the highest chieftaincies were confined to certain clans, and these may be said in a modified sense to have been hereditary. Practically, however, all the offices within the limits of the tribal government were purely elective. The ability of the candidates, their courage, eloquence, previous services, above all their personal popularity, formed the basis for election to any and all offices. No power in any wise analogous to that of the despot, no rank savoring of inheritance, as we understand the term, existed among our Indians. Even military service was not compulsory, but he who would might organize a war party, and the courage and known prowess in war of the leader chiefly determined the number of his followers. So loose were the ties of authority on the warpath that a bad dream or an unlucky presage was enough to diminish the number of the war party at any time or even to break it up entirely.

The idea prevalent among the colonists of a legal executive head over the Indians, a so-called king, was acceptable on account of the aid it lent to the transaction of business with the Indians, especially to the enforcement of contracts. It enabled the colonists to treat directly and effectively with one man, or at most with a few, for the sale of land, instead of with the tribe as a whole. The fact is that social and political organization was of the lowest kind; the very name of tribe, with implication of a body bound together by social ties and under some central authority, is of very uncertain application.

Knowledge of Medicine.—Many erroneous ideas of the practice of medicine among the Indians are current, often fostered by quacks

who claim to have received herbs and methods of practice from noted Indian doctors. The medical art among all Indians was rooted in sorcery; and the prevailing idea that diseases were caused by the presence or acts of evil spirits, which could be removed only by sorcery and incantation, controlled diagnosis and treatment. This conception gave rise to both priest and physician. Combined with it there grew up a certain knowledge of and dependence upon simples, one important development of which was what we know as the doctrine of signatures, according to which the color, shape, and markings of plants are supposed to indicate the organs for which in disease they are supposed to be efficacious specifics. There was current in many tribes, especially among the old women, a rude knowledge of the therapeutic use of a considerable number of plants and roots and of the sweating process, which was employed with little discrimination.

The Great Spirit.—Among the many erroneous conceptions regarding the Indian none has taken deeper root than the one which ascribes to him belief in an overruling deity, the "Great Spirit." Very far removed from this tremendous conception of one all-powerful deity was the Indian belief in a multitude of spirits that dwelt in animate and inanimate objects, to propitiate which was the chief object of his supplications and sacrifices. To none of his deities did the Indian ascribe moral good or evil. His religion was practical. The spirits were the source of good or bad fortune whether on the hunting path or the war trail, in the pursuit of a wife or in a ball game. If successful he adored, offered sacrifices, and made valuable presents. If unsuccessful he cast his manitou away and offered his faith to more powerful or more friendly deities.

In this world of spirits the Indian dwelt in perpetual fear. He feared to offend the spirits of the mountains, of the dark wood, of the lake, of the prairie. The real Indian was a different creature from the joyous and untrammelled savage pictured and envied by the poet and philosopher.

Happy Hunting Ground.—If the term be understood to imply nothing more than a belief of the Indian in a future existence, it answers, perhaps, as well as another. That the Indian believes in a future life his mortuary rites abundantly testify. It may be con-

fidently stated that no tribe of American Indians was without some idea of a life after death ; but as to its exact nature and whereabouts the Indian's ideas, differing in different tribes, were vague. Nor does it appear that belief in a future life had any marked influence on the daily life and conduct of the individual. The American Indian seems not to have evolved the idea of hell and future punishment.

Division of Labor.—The position of woman in Indian society, especially as regards the division of labor, has been misunderstood. Historians have generally pictured her as a drudge and slave, toiling incessantly, while her indolent husband idles away most of the time and exists chiefly by the fruits of her labor. While the picture is not wholly false, it is much overdrawn, chiefly because the observations which suggest it were made about the camp or village, in which and in the neighboring fields lay the peculiar province of woman's activity. In addition to the nurture of children, their duties were the care of the habitation, cooking, preparation of skins, and the making of clothing, pottery, and basketry; and among many tribes they were expected also to help bring home the spoils of the chase. Among agricultural tribes tillage of the fields was largely woman's work. Thus her tasks were many and laborious, but she had her hours for gossip and for special women's games. In an Indian community, where the food question is always a serious one, there can be no idle hands. The women were aided in their round of tasks by the children and the old men. Where slavery existed their toil was further lightened by the aid of slaves, and in other tribes captives were often compelled to aid in the women's work.

The men did all the hunting, fishing, and trapping, which in savagery are always toilsome, frequently dangerous, and not rarely fatal, especially in winter. The man alone bore arms, and to him belonged the chances and dangers of war. The making and administration of laws, the conduct of treaties, and the general regulation of tribal affairs were in the hands of the men, though in these fields woman also had important prerogatives. To men were entrusted all the important ceremonies and most of the religious rites, also the task of memorizing tribal records and treaties, as well as rituals,

which involved astonishing feats of memory. The chief manual labor of the men was the manufacture of hunting and war implements, an important occupation that took much time. The manufacture of canoes, also, was chiefly man's work. Thus in Indian society the position of woman was always subordinate, and the lines of demarcation between the duties of the sexes were everywhere sharply drawn. Nevertheless, the division of labor was not so unequal as it might seem to the casual observer, and it is difficult to understand how the line could have been more fairly drawn in a state of society where the military spirit was so dominant. Indian communities lived in constant danger of attack, and their men, whether in camp or on the march, must ever be ready at a moment's warning to seize their arms and defend their homes and families.

Where Indian communities adopted settled village life, as did the Pueblo peoples, or where the nature of tribal wealth was such as to enable women to become property-holders on a large scale, as among the Navaho, whose women own the sheep, or where slavery was an established institution and extensively practised, as among the northwest coast tribes, the position of women advanced, and there ensued, among other social changes, a more equal division of laborious tasks.

Indian Population. — Early estimates of Indian population were greatly exaggerated, chiefly because they were based on the numbers observed in the more populous districts, as along the coast, on the natural waterways, and in permanent settlements. The inference was that elsewhere the population was equally large, whereas the country as a whole was but sparsely populated, and there were extensive tracts in the United States which were practically uninhabited. Later, when a fairly accurate census revealed a comparatively small population, the difference between the first estimates and the actual numbers was accounted for by the theory of rapid decimation due to pestilence. The Indian population of prehistoric America can never be known, but all available data indicate that it could not possibly have exceeded a million; many authorities believe an estimate of half that number sufficient.

Degeneracy of Mixed-bloods. — It has long been an adage that the mixed-blood is a moral degenerate, exhibiting few or none of

the virtues of either, but all the vices of both of the parent stocks. In various parts of the country there are many mixed-bloods of undoubted ability and of high moral standing, and there is no evidence to prove that the low moral status of the average mixed-bloods of the frontier is a necessary result of mixture of blood, but there is much to indicate that it arises chiefly from his unfortunate environment. The mixed-blood finds little favor with either race, while his superior education and advantages, derived from association with the whites, enable him to outstrip his Indian brother in the pursuit of either good or evil. Absorption into the dominant race is likely to be the fate of the Indian, and there is no reason to fear that when freed from his anomalous environment the mixed-blood will not win an honorable, social, industrial, and political place in the national life.

Indian Pygmies and Giants.—All times and all peoples have had traditions of pygmies and giants. It is therefore nowise surprising that such myths were early transplanted to American soil. The story of an ancient race of pygmies in Tennessee, familiar to most archeologists, owes its origin to the discovery, in the early half of the last century, of numerous small stone coffins, or cists, containing skeletons. The largest, measured by Featherstonhaugh, was 24 inches long by 9 inches deep. The small size of the cists was assumed by their discoverers to be proof of the existence of a race of dwarfs, and the belief gained ready credence and exists to the present day in the minds of a few. In many cases the skeletons of the supposed dwarfs proved to be those of children, while, as pointed out by Jones and Thomas, the skeletons of the adults found in the cists had been deprived of flesh, a common Indian mortuary custom, and then disjoined, when the bones of an adult could be packed into a very small space.

A race of dwarfs has also been popularly ascribed to the cliff-dweller region of New Mexico and Arizona, partly owing to the finding of shriveled and shrunk mummies of children, too hastily assumed to be those of dwarfs, and partly owing to the discovery of small apartments in the cliff dwellings, of the nature of cubby-holes for the storage of property, the entrances to which were too small to permit the passage, erect, of an ordinary man; hence, in the

mind of the discoverers, they must have been used by dwarfs. The Pueblo peoples are, indeed, of relatively small stature, but they are as far from being dwarfs as other Indians from being giants.¹

The myth of the discovery of giant skeletons perennial in newspapers, is revived at times by the finding of huge fossil mammalian remains of ancient epochs, erroneously supposed by the ignorant to be human; at others by the discovery of buried skeletons the bones of which have in the course of time become separated so as to give the impression of beings of unusual height. There was considerable diversity of stature among Indian tribes, some, as the Pueblos, being of rather small size, while among the tribes of the lower Colorado and the Plains were many men of unusual size. Now and then, too, as among other peoples, a man is found who is a real giant among his kind; a skeleton was exhumed in West Virginia which measured $7\frac{1}{2}$ feet in length and 19 inches across the shoulders.

Mound-builders and Cliff-dwellers.—The belief was formerly held by many that the mound-builders of the Mississippi valley and the cliff-dwellers of the southwestern border were racially distinct from the Indians or had reached a superior degree of culture. The more thoroughly the mounds and cliff ruins have been explored and the more carefully the artifacts, customs, and culture status of these ancient peoples are studied, the more apparent is it that their attainments were nowise superior to those of the later Indian. There is no evidence incompatible with the theory that the builders of the mounds and the dwellers in the cliffs are the ancestors of the tribes now or recently in possession of the same regions.

Stolidity and Taciturnity.—The idea of the Indian, once popular, suggests a taciturn and stolid character who smoked his pipe in silence and stalked reserved and dignified among his fellows. Unquestionably the Indian of the Atlantic slope differed in many respects from his kinsmen farther west; it may be that the forest Indian of the north and east imbibed something of the spirit of the primeval woods which, deep and gloomy, overspread much of his region. If so, he has no counterpart in the regions west of the

For details respecting the dwarfs of Tennessee see Haywood, *Natural and Aboriginal History of Tennessee*, 1823; and Jones, *Antiquities of Tennessee*, 10, 1876.

Mississippi. On occasions of ceremony and religion the western Indian can be both dignified and solemn, as befits the occasion, but his nature, if not as bright and sunny as that of the Polynesian, is at least as far removed from moroseness as his disposition is from taciturnity. The Indian of the present day has a fair sense of humor and is by no means a stranger to jest, laughter, and even repartee.

BOOK REVIEWS

The American Nation: A History. Volume II. Basis of American History, 1500-1900. By LIVINGSTON FARRAND, A.M., M.D., Professor of Anthropology, Columbia University. New York and London: Harper Brothers. 1904. 8°, 303 pages, 1 pl., 10 maps.

The American nation as a political unit merely is a subject easily compassed by the historian, since its foundation lies not only within the period of written history, but within the narrow limits of discovery and colonization. But he who would venture to treat the national history in its fuller significance must carry his researches beyond the limits of the Columbian period and over a vast range of subject-matter; he must consider the races and cultures of the Old World and their far-reaching influence in the New; he must have an intimate acquaintance with the New World, giving due attention to its configuration, its climate, and its resources, and must build up the background of his picture with the history of the American race. These are the elements that, in the view of Dr Farrand, constitute the basis of the history of the American nation. The time may or may not have come for an adequate presentation of this history; the point of view may not yet be sufficiently remote for comprehensive vision, and the knowledge of the field and its complex phenomena may not be sufficiently complete; but our author has ventured on the task, and the future must determine the wisdom of the undertaking and the degree of his success.

In the earlier chapters the author depicts in a simple and effective manner the physical features of the continent, characterizing the areas fitted for human occupancy and pointing out the bearing of the mountain masses, the deserts, and rivers on the distribution of populations. He shows how the invading race advanced to the conquest of the fertile valleys and the prairies, and how the aborigines were pushed inland along the waterways, across the passes, and over the portages, until the great habitable areas were almost completely wrested from their grasp. The special areas that had nurtured the native communities and developed their peculiar culture now became the focal centers for the development of the new people and the new culture. Dr Farrand summarizes the characteristics of the great areas of human activity, and enumerates (touching all too lightly on the mineral kingdom) the resources which,

under the simple regime of the Indian, gave him an impulse toward civilization, and which in the stronger grasp of the white race created a new empire almost within the limit of a lifetime. Having covered this much of the ground, the author takes up the story of the native tribes as an essential part of the national history.

Chapter 5 is devoted to a consideration of the very important question of the antiquity of man in what is now the domain of the American nation. The geological evidence is dismissed with a few short paragraphs, leaving the impression that as yet little satisfactory proof of great antiquity has been found. Facts relied on when investigations began a few years ago as fully establishing the existence of conditions of occupancy and culture parallel with those of Europe, have more recently been given different and much simpler interpretations. Finds of artifacts in Glacial gravels are too few and too imperfectly attested to carry conviction to the conservative student, and it is pointed out that caves which have for untold centuries offered free shelter to the tribes that have come and gone, yield no trace of occupancy by others than the Indian tribes as known to us. It is justly considered, however, that the continent must have been occupied for thousands of years, the well-authenticated traces extending far back toward the period that witnessed the final retreat of the Glacial ice beyond the northern limits of the Great Lakes. The mound builders and the cliff dwellers, about whom much misconception and error have insisted on clustering, are relegated to their proper place in the simple history of Indian occupancy. In the light of the straightforward and judicious interpretations presented by Dr Farrand, the cobwebs of early misinterpretation are swept completely away.

In Chapter 6 a comprehensive glance is taken of the North American aborigines for the period beginning with 1500 and ending with 1900 — the period during which they have been under the observation of our own race. The first requisite in this presentation is a classification of the extensive and complex phenomena involved, and it is pointed out that four groupings of the tribes are possible: by physical characters, by languages, by geographical areas, and by culture groups. The physical characters are varied and pronounced, but difficult to formulate in such ways as to serve as a basis for treatment. The grouping by languages is regarded as the most satisfactory for scientific discussion, but the tribes north of Mexico present such a wonderful diversity of tongues that fifty-seven distinct linguistic groups or families are recognized, making impossible a brief and comprehensive treatment on this basis.

It is believed by Dr Farrand that a grouping by geographical areas

is the most satisfactory for his purpose, the areas being such as have, partly at least, through their peculiar characteristics of conformation and resources, led to the development of somewhat decidedly distinctive phases of culture. By this method the number of groups may be large or small as the treatment demands. Seven are considered sufficient for the author's purpose, and are as follows: (1) the Eskimo; (2) the tribes of the North Pacific coast; (3) the tribes of the Mackenzie river basin and the high plateaus; (4) the tribes of the Columbia river and California; (5) the tribes of the Great Plains; (6) the tribes of the eastern woodlands; and (7) the tribes of the Southwest and Mexico. The Eskimo occupy the northern shoreline of the continent from Bering sea to Greenland, and originally, it is surmised, extended south into New England. They are a people widely separated from the Indian in physical and mental characters, whose origin is not determined, but whose adjustment to the Arctic environment and unique resultant culture are among the most interesting and instructive lessons of aboriginal America. Contrasting strongly with the Eskimo, and presenting physical and cultural characters hardly less remarkable, are the tribes of the Northwest coast. The third group, assembled in the great northern inland region, connects with the Eskimo on the north and extends from the coast ranges on the west to Hudson bay on the east; while the fourth occupies the basin of Columbia river and the numerous minor valleys opening out to the Pacific in Oregon and California. The fifth group comprises the great warrior-hunter tribes of the inland plains, of which the Sioux are taken as the type; the sixth, the formerly powerful and strongly contrasting Iroquoian and Algonquian groups of the eastern woodland north and south, with which the English and French colonists had chiefly to deal; and the seventh, the many tribes of the Southwest and Mexico, presenting numerous physical types and greatly diversified cultures. Of the three hundred or more tribes thus passed under review, few could even be mentioned and fewer described by Dr Farrand with any degree of fulness in the brief space allotted; but the perusal of these chapters will give the reader an excellent notion of the people as a whole, and of the groups as assembled in the great specialization areas of the northern portions of the continent.

The chapters treating of the social organization of the tribes; houses, house life, and food quest; industrial life and warfare; religion, mythology, and art; and the character and future of the Indians, which follow, are excellent summaries of these subjects; and the final chapter, a critical essay on authorities, will prove to be of high value to the student.

Not without shortcomings such as necessarily result from the crowd-

ing of a vast subject within narrow limits (the faults of omission), this work is charmingly simple, direct, and comprehensive. The reader is not led into troublesome mazes of speculation, nor is he asked to skate on the thin ice of preconceived notions; the work must therefore prove a boon to schools and to the general public, which have too long been at the mercy of the hobby-rider and the sensation-monger. It is conservative and refreshingly healthy in tone throughout. The publishers will be fortunate if the other volumes of the composite work to which this one belongs reach an equal standard of excellence.

W. H. HOLMES

An Outline of the Theory of Organic Evolution, with a Description of some of the Phenomena which it Explains. By MAYNARD M. METCALF. New York: The Macmillan Company. 1904. 8°, xxii, 204 pages, illustrated.

This book, as the author says, is not intended for biologists, but for laymen, and especially for such as are somewhat young either in years or in science. But many a biologist could doubtless refresh his memory, dimmed by long special researches, by scanning its attractive pages, and especially its profuse and well-selected illustrations. It covers the entire field of organic nature, and the examples are drawn as well from plants as from animals. The author, although he says that he believes "that all nature is controlled by an intelligent Providence," is a thoroughgoing evolutionist. He is also open-minded, and accepts all the evidence from whatever source. For example, he gives some excellent illustrations of sexual selection, which some eminent evolutionists affect to discredit.

If the book were exclusively devoted to biology in the narrower sense of dealing with plants and the lower animals, it could not be expected that the *American Anthropologist* would give space to it, however meritorious, but the author has not stopped with animals in the ordinary sense. He has devoted a chapter to the evolution of man. In this he says:

"Study of human anatomy shows mankind to be probably a single species, belonging to the *Primates*, a group of the *Mammalia*, including, besides man, the lemurs and the apes and monkeys of the eastern and western hemispheres. Man is most related to the *Simiidae*, the tailless apes of Asia and Africa, including the gibbon, the orang, the chimpanzee, and the gorilla. It is usual to place humankind in a distinct family of *Primates*, *Hominidae*. It is now the general consensus of opinion that we should recognize but a single species and distinguish as subspecies the several races of men."

In support of these views he gives the well-known figures of Huxley showing the skeletons of man and the four anthropoid apes, and also the remarkable series of embryos arranged by Haeckel to show the phylogeny and ontogeny of man. This series first appeared in Haeckel's *Anthropogenie*, 1874, pl. v. It has been copied many times, and our author, who does not seem to be acquainted with Haeckel's work, borrowed it from Romanes (*Darwin and after Darwin*, pp. 152-153).

The general reflections in which the author indulges growing out of these and other facts adduced in favor of human evolution, show a strong coördinating power and a broad view of his subject. The rôle of the higher mind is clearly grasped, and its bearing on the future of evolution, both favorable and unfavorable, is well set forth. Perhaps he somewhat exaggerates the tendency of civilization to preserve the biologically unfit, but he may be pardoned, for this is a favorite theme of modern biological philosophers, many of whom are so carried away by it that they lose all sense of perspective and become wholly pessimistic. Not so our author, although he sounds the note of warning. But he sees, as many do not, that intelligence exempts mankind for the most part from the principle of selection, and enables him to control and transform his environment, instead of being controlled and transformed by it. "We can," he says "to a considerable extent, control our own evolution. The lower animals cannot do so. They lack the intelligence which gives us this power." But he seems to share with Galton, Ribot, and others the faith that whatever progress is to be brought about through intelligence must consist in some sort of rational stirpiculture or "eugenics," and be exclusively physiological. The idea of a strictly social evolution, as distinguished from biological evolution, seems to be outside the range of his studies.

LESTER F. WARD.

An Introduction to the Theory of Mental and Social Measurements. By EDWARD L. THORNDIKE. New York: The Science Press. 1904. 8°, xii, 210 pages.

The author claims this book to be a statement of the first principles and rules of procedure in the treatment of statistical data, to serve as a handbook for the students of all sciences using statistical material. Yet it is obvious, on looking into the special methods discussed, that the treatise is expressly for the students of education and psychology. The apparent design of the work is to present methods of procedure based on mathematical conceptions with the mathematics left out, the author himself being fully conscious of the awkwardness of his position. Since methods

of handling statistics for variable phenomena are of special interest to physical anthropology, an application of methods to similar conditions in other fields of investigation will always deserve attention. All statistical work in variation proceeds on the assumption that variation is the result of a large number of independent causes working independently, the probabilities of their acting and not acting being equal. Such a condition gives a distribution of cases expressed by the binomial formula. Whenever it can be established that anatomical measurements for a homogeneous people follow the same law, mathematics will be of great service and new fields of research will present themselves. Physical anthropology has firmly established itself by empirically demonstrating the correspondence between the observed facts and this mathematical expression. However, the great obstacle to research has been the general ignorance of mathematics on the part of the workers, self-justified by traditions against the use of its methods.

While the psychologists have been using the same mathematical methods, they have not yet demonstrated in the same rough fashion the correspondence between their data and the binomial formula, or the more general expression of the exponential formula. The author devotes much space to the presentation of types of distribution obtained in the various kinds of data to give the student some idea of the basis for the assumption of the applicability of the mathematical formulas that hold for the conditions of a single type of distribution. This is commendable and safe ground, but merely states observations. The critical reader of the book must feel that the advice of the author to regard every distribution as being of the symmetrical type unless there is good reason for not doing so would rule out the remainder of the book, since, as far as can be judged by eye, the majority of the plotted distributions show asymmetrical tendencies. This will doubtless serve the good purpose of making the student duly cautious in the use of the method. The weakness of the author's position is in his failure to give a satisfactory basis for the determination of asymmetry. The question of the type of distribution would have come to something more definite if the relation between the higher powers of the deviations and the type of distribution had been discussed. As it is, the whole preliminary discussion fails to suggest a way out of seemingly hopeless diversity of forms of distribution.

The book must be estimated as an exposition of established methods rather than as a contribution to the knowledge of the subject. To this end the author has chosen a few main points and treated them at length. The illustrative examples are original, and although sometimes a little

strained seem to serve their purpose: *e. g.*, John's Christmas money, the relative probability of his receiving a dollar from different sources, is carried through the entire chapter on the cause of variability.

Some useful adaptations of principles are worked out by the author as special methods of procedure in psychological research: *i. e.*, the transmutation of relative measures into those of quantity. The author's discussion of the zero point of a series seems unnecessarily confusing; in this as in several other instances he gives the reader the impression that he is in too great haste to get to the end. The standard deviation is represented in the exponential formula by μ and in the text by σ ; as this occurs on the same page without explanation it will confuse the student. The distinction between the mode and the average is dwelt upon at length, but it would have been more emphatic if a brief mathematical demonstration had been added. In the treatment of accuracy of measurements the student should have been given the simple formula for the correction of the standard deviation. These are some of the instances in which the author's fear of mathematics led him to eliminate matter that is really useful to the reader even though he must take its verity on faith.

The appearance of the book is an encouraging sign that psychology may be about to begin substantial advance in one important part of its field. As a text book for a preparatory course to psychological investigation it has many points of excellence, but the author's hope that it will be of great service to the unmathematical reader is not well grounded, for it is the experience of the reviewer that even such a presentation reaches only the mathematically inclined.

CLARK WISSLER.

Notes d'archéologie préhistorique. — Nos ancêtres primitifs. Par A. DOIGNEAU. Preface par le Docteur Capitan. Paris: Librairie C. Clavreuil. 1905. 8°, 202 pages, 109 figures.

This volume is very well characterized by the author in the dedication as "a work of popularization"; and again by Dr Capitan in the preface as "a concise résumé of the history of our primitive ancestors." Turning to the table of contents, the history is found to be limited to the chapters dealing with the ages of stone. Such a work marks a timely step in the right direction. The domain of prehistoric archeology is a broad one. The period of pioneering has therefore of necessity been long. But there comes a time in the development of a science, as in that of a country, when the trail should give place to the highway. There are those who will always prefer the trail. Let them still wander to their heart's content through the wilderness. Their course leads by way of the numerous

publications of museums, societies, academies, etc.; of scientific journals, government reports, books of travel, as well as works on special topics. But that way is too laborious for the great majority whose means of communication should be as easy and direct as possible, and who may choose to be personally conducted. In that case, Doigneau is recommended as their guide. He knows the field and has supplemented his text by copious references to the original sources of information.

In archeology it is necessary to know the when as well as the what and the where; hence the importance of chronological classification. In prehistoric archeology the chronology is of necessity relative rather than absolute. The author offers nothing new in the way of classification, his outline agreeing practically with that made by Gabriel de Mortillet¹ more than ten years ago. The stone age is divided into three periods: (1) eolithic, (2) paleolithic, and (3) neolithic. It is well known that to Sir John Lubbock (Lord Avebury) belongs the credit of first employing the terms paleolithic and neolithic. As to the name eolithic, the author leaves one to infer (p. 36) that it was introduced by G. de Mortillet. Dr A. Rutot² of Brussels also believes him to have been the first to propose that name to designate a primitive industry antedating the paleolithic. In the opinion of the reviewer, and as stated by him in a paper written last year but not yet published, the priority belongs to Mr J. Allen Brown, late fellow of the Geological Society of London, who made use of the term "eolithic" in a communication³ read before the Anthropological Institute of Great Britain and Ireland on March 8th, 1892, whereas de Mortillet submitted his "Classification palethnologique" to the Paris Society of Anthropology on December 6, 1894.⁴

The eolithic period of Doigneau, like that of de Mortillet, is placed wholly in the Tertiary. The paleolithic is referred to the early Quaternary and the neolithic to the Recent. On the other hand Rutot has recently shown that the eolithic is by no means confined to the Tertiary—Reutelian, Reutelo-Mesvinian, and Mesvinian industries all occurring in the lower Quaternary. In regard to the subdivisions of the paleolithic period, the author does not seem to share the opinion of Professor Hoernes⁵ and others that the Chellean, Acheulian, and

¹ Classification palethnologique, *Bull. Soc. d'anthr. de Paris*, 1894, p. 616.

² Le préhistorique dans l'Europe centrale, etc. *Extrait du C.-R. du Congr. d'arch. et d'hist.*, Dinant, 1903, p. 244.

³ On the continuity of the paleolithic and neolithic periods, *J. A. I.*, XXII, 93.

⁴ Page 616 of the Bulletins.

⁵ Moriz Hoernes, *Der diluviale Mensch in Europa*, Braunschweig, Friedrich Vieweg und Sohn, 1903 (reviewed in *American Anthropologist*, N. S., 1903, V, 695).

Mousterian epochs are but phases of one and the same industry. Yet he goes so far as to admit that: the Acheulian cannot be considered as constituting a veritable epoch. It is at the same time the end of the Chellean and the beginning of the Mousterian, a passage from the one to the other, and marking a relatively short period of time. The Solutrean is also looked upon as a transition epoch. A good deal of space is given to the closing epoch of the paleolithic period which was marked by a real passion for art. Indeed the Magdalenian epoch may well be called the Phidian age of prehistoric times. Records have been preserved of each successive step from sculpture in the round, through high-relief and low-relief to delicate engraving. Color was sometimes combined with engraving, as in the remarkable frescoes which adorn the cavern walls of Fond-de-Gaume, near Les Eyzies. Curious markings suggestive of a halter on some of the figures of horses from the cavern walls of Combarelles, also near Les Eyzies, have led to the question of domestication of animals during the paleolithic period. Doigneau does not believe the evidence sufficient to demonstrate that any animal had become domesticated previous to the arrival of the neolithic peoples in Europe.

The closing chapter deals with the neolithic period; the hiatus, supposed by some to separate it from the paleolithic, the author believes to be non-existent. In support of this view he marshals the evidence furnished by the researches of de Mortillet at la Tourasse (Haute-Garonne), Piette at Mas d'Azil (Ariège), Salmon and Capitan at Campigny (Seine-Inferieure), and d'Ault du Mesnil in the valley of the Somme. The Tourassian is a transition epoch. The Campignian epoch is characterized by the survival of a few ancient types, such as scrapers, double scrapers, and graters, and the appearance of two new types, the paring-knife and the pick. Nowhere was there the slightest evidence of an attempt at polishing the stone implements. This was reserved for the following epoch, the so-called Robenhausian.

The story as told by Doigneau is attractive throughout. The excellent figures are, happily, almost exclusively of specimens in his own collection. The references, though numerous, are wholly confined to French authors or French translations of foreign authors, with the exception of citations from a few classical writers — a limitation perhaps more apparent than real when the scope of the work is taken into consideration. A few typographical errors are noted, among which may possibly be classed the statement that *Pithecanthropus* was found *near* Java.

GEORGE GRANT MACCURDY.

Personal Names of Indians of New Jersey : Being a list of Six Hundred and Fifty such Names, Gleaned mostly from Indian deeds of the Seventeenth Century. By WILLIAM NELSON. Paterson, N. J.: The Paterson History Club. 1904. 8°, 83 pages.

The title of this book sufficiently explains itself. The author, who has already given us a work on the "Indians of New Jersey," states in the preface that the nucleus of the present compilation appeared in the *American Anthropologist* for January, 1902, and that the interest manifested in that publication has led him to extend the list to its present proportions. "It is believed that no such list of aboriginal personal names, principally of the seventeenth century, has ever been published before." It is a laborious and valuable work, conscientiously performed, of use alike to the historian, philologist, and ethnologist, particularly in connection with the old Lenape or Delaware tribe. Its usefulness will increase with acquaintance, and it would be well if we could have more such compilations on which to draw for material.

JAMES MOONEY.

The Mythology of the Wichita. Collected under the Auspices of the Carnegie Institution of Washington. By GEORGE A. DORSEY, Curator of Anthropology, Field Columbian Museum. Washington: Published by the Carnegie Institution of Washington. 1904. (Publication No. 21.) 8°, 351 pages.

This and the companion volume by the same author, *Traditions of the Arikara* (Publication No. 17) are the most recent fruits of a study of the Caddoan tribes begun several years ago by Dr Dorsey for the Field Columbian Museum and continued under an allotment from the Carnegie Institution. The Wichita are a southern branch, as the Arikara are a northern branch, of the Pawnee proper, all three tribes speaking the same language with dialectic variations, and being primarily sedentary and agricultural in habit as distinguished from the roving, hunting tribes by which they were formerly surrounded. The Wichita of today, now settled on individual allotments in southwestern Oklahoma, are all that are left of three formerly distinct tribes speaking the same language, viz., Wichita proper, Waco, and Tawaconi, with the Kichai, of distinct but cognate language. The Wichita proper when first known had their villages on the upper waters of Red river, about Wichita falls and in the Wichita mountains, while the other two bands lived farther south, and the Kichai farther east, in Texas. One hundred years ago the four tribes numbered together at least 2,500, the Wichita proper being estimated at 400 men. In 1874 they numbered together 671 souls; in 1885 they had dwindled

to 448 and in 1903 to 338, a decrease of one-half in thirty years. Their fate is the common fate of the western tribes and emphasizes the necessity of energetic field work while opportunity remains. On the field result of the next ten years depends the final position of American ethnology.

In the valuable introductory sketch the earliest date noted is that of the Dragoon expedition to the North Fork village in 1834. The documentary French history of the tribe goes back at least to 1720. The Rush Springs date given is a misprint for 1852. Only the Wichita proper lived at North Fork; the other bands came up from Texas in 1856.

An interesting account follows of the peculiar tattooing, from which the tribe derived the old name of *Pani Piqué*. Their unique grass houses and arbors are described in detail, and attention is given to their name system, childbirth, war, marriage and mourning customs, all of which are dominated by the religious idea, the religion itself being described as a star cult, as is also that of the Pawnee. The Sun, Moon, and Morning Star appear to be the most prominent divinities, the Moon presiding especially over the destinies of the women. Time, from the creation to the death of all things, is divided into four eras. We are now in the fourth or era of decline, after which there will be a renewal by the star gods and another cycle of four eras will begin. Notwithstanding the commonly accepted opinion that the Pawnee and Wichita are a part of the Caddoan stock of the timber region of Louisiana and eastern Texas, both Dr Dorsey and Miss Alice C. Fletcher have independently arrived at the same conclusion, from a study of their cults, that the true ancient home of these tribes was in the open country of the plains or the desert southwest.

Sixty myths are given, including variants. Several of the variants might well have been omitted, being simply fragmentary renderings of the more complete myth as told by a better story-teller. In the shorter tales the Coyote, as usual on the Plains, appears as a trickster, usually coming to grief in the end by his impatience and mercenary desire. "He would always do something wrong and let the power escape him." In "The Coyote and His Magic Shield and Arrows" we are introduced to some wonderful arrows which talk among themselves and go out every day hunting while their master remains at home. "Finally all his arrows came in, each carrying a whole buffalo." But all this was a long time ago. In "The Seven Brothers and the Woman," "when she tossed the double-ball she went with it up in the air" to escape her pursuer. This story, which accounts for the origin of the Pleiades, has a close

parallel among the Kiowa. The incident of smearing an unseen night visitor with ashes occurs in some myth of nearly every tribe from the Eskimo to the isthmus, being usually told to account for the spots on the moon. The main incident in "The Woman who Married a Star" is also paralleled in probably all the Plains mythologies.

Other coincidences with the universal body of Indian myth are constantly cropping out in these Wichita tales and may be accepted as the natural outcome of the workings of the primitive mind under similar circumstances, but occasionally we find parallels which seem unaccountable except on the theory of actual contact by tribes or individuals. As an instance take "The Man who Went to Spirit Land." His wife has died and he goes night after night to mourn at her grave. The spirit of a former friend appears and tells him how he may bring back the woman from the land of the dead. The spirit gives him four mud balls and instructs him how to use them.

"His friend touched his eyes and he found himself in another world, till with his friend. Around him, as far as his eye could see, he saw lodges. They entered the homes of the dead, and finally came to the place where the dance was, and there the dead man left his friend. The live man saw his wife dancing, and as she came around he threw one of the mud balls at her and hit her, as he had been told to do. She went around the pole that they were dancing around and when she came around again he threw another mud ball at her and hit her again. Every time she came around he threw at her, until he had thrown the last ball. Then she left the dance and went off to her home, and the live man followed her."

In the story of "The Daughter of the Sun," in the present reviewer's *Myths of the Cherokee* in the 19th Report of the Bureau of Ethnology, 1902, seven messengers set out for the Spirit World to bring back the soul of the daughter of the Sun, carrying with them seven magic rods: "They took the rods and a large box and traveled seven days to the west until they came to the Darkening Land. There were a great many people there, and they were having a dance just as if they were at home in the settlement. The young woman was in the outside circle, and as she swung around to where the seven men were standing, one struck her with his rod and she turned her head and saw him. As she came around the second time another touched her with his rod, and then another and another, until at the seventh round she fell out of the ring, and they put her into the box and closed the lid fast."

Several songs are given with musical notation by Mr Frederic R. Burton. The last thirty-five pages are devoted to abstracts of the

myths, thus affording convenient basis for comparison. The language throughout is simple and in accord with Indian expression, and each Indian assistant is given full credit.

With so much that is good it is regrettable that we have not more, particularly in the way of notes and glossary. It has been well said that the purpose of a museum is to illustrate a series of labels. In a similar manner a main purpose of a myth collection is to illustrate custom, ritual, and language. Almost every one of these myths contains reference to some custom or ceremony of which the layman would wish to know more, while an analytic vocabulary of the Indian terms would give a deeper meaning to the myths themselves and add a philologic value to this revelation of a most interesting people.

JAMES MOONEY.

Vier Lustspiele (Der französisch-preussische Krieg—Ich gratuliere;—Grosse Wahl schafft grosse Qual—Ein Liebesbrief). Von KOSTA TRIFKOVIĆ. Übersetzt und für die deutsche Bühne bearbeitet von DR. FRIEDRICH S. KRAUSS. (Bibliothek ausgewählter serbischer Meisterwerke, Band IV). Leipzig: Deutsche Verlagsaktien Gesellschaft. 1904. 12°, xvi, 182 pages.

In the fourth volume of the Library of Servian Masterworks, which Dr Krauss is now editing, he introduces us to another talented young author who, although prematurely cut off just when life was most full of promise, has left such impress upon the literature of his people that his dramas are still the favorites of the Servian stage thirty years after his death.

Kosta Trifković was born of Servian parents at Neusatz, southern Hungary, in 1843, and after the usual school period and a short experience in seafaring life, he betook himself to law and literature while holding a small governmental clerkship at Budapest. His literary efforts were directed chiefly to the building up of a national Servian stage at Neusatz to rival that of Belgrade. With capacity for doing two years' work in one, and an equipment of five languages, he worked untiringly until stricken by a fever which finally resulted in his untimely death in 1875 at the age of thirty-two. In four short years of production he had brought out seven original dramas, arranged ten others from the German and French, and written two important works of fiction and an autobiography, besides critiques and numerous shorter articles which were published in a journal which he had founded.

The four specimen comedies are filled with sparkling wit and catchy verses, and a succession of bewilderingly comic situations which finally

disentangle themselves, so that all ends well at last, as a good story should. There are frequent appeals to Servian patriotism, and reference to several interesting national customs such as the New Year celebration and the betrothal feast. It is to be hoped that the translator may succeed in his efforts to bring such excellent work to a wider circle of acquaintance.

JAMES MOONEY.

Anthropophyteia: Jahrbücher für Folkloristische Erhebungen und Forschungen zur Entwicklungsgeschichte der geschlechtlichen Moral. [Yearbooks for Folklore Collections and Investigations relating to the Historical Development of the Sexual Code.] Herausgegeben von Dr FRIEDRICH S. KRAUSS. Band I. Südslavische Volksüberlieferungen, die sich auf den Geschlechtsverkehr beziehen. I. Erzählungen, gesammelt, verdeutscht und erläutert von Dr Friedrich S. Krauss. Leipzig: Deutsche Aktien-Gesellschaft. 1904. 8°, xxii, 530 pages.

This remarkable production of the distinguished South Slavic ethnologist is the first volume of an investigation of the sexual folklore of the Balkan provinces, of which a preliminary publication appeared in *Kryptadia* (Paris) some years ago. The volume is dedicated to Dr Franz Boas of New York, who, in a brief introductory letter, points out the importance, to the student of European anthropology, of a knowledge of present conditions, as well as of vanished and vanishing customs.

The work, which is printed in numbered copies for the use of students only, embodies the result of a patient investigation of an important but peculiarly difficult and ungrateful subject along the border-line between primitive anthropology and modern civilization. From the nature of the subject it is impossible to go into detail, but it may be said briefly that every phase receives careful attention, from remains of ancient phallicism to the popular proverb. Special topics treated in this connection are supernatural conception, personal and place names, sexual teaching, betrothal and marriage customs, sexual hospitality, the *jus primæ noctis*, erotic tattooing, perversions, and modern prostitution. Most of the material is given in the form of short narrative descriptions in the various Slavic provincial dialects, with German translation and notes.

There is one curious Bosnian myth of a woman who becomes pregnant and a mother from having eaten the unconsumed heart of a sinner whose body had been given to the flames. As the manifold sins have been burned away with the body, leaving the heart in its original purity, the child grows up to be a saint. The primitive idea of the sun or moon as the fertilizer survives in the belief that a young woman may become preg-

nant by sleeping naked under the light of the full moon or by walking naked at noon of a sunny day through a field of growing grain. The children of such conception can see spirits. The right of the first night is still but a thing of yesterday, particularly in the provinces most recently emancipated from Turkish misrule, and was even made a claim by the landed proprietor upon his impoverished debtor, while the essentially primitive custom of sexual hospitality seems hardly yet to be obsolete in the Balkan provinces.

The deep pervading bestiality of thought and act made manifest in these relations is certainly without parallel in any other civilized country. It must be remembered that the book does not deal with the aberrant impulse of a decadent aristocracy, a degenerate city slum community, or of a miscellaneous gathering of the refuse of the earth at some shipping port or remote frontier outpost. It deals with the everyday things of a whole population made up almost entirely of farmers and herdsmen remote from large cities and their temptations. Moreover, the author expressly states that he is not laying bare secret filthiness, such as exists to some extent in every large community, but is putting on record "only what the people are accustomed to relate in full publicity and usually also without concern in the presence of children, young girls, and women."

We cannot regard all that is here simply as a part of an arrested primitive development, and we have too much faith in our own stock to believe that all of it is properly European. Much of it appears to be due to actual racial degeneration, the result of the steady brutalization of centuries of subjection to an Asiatic barbarism which makes the harem, the eunuch, and the mute the cornerstones of its social system. Indeed, some of the customs noted are directly stated to be an inheritance from such Moslem warfare as the Kurds are still inflicting on the Christian provinces of Asia, while others were enforced at the demand of local Turkish officials. The question is of practical interest in view of the fact that of more than 800,000 immigrants now arriving annually in the United States a large and increasing percentage is from southwestern Europe, and the supply area, which in 1882 centered at Paris, in 1902 had its center at Constantinople.

The work has a distinct philologic value as a repository of the dialectic forms of Servia, Croatia, Slavonia, Bosnia, Herzegovina, and neighboring provinces. Among the well-known collaborators whose names appear on the title-page are Dr Thomas Achelis, Bremen; Dr Iwan Bloch, Berlin; Dr Franz Boas, New York; Dr Anton Hermann, Budapest; Dr Bernhard Herrmann Obst, Leipzig; Dr Giuseppe Pitre, Palermo; Dr Isak Robinsohn, Vienna.

JAMES MOONEY.

Beiträge zur Lehre von den Geschlechts-Unterschieden. Von Dr P. J. MÖBIUS in Leipzig. Heft 1. *Geschlecht und Krankheit.* Pp. 39. Heft. II. *Geschlecht und Entartung.* Pp. 45. Hefte III-IV. *Ueber die Wirkungen der Castration.* Heft v. *Geschlecht und Kopfgrösse.* Pp. 47 (5 figs.). Heft vi. *Goethe und die Geschlechter.* Pp. 30. Hefte VII-VIII. *Geschlechter und Kinderliebe.* Pp. 72 (35 figs.).

As the title indicates, Möbius's treatment of the subject of sex-difference covers a rather wide range, not all of which is of decided interest to the anthropologist. The general conclusions of his study of "sex and disease," are, that men sicken and die through their own acts oftener than women, the chief causes of their greater mortality being the use of alcohol and venereal diseases, and that there exists no reasonable ground for ascribing to woman a longevity or resistance to disease that is *sui generis*. The "innate longevity in woman is a superstition." Fewer suicides occur among women because they lack initiative more. If it were not for alcohol and venereal diseases men would have less sickness and live longer than women. For man the slow-killing diseases are more fatal than the plagues so feared by the folk-mind.

A distinguished American psychologist once observed that he might not wish to be "sane according to Lombroso," and for a woman to be healthy according to Möbius might lie as far from rational human desire. His eye filled with the *Vollmensch* (here belongs the happy European), he reckons not of "primitive peoples" and the like whose study "adds nothing to our knowledge of human evolution." For Möbius man is nothing if not absolutely and entirely man, and no woman is healthy if sex is not the unvarying center of her being. In his discussion of "sex and degeneration" he treats the physical and mental aberrancies of sex. Man loses, he thinks, in every way by becoming like a woman, while woman, apparently, may gain something by being more like a man. The causes of sexual degeneration are chiefly bad heredity and alcoholism—the former preserves, the latter increases the evil.

In his monograph on "Castration," after giving a historical sketch of the subject, Möbius discusses the physical and intellectual effects of this form of bodily mutilation on the human organism. The origin of castration Möbius, with Bergmann, sees in the custom of marking captives, who were not killed in war or battle, as slaves by depriving them of their *membrum virile*. Observations of castrated men led afterward to similar treatment of animals, tame or in captivity. Very early a religious significance attaching to the sacrifice of the organ in question made castration common alike with priest and with victim. Castration for the purpose

of making singers is the latest of the series. The eunuchs of the Sultan explain themselves. The general effect of castration in youth is to arrest the development of the secondary sexual characters. Popularly speaking, "a man becomes more like a woman," but really what happens is that he ceases to be more like a man. To this essay a bibliography of 53 titles is appended.

The general thesis of Möbius's study of "sex and size of head" is that "the circumference of the head approximately normal in form increases in general with the intellectual powers." His investigation of the heads of distinguished men is based on the records, 600 in number, of Haugk, the latter, made with the *conformateur*,—of women only 50 were measured. At pages 26–39 the measurements of 360 more or less distinguished men are given, from which it appears that almost all distinguished men are short-headed (brachycephalic),—so, too, with women. Möbius holds that the relation between brain and body is not the same in the two sexes, for "a normal man, even when he is small, requires at least a head of 53 cm. circumference, while a woman gets along quite well with 51 cm.,"—in other words, one may be a clever woman with 51 cm., but not a clever man. The thing lies in the brain that makes the difference. Sexual as well as racial differences of head go back to intellectual differences.

Möbius's discussion of "Goethe and the sexes" is devoted to a consideration of the great German's sayings, "*Das Ewig-Weibliche zieht uns hinan*;" "*Es ist unglaublich, wie der Umgang der Weiber herabzieht*." From an examination of his declarations in prose and verse he comes to the conclusion that the real position of Goethe was about midway between the two expressions quoted. It is rather the "*Ewig-Weibliche*," than the *Weibliche* that leads us on, the ideal woman, not the real one. The famous conclusion of Faust, Möbius thinks, can be interpreted only in light of the fact that Goethe was old and writing with tender recollections of youth. In his completer manhood he would have selected some other ideal. At this point one feels that he would like to hear Goethe demolish, as doubtless he could and would, such arguments.

His monograph on "Sex and love of children" exhibits Möbius in his rôle of resurrector of Gall, the phrenologist, whose organ of "philoprogenitiveness" he seeks to make function again. In three sections he considers love of offspring among animals and men, Gall's doctrine, and skull and love of children. For Möbius love of offspring is an innate instinct deeply rooted in the organism, and he argues for the location of

"the organ of love of offspring," near the "organ of sex-instinct," in the upper part of the occipital bone, corresponding to a special part of the brain. The strong development of this "organ" (it is marked in women) indicates love of offspring. With civilization, according to Möbius, comes a certain dulling of sex-differences and man takes on even some female traits. Thus it happens, perhaps, that there are so many men to-day with a large organ of love of offspring,—women with heads of the male type are less common.

While interesting, and representing, doubtless, a certain tendency of the present Teutonic mind, these views of sex-problems are fortunately not axioms of science.

ALEXANDER F. CHAMBERLAIN.

Album of Philippine Types; Christians and Moros. By DANIEL FOLKMAR. Prepared and Published under the Auspices of the Philippine Exposition Board. Manila: 1904. Oblong 4°, 80 plates with introductory text.

The subjects for Dr Folkmar's *Album of Philippine Types* were prisoners in Bilibid prison in the year 1903. It is unfortunate to base an anthropological study on prison subjects unless it be absolutely necessary. Prison cases should everywhere be exceptional and aberrant types, in no true sense representative of their race. It may indeed be that many of the prisoners now held in the Philippines are political prisoners and not degenerate and abnormal to the degree that most criminals would be. But it ought not to be difficult to conduct a study like Dr Folkmar's in villages where an unselected group might be studied and the normal type secured.

This preliminary criticism made, we turn to the examination of Dr Folkmar's Album. Front and side views of each subject are presented, made to a uniform scale, measures being one-half the actual. Opposite the portraits are printed the anthropometric data regarding the subject represented—eight measures and two indices being given. In the same table are presented averages of these measures and indices as taken on a number of individuals from the same tribe as the subject, who was, in each case, chosen as approximating the average. The portraits thus represent the average of the prison representation of their tribal groups. Unfortunately there are errors in these figures as given, and apparently many. Opening at hazard, plate 11 represents a Cagayan with chest measure of .895 m. The average of 5 Cagayans was .864; of 15 from all provinces .856. One can hardly believe an average subject to be so far from these averages and guesses that .859 m. was intended. It is

also unfortunate that in an Album representing the Christian and Moro tribes, portraits were presented of other populations, *unless* the material were ample. Thus the Negrito portraits carry no weight, because the Negrito material available was too small. Nor was it, as shown by the author's own portraits and figures, at all typical: *e. g.*, plate 80.

The portraits are prefaced by several pages of introductory text in which the method of procedure is stated and some information given regarding the populations represented.

FREDERICK STARR.

Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. V. Sociology, Magic, and Religion of the Western Islanders. Cambridge: University Press. 1904. Large 8°, xii, 378 pages, 22 plates, 3 maps.

The Expedition from Cambridge University to Torres straits was, perhaps, the best equipped for work of any ethnographic expedition ever made. Under the leadership of Dr Alfred C. Haddon, the party included also Dr Rivers and Messrs Ray, Seligman, and Wilkin. Each worker was assigned his particular portion of the investigation. Dr Haddon had already been in the region to be explored, studying the marine fauna, in 1888 and 1889. The party spent five weeks in the Western islands, to which the volume before us is confined, in 1898. The region is of particular interest as it is the frontier between the Papuan and Australian culture areas, although the islanders were found to be distinctly Papuan.

The Reports of the Expedition are to form six volumes, as follows: I, Physical Anthropology; II, Physiology and Psychology; III, Linguistics; IV, Technology; V, Sociology, Magic, and Religion of the Western Islanders; VI, Sociology, Magic, and Religion of the Eastern Islanders. All that has so far been published are two parts of Volume II, presenting investigations on sense phenomena of these natives, and Volume V, which lies before us. The other volumes are in preparation and will be duly published. Each of the workers has prepared his own reports and the volume in hand contains contributions from all but Mr Ray whose work was purely linguistic. In gathering material in the Western islands, most time and attention was given to the island of Mabuiag, which may be considered typical. These islanders have been for thirty years under missionary influence and have been affected by it and by other forms of contact with white men, but still retain much of their native culture and have yielded a rich harvest of interesting data. Much in the volume deserves notice, but we can refer to but a few points.

Almost a third of the book is devoted to Folk Tales, which have been treated and presented by Dr Haddon himself. They are classified as nature myths, culture myths, totem myths, spirit myths, *dogai* tales, narratives about people, comic tales. A *dogai* is an uncanny and malicious, but stupid, human monster, of ogreish instincts. The collection includes forty-six stories. These were told to Dr Haddon in broken English and he assures us that he gives them as they were received. He does so literally in some cases, and reading these versions raises the question as to how far scientific accuracy demands such presentation. Is it desirable to present such a story in broken English, if it can be told in good English without falsely rendering the native teller's thought and intent? If the recorder really *knows* the native's meaning and catches his spirit, it is unfair to the narrator and to the genius of his race to spoil his performance by too literal a presentation of his imperfect medium of expression. When we listen to a great French or German scholar giving a lecture in English, we take his thought and meaning, not his bad pronunciation and halting grammar. A reporter of such a lecture, if he really understands its argument and matter, aims to present these, not the dialect. Of course, the jargon of the native tale may have linguistic importance and psychologic value; as material for study samples may have their reason. Dr Haddon fortunately does not give all his stories in "Pigeon-English." The question may be raised, whether even those he does give in true English form do not deserve a finer rendering. If not, it must be confessed that the tales are, on the whole, poor, vague, and meager; not in keeping with the artistic development shown in the manufactures, nor with the intellectual power indicated by the genealogies of this people. Dr Haddon not only presents the stories themselves, but makes them yield their utmost to the student by giving the carefully condensed plot of each and a statement of the anthropological incidents which each contains. It is unnecessary to say that this work is done carefully and conscientiously and that it adds largely to the value of the collection.

The chapters by Dr Rivers on Genealogies, Kinship, Personal Names, etc., are of particular importance. These matters were investigated with great care and throw much light on the social organization. The kinship system in use among the Western islanders "is a definite example of the classificatory system," showing all of Morgan's ten indicative features. There is, however, a clear tendency to break down in some directions. Dr Rivers introduces an elaborate system of tabulating the genealogical data, and his tables require close examination and some study. Once

mastered, however, they clearly show the native view of kin. These Torres Straits islanders possess remarkable memory for genealogical detail and analogous to that shown by Polynesians.

In the chapters by Mr Seligman on Birth and Childhood Customs and Women's Puberty Customs, is a clear and excellent statement regarding matters which are too often neglected or but inadequately touched by travelers and students.

The mass of material on Initiation, Courtship and Marriage, Funeral Ceremonies, Magic, Religion, etc., is large and interesting but can be mentioned only cursorily. This has been worked out chiefly by Dr Haddon, with the aid of Mr A. Wilkin, whose recent death is announced in the volume. Many interesting customs are described. Thus, in courtship and marriage—the woman proposes, sending an arm-band to her lover; he returns a leg-ring, meets her in the bush, and sleeps at her house; often, her relatives battle over her. Very interesting is the custom of divining with skulls, usually those of relatives. The skulls were carefully prepared by cleaning, painting, and enclosing in a basketry casing decorated with feathers and the ornaments of the deceased. When such a skull was to be consulted, it was cleaned, repainted, and anointed with or placed upon aromatic plants. Before going to sleep the inquirer urged the skull to tell the truth and then placed it by his pillow. The skull spoke to the sleeper, the noise made being like the chattering of teeth together. But further reference to the interesting ethnographic details of the volume is impossible. The work is a storehouse of new information regarding a little-known people and, after reading it, one can well understand the urgency of Dr Haddon's appeal in view of the "vanishing of anthropological data." *Now* is the time for such work as that of the Cambridge Expedition. The harvest waits. Soon it will be lost if there are not reapers and gleaners. The volume before us is illustrated with twenty-two full page plates and with native drawings and maps in the text.

FREDERICK STARR.

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

Adachi (B.) Die Porosität des Schädel-daches. (*Z. f. Morph. u. Anthr.*, Berlin, 1904, VII, 373-378, 2 pl.) Describes two cases of extreme porosity of the vault of the cranium (Dyak, Egyptian),—such porosity does not occur in European skulls.

Anthropology at the St. Louis Exposition. (*Amer. Antiq.*, Chicago, 1904, XXVI, 116-120, 1 fig.) Notes on Patagonian giants, aboriginal groups, section of archeology, etc.

Atgier (M.) Ibères et Berbères: origine et significations diverses de ces expressions ethniques. (*Bull. Soc. d'Anthr. de Paris*, 1904, V^e s., V, 110-111.) Dr A. argues that in the Kabylean *iberik*, "the blacks," lies the origin of the Latin *Iberi* and its cognates and descendants. From the same root by reduplication came *Berber*, etc. Black hair, not skin, is connoted.

Bardeen (C. R.) Numerical vertebral variation in the human adult and embryo. (*Anat. Anz.*, Jena, 1904, XXV, 497-519.) Résumés data. Author recognizes in development of spinal column and appendages 4 periods (pre-pelvic, chondro-factive, ossificative,—prenatal, post-natal,—adult). B. concludes among other things that "regional variation in the vertebral column is an inherited condition, manifesting itself early in embryonic development." Variation seems to be greater in females than in males, and in Baltimore negroes than in whites as to number of presacral vertebrae. The tendency toward reduction and increase in the number of presacral vertebrae seems equal. The article has abundant statistics and a bibliography of 46 titles.

Bloch (A.) Des variations de longueur de l'intestin. (*Bull. Soc. d'Anthr. de Paris*, 1904, V^e s., V, 160-197.) Résumés knowledge of the length of the intestines in the animals and man (pp. 177-195). The effects of disease, obesity, race, etc., are discussed. The intestine of the child is relatively longer than that of the adult. The variability of the adult intestine is due to the fact that its length is sometimes congenital and sometimes acquired (often as a result of disease, etc., or obesity). The Japanese (a more or less herbivorous race) seem to possess the longest intestines. As to sex-differences the authorities are not in agreement.

— **et Vigier (P.)** Recherches histologiques sur le follicule pileux et le cheveu de deux nègres décédés à Paris. (*Ibid.*, 124-132, 5 figs.) Details concerning the pilose follicle and hair of a negro from Loango and of another from Accra in Guinea. The notable peculiarity of the negro's follicle is the oblique semi-circular crest. The particular form and structure of the pilose follicle are not confined to the negro,—the Bushman has them. Whether the recurved follicle is found in the negro new-born child is not known.

Buron (E. J. P.) L'abbé Casgrain (J. Soc. Améric. de Paris, 1904, N. S., I, 344-346.) Sketch of life and activities of the distinguished French Canadian man of letters, historian, genealogist, etc.

Buschan (G.) Kultur und Gehirn. (A. f. Rassen- u. Ges.-Biol., Berlin, 1904, I, 689-701.) Résumés briefly studies of Broca, Schmidt, Hunt, Matiegka, Marchand, Spitzka, Costa Ferreira, Galton and Venn, Vaschide and Pelletier, Pfit-

ner, Bartels, Papillault, etc., concerning the relations of size of skull and brain to progress in civilization and culture. Dr G. concludes that increase of brain-volume and increase of culture go together and brain sinks with disappearing culture (i. e., ancient and modern Egyptians). Also that the gift of modern culture is for certain primitive peoples fatal and brain-killing.

Carruth (W. H.) Adolf Bastian. (Open Ct., Chicago, 1904, XVIII, 321-330.) Sketch of life and philosophy with list of 30 published books and portrait. To Bastian belongs the credit of originating the expression *Völkergedanken*, or "race thoughts" as it has been translated,—the matter of primary interest is the primitive man's conception of the universe.

Carus (P.) The ascent of man. (Ibid., 178-190, 6 fgs.) Discusses "evolution," Neanderthal skull, the Mitchell-Ward restoration of Neanderthal man, Gabriel Max's painting of the *Homo alatus*, etc. Dr C. accepts the Neanderthal skull as of primitive man, and posits the origin of mankind in the north, where, through stress of environment, ape-men developed altruism and intelligence.

— A new religion. (Ibid., 355-372, 398-420, 17 fgs.) Treats of Babism, "the youngest faith on earth" and its chief exponents. Some think it may some day become the religion of Persia.

— Stone worship. (Ibid., 660-685, 33 fgs.) Treats of the matsebah, jachin and boaz, the matsebah as Bethel (Jacob's dream), Gilead and Gilead, obelisks, the destruction of matsebahs in Judea, the kudurrus of ancient Babylonia, Stonehenge (a place of sun-worship), the Tibetan pyramid of peace, the runic stone of Gottorp (Sleswick), menhirs and dolmens, the memorial stones of the Khasi (India), etc. The stone itself is not worshipped, but is a marker for the presence of deity.

— How history is transfigured by myth, (Ibid., 690-694.) Shows the mixture of fact and fancy in what we believe to be history. Takes the opposite view to Mr Shaw (q. v.).

Chamberlain (A. F. and I. C.). Studies of a child, II. (Pedag. Sem., Worcester, 1904, XI, 452-483.) Treats of agglutination, analogy, caressive repetitions, comparison, definitions, father and

mother, favorite phrases, negation, *aditer dicta*, order of words, parareplication, plural-forms. Poetry and rhythmic speech, prefix, preterite-forms, reduplication, reproduction of nursery-rhymes, spontaneous language, word-forms differing slightly from the adult, word-groups, words "original" or "invented," words pseudo-primitive in form, words with special meanings, etc. Second article of the authors' dealing with the psychological phenomena of their own child.

— Child study and related topics in recent Italian scientific literature. (Ibid., 508-515.) Résumés articles, etc., relating to child-life, craniology, criminology, fatigue, feeble-minded, foot, genius, giantism, inbreeding, Italia "barbara," jargons, man and woman, mental and physical, microcephaly, race and individual, school-excursions, stature.

— Child study and related topics in recent Russian scientific literature. (Ibid., 516-520.) Résumés articles relating to brain-conformation, brain-cortex, continuance of growth, ear, eye-growth, fertility, giantism, heart, heredity, idiocy, microcephaly, precocious development, puberty, seasonal growth, still-birth, suicide.

— Use and domestication of the horse. (Am. Antiq., Chicago, 1904, XXVI, 164-167.) Résumés recent articles of Zaborowski, Ridgeway, von Negelein, Munro. Zaborowski and von Negelein do not believe the horse was domesticated in quaternary times,—the horse was first used for food. Ridgeway thinks the horse was driven before ridden, and that Africa was the home of the "Arab steed."

Conservation (La) des os dans les tombes. (Bull. Soc. d'Anthr. de Paris, 1904, v, s., v, 99-100.) In opposition to Manouvrier, M. Emile Rivière argued that water and humidity are not prime destructive agents of osseous remains. Dr Baudouin took a similar view and suggested experiments in the softening of bones.

Eijkman (P. H.) Weiteres über das neue graphische System für die Kraniaologie. (Hdln. v. d. Nederl. Anthr. Ver., Den Haag, 1904, I, 83-103, 10 fgs.) Treats of height of skull, rational modulus, index-system, necessity of three-sided system, racial mixture and

crossing, exactness, group-division, etc. The graphic system can be used to compare with each other different methods of measurement. E. would reject the index-system for the relative mass-system developed on the ideas of Schmidt.

Evans (H. R.) The legendary and the real Napoleon. (Open Ct., Chicago, 1904, xviii, 584-605, 8 figs.) Cites legends produced by the Egyptian campaign, etc., the opinions of poets, historians, novelists, and others as to the real and the legendary Napoleon. The theosophists might win some comfort from the fact that the face of a statue of Rameses now in the Turin Museum and the face of Bartelda, a young Apache Indian, both strongly resemble in profile the great Corsican. There is also a *rapprochement* between Napoleon and Alexander the Great.

Gfeller (S.) Der Schulgang unseres Herren und Heilandes Jesu Christi. (Schw. Arch. f. Volksk., Zürich, 1904, vii, 154-157.) Gives text of poem (Bern, 1563) on the school-going of Jesus.

Hochstetter (F.) Ueber die Nichtexistenz der sogenannten Bogenfurchen an den Gehirnen lebensfrisch konservierter menschlicher Embryonen. (Verh. d. anat. Ges., Jena, 1904, 27-34, 5 figs.) Author still holds to the post-mortem origin of these "transitory" furrows.

Hutchinson (W.) What the dog is built to do. (Open Ct., Chicago, 1904, xviii, 577-583.) Popular discussion. Dr H. thinks dog the earliest domestic animal,—"long before the dawn of history he had become our companion in the chase, then the most important occupation of life,"—and grants him a "record of at least 10,000 years of continuous service and devotion to our race." To chase and catch were long his chief acts.

Kassel (C.) Androgynous man in myth and tradition. (Ibid., 525-530.) Treats of the idea of "man-woman" in Aryan myth, Hebrew Bible, Plato's *Symposium*, the words of Jesus, facts of biology (Haeckel), etc. A pre-sexual androgynous condition is posited.

Keibel (Hr.) Zur Entwicklungsgeschichte der Affen. (Verh. d. anat. Ges., Jena, 1904, 156-163.) Describes feti (from material of Selenka and Hübner) *Semnopithecus*, *Hyllobates*, *Orang*, *Macaque*, etc., and man. There is a strik-

ing similarity between the young embryos of the various monkeys and the much more developed human embryos. The occurrence of a *schwanzfeder* in the long-tailed monkeys is noteworthy. The importance of slight variations and even "arabesques of development" for phylogeny is emphasized. In the discussion G. Retzius showed that the pads in the hands and feet of the monkey embryos were less developed than those of man,—the saying of K. von Bardeleben is illustrated here, that man is a more primitive monkey than the monkeys themselves."

Krämer (A.) Der Neubau des Berliner Museums für Völkerkunde im Lichte der ethnographischen Forschung. (Globus, Brunschwg., 1904, lxxxvi, 21-24.) Dr A., who remarks that the pads in the hands and feet of the monkey embryos were less developed than those of man, —the saying of K. von Bardeleben is illustrated here, that man is a more primitive monkey than the monkeys themselves."

Lasch (R.) Wachstumszeremonien der Naturvölker und die Entstehung des Dramas. (Ibid., 137-138.) Critical résumé of the monograph of Preuss (see *American Anthropologist*, 1904, n. s., vi, 359), on phallic growth demons, etc. and the origin of the *mimus* and the clown. The primitive mime-drama is, in its beginnings, an act of worship and magic and is intimately connected with religious ideas as to the begetting of the natural products of the field.

Lewis (J. F.) "Teigdrücke"—prints in paste. (Proc. Num. & Antiq. Soc. of Phila., 1902-1903 [1904], 189-194, 1 fig.) Of "paste-prints," made by printing the design from the plate or block with paste instead of ink, only some 100 are known altogether. They may antedate ink printing and "belong to the very dawn of the art of engraving for the purpose of reproducing designs." They were made in Germany (probably Bavaria) before 1500, possibly before 1450. *Teigdrücke* are usually found pasted in books.

- "Schrotblätter;" or, prints in the "manière ciblée," with some consideration of a set of eight such prints associated with typographic text. (Ibid., 105-210, 9 pl.) These prints are so called from the dots of the design, suggesting that "the plate from which they were printed had been gnawed or indented, or pierced through like a sieve." They belong among the earliest forms of engraving for reproducing designs, and their chief period was 1470-1500. Like the *Tridrucke*, they are probably of Bavarian origin.
- Loisel (G.)** Sur Ernst Haeckel. (Bull. Soc. d'Anthr. de Paris, 1904, 7^e s., v, 197-199.) Résumés Haeckel's *Anthropogenie* (5^e Aufl., Leipzig, 1903).
- MacCurdy (G. G.)** John Wesley Powell. (J. Soc. Améric. de Paris, 1904, N. S., 1, 339-344.) Sketch of life and scientific activities with chronological list of publications.
- Mentré (F.)** La simultanéité des découvertes scientifiques. (Rev. Scientif., Paris, 1904, 7^e s., II, 555-559.) Contains a list of *simultaneous* scientific discoveries in mathematics, astronomy, mechanics, physics, chemistry, biology, sociology. These simultaneous discoveries are due neither to accident nor to the free will of the men of science, but rather to an external and an internal determinism of a social character. Every moment has its scientific milieu of ideas, acts, and objects. Contemporary men of genius working in the same field have, as it were, "a common soul" and a common environment.
- Meyer (A. B.)** Neue Mitteilungen über Nephrit. (Globus, Braunschwg., 1904, LXXXVI, 53-55.) Discusses recent examples of the occurrence of nephrite in New Guinea, Australia, Brazil, Celebes, and the southern Tirol, — the last a votive axe found in 1903 at Vervo. Crude nephrite is now reported from several parts of New Guinea, Australia, and Brazil. The importation theory has recently received several other hard blows.
- Mölk (E.)** Die Volkskunde im Rahmen der Kulturentwicklung der Gegenwart. (Hess. Bl. f. Volksk., Leipzig, 1904, III, 1-15.) According to the author the object of theoretical folklore is to know the idea-world of the folk in its processes and to obtain a psychological understanding of the individual phenomena, and to work on that basis is the most important task of practical folklore. The field of the destructive amateur will be narrowed and the scientific method more and more employed. As a science, folklore belongs with the culture-sciences. A knowledge of the folk-soul is necessary for the clergy, the teachers, the statesmen. M. is of opinion that the estrangement of the educated classes from the *vulgus* accounts for the success of the propaganda of social democracy in Germany.
- Pearson (K.)** On the inheritance of the mental and moral characters in man, and its comparison with the inheritance of the physical characters. (J. Anthr. Inst., Lond., 1903, XXXIII, 179-237.) In this article, mainly consisting of diagrams and statistics resulting from the study of the brothers and sisters in 1000 families, Dr P. treats of health, color of eyes and hair, curliness of hair, cephalic index, head length, breadth and auricular height, athletic power; vivacity, assertiveness, introspection, popularity, conscientiousness, temper, ability, handwriting. The number of school boys examined was 1918, girls 2014. Dr P. concludes that "the degree of the resemblance of the physical and mental characters in children is one and the same." This sameness involves a like heritage from parents, and "we inherit our parents' tempers, our parents' conscientiousness, shyness and ability, even as we inherit their stature, forearm and span." Intelligence can be aided and be trained, but "no training or education can *create* it." It must be bred. The great problem is to make the best families and stocks more fertile than the bad.
- Peet (S. D.)** The tree of life among all nations. (Am. Antiq., Chicago, 1904, XXVI, 1-16, 7 figs.) General discussion of occurrence of these symbols in Asia and America (Mayas chiefly).
- Superstition a means of defense. (Ibid., 48-56, 6 figs.) Author holds that "the most interesting method of defense was that which came from the combination of religious symbols and mechanical contrivances," as, e. g., at Ft. Ancient, Ohio. Totem-posts are another example.
- Architecture in the protohistoric age. (Ibid., 89-104, 13 figs.) Treats

of Egypt, Crete and the Mediterranean islands, Asia Minor, etc. The end of the protohistoric period is marked by the appearance of the column; it began with the use of bronze. The rock-cut tombs of Phrygia and Lydia are imitative of the house.

— The distribution of pile-dwellings. (Ibid., 127-130, 4 figs.) Notes of a general character on Swiss lake-dwellings and those of the Pacific.

Retzius (G.) Die sog. Tastballen an den Händen und Füssen des Menschen. (Verh. d. Anat. Ges., Jena, 1904, 41-43, 3 figs.) Author shows that the pads, well developed in most of the adult monkeys, develop in the man during the third fetal month, and then from the fourth month, "regress." According to Keibel the pads are also present in monkey-embryos.

Robin (P.) Substance et populations. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 76-79.) Author holds, with Gabriel Giroud in his *Population de subsistances* (Paris, 1904), that one-third of mankind are condemned to die of hunger, and nine-tenths have their end hastened through insufficient food. Hence, the author argues, the advocates of "parental prudence" need not appear as mere suppliants. In the discussion M. Lejeune pointed out some of the fallacies in such arguments.

Schaper (A.) Zur Frage der Existenzberechtigung der Bogenfurchen am Gehirn menschlicher Embryonen. (Verh. d. anat. Ges., Jena, 1904, 35-37, 5 figs.) S. produces evidence to confirm the views of Hochstetter (q. v.).

Schwaebli (R.) L'alchimie en 1904. (Rev. Scientif., Paris, 1904, 5^e s., II, 396-398.) Notes on modern alchemists, their claims and alleged performances. There are those who pore over the old texts and the so-called "unitary chemists." Likewise those stand between the two like the Society of Alchemists of France, with its organ *Rosa Alchemica*. M. Schwaebli has published a book entitled *Commentaires alchimiques*.

Shaw (G. W.) Mythopoeic erudition. (Open Ct., Chicago, 1904, XVIII, 687-689.) Author argues against resolving the stories of the Trojan war, Samson, William Tell, etc., into solar myths. See *Carus* (P.).

Steizi (G.) Intorno alla struttura dell'ipofisi nei vertebrati. (A. d. Accad. Sci. Ven.-Trent.-Isti., Padova, 1904, N. S., I, 70-141, 9 figs.) Résumés literature of subject,—bibliography of 49 titles. The *hypophysis cerebri* or pituitary gland is interesting by reason of the so-called chromophile and chromophobic cells, the existence of the two portions of the glandular lobe and the way of defluxion of the secretion. These questions Dr S. discusses in detail.

Stevenson (C.) The tournament and the joust. (Proc. Num. and Antiq. Soc. of Phila., 1902-1903 [1904], 145-172, 5 pl.) Treats of name, method of holding, arms and armor, etc. Decadence of tournament and joust dates from middle of 16th century,—death of Henry II in famous joust with Comte de Montgomeri. They came into existence with the Middle Ages.

Stratz (C. H.) De phylogenetische beteekenis van het mamma-organ. (Hdign. v. d. Nederl. Anthr. Ver., Den Haag, 1904, I, 81-82.) Dr S. distinguishes four forms of mammae, the *mamma infantilis*, *areolomammia*, *mamma areolata*, *mamma papillata*,—the third is "primitive" and the fourth "progressive," the one characterizing the negro, the other the white races. Further details are given in Dr S.'s *Die Naturgeschichte des Menschen* (Stuttgart, 1904).

Thomas (N. W.) Der Internationale Katalog der naturwissenschaftlichen Literatur. Abteilung P: Physische Anthropologie. (Globus, Braunschwg., 1904, LXXXVI, 185-187.) Critique of the section on physical anthropology of the *International Catalogue of Scientific Literature*. T. advocates an annual author bibliography.

Vierkandt (A.) Der Mimus. (Ibid., 1904, LXXXV, 356-358.) Critical résumé of Hermann Reich's *Der Mimus. Ein literar-entwicklungsgeschichtlicher Versuch*, Bd. I. Erster u. Zweiter Tb. (Berlin, 1903), devoted to the study of the history and evolution of the kind of poetry designated by the classical term *mimus*. Vierkandt does not quite approve Reich's derivative of the Greek *mimos* from a certain species of older religious representations. The influence of the *mimos* is seen in the "fool" of Shakespeare, the clown of the circus, etc.

Ward (D. J. H.) First yearly meeting of the Iowa Anthropological Association. (Iowa J. of Hist. & Pol., Iowa City, 1904, II, 342-368.) Résumés proceedings and papers read by Messrs Wilder (Physiography), Nutting (Biology), Fairbanks (Archeology), Shimek (Loess), Paurmann (Davenport Academy), Flom (Philology), Loos (Sociology), Bolton (Education), Shambaugh (History), McGee (Human Progress), on various aspects of anthropology.

EUROPE

Annandale (N.) The survival of primitive implements, materials and methods in the Faroes and south Iceland. (J. Anthr. Inst., Lond., 1903, XXXIII, 246-258, 1 pl.) Treats of objects of stone, bone and skin (hammers, pounders, sinkers for fishing-lines, hand-querns, weights and whorls, stone lamps, — in use comparatively recently, — toys and implements from bones of whales, bone-skates, pins, needles, fish-carriers, bone-sinkers, weaver's sword, skin shoes, floats, puffin-wing brooms; skin-windows, — now obsolete), baskets and creels. The resemblance between these baskets and certain clay vessels is very striking.

Bates (W. N.) Scenes from the *Æthiopis* on a black-figured amphora. (Trans. Dept. Arch. Univ. of Penn., Phila., 1904, I, 45-50, 2 pl.) Describes fragments of Greek vases from Orvieto in ancient Etruria on which are represented "two of the most important events described in the *Æthiopis*, namely, the death of Antilochus and the death of Achilles." The *Æthiopis*, continuation of the *Iliad*, was the work of Arctinus of Miletus.

Baudouin (M.) L'influence du mariachinage sur les formes de natalité. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 80-87.) From a statistical study of the birth and marriage data of the de Mont region, Dr B. concludes that the custom of "mariachinage" or pre-marriage sexual relations has a more moralizing effect than at first sight would be granted, — although $\frac{1}{5}$ or $\frac{1}{4}$ of the young women marry *encontré*, for it overbalances the illegitimate births. It also seems to favor marriage and does not reduce the birth-rate. The author considers that "so poetic and fecund a custom" adds

some romance to the acts necessary for the perpetuation of the species.

— Les menhirs satellites des mégalithes funéraires. (Ibid., 139-142.) Dr B. argues that among menhirs properly so-called, exclusive of alignments and cromlechs, are to be distinguished isolated large menhirs or "indicator menhirs at a distance," and the lesser menhirs close to funerary megaliths, which when very near and regularly disposed may be called satellites of the megalithic sepulture, and they may indicate that the dolmen or covered way was formerly hidden from the eye. The "pierre folle" of Plessis and the "covered way" of the Landes are cited.

Béraud (G.) Galet-polissoirs. (Ibid., 153-154.) Author has found 135 of these pebbles at 11 "stations." They were probably used to make the grooves of the polishers for use on stone axes.

von Binzer (C. A. L.) Die Römerwege zwischen der Unterveser und der Niederelbe und die mutmasslichen Ankerplätze des Tiberius im Jahre 5 n. Chr. (Globus, Brmschw., 1904, LXXXVI, 37-41.) The place of anchoring of Tiberius must have been in the region of the lake near Bederkesa, then connected with the Elbe or the mouth of the Oste.

Boyd (Harriet A.) Gournia. — Report of the American Exploration Society's Excavations at Gournia, Crete, 1901-1903. (Trans. Dept. Arch., Univ. of Penn., Phila., 1904, I, 7-44, 1 pl., 21 figs., map.) Treats of Turkish, Venetian, Greco-Roman, Iron age (1700-1500 B. C.), Bronze age (before 1100 B. C.) ruins and remains, literary testimony on the isthmus, the town and its buildings, stone tools, bronze tools and weapons, stone vases, lamps, basins, pottery (painted and unpainted), modeling, engraving, writing, etc. Gournia is thought to be one of the 90 cities mentioned by Homer.

Burns (C. M.) A few impressions of Segesta and Selinus. (Proc. Num. & Antiq. Soc. of Phila., 1902-1903 [1904], 185-186, 2 pl.) Describes ruins as seen in 1902-1903. At Selinunte are the ruins of 7 temples, some of immense proportions.

Carus (P.) Russian icons. (Open Ct. Chicago, 1904, XVIII, 449-453, 9 figs.) Describes in particular the famous fold-

ing icon of St Petersburg and reproduces this and others.

Cooley (A. S.) The Macedonian tomb and the battlefield of Cheroneia. (Rec. of Past, Wash., 1904, III, 131-143, 7 figs.) Résumés the investigations of Dr G. Soteriades. The large funeral mound is identified with the tomb of the Macedonians mentioned by Plutarch. The colossal stone lion, marking the grave of the Thebans, blown up during the Greek Revolution, is now being restored.

Crépin (G.) et Laville (A.) Découverte et fouille du dolmen de Mériel. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 117-118.) Notes on discovery in December, 1903, of the Mériel dolmen and the objects (pottery fragments, flint implements, stone and bone ornaments, flint arrowheads and axes) found. The human bones include a trepanned skull.

Crittenden (A. R.) The topography and monuments of ancient Rome. (Rec. of Past, Wash., 1904, III, 310-314, 5 figs.) Résumés Professor S. B. Platner's *Topography and Monuments of Ancient Rome* (Boston, 1904).

Dana (C. E.) The English coronation, its service and its history. (Proc. Num. and Antiq. Soc. of Phila., 1902-1903 [1904], 99-133.) Contains interesting historical notes on ceremony, etiquette, dress and ornament, the crown, anointment, throne, King's champion, etc.

DeLoe (B. A.) Discovery of an ancient wooden structure in the excavations of Port Zeebrugge. (Rec. of Past, Wash., 1904, III, 344-346, 2 figs.) Translated from *Bull. d. Mus. R. des Arts Decor. et Industr.*, Brussels. Description of what may have been the frame or ground-work of an artificial island in a marsh. The structure (there is no trace of metal) probably dates from the Roman period.

Delore (M.) Les Romains et les Francs dans les montagnes du centre de la Gaule au sein de l'Arvernien. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 104-109.) The Arvernien region had special attractions for the Romans,—around St. Flour 18 sites indicating the presence of their civilization have been discovered. The author describes in some detail the finds at the *villa* of Mons, and also some Frankish weapons found in this region.

Dumas (U.) La station des Châtaigniers-Baron, Gard. (Ibid., 157-158.) This

neolithic "station" is characterized by the diminutive size of the stone implements found. The pottery (rare) has no spar in the paste. The "station" may be due to a nomadic people with early neolithic culture.

— La grotte Nicolas, commune de Sainte Anastaise, Gard. (Ibid., 158-159.) Brief description of a funeral grotto of the transitional period between the stone age and the age of the metals and the remains of human bones, stone implements, pottery, terra-cotta statuette of a nude man, perhaps the earliest representation of the human figure in this material known.

Gebhardt (A.) Die Rentiere auf Island. (Globus, Braunsch., 1904, LXXXVI, 261-263.) Gives, after Th. Thoroddsen, the history of the reindeer in Iceland, where it is not native as is often stated, but was introduced in 1771 from Norway. The polar-fox is also not indigenous, but an accidental immigrant (originally brought on drift ice).

Hoffmann-Krayer (E.) Knabenschaften und Volksjustiz in der Schweiz. (Schw. Arch. f. Volk., Zürich, 1904, VIII, 81-99, 161-178.) An interesting and valuable study of societies of the youth and folk-justice in Switzerland. The names of these organizations and their officers, their duties and activities, history and character in the various cantons, are discussed. They busied themselves with wooing and marriage, feasts and festivals, took over the control of certain social, religious, political, military events, etc. They were generally no unruly mob of chance-met youths, but performed distinctly useful service in the community. Dr H.-K. emphasizes their religiousness and sexual morality,—their decrees were directed notably against godlessness, cursing and swearing, breaking the divine commands, wrong conduct on Sundays, holidays, fast days, etc., immorality. In Switzerland, as the occurrence of the *charivari* shows, the amenities of married life came under the eye of folk-justice. The unofficial character of these organizations made it easy for some of them to become mere parodies of official institutions. Their three chief characters were sacral, judicial, military. Beneath all the author sees "belief in the holiness and purifying power of youth."

— Volkmedizinisches. (Schw. Arch. f. Volksk., Zürich, 1904, VIII, 141-153.) Gives numerous items of folk-medicine received in answer to *questionnaire* recently sent out.

Jones (H. S.) Recent discoveries in Rome. (Am. Antiq., Chicago, 1904, XXVI, 236-239.) Notes on excavations in the Forum, the Lacus Curtius, etc. Reprinted from the London *Times*.

K. (W.) Kunstgewerbliche Frauenarbeit in den Ostalpen und Nachbargebieten. (Globus, Brunschwg., 1904, LXXXVI, 93-95.) Treats of the work of women and girls (house-industry especially) in the production of embroidery, carpets, lace (blond, etc.). Lace is made of yarn, silk, silver, gold, etc., in more than 500 patterns at the lace-school at Idria. The Bosnian women are adepts in making oriental carpets. Appenzell embroidery is of great reputation.

Knowles (W. J.) Stone axe factories near Cushendall, County Antrim. (J. Anthr. Inst. Lond., 1903, XXXIII, 360-366, 8 pl.) Describes sites in Ballymon Glen, where thousands of flakes, etc., exist and from which 800 whole axes were obtained. The most favored material used has not been found *in situ* in the district. The boulders, in various states of flaking, indicate the process of manufacture. These implements probably belong to an early stage of the neolithic period, — some have been found in the clay below the peat.

Kopp (A.) Handschrift der Trierer Stadtbibliothek vom Jahre 1744. (Hess. Bl. f. Volksk., Leipzig, 1904, III, 16-54.) Describes, with abundant citation of material, a German song-book in Ms. in the public library of Trier, dating from 1744, and probably belonging originally to a pious Catholic family of Cologne. A number of French pieces are included, — also a few drinking songs and some folk-lyrics.

Kraitschek (G.) Die Menschenrassen Europas. (Polit.-Anthr. Rev., Berlin, 1903-1904, 15-45, 533-547, 684-704.) Résumés data on the races of Europe, their divisions, physical characters, etc. Dr K. recognizes three chief European races: Nordic (light, tall, dolichocephalic) radiating from Scandinavian; south European (dark, short, dolichocephalic); Mediterranean, kin with certain

North African and West Asiatic people, brachycephalic [Mongolian, Celtic or Alpine, — both broad-faced; Sarmatian, long-faced] originating from central Asia.

Krause (E. L.) Einige neuere Ergebnisse der skandinavischen Quartärforschung. (Globus, Brunschwg., 1904, LXXXV, 381-382.) Reviews recent literature on the quaternary period in Sweden and Norway. The middens of Schonen must be older than the remains discovered on the island of Sven and described by Andersson in 1902.

Manouvrier (L.) Incisions, cautérisations et trépanations crâniennes de l'époque néolithique. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 67-73, 1 fig.) Dr M. argues, as Dr Loydieu did 30 years ago, that the fine thin pieces of flint, quartz, etc., belonging to the neolithic period, were tools of the primitive "surgeon" for use in trepanning, etc. A trepanned skull from the dolmen of Champignolles is described with some detail. (See page 17.)

— Note sur les ossements humains du dolmen du terrier de Cabut, Gironde. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 73-76.) Describes, with chief measurements, a skull (index 81.8), several mandibles, femurs, etc., from a dolmen of the Morgian epoch at Cabut, much damaged by agricultural operations. One of the astragali found has "an almost simian form."

— Sur l'aspect négroïde de quelques crânes préhistoriques trouvés en France. (Ibid., 119-124, 1 fig.) Dr M. argues that the seemingly negroid aspect of the Mentone crania "is due to morphologic characters whose occurrence together in the same skull is certainly rare in the white race," but does not require the assumption of negro ancestry. They are *female* skulls, which explains some of their peculiar features. The *facies mongoloides* said to be frequent in certain parts of Brittany becomes, when associated with dolichocephaly, a *facies negroides*. The author discusses also the skull from the dolmen of Mériel. See *Crispin et Laville*.

— Crânes de vieillards de l'époque néolithique en France. (Ibid., 101-104, 2 figs.) Describes two neolithic skulls, from the dolmen of Pocancy and a grotto in Hérault, both of which bear marks of advanced old age. The chief signs of

old age are atrophy of the alveolar portion of the maxillary and the more or less symmetrical sinking of the external table of the parietals, due to atrophy of the spongy tissue of the center. These skulls are interesting in view of the fact that many theorists have not admitted the possibility of the attainment of high old age among the savage ancestors of the present races of man.

- Mayr (A.)** Die vorgeschichtlichen Denkmäler von Sardinien. (Globus, Brunschwig, 1904, LXXXVI, 133-137.) Résumés present knowledge of Sardinian antiquities — based chiefly on Pinna's *Monumenti primitivi della Sardegna* (Roma, 1901). According to P., with whom M. agrees, the *nuraghi* are "graves" — there exist also the "giants' graves" and the *domus de jana*, or rock graves, besides natural caves. The culture of the *nuraghi*, giants' graves, rock graves, etc., suggests a close connection between Sardinia, the Balearic islands, the islands between Sicily and Africa and the southern part of Spain and France during the bronze period. There is a unity — a sort of "western Mediterranean culture area" indicated. Influences of older Aegean culture are present in this region — also Mycenaean and pre-Mycenaean both in implements and architecture. The *nuraghi* people were probably of African origin. The specific creators of old Sardinian culture were the Jolai of the ancient Roman writers.

- Mehlis (C.)** Die Nekropole im Bentzenlock bei Neustadt a. d. H. (Ibid., 1904, LXXXV, 388.) Brief account of the contents of 6 tumuli examined in 1904. The neolithic, Hallstatt, La Tène, and Roman periods are all represented — the last two subsequent interments.

- Offord (J.)** Roman discoveries in Great Britain. (Am. Antiq., Chicago, 1904, XXVI, 17-23.) Treats of discoveries of 1903: altars and tablets from Newcastle-upon-Tyne, inscriptions from military station at Brough (Derbyshire) and city of Venta Silurum (Monmouthshire), excavations at Silchester, etc. Frequent references occur in the inscriptions to individuals of German origin among the Roman soldiery in Britain. Some of the deities cited, e. g., *Mogou*, may also be German.

— A prehistoric Scandinavian sun-

chariot. (Ibid., 234-235, 1 fig.) Describes the sun-chariot (dating from ca. 1000 B. C.) found at Trundholm. The author seeks Babylonian or Sumerian connections.

- P.** Die Karelrier im russischen Gouvernement Twer. (Globus, Brunschwig, 1904, LXXXVI, 188-189.) Brief résumé of data in D. Richter's article on the Karelrians of Twer in the *Journal der finnisch-estnischen Gesellschaft in Hel-singfors*, 1904. Folk-literature and folk-songs seem to have vanished — even the recollection of their original home. Russian influence is marked and racial assimilation has increased since the building of schools and the coming of railroads, etc. In the family there is "no suppression of personality." The proportion of males to females is 100 : 110.6.

- Reindl (J.)** Die ehemaligen Weinkulturen in Südbayern. (Ibid., 1904, LXXXV, 384-387.) Discusses the extent of the vineyards in South Bavaria, the quality of the wine, and the cause of the decline of wine culture (the increasing importation of foreign wines since the 14th century). The vine on the gables of houses and barns, the frequent occurrence of *Wien* in place-names, etc., indicate the influence of this industry since its introductions by the Romans.

- Rossat (A.)** Les paniers: poème patois. (Schw. Arch. f. Volksk., Zürich, 1904, VIII, 116-140, 196-219.) Gives dialect versions and literary French texts of Raspeller's poem *Les Paniers* (1849), with critical notes on the various versions.

- Schöner (G.)** Erinnerungen und Ueber-lebsel vergangener Zeiten aus dem Dorfe Eschenrod im Vogelsberg. (Hess. Bl. f. Volksk., Leipzig, 1904, III, 54-63.) Reproduces from the narration of an old man 25 items of beliefs, customs, folk-thought, etc., from the village of Eschenrod.

- Stückelberg (E. A.)** Die Verehrung des h. Morand Mon. (Schw. Arch. f. Volksk., Zürich, 1904, VIII, 220-223, 1 fig.) Gives account of the development of the worship of the late medieval St. Morandus of Bâle, limited to the Sandgau.

- Tedeschi (E. E.)** Contributo alla cranio-logia dei popoli alpini. (A. d. Accad. Sci. Ven.-Trent.-Istr., Padova, 1904,

- N. S., 1, 57-69.) Gives measurements and descriptions of 50 male and 50 female skulls from the ossuary of S. Pietro in the commune of Zuglio. Homogeneity in the distribution of the cephalic indexes in both sexes is marked. The female skulls are more rectangular than the male. There are features which suggest artificial deformation rather than ethnic characters.
- Tetzner (F.)** Zur Volkskunde der Serben. (Globus, Brnschw., 1904, LXXXVI, 85-91, 12 figs.) Treats of name, dress (particularly bridal), houses, furniture and implements (domestic and agricultural), folk-poetry (hero-song, lyric-poems, etc.). Wooden vessels are still much in use; noteworthy are the east Servian calabashes. The Servian ox-yoke has some peculiarities, likewise the fire-tongs. The "puberty cane" also deserves mention, although some deny its significance.
- Tobler (A.)** Der Volkstanz im Appenzellerlande. (Schw. Arch. f. Volksk., Zürich, 1904, VIII, 100-115, 178-195.) Consists of the music for some 17 Appenzell folk-dances.
- Viré (A.)** Une station solutréenne. Nouvelle grotte et abri sous roche de Lacave, Lot. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., v, 63-66.) Describes cave and rock-shelter with remains discovered (flints, bone implements and ornaments, shells, kitchen debris, the last very numerous), of the Solutrean epoch (paleolithic).
- Walker (F. I.)** The story of Pompeii. (Am. Antiq., Chicago, 1904, XXVI, 169-176.) Résumés history and describes excavations and results, as revealing the nature of the city and its inhabitants.
- Weinberg (R.)** Prähistorische Feuersteine und der neolithische Mensch in Baltisch-Russland. (Globus, Brnschw., 1904, LXXXVI, 231-235, 21 figs.) The East Baltic region offers comparatively few worked flints, — a dozen or so is the largest find (near Swineck on Lake Burtneck). Implements combining flints and bone (harpoons) occur, and some of the flints are of fine workmanship and belong probably with the Rügen-Pomeranian stone-age culture. The Woisek skeleton belongs to a decidedly dolicocephalic type (index 67) — Pomeranian and also Ladoga lake man may be related.
- Der syrijsche Pam-Kultus. (Ibid., 259-261.) Describes the Syrian folk-figure of Pam, the highest conception of this people of the governments of Wologda and Archangelsk in European Russia. Pam incarnates the spirit striving after light, the struggle of the soul, the ideal of humanity, the highest aims of man, his boldest hopes, his deepest emotions — he stands high above all that is small and commonplace in the life and activities of men. Pam is perhaps the same as the half-god of the Ugro-Finnish peoples.
- Wilser (L.)** Die Menschenrassen Europas, nach Kratschek. (Ibid., 45-46.) Résumés the article of Dr G. Kratschek on European races in the *Politisch-anthropologische Revue*, vols. 1-11. Dr W. agrees with K. that the dolichocephalic race of Europe is the oldest, the brachycephalic a later immigrant from the East. Also as to the mixture of Finnish peoples. See *Kratschek (G.)*
- Winter (A. C.)** Totenklagen der Russen. (Ibid., 1904, LXXXV, 388-389.) Gives German texts of three "death-wails" from Twer, Rāsan and Černigov. In Twer they are called wōpi, in Rāsan kriki, in Jaroslav pričōty, in Černigov Zaplāčki. The Twer "wail" consists of 140 lines containing many repetitions.
- Wright (G. F.)** The bone cave of San Ciro, Sicily. (Rec. of Past, Wash., 1904, III, 216-219, 2 figs.) Brief notes on the investigation of this cave in 1830. Immense quantities of bones (chiefly of hippopotami and very fresh), some of which were commercially exploited, were found. Prestwich, the geologist, thought a land subsidence, in times when the hippopotami lived in this part of the world, drove them into the cave for refuge.
- Zaborowski (S.)** La céréale protoaryenne. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., v, 87-99.) Treats of limits of the proto-Aryan period, common terms relating to the employment of stone implements (words for knife, sword, razor, arrow, whetstone, etc.), agriculture in the European and Indo-Iranian groups (words for plow, sickle, reap, etc. — the European knowledge of agriculture was earlier than the Indo-Iranian), the late appearance of agriculture (of Teutonic origin) among the

Finns, the proto-Aryan plow, the plants cultivated by the proto-Aryans. Z. thinks that the proto-Aryans long confined themselves to gathering wild grains — first of the cereals was barley, and the oldest names signify not special cereals but simply the grains of the wild plant.

AFRICA

Borchard (L.) Excavations of the German Oriental Society near Abusir. (Rec. of Past, Wash., 1904, III, 195-212, 15 figs.) Gives account of excavations of winters of 1901-1902 and 1902-1903. Describes the temple of King Ne-rooser-re; the cemetery surrounding "offers traces of all periods of Egyptian civilization." Three types of mastabas were found.

Brower (C. DeW.) Philæ. (Ibid., 259-268, 6 figs.) Historical and descriptive account of Philæ and its famous temples, now threatened with possible submersion by the erection of the great Assuan dam. The author suggests that the new stone bulwark is really more beautiful than the old ruined temples because more useful, now that the day of the Fellaheen has come.

Curtis (W. E.) Ancient cities of Egypt. (Am. Antiq., Chicago, 1904, XXVI, 77-84.) These notes, originally contributed to the Chicago *Record-Herald*, treat of Alexandria, Cairo and its university, stone towers, Memphis, mastaba of Ti, rock-hewn tombs, etc.

David (J.) Notizen über die Pygmäen des Ituriwaldes. (Globus, Brnschw., 1904, LXXXVI, 193-198.) Treats of physical characters, dwellings, implements and utensils (few and pots rare), tobacco (obtained from taller negroes and much used by pygmies), hunting and other activities (traps and pits), counting, language (brief vocabulary including numerals and proper names of men and women). No evidences of degeneration or abnormality exist and the Wambutti have been for centuries the primitive forest folk they are now. There is no symbiosis with the surrounding agricultural peoples, as, e. g., at Mawambi. Dr D. describes (p. 197) a new-born child. Their uncleanness, dread of water, ignorance of boiling flesh, etc., are noted. The author, from his personal experience, credits these pygmies with great skill in hunting and tracking animals.

von Doering (Hptm.) Ueber die Herstellung von Seife in Togo. (Ibid., 282-283.) Describes the manufacture of soap by the negroes of Togo-land. It is made from the ashes of the *kongulu* palm and some other trees and palm-seed oil.

Gewerbe (Das) in Ruanda. (Ibid., 82-83.) Résumé of the article of Dr R. Kandt. See *American Anthropologist*, 1904, vol. VI, N. 5, 731.

Hobley (C. W.) British East Africa: Anthropological studies in Kavirondo and Nandi. (J. Anthr. Inst. Lond., 1903, XXXIII, 325-359, 3 pl. 8 figs.) Treats of legends of the origin of the Ja-Luo race and their genealogy, genealogy of the Awa-Wanga, animal-stories of the Ama-Wanga, ghost beliefs of the Ithako, omens, ancestor-worship, charms (a list of the components of the magic necklace of a chief is given at page 345), totems (list given), rain-making, cult of the *nika* (special mark of married woman), "nika" operation on girls among the Guasangishu and Nandi, naming of children, tattooing and tribal marks, numeral proportion of sexes (table given; in Bantu tribes male births exceed female, in Nilotic vice versa), the *itira* custom (vendetta), miscellaneous customs and beliefs, laws of succession among the Ja-Luo (chiefship goes to eldest son of wife whom father married first), etc. Neither the Ja-Luo nor the Nandi have such animal-love as the Ama-Wanga. The Ithako consider ghosts much larger than life-size. Cremation of a corpse and re-intering the ashes "lays" a ghost. Charms are legion. Artificial deflowering of dead virgins occurs among the Ama-Wanga.

Hutter (F.) Völkergruppierung in Kamerun. (Globus, Brnschw., 1904, LXXXVI, 1-5, map.) The distribution-map suggests an ethnic chaos. The greatest sections are the Bantu and the Sudan-Negroes, the third chief element consisting of intruding non-negro peoples. In German Bornu are the Kanuri, Makari, Musgu, Marghi, besides tribes of Arab lineage (Shôa), some Fula, immigrants from Baghirmi and Wadai, from Dar Runga and Dongola. In Adamua are Batta tribes, Fali, Musgu, Kanuri, Shôa, Mbum, Bantu, Baia, Tikar, Haussa, etc. In the primitive forests of the west and south dwell the Fans.

The Fula have followed often the ruins of Hausa "states." Mixture of races has long been taking place here.

Kandt (R.) Ein Marsch am Ostufer des Kiwu. (*Ibid.*, 209-214, 245-249, 11 figs.) Contains notes on the Watussi (higher classes), Wahutu (Bantu common people), etc. A pariah-folk, the pygmy Batwa, is scattered over the country. The east shore of Lake Kiwu belongs to Ruanda.

Klose (H.) Produktion und Handel Togos. (*Ibid.*, 69-75, 145-149.) Notes on exploitation of oil-palm and its products, caoutchouc, *shi*-palm (*shi*-butter), cocoa-palm (copra), kola-nut, earth-nut, cassava, maize, cotton, caoutchouc, cacao, etc. The spread of such American plants as cassava, maize, and cacao in Africa is remarkable. The oil-palm furnishes oil, sauce, salve, hair-dressing, light, building material, fish-traps, food, drink, etc.

Lessner (Oberlin.) Die Balue oder Rumpiberge und ihre Bewohner. (*Ibid.*, 273-278, 337-344, 18 figs.) Contains notes (pp. 277-278) on the Balue, Bakundu, Ngolo, and Batanga, all of Bantu stock. Several albinos (who enjoy no special rôle) were met with. Although these four peoples speak the same language, yet the words for several things (including *father*, *nose*, *dog*,) are not the same in all of them. Tattooing, clothing, and ornaments (comparatively little), objects used in dance (very numerous and manifold), weapons, houses and villages, "palaver"-houses, furniture and utensils, land-culture, domestic animals, etc., are discussed. Tobacco is much used.

New English province (The) of Nigeria. (*Nat. Geogr. Mag.*, Wash., 1904, xv, 433-442, 9 figs.) Contains notes on the city of Kano and the people of the province, chiefly Hausas.

Offord (J.) Discoveries in Egypt. (*Am. Antiq.*, Chicago, 1904, xxvi, 73-77.) Discusses the inscription of the "Stele of Palermo" (5th or 6th dynasty, relating to Heliopolis), the new papyrus (ca. 410 B. C.) from Luxor, and two new cuneiform tablets from Tel-el Amarna.

— Monuments of primitive Pharaohs. (*Ibid.*, 240-242.) Author thinks that evidence shows that these early monarch,

were not petty princes, but ruled over upper and lower Egypt. It also proves the accuracy of Manetho's lists and the increasing antiquity of Egyptian culture.

Parish von Senftenburg (Freih. O.) Zwei Reisen durch Ruanda 1902 bis 1903. (*Globus*, Brnschw., 1904, LXXXVI, 5-13, 73-79, 13 figs., map.) Based on data of Lieut. von Parish. Contains ethnographic notes on the Watusi (a tall negro people), Mssinga, the ruler of Ruanda, the dwarf executioners of Mssinga (Bagiga or Watwa). The Watwa of the volcanic region are said to be cannibals. The Watwa and Watusi (the ruling element in Ruanda) get along well together.

Pittard (M.) Sur la monnaie du Ba-Souto. (*Bull. Soc. d'Anthr. de Paris*, 1904, v^e s., v, 142-143.) Describes the *lire* or copper money of the Basuto from a specimen in the Geneva Museum and one presented to the Anthropological Society.

Sg. Die Festlegung der Westgrenze von Togo. (*Globus*, Brnschw., 1904, LXXXVI, 283-286, map.) Contains brief notes on the Moab, Guan tribes, Nawuri, Shanboron, Nanumba (becoming more and more Mohammedanized), Dagbamba, Tjanse, Kusa, Konkomba, Chokosi, etc.

Singer (H.) Eine Begräbnishöhle auf der Insel Bussira, Victoria Nyansa. (*Ibid.*, 80-82, 1 fig.) Notes on a photograph by the late Lieut. von Parish, representing a grave on the island of Bussira, and on the funeral customs of the Wasiba. A sort of strata-deposition of corpses is practised.

— Hauptmann Merkers Monographie über die Massai. (*Ibid.*, 264-268, 10 figs.) Résumé Capt. M. Merker's *Die Masai. Ethnographische Monographie eines ostafrikanischen Semitenvolkes* (Berlin, 1904). On anthropological, ethnographic and ethnologic grounds (but particularly from study of their myths) M. holds that the Masai are of Semitic lineage, but he probably places too much weight on certain legends. The beginning of Masai immigration he sets at ca. 5000 B. C. Cattle are of great importance for the Masai, but in consequence of the great cattle-plague of some 14-15 years ago, they are in process of change from cattle-nomads to agricul-

tourists. To the main part of the book are added ethnobotanical notes and anthropological descriptions of 18 men and 43 women. At pages 286-287 of *Globus* is given the creation myth of the Masai.

Sommerville (M.) Amulets and talismans from Senegal. (Proc. Num. and Antiq. Soc. of Phila., 1902-1903 [1904], 53, 2 pl.) Brief note and photographs of 6 amulets from the Sahara, east of Senegal.

ASIA

Carus (P.) Stone-worship. (Open Ct., Chicago, 1904, XVIII, 45-52, 7 figs.) Treats of stone-worship, votive stones, etc., among the Phenicians.

— Pre-Christian crosses as symbols of chthonic deities. (Ibid., 285-290, 12 figs.) Author notes that the cross is found on tombs in Asia Minor and used in connection with chthonic deities, gods of the lower world, Hades, etc.

— The religion of proto-Semitism. (Ibid., 421-429.) Based on Prof. S. I. Curtiss' *Ursemitische Religion* (Leipzig, 1904), the improved German edition of the author's *Primitive Semitic Religion*, Chicago, 1902.

— Corea. (Ibid., 218-220, 2 figs.) Contains notes on coat-of-arms and *kwasi* or trigrams.

— The Rosetta stone. (Ibid., 531-536, 3 figs.) Describes the stone with cuts of the hieroglyphic, demotic, and Greek inscriptions.

— The spinning damsel. (Ibid., 568-569, 1 fig.) Brief account of an ancient bas-relief from Susa of a Semitic (?) maiden spinning, while a slave behind fans her.

— Naram-sin's stele. (Ibid., 563-567, 4 figs.) Describes the stele (now in the Louvre) of Naram-sin (ca. 3750 B. C.) found in the ruins of Susa by DeMorgan. The facial types of the Elamites are reproduced in outlines.

— Japanese leaders. (Ibid., 454-478, 21 figs.) Treats of the Mikado, the Empress, Oyama, Yamagata, Kodowa, Kuroki, Oku, Nodzu, Nogi, Ito, Yamamoto, Togo, Kamimura, Uriu, Hirose, Fukushima (author of patriotic poems as well as a general). Some of these notable represent the Japanese physical type (or types), others, apparently, do not.

Clement (E. W.) The Japanese floral calendar. (Ibid., 6-13, 107-112, 163-165, 213-217, 282-284, 351-354, 394-397, 499-501, 554-557, 615-617, 695-698, 723-731, 28 figs.) Interesting notes on the pine, plum, peach, cherry, wistaria, iris, morning-glory, lotus, *nana-kusa* ("seven grasses"), maple, chrysanthemum, camellia, the various month-flowers in poetry, art, etc. The Japanese love a flower as a flower. To them a bouquet is floral murder and the whole theory of Japanese flower arrangement "depends upon the 'language of line' rather than upon mass or color." The arrangement of flowers is an important item in woman's education.

Crabbe (J. J.) Japanese songs and folklore. (Ibid., 277-481.) According to the author "no other nation has so rich a treasury of folk-lore as the Japanese, or has such a wealth of myth and romance," and religion, myth, romance and history are inextricably intertwined. One of the most popular collections of songs and folk-lore is the *Hyak Nin Is'shin Mine No Kake-kashi*. The *Taketori Monogatari* was first issued about 1000 years ago. The Japanese variant of Rip van Winkle is given on page 279.

Doolittle (G. E.) Neglected archeological ruins in Coelestria. (Rec. of Past, Wash., 1904, III, 227-233, 12 figs.) Notes on the Libo aqueduct, the temple ruins of Keir Zebed, Shleefa Niha, the shrine near Kobb Elias, the Kamu' at Hermil (a monument of some hunting monarch, etc.). These ruins have been neglected because so overshadowed by "the titanic ruins of Baalbek." Coelestria was the home of Baal worship.

El-Howie (Ghosn.) Gezer foundation deposits and modern beliefs. (Ibid., 212-216.) Treats of foundation-sacrifices, ancient and modern, of this region in connection with the finding at Tell-el-Jezari (the Gezer of King Solomon) of jars containing bodies of infants, lamps and bowls, in the foundation of dwellings. This was probably to ward off the "evil eye."

— The Druze of Syria. (Amer. Antiq., Chicago, 1904, XXVI, 167-168.) Notes on beliefs, etc., of the Druzes concerning the origin of life, transmigration of souls, etc.

d'Enjoy (P.) De la législation chinoise à l'égard des congrégations religieuses.

- (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 154-157.) Gives the French version of the legislation of the old Chinese code relative to the Buddhist monks and monasteries, for comparison with recent edicts of the French Government concerning the Catholic "congregations."
- Foster** (J. W.) China. (Nat. Geogr. Mag., Wash., xv, 463-478, 2 maps.) Contains some notes on the character of the Chinese peoples.
- Gilbert** (O.) Babylons Gestirndienst. (Globus, Brnschw., 1904, LXXXVI, 225-231, 2 figs.) Treats of the stars in Babylonian mythology and religion, their symbolism and its interpretation, combinations of deities, double-heads, etc. The author holds that these emblems are all *per se* symbols of deities, which later became connected with and were transferred to certain chief stars and constellations. The stars were always subordinated to the gods and not vice versa.
- Goldziher** (I.) Orientalische Baulegende. (Ibid., 95-96.) Treats of the Persian legend of the building of the castle of Chawarnak by the Greek architect Sinnimar in the fifth century, the country palace of Shapur I. Connected with this legend was the astrologer's verdict that the King would lose his kingdom for a time and recover it only after "taking golden bread from an iron dish." The architect escapes the King's attempt to destroy him, by making himself wings and flying away. This suggests the classic tale of Dedalus.
- von Hahn** (C.) Neues über die Kurden. (Ibid., 31-32.) Résumés an address by A. A. Arkeljan before the Geographical Society of Tiflis. A. maintains that the Kurds are a very mixed race, compounded of Medes, Mongols, Tatars, Armenians, Turks, Arabs, etc., and not a somewhat pure Iranian people as is generally believed. They number altogether about 1,000,000, divided into some 100 "tribes," partly nomadic, partly half-nomadic. In religion they are strict Sunnites. Divorce is easy, hospitality a sacred duty, theft and robbery works of valor.
- Harper** (R. F.) Exploration and discovery in Babylonia. (Am. Antiq., Chicago, 1904, XXVI, 177-179.) Notes on the excavations at Bismya, where large ruins exist, from which rich results are expected.
- Hau** (K.) German excavations in Babylon, 1901 and 1902. (Rec. of Past, Wash., 1904, III, 166-183, 6 figs.) Describes the excavations of the "Kasr" mound and the remains discovered (clay sculptures, cylinders, glazed tiles, documents found in coffins, explorations of the temple, palace, fortifications, etc.). Among the finds are a new text of King Nabopolassar, a hymn to Marduk, etc.
- German excavations in Fara. (Ibid., 233-243, 6 figs., map.) Describes investigations of 1902-1903, at Fara and Abu Hatab. Résumé from official reports of the German Oriental Society.
- Hedin** (S.) De vetenskapliga resultaten af min sista resa. (Ymer, Stkhlm., 1904, XXIV, 237-258, maps.) Résumés scientific results of last journey in central Asia, 1899-1902, which are to appear in English in six volumes. Of great interest are the excavations in old Lobnor.
- Henderson** (A. E.) Survey of Cyzicus. (Rec. of Past, Wash., 1904, III, 355-364, 7 figs., map.) Describes situation and topography of the ruins of Cyzicus on the southern shore of the Sea of Marmora. The chief ruin is that of "the colossal temple of Hadrian." Others are the "theater," the "honey-maiden's palace," etc.
- Henning** (C. L.) Die sumerische Grundlage der vorderasiatischen Schöpfungsgeschichte. (Globus, Brnschw., 1904, LXXXVI, 46-49, 58-61, 1 fig.) Résumés the recent writings of Zimmern, Tiele, Radau, etc., particularly the last. Radau endeavors to prove the "Sumerian" origin of the Babylonian creation myth, added to Tiele's opinion ("by far the greater part of Babylonian religious ideas were already in the possession of the Sumerians").
- Hervey** (D. F. A.) Malay games. (J. Anthr. Inst., Lond., 1903, XXXIII, 284-304, 8 figs.) Describes briefly 63 games, chiefly children's, and mostly as played in Malacca. Some of these games resemble: Hide-and-seek, Tom Tiddler's Grouard, Oranges and Lemons, French and English, Marbles, Hopscotch, Pitch and Toss, etc.

Janke (A.) Das Schlachtfeld am Granicus. (Ibid., 129-133, 6 figs., map.) J. does not confirm Kiepert's opinion as to the old course of the Granicus, nor his site for the battle-field—the lowest course of the stream has most in its favor.

Joyce (T. A.) On the physical anthropology of the Oases of Khotan and Keriya. (J. Anthr. Inst., Lond., 1903, XXXIII, 305-324, 2 pl., tables.) Treats of cephalic nasal and facial indices, stature, thickness of lips, color of hair and eyes, etc., of 23 individuals from Khotan and 16 from Keriya measured by Dr M. A. Stein during his recent archeological investigation in Chinese Turkestan. The ethnic affinities of these people are discussed at some length. A Turki element has probably modified the Khotanese more than the Galchas, whom they much resemble, also a large Tibetan admixture. The Keriya have a larger Turki element and perhaps also some Mongol. Both Khotanese and Keriya are in the main "Aryan" and descendants of Lapouge's *Homo alpinus*.

Karsten (Paula) Abbaji Radscha und sein Schwager Tinnäll. (Globus, Brnschw., 1904, LXXXVI, 138-140.) Text in German of a Tamil legend of Tinnäll, a sort of Oriental Eulenspiegel.

Lauer (B.) Religiöse Toleranz in China. (Ibid., 1904, LXXXVI, 219-220.) Criticizes somewhat severely J. J. M. de Groot's recent book *Sectarianism and Religious Persecution in China* (2 vols., Amsterdam: 1903-1904), which Dr L. considers very partial and often inexact, and unjust in suppressing references to edicts of toleration, while careful to cite all intolerant acts. China never burned witches, had no inquisition, and never destroyed primitive civilizations. Any Chinese can change his religion at will. The growth of Buddhist clericalism and the "dead hand" of the church are dangers to China as similar conditions have been in Europe. China has tolerated Buddhists, Parsees, Manicheans, Mazdeans, Nestorians, Jews, and Mohammedans before Christians of to-day, and she can in no way be styled intolerant and religiously bigoted.

Lyle (T. H.) Notes on the ancient pottery kilns at Sawankalok, Siam. (J. Anthr. Inst., Lond., 1903, XXXIII, 238-245, 1 pl., 4 figs.) Gives results of ten days' investigation of the Sawankalok

kilns said to belong to the time of King Phra Roang (fifth or sixth century, A. D.), and the pottery found there. In an appended "note" (pages 244-245) Mr C. H. Read points out that Mr Lyle's material makes it certain that celadon ware was made in Siam in ancient times in considerable quantity and of a kind closely resembling the Chinese kind.

Meyer (A.) Tasch-Rabat. (Globus, Brnschw., 1904, LXXXVI, 41-45, 8 figs.) Résumés N. N. Pantusov's article published in 1902 on the ruins of Tasch-Rabat on the Russo-Chinese frontier (Kashgar caravan road), the remains of a Nestorian monastery—these monks were already in central Asia by the 7th century.

Myres (J. L.) The early pot-fabrics of Asia Minor. (J. Anthr. Inst., Lond., 1903, XXXIII, 367-400, 4 pl., 11 figs.) Discusses the black polished fabric of Hissarlik and its homologues,—Hissarlik is "the pier-head of Asia toward S. E. Europe, the *ête de pont* of Europe toward N. W. Asia"; the red-faced fabric of Hissarlik II and its homologues; the painted style of Cappadocia (distribution, fabrics, forms, ornament, post-Mycenaean and Mycenaean accretions, pre-Mycenaean geometrical residuum, residual Cappadocian style), a Syro-Cappadocian promise of ceramic art. The last the author argues from the decorative repertoire, the lavish use of red paint, the treatment of pot-surface, etc.—the white-ground fabric may be due to the local occurrence of *meerschauum*.

Niehus (H.) Die Zuckerfabrikation des indischen Bauern. (Globus, Brnschw., 1904, LXXXVI, 167-171, 7 figs.) Describes the making of sugar to-day by the Hindu peasantry. The old sugar-mill is not yet extinct.

Oppert (G.) Erinnerungen an Indien. (Ibid., 249-252.) Critique of Dr Paul Deussen's *Erinnerungen an Indien* (Kiel u. Leipzig, 1904). Dr O. considers the author rather unjust and unsympathetic toward the English, and instances a case in which an educated Brahman, an M. A., did not consider it wrong for a judge to receive money from the two parties to a cause, provided he returned his to the loser.

Ranke (H.) Business house of Murashu Sons of Nippur. (Rec. of Past, Wash.

1904, III, 364-374, 8 fgs.) *Résumés* Rev. A. T. Clay's *Business Documents of Murashu Sons of Nippur* (Phila., 1904), which treats of the cuneiform tablets (found at Nippur in 1893) recording the business transactions (464-424 B. C., and 423-405 B. C.) of a firm of that city. The number of Aramaic indorsements is notable.—Babylonian may have been at this late period in use only for literary and legal purposes, etc.

Regnault (J.) *L'hygiène chez les Chinois.* (Rev. Scientif., Paris, 1904, 5^e s., II, 582-585, 617-620, 651-655.) Treats of houses, clothing, food, drink, opium, tobacco (recent), physical exercise, sex, childhood, diseases (particularly small-pox), death. The "combination of natural science and general hygiene obscured by superstition," which passes for hygiene in China, is called *foung-choi*, "wind-water"; and the primitive hygienist is *foung-choi ti*.

von Reitzenstein (Frk.) *Die Silberinsel bei Chinkiang.* (Globus, Brunschwg., 1904, LXXXVI, 217-218, 1 fg., map.) Notes on the former summer seat of the Chinese imperial family, "Silver Island" in the Yang-tse-kiang. The pagoda of the near-by town of Chinkiang is the subject of legend.

Views of Lhasa. (Nat. Geogr. Mag., Wash., 1905, XVI, 27-38.) Selected from pictures taken by the Buriat Tsbikov and the Kalmuck Norzunov on their recent visit to Tibet.

Wright (F. B.) *Ancient caravan routes of China.* (Rec. of Past, Wash., 1904, III, 163-166, 5 fgs.) Brief notes on the Nankin-Turfan-Kashgar-Kuldja, and Pekin-Urga-Kiakhta-Baikal-Semipalatinsk caravan routes, the Chinese wall, etc.

INDONESIA, AUSTRALASIA, POLYNESIA

Bewohner (Die) der westlichen Torresstrasse-Inseln. (Globus, Brunschwg., 1904, LXXXVI, 177-181, 3 fgs.) *Résumés* the fifth volume of the Reports of the Anthropological Expedition to Torres Strait, *Sociology, Magic and Religion of the Western Islanders* (Cambridge, 1904). See page 132.

Dr Heinrich Schnee's Buch über den Bismarckarchipel. (Ibid., 152-156, 6 fgs.) *Résumés* Dr Schnee's *Bilder aus der*

Südsee (Berlin, 1904), which treats chiefly of ethnographic matters. The population is estimated (rather low) at 200,000, many losses taking place, especially of women and children, through vengeance-feuds. The peoples of the Matty and Durour islands, where culture is *sui generis*, Dr S. thinks, "possess a strain of Chinese or Japanese blood. His linguistic map, exclusive of some of the smaller islands, counts 9 stocks, from Papuan-like to Polynesian. The Manus are said to have a special word for 10,000. An inter-island system of signals by smoke and fire exists. The Bismarck Islanders are still one of the wildest peoples of the Pacific, and cannibalism is prevalent among many tribes. The pile-dwellings of Mok Mandrian, are interesting. The *duk-duh* of Gazelle peninsula is an importation from New Mecklenburg.

Fraser (J.) Some notes on the ethnology of the New Hebrides. (Am. Antiq., Chicago, 1904, XXVI, 28-31.) Discusses the origin of the blacks ("negroid, not negro") of New Hebrides, etc. Dr F., who locates the "original home of the undivided human family" in a "portion of High Asia, to the east of Mesopotamia," brings the negroes into Africa, Asia, and the Pacific islands by a wide dispersion. That the New Hebrides black is negroid is due to race intermixture—three streams of immigration into these islands (Malay the last).

Furness (H. F., 3d) The stone money of Uap, Western Carolines. (Trans. Dept. Arch., Univ. of Penn., Phila., 1904, I, 51-60, 4 fgs.) Describes the *fei* or stone money (in diameter from 1 to 12 feet) of Uap—quarried and shaped 400 miles away in the Pelew Is., and brought thence in canoes or rafts. No attribute of age or sacredness attaches to them and they have no practical or intrinsic value. Mr F. thinks "they present to the people a certain visible and tangible amount of labor expended in their production," are, in fact, primitive "certificates of deposit of work." Actual possession on one's own property is not necessary, indeed one at the bottom of the sea is said to have served just as well, its sinking having become common knowledge.

Hagen (B.) *Die Gajos auf Sumatra.* (Globus, Brunschwg., 1904, LXXXVI, 24-30, 13 fgs.) Physically the Gajos are

only "grown children,"—they have remained at the child-stage, and, with the Alas, represent "the old primitive or pre-Malay population of Sumatra more purely and less mixed than the Bataks." Their pandanus-weaving is noteworthy. The Bataks show a more advanced, less fluctuating culture than the Gajos; otherwise there are close resemblances between them. Close relations are suggested by Dr H. between the Toradjas and Toalas of Celebes, the Veddas and even some South American Indians. References are made to Dr S. Hurgonje's book *Het Gajoland en zijne bewoners* (Batavia, 1903).

Krämer (A.) Der Wert der Südseeckenlen für Völkerbeziehungen. (Ibid., 125-128, 3 figs.) Describes three clubs, — from Tutuila (Samoa), from Fiji, and from a grave at Truxillo, Peru, the last "thoroughly Tongan" in form and ornament. South Pacific clubs have been reported also from Alaska, etc. These are all probably incidental imports. The relations between the Spaniards in Peru and the Pacific islands might account for the Truxillo club.

Mathews (R. H.) Languages of the Kamilaroi and other aboriginal tribes of New South Wales. (J. Anthr. Inst., Lond., 1903, XXXIII, 259-283.) Gives grammatical sketches of the Kamilaroi and Darkifung languages, with notes on the Yuan (a mystic tongue used in the Bora ceremonies), the Wallarai, Wirrarairai and Guinbrai dialects, a vocabulary of some 900 words of the Kamilaroi and Thurrawal tongues. Appended are also notes on some native tribes of Victoria, S. Australia, and Queensland. The Kamilaroi has an inclusive and exclusive plural of the first personal pronouns.

— Language des Kurnu, tribu d'indigènes de la Nouvelle Galles du Sud. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 132-138.) Résumé of the grammar of the Kurnu, an Australian tribe on the river Darling in New South Wales. The pronouns have certain special features.

Meyer (A. B.) Alte Südseegegenstände in Amerika. (Globus, Brnswgw., 1904, LXXXVI, 202-203, 1 fig.) Brief notes on a "Samoan club" from Peru and a mask from Atacama, the South Pacific origin of which is probably post-Columbian. See *Krämer*.

— und **Richter (O.)** Das indonesische Webgestell. (Ibid., 172, 1 fig.) Gives a more exact figure of the Indonesian weaving-apparatus. See previous title.

— — — Ethnographische Miscellen II. (Abhandl. u. Ber. d. K. Zool. u. Anthr.-Ethn. Mus. zu Dresden, 1903, X, Nr. 6, viii + 102, 4 pl., 10 figs.) Treats of spirit-traps in the East Indian archipelago (1-7), brass shields from the Moluccas (8-15), brass breast-plate from the Moluccas (16-18), weaving-apparatus from the East Indies, particularly Gorontalo in North Celebes (19-67), *Kain Bintuan*, or cloths from the island of Bentenan; the bronze age in Celebes, rings, ornaments, weapons, — prehistoric and historic (72-91), the stone age in Celebes (92-102). The "soul-traps" are of two chief types, the "cage" and the "boat." The prototype of the brass-shields is to be found in the northern Moluccas, but they are probably to be traced back to the Spanish immigrants, though indigenous origin is not yet excluded by the evidence. The data do not allow one to dogmatize as to the origin of Malaysian weaving, — it may have been of indigenous origin or have spread later from the Asiatic continent through Hindu influences. The bronze remains seem to indicate the former existence of a prehistoric copper or bronze culture (last relics of primitive Malay bronze culture) more or less repressed by iron, etc., — this bronze culture was of Indian origin. Fetishistic use of stone implements is reported from various regions of Celebes; also "holy stone stocks." Stone axes (except those found by the Sarastins in the caves of the Toalas) have always served previously for amulets. Evidences of a former stone age are numerous in Celebes.

Parkinson (R.) Tätowierung der Mogemokinsulaner. (Globus, Brnswgw., 1904, LXXXVI, 15-17, 3 figs.) According to P. the statement of Kubary that the Yap tattooing is found on Mogemok ("Mackenzie Islands") is not quite correct, as there are notable differences as well as resemblances. The tattooing of the women, while simpler, is very characteristic. The Mogemok tattooing is in some respects like that of Nukumanu and Liueniua. The men's tattooing has considerable variation.

Schmidt (W.) Eine Papuasprache auf Neupommern. (Ibid., 79-80.) A close study of the Suka language of New Britain, according to Father S., makes it Papuan in character. Papuoid features occur in the personal pronoun, possessive, noun, adjective, numeral, and verb. The numeral system is of the two-root and partly of the quinary-vegesimal. S. expects to find other more or less Papuan languages farther south and also in the Solomon Islands.

Seidel (H.) Tobî in Westmirkonesien eine deutsche Insel mit acht Namen. (Ibid., 13-15.) The proper appellation of this many-named island seems to be "Tobî," the *Kadegube* of Kubary is of uncertain origin. The natives of Tobî in 1832 were fierce savages who enslaved and ill-treated shipwrecked sailors.

— Saipan, die Hauptinsel der deutschen Marianen. (Ibid., 278-282.) Contains some notes on the natives, the *mëtis* Chamorros and their history (the island was resettled in 1815, after the original inhabitants had been exterminated or transported by the Spaniards).

Tatè (M.) Rondelle percée en coquille, Nouvelles-Hebrides. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 115.) Brief description of a shell breast ornament of the native chiefs of the New Hebrides. Some similar objects found in the prehistoric "stations" of western Europe were probably worn in the same manner.

AMERICA

Barber (E. A.) The ceramic literature of the Pennsylvania Germans. (Proc. Num. and Antiq. Soc. of Phila., 1902-1903 [1904], 83-98, 6 fgs.) Under the heads of humor, superstitions, philosophy, questionable inscriptions, history, sentiment, eating, religion, the author gives English translations of numerous inscriptions on slip-decorated earthenware, mainly in the superb collection of the Pennsylvania Museum, which perpetuate proverbs and spoken folk-lore. This "curious phase of the potters art flourished in eastern Pennsylvania for nearly a century and a half"—its existence was an accidental discovery some 10 years ago.

Beauvois (E.) La Grande-Irland ou pays de blancs précolombiens du Nouveau-Monde. (J. Soc. d. Amér. de Paris, 1904,

N. S., 1, 189-229, map.) Historical and critical study of the evidence as to the existence and location of the *Heitramannaland* ("white man's land") of the Icelandic sagas. The author, who accepts the "evidence," places this region up the St. Lawrence "near modern Quebec, which may have been the capital of the Gaelic colony, as it was later of New France."

Boman (E.) Groupes de tumulus pré-hispaniques dans la vallée de Lerma, République Argentine. (L'Homme Préhist., Paris, 1904, 11. extr., pp. 1-11, 5 fgs.) Describes briefly the tumulus of Pucara de Lerma—group A contains 1047 tumuli, group B 158, and group C 463—in all 1268. The investigations of the author were made in 1901 and 1903. These tumuli appear to have been constructed and grouped according to lines previously adopted. They are undoubtedly of Indian (Calchaqui?) origin, but are not grave-mounds, nor hut-foundations; they may be garden-mounds or ceremonial seats.

Castells (F. De P.) The ruins of Indian Church in British Honduras. (Am. Antiq., Chicago, 1904, xxvi, 32-37, 2 fgs.) Describes "temple," etc., at Indian Church, a mahogany-cutter settlement in northern Belize—the Indian name *Ichiuchek* is said to be an imitation of the English, but more likely *vice versa*. These ruins may be of considerable importance for Mayan archeology. At the mouth of New river are the ruins of Santa Rita. Indian Church is on the way to Yaxhaa lake, where other ruins exist.

Charnay (D.) Les explorations de Téo-berth Maler. (J. Soc. d. Amér. de Paris, 1904, N. S., 1, 289-308, 2 fgs.) Critique of Maler's *Researches in the Usumaintla Valley, 1898-1900* (Memoirs Peab. Mus., vol. 11, 1901-1903). Charnay objects to the name Yaxchilan for "Lorillard City" and to certain spellings, the use of the term *acropolis* (there are no fortresses in "Anahuac"). He agrees with Maler that Palenque was in existence at the time of the Spanish conquest, but thinks that it was Tayasal where Cortez stopped in 1524. C. considers Copan the junction of two branches of the same civilization. The oldest monuments, according to C., date from the 11th century at Comalcalco; the latest (middle of 17th century) are at

Tayasal. The whole Yucatecan civilization is thus quite modern and "has nothing to do with the fossil horse and the Abbé Brasseur's geologic epochs."

Chithero (T.) Site of Mascouten rediscovered. (*Am. Antiq.*, Chicago, 1904, xxvi, 84-88.) Author argues that the Mascouten of Marquette (1673), Allouez, and other early explorers and writers, located by Dablon, in 1675, "in the midst of a terrestrial paradise," was situated in Seymour's valley at the head of Mud lake on the banks of the Running Swan, as evidenced by archeological remains and the ruins of fortifications, etc. The Mascoutens are identified with the *Gens du Feu* or "Fire Indians."

Dana (C. E.) Fitch and his predecessors in steam-navigation. (*Proc. Num. and Antiq. Soc. of Phila.*, 1902-1903 [1904], 47-82, 4 pl., 3 figs.) Interesting illustrated account of the beginning of the steamboat in America, Pennsylvania in particular.

Exploration of Jacob's Cavern. (*Rec. of Past, Wash.*, 1904, iii, 347-351, 2 figs.) Résumés account given by C. Peabody and W. K. Moorehead in *Bull. I. Dept. of Arch.*, *Phillips Academy* (1904). Jacob's cavern, in the limestone region of the Ozark uplift, contained traces of human occupancy (six burials, flint implements, thousands of flint flakes, split bones, etc.). The antiquity of man's residence is suggested by the type of implements, pictographs, etc. The cave man here was not the Osage Indian, nor the present tribes of the lower Mississippi.

Exploration (The) of the Potter Creek cave, California. (*Ibid.*, 275-282, 2 figs.) Résumé from the monograph of W. J. Sinclair (q. v.).

Fischer (H.) Eine altmexikanische Steinfigur. (*Globus*, Brnschw., 1904, lxxxv, 445-348, 5 figs.) Describes a nephritoid stone figure of Quetzalcoatl, the wind-god (partly represented as a skeleton), now in the Stuttgart Museum. In the various parts of the figure are many symbols. The back has the sun-disc, Tonatiuh, etc.

Förstemann (E.) Die Stela J. von Copan. (*Ibid.*, 361-363, 2 figs.) E. concludes that this stela, dating from 1496-1510, relates to the appearance on the coast of unknown foreigners. Comparison is suggested with the inscription of Piedras

Negras of about the same date, which resembles Stela J in many respects.

Gold plates and figures from Costa Rica. (*Rec. of Past, Wash.*, 1904, iii, 282-286, 4 figs.) Notes on a collection from ancient tombs in central Costa Rica, made by Don Juan Lau Don and now in the possession of Mr G. C. Disette, of Glenville, Ohio. The workmanship is fine and the carving delicate. The bells have little clappers of gold. The small animal figures are skilfully designed.

Gordon (G. B.) Chronological sequence in the Maya Ruins of Central America. (*Trans. Dept. Archeol.*, Univ. of Penn., 1904, i, 61-66.) From archeological evidence (decorative designs, conditions of formations of ruined buildings, in particular), Dr G. argues that "the earliest unquestioned date is one found at Copan. The movement from south to north (Copan to Chichen Itza) covered about three centuries. Maya culture developed in the region in which its remains have been found. Doubtless dates earlier and later than those now known will be discovered.

Gunn (J. M.) History of the pueblos of Laguna and Acoma. (*Rec. of Past, Wash.*, 1904, iii, 291-310, 323-344, 7 figs.) Resumes old Spanish explorer's accounts, etc., the struggles with the invaders, etc. At pages 330-337 some of the native traditions as to the origin of these pueblos are given. Their history since cession to the United States in 1848 is stated in brief and the prophecy of She-ake, to which Coronado is here said to have alluded, referred to as having been now fulfilled. The author spoils the effect of his paper by asking if the Queres Indians might not be refugees from Tyre after the conquest by Alexander, etc.

Humbert (J.) "L'archivo" du consulat de Cadix et le commerce de l'Amérique. (*J. Soc. d. Améric.*, de Paris, 1904, N. s., i, 231-236.) Describes the archives of Cadix relating to American trade, 1558-1815.

— La première occupation allemande du Vénézuéla au xvi^e siècle, période dite des Welser, 1528-1556. (*Ibid.*, 309-320.) Sketches the history of the German colonists Ynguer, Saylor, the Welser, etc., in Venezuela 1528-1556.

Immigration (Our) during 1904. (Nat. Geogr. Mag., Wash., 1905, XVI, 15-27, 8 figs.) Résumés Report of Commissioner General of Immigration Peck. The "racial" classification is into Teutonic, "Iberic," Celtic, Slavic, Mongolic, etc.

ten Kate (H.) Anthropologische Publikationen aus La Plata. (Globus, Brunschwig, 1904, LXXXVI, 268.) Brief notes on three recent publications of Dr Lehmann-Nitsche treating of *arthritis deformans* in ancient Patagonians, *brachyphalangia*, and "mortal holes" in rocks of the Sierra de Córdoba.

Kroeber (A. L.) The languages of the coast of California south of San Francisco. (Univ. of Calif. Public., Amer. Arch. and Ethn., Berkeley, 1904, II, 29-80.) Treats phonetic, grammatic, and lexical characters of Chumash, Salinan, Esselen, and Costanoan. Chumash and Salinan, while not genetically related, constitute a morphological group. Another such group is formed by Esselen and Costanoan. The only continuous text obtained was in Costanoan. Chumash has an article, *ma*, and Salinan a plural in verbs. Esselen has case-suffixes. Costanoan has preposed particles, but no suffixes. This article will be welcome to the students of American Indian comparative philology by reason of the accuracy of its data and the real information it conveys.

— Types of Indian culture in California. (Ibid., 81-103.) Discusses briefly habitat, food, dwellings, arts, social organization, ceremonies, shamanism, mythology, culture-hero, origin and creation myths, etc.

de La Grasserie (R.) Les langues de Costa-Rica et les idiomes apparentés. (J. Soc. d. Améric. de Paris, 1904, N. S., I, 153-187.) Gives grammatical sketches of Bribri, Terraba, Brunca, Guatuso, Chibcha, Cuna, Koggaba; tables of resemblances in numerals, personal pronouns, substantives, etc., — after Uhle, Thiel, Pittier, etc.; phonetic rules; comparative vocabulary (pp. 183-187) of Bribri, Cabecar, Terraba, Brunca, Guatuso, Chibcha, Dorasque, Guaymi, Cuna. All these languages, with certain others, make up one stock, which ought to be called Chibchan.

Lejeal (L.) Un petit problème de théologie Méxicaine. (Ibid., 257-361.) Treats

of Centeotl, "the Aztec Ceres," and her cult. The author inquires why a pacific and joyous cult (that of fecundity and the perpetuation of life) came to be deformed and degenerate. Beside a more primitive (Toltec and Totonac) Centeotl existed another (Aztec) with sanguinary rites.

— Explorations et découvertes dans les régions Andines. (Ibid., 262-265.) Notes on the expeditions of MM. Rivet, de Créqui, Montfort, Granger, etc. See Rivet.

— L'exposition de la Mission Française de l'Amérique du Sud au Palais du Trocadéro. (Ibid., 321-328, 2 pl.) Contains brief notes on the excavations in Argentina, Tiahuanaco, Tarija (pottery), etc.

McSweeney (Z. F.) The character of our immigration, past and present. (Nat. Geogr. Mag., Wash., 1905, XVI, 1-15, chart.) Discusses world-migrations, early American immigration, immigration during 19th century, immigrants from Italy, Austria-Hungary and Russia, the Finns, Greeks and Syrians, the Chinese, blending of the "American" race, effects of unchecked immigration, contract-labor law, the examination of immigrants, etc. Author takes optimistic view of ability of America to receive and make over her immigrants. The "toughest problem" is presented by the Syrians.

Marcel (G.) Un texte ethnographique inédit du XVIII^e siècle. (J. Soc. d. Améric. de Paris, 1904, N. S., I, 133-151.) Gives text of MS. (ca. 1787) by a surgeon named La Croix containing notes on the Indians of French Guiana at the end of the eighteenth century — physical characters, clothing, religion, marriage (the *couvade* is described but not named), festivals, arms, chiefs, etc.). The author notes the existence of a jargon for intercommunication between Indians and Europeans.

— L'inscription du Rupunumi. (Ibid., 387-390, 1 fig.) Describes the curious "inscription," which includes a number of European letters, said to have been found by Nicholas Horstman in 1739. It is probably of European (Portuguese?) origin.

Moorehead (W. K.) Some unknown forms of stone objects. (Rec. of Past, Wash., 1904, III, 268-274, 9 figs.)

Treats of finished and unfinished objects of the "winged-perforated" class. Mr M. thinks reed drills were preferred to those of flint, or bone. Other curved stone objects are figured and described—the "bird" and "butterfly" types, etc. The author's plea for Latin names ought not to be heard.

Morice (A. G.) Du lac Stuart à l'Océan Pacifique. (Bull. Soc. Neuchât. de Géogr., 1904, xv, 32-80, 2 figs., map.) Contains notes on the Indian names of lakes and rivers (pp. 53-56), and on the Déné Indians of the country traversed.

Peet (S. D.) Comparison of the codices with the ordinary pictographs. (Am. Antiq., Chicago, 1904, xxvi, 137-152, 9 figs.) Cites evidence to show that "to those who have become familiar with the pictographs and other symbols which are still common among the uncivilized tribes, there is a very close connection between them, and both treat of the same subject,"—calendars and religious ceremonies chiefly.

— The suastika and fire worship in America. (Ibid., 185-192, 4 figs.) Treats chiefly of the Navaho fire-dance and the Aztec "new fire."

— The ethnography of art in America. (Ibid., 201-224, 21 figs.) General discussion of sculptured art, ethnographic districts, graphic arts, picture-writing, symbolic figures and hieroglyphs, personal decorations and ornaments, jewelry, basketry, musical instruments, etc.

— Archeological researches in Costa Rica. (Ibid., 249-256, 13 figs.) Based on C. V. Hartman's *Archeological Researches in Costa Rica* (Stockholm, 1904), which it resums in part.

— The red men of Brazil. (Ibid., 41-46, 2 figs.) Ethnographic notes based on a recent work of Rev. Hugh C. Tucker.

Preuss (K. Th.) Der Ursprung der Menschenopfer in Mexico. (Globus, Brunschwig., 1904, lxxxvi, 108-119, 1 fig.) Treats of the renewing of the sun and fire gods, the death of the deities of rain and vegetation, the origin of god-sacrifice, etc. The festivals of the sun and fire gods are for the most part a renewal of the sun by killing a deity and the spring and harvest festivals a bloody rejuvenation of the spring-god and the old harvest-mother, for the purpose of

making her capable of the production of new vegetation. Out of the sacrifice of gods came that of man.

— Der XIV. Internationale Amerikanistenkongress in Stuttgart, 18. bis 23. August 1904. (Ibid., 199-202.) Good resums of proceedings and chief papers presented.

Prince (L. B.) The stone lions of Cochtitl. (Rec. of Past, Wash., 1904, iii, 151-160, 2 figs.) Describes what the author calls "the most important specimen of aboriginal sculpture in the United States," and the pueblo to which these lions belonged. The tale of its destruction by fire is also given. The lions face the east, "a fact no doubt having symbolic significance." They have suffered from the vandalism of ignorant herdsmen. The author compares the enclosure of Stonehenge, etc.

Reid (W. M.) Mohawk pottery. (Ibid., 184-188, 4 pl.) Treats of the pottery of the Mohawk valley—the author's collection includes 65 decorated fragments of as many different vessels. In the sand on the shore of Lake Pleasant was found recently a whole pot of large size—this, the Hanson, the Richmond, and the Horrack pots were all found in the Adirondack region.

Rivet (Dr) Le "huicho" des indiens Colorados. (Bull. Soc. d' Anthr. de Paris, 1904, v^e s., v, 116-117.) Notes on the *huicho* of the Colorado Indians of western Ecuador, a deadly disease characterized by an irresistible tendency to sleep. The Colorados' method of curing it is "an ethnographic curiosity." One ingredient is human urine. *Huicho* may have analogies with the well-known African "sleeping-sickness." It attacks foreign Indians and whites first, then the Colorados.

— Les Indiens de Mallasquer: Etude ethnologique. (Ibid., 144-152.) Treats briefly of environment, dwellings, clothing, agriculture (banana, sugar-cane, coca, yucca, maize and several fruits, including fine pineapples), domestic animals (cattle), and fowls, food (banana chief basis), drink (*guarapo*, fermented sugar-cane juice), coca-chewing (from the age of 7 years up), trade and commerce (children of 5-6 are already porters), dysentery (as fatal and as feared as small-pox), chiefs, marriage (curious "civil"

ceremony), priests (the coming of the priest of Cumbal is the event of the year), "priostes" (the Indians who pay for the festivals, etc.). These Indians are Catholic in name only and they are more affected by the maleficent *ruja* of their pagan past than by all the new *figurer* of Christianity. On pages 150-151 are given the chief anthropometrical data of 6 individuals, all male. The cephalic index is generally brachycephalic. Mallasjeter is in northern Ecuador, west of the Cordillera.

Schmidt (M.) Aus den Ergebnissen meiner Expedition in das Schingüquellgebiet. (Globus, Brnshwg., 1904, LXXXVI, 119-125, 16 figs.) Treats of ornament-*motifs* (fire-fans, wall-friezes, etc.) of the Bakairi. Also maize straw and cob figures of animals, pencil-drawings of animals, etc., including several of the author, to whom the native artists assigned some Indian characteristics. Some of the wall-frieze patterns were said by the Indians to refer to marks on tortoises, snakes, etc. The wall-frieze patterns are related to those of the fire-fans.

Simmons (H. J.) Human bones found near Galveston. (Am. Antiq., Chicago, 1904, XXVI, 122-123.) Notes on remains (bones, pottery sherds, beads) found in shell and sand deposits in the ballast pits on the railroad near Galveston, Texas. One layer of bones was found 3 feet below the surface, another at sea-level about 20 feet below the surface. A very large number of skulls were discovered. The steam shovel employed destroyed very many.

Sinclair (W. J.) The exploration of the Potter Creek cave. (Univ. Calif. Publ., Amer. Arch. and Ethnol., Berkeley, 1904, II, 1-27, 12 pl.) Describes cave and contents, rediscovered in 1902, the first Californian cave to be systematically excavated and explored, 1902-1903. No human bones were found, but certain implement like bone fragments may be human artifacts, — these polished pieces of bone "closely resemble many of the rough implements from the shell-mounds of California." The cave fauna is not too old to negative contemporaneity with man.

Smith (H. I.) The archeology of the Dakotas. (Rec. of Past, Wash., 1904, III, 220-221.) Notes on shell rings from neck of skeleton (from grave in the

Turtle mountains) now in the American Museum of Natural History (N. Y.), and other Dakota relics.

— The cairns or stone sepulchers of British Columbia and Washington. (Ibid., 243-254, 5 figs., map.) Résumé from H. I. Smith and G. Fowke's *Cairns of British Columbia and Washington* (Mem. Amer. Mus. Nat. Hist., N. Y. 1901, IV, pt. II).

— Shell heaps of the lower Fraser river, British Columbia. (Am. Antiq., Chicago, 1904, XXVI, 235-236.) Notes from a paper printed in the *Memoirs of the American Museum of Natural History*.

— A Michigan earth-work and its impending loss. (Ibid., 121-122.) Brief account of a prehistoric earthwork in Ogemaw co., probably a fort, with plea for its preservation by the public.

von den Steinen (K.) Ausgrabungen an der Valenciasee. (Globus, Brnshwg., 1904, LXXXVI, 101-108, 29 figs.) Describes the excavations of 1903 near Lake Valencia, Venezuela, made by A. Jahn for the Berlin Museum, — the finds included 32 skulls, 140 stone implements, more than 100 clay objects, 28 neck charms, and many ornaments and fragments of pottery. The culture revealed is a type of pre-Columbian stone age, and the number of tumuli and urns discovered indicate that in these *cerritos* were buried a series of generations. Noteworthy is a little clay pot on three legs with a human face showing a nose-ring. Neck-chains seem to have been the most common ornaments. The *cerrito*-population of Indian descent contains few of pure blood. According to the maps of the 16th century the Meregote, a Cariban tribe, occupied the region in question.

Stoddard (H. L.) The abstruse significance of the numbers thirty-six and twelve. (Am. Antiq., Chicago, 1904, XXVI, 153-164, 6 figs.) Discusses at length the origin and meaning of the discoidal stone and statues discovered near Menard's mound, Arkansas, in the spring of 1901. The outer edge of this jasper discoidal has 36 semicircles and on the underside is a phallic symbol, a *yoni* conventionalized (the male figure has a Mongolian cast of features, the headdress of the female suggests Egypt). This wonderful find is regarded as evidence of prehistoric Asiatic culture in America.

ANTHROPOLOGIC MISCELLANEA

Louisiana Purchase Exposition Awards.—The following awards have been made in the Department of Anthropology, Louisiana Purchase Exposition, St. Louis. The list is corrected to February 10, and while the awards may not be regarded as absolutely final, and hence as strictly official, the work of the Residuary Committee empowered to complete the functions of the International Jury of Awards is so well advanced as to leave little probability that the list will be changed.

ETHNOLOGY

UNITED STATES

A. Departmental Exhibits

AINU GROUP: *Grand prize*, Frederick Starr; *Silver medal*, Y. Inagaki; *Bronze medal*, Chief Sangyea.

PATAGONIAN GROUP: *Grand prize*, Vicente Cane; *Silver medal*, Chief Guechico; *Bronze medal*, Juan Wohlers.

PYGMY GROUP: *Grand prize*, S. P. Verner; *Bronze medal*, John Kondola.

FIELD SCHOOL OF ANTHROPOLOGY: *Grand prize*, University of Chicago.

COCOPA GROUP: *Gold medal*, E. C. Cushman Jr.; *Silver medals*, Chief Pablo Colorado, Chief Tom Moore.

VANCOUVER GROUP: *Gold medal*, C. F. Newcombe; *Bronze medals*, Doctor Atliu, Charles Nowell.

GENERAL ASSEMBLAGE: *Gold medal*, Mrs S. M. McCowan.

SUNDRY GROUPS: *Gold medal*, George A. Dorsey.

SIoux GROUP: *Silver medal*, Chief Yellow Hair.

PAWNEE GROUP: *Silver medal*, Roaming Chief; *Bronze medal*, James Murie.

WICHITA GROUP: *Silver medal*, Chief Towakanie Jim; *Bronze medal*, Burgess Hunt.

ARAPAHO GROUP: *Silver medal*, Cleaver Warden.

CHEYENNE GROUP: *Silver medal*, Richard Davis.

GERONIMO BAND: *Silver medal*, Chief Geronimo.

NAVAHO GROUP: *Silver medal*, Vicente Beguay; *Bronze medal*, Pestlekaí.

POMO GROUP: *Silver medals*, William Benson, Mary Benson.

- OSAGE GROUP: *Silver medals*, Charles Michel, Chief Olahowallah; *Bronze medals*, Chief Claymore, Frank Corndropper, Wilson Kirk.
 CHIPPEWA GROUP: *Bronze medal*, Chief Meshakegeschig.
 KICKAPOO GROUP: *Bronze medal*, D. H. Roubideaux.
 PIMA GROUP: *Bronze medal*, Kestro Jackson.
 MARICOPA GROUP: *Bronze medal*, James Bluebird.
 APACHE GROUP: *Bronze medal*, Chief Trucha Tafoya.
 ACOMA GROUP: *Bronze medal*, Juan Antonio Saracini.
 PUEBLO GROUP: *Bronze medal*, Antonio Chavez.

B. General Exhibits

- ACCULTURAL ARTIFACTS: *Grand prize*, J. W. Benham.
 AMERICAN ANTHROPOLOGIST: *Grand prize*, American Anthropological Association; *Gold medal*, F. W. Hodge.
 PALACE OF ANCIENT ART: *Grand prize*, H. Ephraim Benguiat; *Silver medal*, Mordecai Benguiat.
 PHOTOGRAPHS OF ETHNIC TYPES: *Gold medal*, Frederick Starr.
 POMO BASKET: *Gold medal*, J. W. Benham.
 FICTILE WARE: *Gold medal*, The Rookwood Pottery.
 HAIDA STRUCTURES: *Gold medal*, Alaska Territory; *Silver medal*, Mary E. Hart.
 ETHNIC MAP: *Silver medal*, University of California.
 ALASKAN ARTIFACTS: *Silver medal*, Governor Brady.
 KICKAPOO RELICS: *Bronze medal*, O. E. Edwards.
 INDIAN BEADWORK: *Bronze medal*, Herbert Brown.
 MONGOLIAN TYPE: *Bronze medal*, Allen Hutchinson.

GERMANY

- EAST AFRICAN ARTIFACTS: *Grand prize*, Imperial Government, German Ost-Afrika; *Gold medal*, Hugo Hardy.

GREAT BRITAIN (EAST INDIA)

- JAIN TEMPLE: *Grand prize*, F. P. Bumghara; *Gold medal*, N. F. Bumghara.
 EAST INDIAN ARTIFACTS: *Silver medal*, F. P. Bumghara & Co.

SIAM

- SIAMESE ARTIFACTS: *Grand prize* (letter), H. M. the King of Siam; *Grand prize*, H. H. the Crown Prince of Siam; *Gold medal*, J. Howard Gore.

NEW ZEALAND

PAINTINGS OF TYPES: *Gold medal*, H. E. Partridge.

PHOTOGRAPHS OF TYPES: *Silver medal*, New Zealand Government.

MAORI ARTIFACTS: *Silver medal*, T. E. Donne.

INDIAN SCHOOL (UNITED STATES)

TYPICAL INDIAN SCHOOL: *Grand prize*, U. S. Indian Bureau; *Gold medal*, S. M. McCowan; *Silver medals*, Miss C. F. Peters, Miss Lillian Harrison, C. A. Peairs, E. K. Miller, Jesse McCallum, Chris Kaufman; *Bronze medals*, Miss Katherine Keck, Miss Emma Johnson, Miss Abbie Scott.

ARCHEOLOGY

UNITED STATES

INDIAN MOUND RELICS: *Grand prize*, Ohio Archaeological and Historical Society; *Gold medal*, William C. Mills.

ABORIGINAL ARTIFACTS: *Grand prizes*, New Mexico Territory, Fred Harvey; *Gold medal*, J. F. Huckel; *Bronze medals*, George Tietzel, Jackson Hurley, E. W. Whitcomb.

WAMPUM TREATY BELTS: *Gold medal*, Wyman Brothers.

ABORIGINAL ANTIQUITIES: *Gold medals*, State of Louisiana, Fred Harvey; *Silver medal*, George T. Williamson.

INDIAN MOUND RELICS: *Silver medal*, Davenport Academy of Sciences.

INDIAN CAVE RELICS: *Silver medal*, Phillips Academy.

PREHISTORIC CACHE: *Silver medal*, Weatherford & Vail.

PREHISTORIC CRADLE-BASKET: *Silver medal*, Julian T. Zeller.

NATIVE COPPER IMPLEMENTS: *Silver medal*, Wyman Brothers.

ABORIGINAL PETROGLYPHS: *Silver medal*, C. H. Bennett.

CEREMONIAL AXE: *Bronze medal*, Charles Aldrich.

IRON BRANK: *Bronze medal*, Joseph Roth.

ARGENTINA

CALCHAQUI RELICS: *Grand prize*, Manuel B. Zavaleta.

BRAZIL

ARCHEOLOGIC AND ETHNOLOGICAL COLLECTIONS: *Grand prize*, State Government of Amazonas; *Gold medal*, Commissioner Aguiar.

ARCHEOLOGIC COLLECTION: *Silver medal*, Ricardo Krone.

ABORIGINAL ARTIFACTS: *Silver medal*, Mirando Ribeiro; *Bronze medal*, Alfonse Roche.

STONE IMPLEMENTS: *Bronze medal*, Nicolao Badariotti.

MEXICO

REPRODUCTIONS OF ANTIQUITIES: *Grand prize*, Secs. Justicia y Fomento.
ARCHEOLOGIC COLLECTION: *Gold medal*, Mexican Commission.
ARCHEOLOGIC PUBLICATIONS: *Gold medals*, Alfredo Chavero, Antonio Peñafiel.

REPRODUCTIONS OF SCULPTURES: *Gold medal*, Eufemio Abadiano.

MODELS OF ANTIQUITIES: *Gold medal*, Secretaria de Fomento.

TREATISES ON TONGUES: *Silver medal*, Cecelio Robelo.

MAP OF MIGRATIONS: *Bronze medal*, Angel Bravo.

PHOTOGRAPHS OF TYPES: *Bronze medals*, Gobierno de Chiapas, Gobierno de Guerrero, Gobierno de Tabasco, Gobierno de Mexico, D. F.

ABORIGINAL COSTUMERY: *Bronze medal*, Gobierno de Oaxaca.

NATIVE INSTRUMENTS: *Bronze medal*, Gobierno de Michoacan.

ABORIGINAL METATES: *Bronze medals*, Jefatura Politica de Maxcanu, Jefatura Politica de Motul.

NATIVE HAMMOCK: *Bronze medal*, Jefatura Politica de Tixkokob.

NATIVE ARTIFACTS: *Bronze medals*, Jefatura Politica de Valladolid, Jefatura Politica de Tancanhuitz, Junta Local de Puebla.

NATIVE BEDS: *Bronze medal*, Jefe Politico de Chiautla.

NATIVE COSTUMERY: *Bronze medal*, Ayuntamiento de Cuetzalan.

EMBROIDERED CAMISAS: *Bronze medal*, Señorita Margarita Valdéz.

BEAD-EMBROIDERED CAMISAS: *Bronze medal*, Nina S. Oroasco.

ILLUSTRATIONS OF ANTIQUITIES: *Bronze medal*, Señorita Maura Marin.

NICARAGUA

PROTOHISTORIC ANTIQUITIES: *Silver medal*, Alejandro Bermudez.

PORTO RICO

ABORIGINAL "COLLARS": *Bronze medal*, Gustavo Preston.

GERMANY

SAALBURG CASTLE ANTIQUITIES: *Grand prize* (letter), K. K. Wilhelm II; *Gold medal*, Geh. Baurat Jacobi.

BABYLONIAN RELICS: *Gold medals*, Kgl. Museen, Deutsch Orient.-Ges.

ILLUSTRATIONS OF RELICS: *Gold medal*, Kgl. Messbild-Anstalt.

ILLUSTRATIONS OF ANTIQUITIES: *Gold medal*, Dir. Dr Th. Wiegand.

GREAT BRITAIN

EGYPTIAN ANTIQUITIES: *Grand prize*, Egyptian Exploration Fund.

HOLYLAND ANTIQUITIES: *Grand prize*, Palestine Exploration Fund.

CRETAN ANTIQUITIES: *Grand prize*, Cretan Exploration Fund.

GREAT BRITAIN (EGYPT)

ARCHEOLOGIC COLLECTIONS: *Grand prize*, Egyptian Government; *Gold medals*, Prof. G. C. C. Maspero, Dr J. E. Quibell; *Bronze medal*, A. B. Coover.

GREAT BRITAIN (CEYLON)

TAMIL ANTIQUITIES: *Silver medal*, Ceylon Government.

OLA MANUSCRIPTS: *Silver medal*, Ceylon Government.

PHOTOGRAPHS OF ARTIFACTS: *Bronze medal*, E. F. im Thurn.

BRONZE BUDDHAS: *Bronze medal*, N. S. Terrunhanse.

OLA BOOKS: *Bronze medal*, P. E. Pieris.

PHOTOGRAPHS OF TYPES: *Bronze medal*, John Scott.

BELGIUM

CLASSIFIED RELICS: *Grand prize*, Musée d'Histoire Nat.; *Gold medal*, Prof. Dr Houze, Prof. J. Fraipont.

JAPAN (FORMOSA)

ILLUSTRATIONS OF TYPES: *Gold medal*, Government of Formosa.

CHINA

PREHISTORIC COLLECTIONS: *Grand prize*, Imperial Chinese Government; *Gold medal*, H. H. Prince Pu Lun.

HISTORY

UNITED STATES

HISTORICAL COLLECTIONS: *Grand prizes*, Missouri Historical Society, State of Iowa, Franco-Louisiana Society; *Gold medals*, Pierre Chouteau, Mrs Wallace Delafield; D. I. Bushnell, Judge W. B. Douglas, Charles Aldrich, Gaspar Cusachs, Chicago Historical Society; *Silver medals*, Dr C. A. Peterson, Miss Mary L. Dalton, Charles A. Cumming; *Bronze medals*, Dr W. F. Parks, Miss Valentine Smith.

HISTORICAL RECORDS: *Grand prize*, Louisiana Historical Society.

PROTOHISTORIC RELICS: *Gold medal*, Missouri Historical Society.

CHIPPED FLINTS: *Gold medal*, Gates P. Thruston.

"HISTORY OF LOUISIANA": *Gold medal*, Prof. Alcée Fortier.

NATIVE AGRICULTURAL IMPLEMENTS: *Silver medal*, Missouri Historical Society.

MARQUETTE PORTRAIT: *Silver medal*, Donald G. McNab.

ARKANSAS POST RECORDS: *Silver medal*, W. H. Halli-Burton.

NAPOLEON AUTOGRAPHS: *Silver medal*, Gus V. R. Mechin.

CEREMONIAL AXE: *Bronze medal*, D. I. Bushnell.

CLAIBORNE PORTRAIT: *Bronze medal*, W. C. C. Claiborne.

ZACHARY TAYLOR RELICS: *Bronze medal*, Mrs W. H. Stauffer.

NAPOLEON DEATH MASK: *Bronze medal*, Miss Gally.

MAPS AND DOCUMENTS: *Bronze medal*, T. P. Thompson.

LETTERS AND DOCUMENTS: *Bronze medal*, W. H. Seymour.

GREAT BRITAIN

QUEEN'S JUBILEE TRIBUTES: *Grand prize* (letter), H. R. M. Edward VII; *Gold medal*, Miss Florence Hayward.

GREAT BRITAIN (CANADA)

HISTORICAL COLLECTIONS: *Grand prize*, St. Mary's College; *Gold medal*, A. E. Jones, S. J.; *Silver medal*, J. C. Burke, S. J.

ITALY (THE VATICAN)

REPRODUCTIONS OF ARCHIVES: *Grand prize* (letter), His Holiness Pius X; *Gold medal*, Fabrica dei Mosaici; *Silver medal*, Francesco Cagiati.

ANTHROPOMETRY

UNITED STATES

ANTHROPOMETRIC PUBLICATIONS: *Grand prize*, Peabody Museum of American Ethnology and Archæology; *Gold medal*, F. W. Putnam.

LIFE CASTS OF TYPES: *Silver medal*, Caspar Mayer.

ANTHROPOMETRIC APPARATUS: *Silver medals*, The Fairbanks Company, Narragansett Machine Company, C. H. Stoelting Company; *Bronze medals*, George Tieman & Co., Kny-Scheerer Company.

ANTHROPOMETRIC CHART: *Bronze medal*, Bryn Mawr College.

"HASTINGS MANUAL": *Bronze medal*, Macmillan Company.

GERMANY

ANTHROPOMETRIC APPARATUS: *Silver medal*, Boehm & Wiedmann.

ANTHROPOMETRIC PUBLICATIONS: *Bronze medal*, Dietrich Riemer.

GERMANY (GERMAN OST-AFRIKA)

CASTS AND PHOTOGRAPHS OF TYPES: *Silver medal*, Imperial Government of German Ost-Afrika.

FRANCE

ANTHROPOMETRIC APPARATUS: *Silver medal*, (Maison Charrière) Collin.

BELGIUM

ANTHROPOMETRIC PUBLICATIONS: *Gold medal*, Société d'Anthropologie.

MAPS OF TYPES: *Silver medal*, Prof. L. Vanderkindere.

SWITZERLAND

ANTHROPOMETRIC APPARATUS: *Silver medals*, P. Hermann, Prof. Rudolf Martin.

ILLUSTRATIONS OF TYPES: *Bronze medal*, Art Institut Orell Füssli.

PSYCHOMETRY

UNITED STATES

PSYCHOMETRIC LABORATORY: *Grand prize*, Columbia University.

PSYCHOMETRIC APPARATUS: *Gold medals*, Harvard Apparatus Company, C. H. Stoelting Company; *Silver medals*, Yale University, Milton Bradley Company; *Bronze medal*, E. B. Meyrowitz.

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DEPARTMENT JURY

Prof. F. W. Putnam, *Chairman*. Hon. F. W. Lehmann, *Honorary Vice-Chairman*. Dr J. C. Alves de Lima, *First Vice-Chairman*. Prof. Alcée Fortier, *Second Vice-Chairman*. Prof. M. H. Saville, *Third Vice-Chairman*. Dr George A. Dorsey, *Secretary*. Mr C. A. Peairs, Dr Hugo Hardy, Hon. L. Bradford Prince (absent), Dr Aleš Hrdlička, Miss Alice C. Fletcher, Prof. J. McKeen Cattell, Dr Hugo Münsterberg, Madame Zelia Nuttall.

Of the foregoing, Madame Nuttall was designated by the Board of Lady Managers; Mr Lehmann was named by the Executive; and all others entered as chairmen and vice-chairmen of the group juries.

REPRESENTATION IN SUPERIOR JURY

F. W. Putnam, United States (absent). J. C. Alves de Lima, Brazil. W J McGee, Chief of Department.

Preservation of Antiquities. — Under the law of February 1, 1905, the administration of the National Forest Reserves was transferred from the General Land Office, Department of the Interior, to the Bureau of Forestry under the Department of Agriculture. As a large proportion of the prehistoric ruins of the Southwest are situated on forest reserves, this change is of importance to students of archeology. The Department of Agriculture must now be looked to for the protection of these ruins and for permits to do archeological work on forest reserves.

By an order recently issued the Office of Indian Affairs directs that all traders on Indian reservations shall be prohibited from dealing in prehistoric wares in the future. Traders are given thirty days in which to dispose of collections on hand, after which such articles found in their possession will be considered contraband and future violations of the order will be punished by revocation of license to trade with the Indians.

On the request of the Secretary of the Interior, the Secretary of Agriculture has directed that the ruins of Montezuma Castle on Beaver

creek, Arizona, lying on public lands, about three miles outside the Black Mesa Forest Reserve, shall be under the protection of the forest rangers of the adjacent portion of the reserve.

It is reported by Forest Supervisor Breen that on establishing the northern boundary of the San Francisco Mountains Forest Reserve in northern Arizona, the Black Falls group of ruins are found to lie within the limits of the reserve. This important group of ruins is, therefore, under the jurisdiction of the forest rangers of the Bureau of Forestry, instead of being entirely unprotected on the public lands as has been supposed.

The bill for the preservation of American antiquities, which was drafted by the joint committee of the Archaeological Institute of America and the American Anthropological Association, and presented by them for the consideration of the House of Representatives committee on Public Lands, met with the approval of that committee and was favorably reported to the House. Final consideration of the measure, however, could not be obtained during the short session of Congress.

As far as heard from, it is the feeling of the members of the joint committee that the measure should be perfected and reintroduced at the beginning of the next session of Congress. Certain defects in the bill have been pointed out and revisions suggested to meet conditions that were not formerly understood or that have recently arisen. The local members have prepared and sent out the following draft for consideration and discussion by all who are interested in the subject:

AN ACT for the preservation of American antiquities, and to control the excavation of archeological sites.

Be it enacted [etc.].

SEC. 1. That for the purpose of preserving and protecting from despoliation the historic and prehistoric ruins, monuments, and other antiquities that are situated on lands owned or controlled by the Government of the United States, said antiquities are hereby placed under the custody and control of the Secretaries of the Departments having jurisdiction over said lands, and it shall be the duty of said Secretaries to preserve and protect said antiquities from despoliation or unauthorized appropriation or injury.

SEC. 2. That the Secretaries of the Departments having jurisdiction over the lands owned or controlled by the Government of the United States, are hereby authorized to permit the examinations of ruins, the excavation of archeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions by institutions, either

domestic or foreign, which they deem properly qualified to conduct such examination, excavation, or gatherings, subject to such rules and regulations as they may prescribe: Provided, That the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums and not for commercial purposes.

SEC. 3. That of all excavations and explorations made under the provisions of this act, a proper written and photographic record, with plans, shall be made at stated periods, and transmitted for preservation to the United States National Museum.

SEC. 4. That the Secretaries of the Departments aforesaid shall make and publish from time to time uniform rules and regulations for the purpose of carrying out the provisions of this act.

SEC. 5. That all persons who shall, without permission, appropriate, injure, or destroy any of the objects of antiquity referred to in this act, shall, upon conviction, be fined in a sum not more than five thousand dollars, or be imprisoned for a period not more than twelve months, or shall suffer both fine and imprisonment, in the discretion of the court.

It is hoped that all who are interested will consider this thoroughly and freely express their views for the guidance of the committee at its next meeting.

EDGAR L. HEWETT.

WASHINGTON, D. C.

Archæological Institute of America. — The twenty-fifth anniversary of the Archæological Institute of America was celebrated by a meeting in Boston and Cambridge, December 28-30, 1904.

For several years many members have been urging that attention should be given to American archeology in accordance with the original plan of the Institute, "embracing the sites of ancient civilization in the New World as well as in the Old." An important step in this direction is the establishment of an American Fellowship, now in its fourth year. This fellowship has been held from the beginning by Dr Alfred M. Tozzer, a graduate in the Division of Anthropology at Harvard, who is now on his fourth trip to Yucatan and Central America. At the Boston meeting an appropriation was made for the continuation of this fellowship.

At this meeting Mr C. F. Lummis gave an account of the work done by the recently organized Southwestern branch of the Institute, with headquarters at Los Angeles, in collecting phonographic records of Indian

and old Spanish songs, both of which are so rapidly passing away that Mr Lummis aptly terms the research "living archeology." Dr F. M. Palmer gave an illustrated paper on some features of the archeology of southern California, showing what had been accomplished by the South-western branch in making collections in the southern portion of the state. So active has this branch become that the Institute made a liberal appropriation for the continuation of the researches by Mr Lummis and Dr Palmer, the exact amount to be decided by the executive committee. An appropriation of \$1,000 was made in aid of the archeological researches in Central America under the auspices of the committee of the Peabody Museum; and the sum of \$500 was granted toward the continuation of the research in the caves of northern California under the direction of the Department of Anthropology of the University of California.

With the exception of the researches by Bandelier in the Pueblo region during its earlier years, the Institute has been engaged principally in classical archeology, in which it has accomplished much of value. This new awakening to the importance of American archeology in the wider study of the life of man, and the continuation of this broader policy by the Institute will be gratifying to many of its members and will be sure to bring about additional support in all its sections. The Institute has now an efficient American Committee which is ready to receive communications in relation to researches of special importance in this country. Through this committee it took part in drafting the bill for the national preservation of the prehistoric sites in this country and was represented at the hearing before the House Committee on Public Lands.

At this anniversary meeting Prof. Charles Eliot Norton, the first president, who is regarded as the father of the Institute, was present and took an active part.

A Form of Urn-burial on Mobile Bay.—In the last number of the *American Anthropologist* (October-December, 1904) I contributed a paper, "Aboriginal Urn-Burial in the United States." In this paper I pointed out that the occurrence of what might be called a form of urn-burial, namely, the placing of a vessel of earthenware inverted over a skull with which the rest of the skeleton was present had not been reported, to my knowledge, east of Arizona and New Mexico. The fact was emphasized that the form of urn-burial in question should not be confused with that obtaining along the northwestern Florida coast where inverted bowls are found lying over isolated skulls or skulls with a few scattered, accompanying bones.

While consulting authorities for my paper I came upon a description¹ of the finding of an urn-burial, exact particulars not given, on Simpson's island, one of a number of islands to the north of Mobile bay.

Having decided to make certain investigations around Mobile bay, I visited Simpson's island in January, 1905. On the western, or Mobile river, side of the island, about three miles from the northern end, is a cultivated tract on which are several frame houses. About 250 yards in a southerly direction from the houses was a mound, 3 feet in height and 87 feet across its circular base, made of a mixture of tenacious muck and small clam-shells (*Rangia cuneata*). As the owner valued the mound as a place of refuge for stock in flood-time, the outer part of the mound, subject to wash, was not touched by us; but the central part, fifty feet in diameter, was dug through and a considerable number of burials of types common to southern mounds, not in connection with urns, were encountered.

There was one exception. In the northeastern part of the mound was a skeleton of an adult, the head directed to the east. The skeleton lay at full length on its back, with the head turned slightly to one side. Inverted over the skull, and completely covering it, was a decorated, imperforate vessel of earthenware, maximum diameter 11.75 inches, height 3.75 inches, with its upturned base but 8 inches from the surface.

Here we have a burial, as far east as Alabama, similar to the burials reported from Arizona and New Mexico.

Considering the interesting urn-burials found on Alabama river and those of the northwestern Florida coast, beginning at Perdido bay, the coast boundary between Alabama and Florida, which is but a few miles distant from Mobile bay, one might look for records of the finding of urn-burials on Mobile bay, but such records are not forthcoming, and even the testimony of inhabitants as to the discovery of such burials seems to be wanting. My investigation, which included the circuit of the bay, resulted in the finding of no urn-burial of any sort other than the one described.

In a mound on Tombigbee river, however, sixty-five miles by water above Mobile, at Three Rivers Landing, Washington county, Alabama, I since have found a skeleton having on the skull, part of which it covered like a cap, an inverted vessel six and one-half inches in diameter.

Fuller description of the archeological work on Mobile bay and on Tombigbee river will appear in the Journal of the Academy of Natural Sciences of Philadelphia.

CLARENCE B. MOORE.

¹ *Smithsonian Report*, 1878, p. 290.

Facial Casts.—In the *Directions for Collecting Information and Specimens for Physical Anthropology*, by Dr Aleš Hrdlička, published as Part R of the Bulletin of the United States National Museum, No. 39, 1905, a method for collecting facial casts is described (page 19). I think it is but just to say that anthropologists are indebted for the development of this method to Mr Caspar Mayer, sculptor in the ethnological department of the American Museum of Natural History. This Museum has been engaged for eight years in making systematic collections of plaster casts of various types of man, and during this entire time the method of taking casts has constantly been improved by Mr Mayer, who was the first to suggest to anthropologists the taking of plaster casts without the use of tubing inserted in the nose, and in such a manner that distortions of the face are almost entirely avoided. The undersigned, as well as all other collaborators of the American Museum of Natural History, including Dr Hrdlička, have learned this method from Mr Mayer, who, by its development, has done an excellent service to anthropological science.

FRANZ BOAS.

IN ANSWER to inquiries concerning the method of making facial casts outlined in my *Directions for Collecting Information and Specimens for Physical Anthropology*, I wish to say that I am not aware with whom it is original. As plaster masks have been and are being made by many artists and travelers, the method is presumably an outcome of numerous experiences. The description follows almost wholly the procedure as I have seen it practised by Mr Caspar Mayer, a New York sculptor, employed largely by the anthropological department of the American Museum of Natural History. Mr Mayer, I believe, has introduced the innovation of doing away with the nasal tubes. The method is practicable with savage tribes; following it I have made about 140 facial casts in the field among the Indians, including some very primitive tribes. The time required by me with one individual, including the preparation, is about 40 minutes. The process is a little too slow for children.

A. HRDLIČKA.

Marquis de Nadaillac.—In the death of Jean François Albert du Pouget, Marquis de Nadaillac, at the Chateau de Rougemont, Loir-et-Cher, France, on October 1, 1904, at the ripe age of 86 years, France has lost one of its most distinguished citizens and Anthropology one of its best known authorities.

The Marquis of Nadaillac was prefect of the Basses-Pyrénées in 1871, and of Indre-et-Loire in 1877. Retiring to private life in the latter

year, he thenceforth devoted his time to the study of archeology and ethnology, writing many works on these subjects. He was a good English scholar, and had many American correspondents, for all of whom he ever had a word of cheer. The Marquis was a member of many learned societies at home and abroad; in America he was a member of the Numismatic and Antiquarian Society of Philadelphia, and an honorary member of the Davenport Academy of Sciences and of the Anthropological Society of Washington. He was a Chevalier of the Legion of Honor, a correspondent of the Institute of France, and held decorations from Austria, Belgium, Brazil, Hanover, Italy, and Spain. In the United States his best known work was *Prehistoric America*, an illustrated octavo published in 1884. His writings included valuable papers on Prehistoric South America, Precolumbian Canada, The Calaveras Skull, Recent Discoveries in America, The Moundbuilders, Pipes and Tobacco, Progress of the United States, The Seris, The Ancient Population of Colombia, The Unity of the Human Race, Dawn of Life on the Earth, The Glacial Period, Man and the Monkey, Men of the Cave Period, Primitive Monuments, The Customs of Early Races, Pile Dwellers, Prehistoric Fishing, The Copper Age, The Evolution of Marriage, and Causes of the Decrease of the Birth-rate in France. He also published several works relating to the archeology and ethnology of Africa, Ireland, Great Britain, and of English and French colonies. It has been related that the Marquis said all the good things possible of authors to whom he referred in his numerous writings, leaving the defects, if any, in the shadow. News of his death comes as a distinct shock to his many American friends and his loss will be keenly felt by students of archeology and ethnology in the New World.

J. D. MCGUIRE.

The Wisconsin Archeological Society has caused to be introduced in the State Legislature a bill (No. 195A) asking for the appropriation by the State of the sum of \$500 annually toward the publication of its educational and scientific bulletins, and with the provision that 131 free copies of each issue be presented to the Wisconsin Free Library Commission for distribution among its traveling libraries.

It is sincerely hoped that this bill may soon be enacted into law, as it will do much toward increasing the interest in Wisconsin's antiquities through wider distribution of the publications of the Wisconsin Archeological Society concerning them. It is also hoped that something will soon be done to preserve the aboriginal monuments throughout the State ere the progress of agricultural pursuits and the increase in the value of

the lands on which they are situated make their acquirement, and even their protection, impossible.

For a number of years there has been a growing interest in the preservation of the antiquities of Michigan, also, but thus far the State has done practically nothing toward furthering it, and the public does not seem to manifest the same interest in the subject as do the people of Wisconsin, who are conducting archeological investigations within their territory with great enthusiasm.

HARLAN I. SMITH.

The Justin Winsor prize of \$100, offered by the American Historical Association for the encouragement of historical research, will be awarded for the year 1905 to the best unpublished monograph in the field of American History that shall be submitted to the Committee of Award on or before October 1, 1905. The prize is intended for writers who have not yet published any considerable work or obtained an established reputation. The monograph must be based on independent and original investigation in American history, by which is meant the history of any of the British colonies in America to 1776, of other portions of the continent which have since been included in the territory of the United States, and of the United States. It may deal with any aspect of that history—social, political, constitutional, religious, economic, ethnological, military, or biographical, though in the last three instances a treatment exclusively ethnological, military, or biographical would be unfavorably received. Professor Charles M. Andrews, of Bryn Mawr, Pa., chairman of the committee, will furnish full information to prospective competitors.

Thomas Varker Keam died at Truro, Cornwall, England, of angina pectoris, November 30, 1904. Mr Keam was born in 1846 in Truro, and went to sea as a boy, sailing as a midshipman in the English mercantile marine to Sidney and Newcastle, Australia. From there he went to San Francisco, thence in 1865 overland to Santa Fé, where he entered the service as a private in the First New Mexico Cavalry, in which he was later commissioned as second lieutenant. In 1872 he was Spanish interpreter in the government service at Fort Defiance, Arizona, and ten years later went to the cañon that bears his name, residing there as Indian trader until a few years ago, when he disposed of his interests and finally returned to his boyhood home at Truro. Mr Keam was widely known to Indians of the southwest as "Tomas" and was respected and loved by them. He spoke both Hopi and Navaho fluently.

Mr Keam was a man of the highest integrity, a keen observer, a wide reader, cultivated and accomplished. He maintained an open

house at Keam's Cañon for every wayfarer, and his hospitality was shared alike by the scientific explorer and the wandering Indian. For many years he practically supported that remarkable genius, Alexander Macgregor Stephen, who lived more or less with him from the time of his arrival at the cañon in 1882 until his death in 1894. Mr Keam preserved Stephen's numerous valuable manuscripts with jealous care, and erected a monument on his grave in the cañon. Taking a lively interest in the Indian antiquities of the adjacent region, he made several important collections, the largest of which is now in the Berlin Museum of Ethnology. Other collections are in the Peabody Museum at Cambridge and the Museum of the University of Pennsylvania. Mr Keam's death will be deplored by every student and explorer of the Southwest, to most of whom he was known and beloved.

STEWART CULIN.

An Interesting Broadside.—Mr D. N. Thomas, of Greenport, L. I., has found an interesting broadside containing a four-column versification of "The Rebels' Reward, or English Courage Displayed, being a Full and True Account of the Victory obtained over the Indians at Norri-giwock on the Twelfth of August last, by the English Forces under command of Capt. Johnson Harmon." On the upper right-hand is a very rude picture supposed to represent the English forces firing on the Indian fortress, and over the verses is the line: "To the Tune of *All You That Love Good Fellows*, etc." This broadside is printed on a thick and coarse kind of rag paper, in old-style type, in ink but little faded. It is in a good state of preservation, except that where creased the paper has given way and in the vertical middle fold it has torn almost across. At the right-hand lower corner is the imprint: BOSTON: Printed and sold by J. Franklin in Union Street, 1724.

W. W. TOOKER.

Tlingit Method of Collecting Herring-eggs. When the herring run took place, hemlock boughs were fastened together and laid down in rows for the fish to spawn upon. At one end of each was tied a float marked in some special way by its owner. When covered with eggs, these boughs were lifted into the canoe, carried ashore, and placed to dry on the branches of a tree which had been stripped of its smaller twigs. To raise them into place there was employed a large wooden hook taken from a tree where a branch comes off, and it was then a comparatively simple matter, but after they were dried the eggs became very brittle and had to be handled with care. Hemlock boughs are said to be used in preference to others because they leave no peculiar taste.

J. R. SWANTON.

Bontoc-Igorot Clothing.—In a brief communication received since the publication of his article on this subject in the last issue of the *American Anthropologist*, Dr Albert Ernest Jenks announces that he has ascertained beyond question, which he had before raised, that "the Ilokano women on the west coast of northern Luzon avowedly wear the *tapis* to hide any possible evidence of menstruation."

AT A MEETING of the Council of the American Anthropological Association held in New York, April 15, it was voted to hold a special meeting of the Association in Portland, Oregon, during the Lewis and Clark Centennial Exposition. The members of the Council present were Messrs Boas, Chamberlain, Culin, Farrand, Gordon, Hodge, Hyde, MacCurdy, Pepper, Putnam, Saville, and Smith.

THE FOURTEENTH INTERNATIONAL CONGRESS OF ORIENTALISTS was held at Algiers, under the auspices of the Algerian Government, April 19-26, 1905. Dr Cyrus Adler, Librarian of the Smithsonian Institution, Washington, D. C., was the official representative in the United States of the Committee on Organization of the Congress.

DR JOHN R. SWANTON of the Bureau of American Ethnology is delivering two courses of lectures in the Semitic Seminary of Johns Hopkins University, one on American Ethnology with special reference to Sociology and Mythology, and one on the Dakota language.

THE WIDE and increasing interest in folklore researches in Germany and Austria is indicated by the fact that the Germans have now perfected a Folklore Union embracing twenty-four societies and 6,000 members.

MR WILLIAM H. HOLMES, Chief of the Bureau of American Ethnology and a vice-president of the American Anthropological Association, has been elected a member of the National Academy of Sciences.

DR LIVINGSTON FARRAND, Professor of Anthropology in Columbia University, has been placed in charge of the work of the National Association for the Study and Prevention of Tuberculosis.

DR C. A. PETERSON, of St. Louis, a founder of the American Anthropological Association, has been elected president of the Missouri Historical Society.

THE title of Correspondant de l'École d'Anthropologie de Paris has been conferred on Dr George Grant MacCurdy of the Yale University Museum.

AMERICAN ANTHROPOLOGICAL ASSOCIATION

PROCEEDINGS OF THE PHILADELPHIA MEETING, DECEMBER 28-30, 1904.

The program of the annual meeting of the American Anthropological Association was merged with that of the American Folk-Lore Society and Section H of the American Association for the Advancement of Science. The sessions were held in Widener Hall, Free Museum of Science and Art, University of Pennsylvania, December 28-30th, inclusive. The joint program was as follows:¹

1. Anthropometric Work at the St. Louis Exposition: (a) Sense Tests of Various Races; (b) Physical Measurements of the Philippine Groups. R. S. Woodworth and Frank G. Bruner.
2. The Story of a Shield. James Mooney.
3. Themistology. Edward Lindsey.
4. Recent Investigations in the Somatic Anthropology of the Brain of Distinguished Persons, of Individuals of Various Races, and of Criminals. Edward Anthony Spitzka.
5. Medical Notes on the Southwestern Indians. A. Hrdlička.
6. The Physical Resemblance of Twins. Edward L. Thorndike.
7. The Color Sensibility of the Peripheral Retina (by title). J. W. Baird.
8. A Tale in the Hudson River Mohican Language (by title). J. Dyneley Prince.
9. The Settlement and Transfer of Upper Louisiana (by title). Paul Beckwith.
10. Superstitions of School Children. Will S. Monroe.
11. The Use and Study of Anthropology in School (by title). Amos W. Farnham.
12. Disenchantment by Decapitation, address of the retiring President (read by Mr. Newell). George Lyman Kittredge.
13. Influence of European Contact on Aboriginal Institutions (by title). Alexander F. Chamberlain.
14. The Kiowa Supernatural. James Mooney.
15. The Tale of the Three Wishes. William Wells Newell.

¹ For abstracts of the papers, see report of George H. Pepper, Secretary of Section H, in *Science*, March 24, 1905.

16. The Influence of the Sun on the People of the Hopi Pueblos. J. Walter Fewkes.
17. The Historic and Prehistoric Ruins of the Southwest. Edgar L. Hewett.
18. The Election at Jemez Pueblo (by title). Albert B. Reagan.
19. Prehistoric Surgery. A Neolithic Survival. George Grant MacCurdy.
20. Mexican and Central American Archeology, address of the Vice-President. Marshall H. Saville.

In the absence of President W J McGee, Vice-President William H. Holmes occupied the chair. The members of the Council present were: Miss Fletcher, Messrs Holmes, Dorsey, Farrand, Fewkes, Hough, Hrdlička, Hyde, Kroeber, MacCurdy, McGuire, Mooney, Pepper, Saville, E. L. Hewett, and Gordon.

The report of the Treasurer, Mr B. Talbot B. Hyde, was read and referred to the Auditing Committee consisting of Messrs Boas (chairman), Farrand, and Harlan I. Smith.

REPORT OF THE TREASURER

RECEIPTS

| | |
|---|-------------------|
| Balance from 1903 | \$ 53.83 |
| Anthropological Society of Washington..... | 608.25 |
| Annual dues..... | 685.98 |
| Annual subscriptions to <i>American Anthropologist</i> from libraries.. | 369.16 |
| Other annual subscriptions..... | 462.15 |
| Sale of back numbers..... | 406.85 |
| Publication fund..... | 235.00 |
| Authors' reprints (at cost)..... | 151.57 |
| American Ethnological Society..... | 230.76 |
| New York Academy of Sciences..... | 62.50 |
| | <u>\$3,266.05</u> |

EXPENDITURES

| | |
|--|-------------------|
| New Era Printing Company, for printing, binding, and mailing <i>American Anthropologist</i> and for reprints..... | \$1,744.06 |
| Stationery and job printing, including 1,500 copies of illustrated prospectus..... | 100.34 |
| Editor's expenses, including advertising back numbers and mail- ing prospectus..... | 144.31 |
| Illustrations for <i>American Anthropologist</i> | 188.70 |
| Letter-heads, circulars, etc..... | 73.24 |
| Postage and petty expenses of Secretary and Treasurer..... | 68.32 |
| Rebates on overpayments (including \$30 paid Anthropological Society of Washington for sale of Old Series)..... | 44.15 |
| Binding of back numbers for St. Louis Exposition..... | 24.00 |
| Insurance of back numbers..... | 25.00 |
| | <u>\$2,412.12</u> |

The following were elected to membership in the Association :

| | |
|---------------------------|----------------------------|
| Edward H. Angle, D.D.S. | Miss Elizabeth J. Letson, |
| Miss Adela Breton, | Reamer Ling, |
| Thomas S. Dedrick, M. D., | Henry Link, |
| E. W. Deming, | Rev. James William Lowber, |
| Christopher Easton, | Rev. J. D. Marmor, |
| William H. Ellsworth, | Owen W. Mills, |
| Dr William H. Furness, | William W. Newell, |
| W. R. Gerard, | Grace Nicholson, |
| Pliny E. Goddard, | Adolph C. Reichard, |
| George Byron Gordon, | Francisco M. Rodriguez, |
| R. H. Harper, M. D., | Marshall H. Saville, |
| C. V. Hartman, Ph.D., | Elizabeth J. Van Beuren, |
| George G. Heye, | Miss Georgie Van Brunt, |
| H. E. Hoopes, | Atreus Wanner, |
| L. W. Jenkins, | George A. West, |
| A. Kirschmann, Ph.D., | Clark Wissler, |
| Francis LaFlesche, | Christopher Wren. |

Amendments to the constitution were proposed by Miss Fletcher and Messrs Holmes and MacCurdy, and were favorably received by the Council. They are :

ARTICLE V, SECTION 1, second and third lines : Change *a number of councilors to be determined annually to twenty-four councilors.*

SECTION 2, third and fourth lines : Change *a number of councilors to be determined by the council to six councilors.*

SECTION 3 : Add at the end of the section : *Five shall constitute a quorum.*

SECTION 7 : Strike out at the end of the section : *of whom not more than one shall be a member of the council.*

ARTICLE VII, SECTION 1 : Strike out entirely.

SECTION 2 : Omit from first sentence : *whose chairman shall be members of the executive committee.*

Resolutions were proposed and adopted by the Association as follows :

Resolved, That a committee be appointed to represent the American Anthropological Association before the Committees on Public Lands of the United States Senate and House of Representatives at meetings of those Committees held for the consideration of measures for the preservation of antiquities, and that this committee be instructed to advocate the acceptance and passage of the particular bill that seems in their judgment to cover the requirements of the case most fully, and that at the same

time meets with the full approval of the Interior Department, which Department has control of all public lands and whose agents in the field must be relied on exclusively for custodianship and care of the antiquities in question.¹

The Committee provided for in the resolutions was appointed by the chair as follows: William H. Holmes (Chairman *ex officio*), Edgar L. Hewett (Secretary), George A. Dorsey, Miss Alice C. Fletcher, George Grant MacCurdy, George B. Gordon, A. L. Kroeber, M. H. Saville, F. W. Putnam, Stewart Culin, C. V. Hartman.

The election of officers resulted as follows: President, FREDERIC W. PUTNAM; Vice-President to serve four years, WILLIAM H. HOLMES; Vice-President to succeed F. W. Putnam, GEORGE A. DORSEY; Secretary, GEORGE GRANT MACCURDY; Treasurer, B. TALBOT B. HYDE; Editor, F. W. HODGE.

Members of the Council as at present constituted are W. J. McGee, Frederic W. Putnam, William H. Holmes, Miss Alice C. Fletcher, George A. Dorsey, Franz Boas, George Grant MacCurdy, B. Talbot B. Hyde, F. W. Hodge, Frank Baker, Charles P. Bowditch, A. F. Chamberlain, Stewart Culin, Roland B. Dixon, Livingston Farrand, J. Walter Fewkes, George Byron Gordon, Edgar L. Hewett, J. N. B. Hewitt, Walter Hough, Aleš Hrdlička, A. L. Kroeber, Joseph D. McGuire, Otis T. Mason, Washington Matthews, James Mooney, George H. Pepper, Marshall H. Saville, Harlan I. Smith, Frederick Starr, John R. Swanton. Of these the first nine named constitute the Executive Committee.

Special meetings of the Association or of the Council may be called at any time. A special meeting will be held at Portland, Oregon, during the summer, the date to be determined by a committee appointed for that purpose.

GEORGE GRANT MACCURDY,

Secretary.

Yale University Museum,
NEW HAVEN, CONN.

¹ For the present status of this proposed action see pages 164-166.

American Anthropological Association

OFFICERS AND MEMBERS¹

APRIL, 1905

OFFICERS

- PRESIDENT, FREDERIC W. PUTNAM, Cambridge.
VICE-PRESIDENT 1908, WILLIAM H. HOLMES, Washington.
VICE-PRESIDENT 1907, MISS ALICE C. FLETCHER, Washington.
VICE-PRESIDENT 1906, GEORGE A. DORSEY, Chicago.
VICE-PRESIDENT 1905, FRANZ BOAS, New York.
SECRETARY, GEORGE GRANT MACCURDY, New Haven.
TREASURER, R. TALBOT B. HYDE, New York.
EDITOR, F. W. HODGE, Washington.

LIFE MEMBERS

- | | |
|---|--|
| MR EDWARD E. AYER,* Railway Exchange Building, Chicago, Illinois. | MR ARCHER M. HUNTINGTON,* Baychester, New York. |
| MR CHARLES P. BOWDITCH,* 28 State St., Boston, Mass. | M. LE DUC DE LOUBAT,* 53 Rue Dumont d'Urville, Paris. |
| | MR CLARENCE B. MOORE,* 1321 Locust St., Philadelphia, Pa. |

MEMBERS

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INCRUSTED OBJECTS FROM PUEBLO BONITO, NEW MEXICO

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NO. 2

CEREMONIAL OBJECTS AND ORNAMENTS FROM PUEBLO BONITO, NEW MEXICO

By GEORGE H. PEPPER

INTRODUCTION

In northwestern New Mexico there is a group of ruined pueblos that stretch for miles along the fertile valleys and mesa tops. The Chaco cañon proper contains the major portion of these ruins, one of the greatest of which in point of interest is Pueblo Bonito. The writer visited and explored parts of this ruin in the summer of 1896, and the investigations were continued thereafter for several years. This work, which was made possible by Mr B. T. B. Hyde and Mr F. E. Hyde, Jr, of New York city, was planned by Prof. F. W. Putnam, and the material collected is now in the American Museum of Natural History.

Pueblo Bonito is near the western end of the cañon and may be reached by driving 65 miles northward from Thoreau, a station on the Santa Fé Pacific railroad, near Gallup, New Mexico. It was one of the homes of an ancient sedentary people who grouped their houses into great many-celled structures and surrounded them with a strong defensive wall, thereby making the town a fortress as well as a place of habitation. Pueblo Bonito, like the other ancient settlements in the cañon, is now in ruins, and many of the rooms are completely covered with debris and drifted sand. The building as a unit measures more than 500 feet in length; the lesser axis is somewhat more than 300 feet. It is semicircular in form, the rounded portion enclosing the structure on the east, north, and west, while the southern side was protected by a straight wall of heavy masonry. The stones used in the building were taken from

the adjacent sandstone cliffs, the work of quarrying being greatly facilitated by the natural cleavage.

The age of Pueblo Bonito is still in doubt, but nothing was found during its excavation to show that its former occupants ever had intercourse with the Spaniards. The first mention of the pueblo was made by Josiah Gregg,¹ in 1844. Since that time it has been visited by soldiers and travelers, and several descriptions of it have been written. Gen. James H. Simpson² and Mr William H. Jackson³ made careful studies of the ruin and published accounts in 1850 and 1878, respectively.

POSITION OF ROOM 38

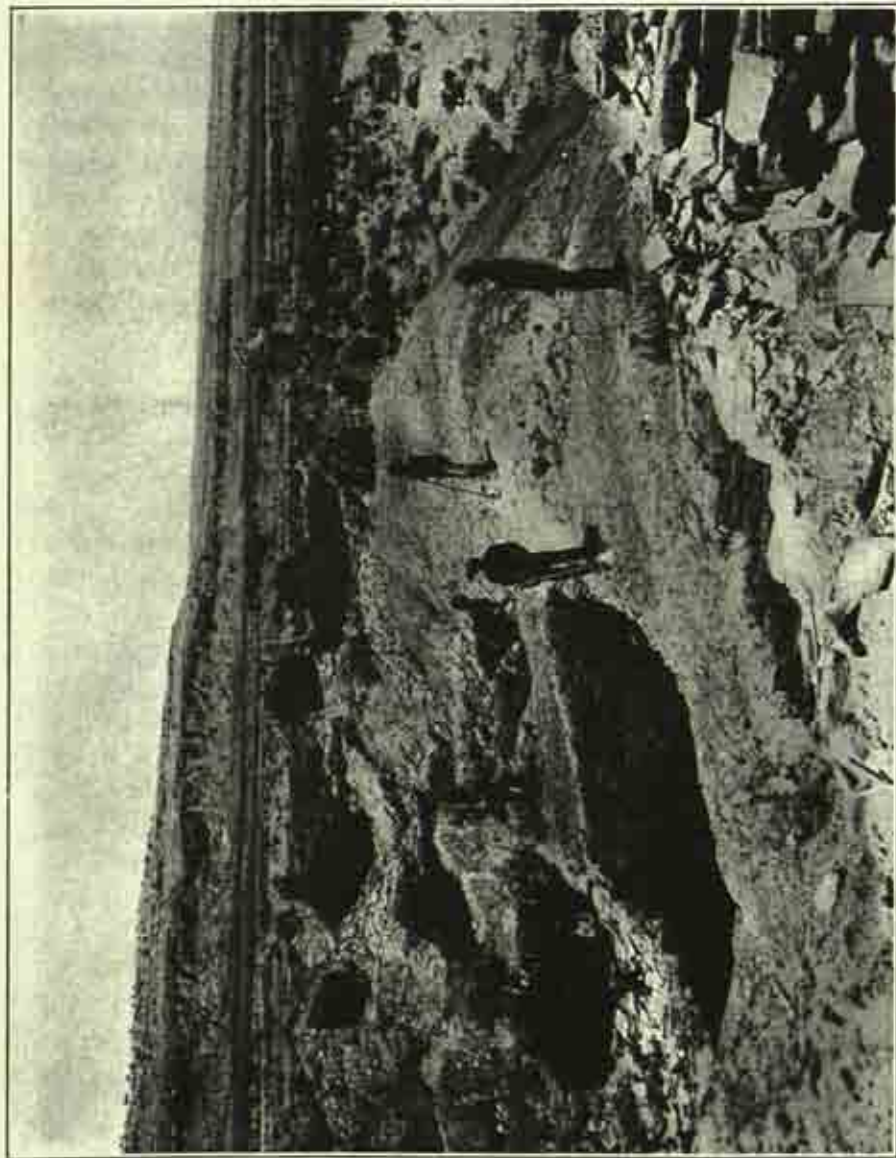
During the season of 1896 we were enabled to uncover a series of rooms extending along the outer wall of the northern part of the ruin. The major portion of this first year's operations was confined to the north central and northwestern parts of the pueblo, although a sufficient number of rooms were opened in other portions to furnish data concerning the style of masonry of the upper series and also of that of the underlying ones. The results of these excavations governed to a large extent the plans for the work of the succeeding season. Owing to the great size of the ruin, little could be accomplished in one season of field work; it was therefore a question of obtaining a representative collection of objects, together with sufficient data concerning the older portions of the pueblo to enable us to gain an idea of the duration of the period of occupancy.

The first work in 1897 was the continuation of excavations in a row of rooms constituting the third series of the northern or curved part of the building. The debris was removed from the western extension of this series, and some very interesting specimens were found on the floors. One of the first rooms to receive attention during this season was that designated No. 38 in the field notes. Its position may be seen in the accompanying illustration (plate XVIII).

¹ Josiah Gregg, *Commerce of the Prairies*, 1, 284-85, 1844.

² J. H. Simpson, *Journal of a Military Reconnaissance from Santa Fe, New Mexico, to the Navajo Country*, Washington, 1850.

³ Wm. H. Jackson, *Ruins of the Chaco Cañon, Examined in 1877*; Tenth Rep. Hayden Survey, pt. III, Washington, 1878.



WESTERN END OF PUEBLO BONITO — ROOM 38 IN THE FOREGROUND

Room 38 was generally rectangular; its north and south walls were curved, but not to an appreciable extent. The room was filled with debris consisting of sandstone slabs from the fallen walls, decaying ceiling beams, and the adobe floors of upper rooms with whatever objects were on them when they gradually weakened and finally collapsed. On this account many objects of scientific interest were broken or scattered through the debris.

THE PLATFORM CONTAINING CEREMONIAL OBJECTS

The work in room 38 brought to light an interesting collection of material, the greater part of which was of a ceremonial character, or at least might have been used in sacred observances.

The eastern end of the room was excavated to a depth of several feet and the work was then carried westward. Nothing of particular interest was found in the upper layers, but the removal of the stones and the fallen beams was still in progress when a platform was uncovered. The first evidence of this structure was a peculiar projecting wall, six inches thick and extending in a north-westerly direction. It was attached to the south wall and had been used as a support for a beam that entered the north wall at a point opposite. The western support of the platform was upheld by posts, but these and the poles that had formed its upper surface were no longer in position; they had been crushed by the weight of the debris and, when uncovered, were greatly decayed.

CEREMONIAL OBJECTS IN SITU

One of our Navaho laborers was excavating in the western part of the room and had reached the point where the fallen masonry ended, when he encountered the first evidence of a ceremonial deposit. At the end of a horizontal stroke we noticed that the Indian had broken an object of bone, and investigation showed that it was inlaid with turquoise and jet. The extremities of the bone had been shattered, but fortunately the mosaic itself had not been injured.

The utmost care was necessary in uncovering this specimen and the objects that surrounded it. When the brush and stylus had removed the sand from about the bone, it proved to be of the so-

called scraper form. It had been completely covered with drift-sand and was lying with the blade pointing toward the west. Directly south of and almost touching this scraper was another of similar shape and size. The first one was lying with the rounded portion upward, whereas this rested upon its convex surface. It was observed that the second scraper had also been inlaid, but owing to the fact that the inlaid surface was downward, there was no support for the tesserae and most of them had fallen out.

For convenience the field numbers will here be used in referring to the scrapers and the objects found with them. The first scraper will be known as No. 9 and its companion as No. 10. In plate XIX these mosaic pieces are shown in situ with the smaller specimens grouped a little to the north of them. The first object uncovered near the scrapers was a pendant of turquoise (No. 11); it was two inches east of and opposite the central portion of No. 10. The next specimen, also a turquoise pendant (No. 12), was found an inch west of No. 10, in the angle formed by the two scrapers. Both of these pendants were at the level of the lower surface of the scrapers. A depth of several inches was reached before the next object was found; but the remaining specimens will be considered according to the arbitrary numbering of the field notes instead of allowing their depth to govern the sequence.

No. 1 is a bird form, made of decomposed turquoise; it was found below the level of the scrapers and is in good condition. No. 2 is also a bird form; it was three inches below the level of No. 9, and was lying on its left side, the head pointing toward the north. No. 3, a turquoise pendant, was found near No. 2. No. 4 is the third bird form that was uncovered; it was resting in a natural position, with the head pointing southward, at a depth of an inch and a half lower than the scrapers. No. 5 is another turquoise bird; it was found six inches below No. 9, and was lying with its head toward the northeast. No. 6 is the tail portion only of a bird of turquoise and was found four and a half inches below the level of No. 9. Several fragments of the same bird were found in the surrounding sand. Nos. 7 and 8 are beads made of jet; they were found six inches below the scrapers. As the four succeeding numbers, the scrapers and pendants, have been noted, and as they will



INLAID SCRAPERS AND OTHER CEREMONIAL OBJECTS IN SITU

be treated more in detail when the esthetic aspect of the specimens is considered, No. 13, which is a large slab of jet perforated for suspension, will now be referred to. This specimen was found only half an inch northwest of No. 4, and the largest fragment was on the same level. Specimens 11, 12, and 13 are not shown in the photograph. Of the remaining objects, Nos. 2, 3, 4, 5, and 6 are in situ; Nos. 1, 7, and 8 were removed in the work of uncovering the other specimens, but were replaced within an inch of their original positions.

THE INLAID SCRAPERS

Bone implements of the type represented in the accompanying photograph (plate xix) are found throughout the ancient Pueblo region of the Southwest. They are known by several names, the most usual of which is "bone scraper," and this term will here be employed. They are generally made from the humeri of deer, elk, or antelope, and are found of all sizes. The average is about six inches, but they range from two to eight inches in length, and of relative width.

Pueblo Bonito has furnished a large number of specimens of this particular type of implement, and from its occurrence throughout the pueblo it would seem to have been an object of general use. The refuse heaps, and the rooms that had been abandoned to become receptacles for the sweepings from the houses, contributed a good share of these implements in the collection. Almost all of them showed use and many were broken.

The bone scrapers from Pueblo Bonito were rarely decorated; but when ornamentation occurred, it was generally in the form of incised designs, such as cross-hatching, meanders, and animal forms. There is but one specimen similar to the incrustated ones which we are about to consider. It was found in a fragmentary condition in Room 170, but there are evidences that it had been prepared for the reception of an inlay similar to that shown in the colored frontispiece. This specimen is shown in figure 3.

The inlaid scraper as represented by the colored plate is slightly reduced in size. It is the distal or elbow end of the humerus of one of the large ungulates, the animal being either a large black-tail deer or a small elk. In preparing the bone for the reception

of the inlay, the usual method was no doubt employed. A groove was cut with a stone knife in one side of the humerus, and the cut extended until it encircled the bone. This process was continued until the bone could be broken apart. The cutting away of the under side was the next step. This was accomplished by grinding, and the final touches to the edges were given with a polishing stone. In scrapers designed for every-day use, no further work was done; but as this particular specimen was intended for an especial use, the maker next turned attention to the handle end. The condyles in their natural state protrude to such an extent that the symmetry of

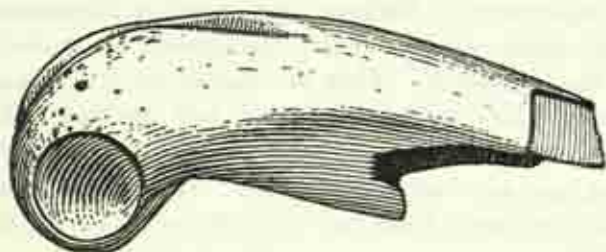


FIG. 3.—Scraper prepared for inlaying. (Natural size.)

the object is affected, hence these were ground until perfectly rounded, and presented, as viewed transversely, a cylindrical aspect, due to the careful rounding of the under parts of the side condyles. The entire surface of the epiphysis was ground, reducing its size considerably.

In preparing for the work of incrustation, a broad band was cut in the convex surface of the bone, extending from edge to edge of the flattened part. This groove was 2 cm. 4.5 mm. in width, and was worked to such depth as would cause the tesserae to correspond with the general surface of the bone. The sides of the cut were trued and the groove was then ready for the inlay.

Piñon gum seems to have been the medium for seating the small pieces of stone and shell. A layer of this material was spread upon the bottom of the cut, and upon this foundation the mosaic pattern was developed. In the scraper under consideration fifty-six pieces were used in the work; of these, twenty were elongate pieces of jet; there were sixteen pieces of turquoise of the same shape, ten pyramidal pieces of turquoise, and ten pieces of red gum,

pointed, as were the turquoise pieces last named, and made to match these inlays, thereby forming a flat finish at the end of the band. When the inlaying was completed, the surface of the mosaic, as well as that of the bone, was polished.

In examining the design and execution of this implement one cannot fail to observe that its maker had an excellent appreciation of decorative art. The jet and turquoise bands are placed systematically, while the colors are alternated either for ceremonial symbolism or for artistic effect. These inlaid bands are composed of carefully shaped pieces, being not only rectangulated but concavo-convexed in order that they may conform to the rounded surface of the bone. There are five such bands, three of jet and two of turquoise, and these are bordered by a serrated line of turquoise composed of a series of pyramidal pieces, each so accurately pointed by grinding that they give a beautiful finish to the highly decorative band. The corresponding inlays of red gum are in strong contrast

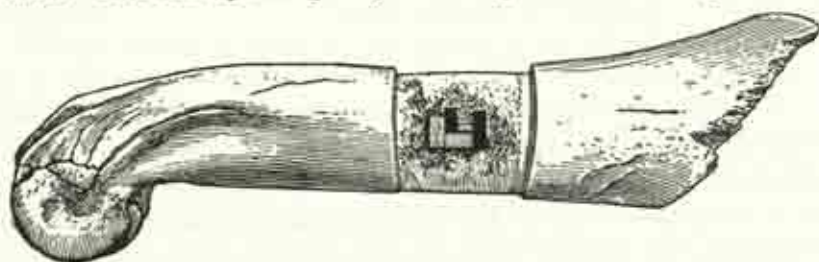


FIG. 4. — Bone scraper (No. 10) showing remnant of mosaic.

to the pointed pieces of turquoise, and impart a richness in finish that is almost unique in aboriginal American handiwork. The care with which the inlays were adjusted is worthy of note. The bone is but 2 cm. 7 mm. in width, and many of the sets are quite elongate, but they were embedded in the gum in such a way that their edges match perfectly, while the contour of the bone is carefully preserved.

The second scraper, No. 10 (figure 4), is practically a duplicate of the one just described. When found, five of the tesserae, three of turquoise and two of jet, were in place. From their position and general arrangement it would seem that the design had been in the form of a half-meander or an interlocking fret. Beneath the scraper

were found nine jet and twenty-seven turquoise tesserae. This comparatively large number of turquoise pieces may be accounted for by the fact that some of the jet pieces are two to three times longer than the average sets of the other material. This scraper is 15 cm. 5 mm. long, and is in perfect condition. The groove that held the mosaic is 2 cm. 6 mm. wide and averages 2 mm. in depth. The loss of the design is compensated by the fact that we have been enabled to observe the finish of the bottom of the cut which was left rough in order that the piñon gum might the more firmly adhere.

Whatever the use of these scrapers, it may safely be assumed that they were made for ceremonial purposes. With the other objects found on the platform they may well have formed a part of the altar paraphernalia of some religious society. There is convincing evidence that the room in which they were found belonged to a macaw or possibly to a parrot clan, but this phase of the subject must be considered in another paper.

THE JET FROG AND THE JET BUCKLE

The exact positions occupied by the jet frog and the buckle, which are shown in the colored plate, are not known. These incrustated objects were stolen by the Navaho Indian who was working at the platform end of the room and who was alone when the pieces were found, hence could not resist the temptation of appropriating them. The specimens were recovered before they had been harmed in any way, however, and the man who took them pointed out the positions where they were lying when he uncovered them. As there is no certainty concerning a stated position in a room that has been excavated, the positions of these jet pieces will be omitted; it is sufficient to say that they came from a point a few inches above and quite near the inlaid scrapers.

When the stolen objects were returned, the jet buckle exhibited four depressions that at one time contained circular inlays; and in these corner depressions there still remained thin beddings of piñon gum the appearance of which indicated that some of the sets had probably been in place when the buckle was found. We therefore examined the turquoise and jet inlays that had been found on the

platform, and were rewarded by the finding of two turquoise disks that fitted the depressions in the buckle. One of the holes was almost devoid of gum, but the setting which conformed to it in outline retained a coating of this material which raised it to the proper level and caused it to fit perfectly. A second depression contained practically all the gum that had been used in seating the inlay, and in this condition its surface was smooth and slightly concave. The corresponding setting was double convex in form, absolutely free from gum, and highly polished: its surface presented no hold for the gum, and, in falling out, only small particles were carried with it. The joint made by the turquoise and the socket was perfect, hence there was no doubt that it had found its original position. Unfortunately the sets from the other two corners were not recovered. Whether they were overlooked in examining the sand from the platform, which does not seem possible, or were lost by the Indian while the buckle was in his possession, could not be determined.

This jet buckle is shown in the colored plate with the turquoise sets in place. In the painting from which the plate was made the specimen was faithfully copied and as now presented is almost of natural size; the various details of carving, surface finish, and inlay may therefore be readily described. The specimen is 8 mm. thick, and the surface measurements show it to be 5 cm. 6 mm. by 5 cm. 1 mm. The under part has a groove which crosses the specimen midway at its shorter axis, and spanning the groove are two bridge-like pieces carved from the original piece of jet. The openings beneath these spans, together with the groove, served as a means of fastening the buckle to a garment or the like. One of the spans was broken evidently while the buckle was in use, and the sides of the break had been drilled to form a new opening, which in turn was also broken but never repaired. There is still a good polish on the surface of the buckle, but it has crackled either from heat or from age; in all other respects it is well preserved.

This ceremonial object is termed a buckle for the sake of convenience. It may have been used in connection with a sash or other piece of clothing, but from its association it would seem rather to have been used as a head or breast ornament in ceremonies.

The frog figure accompanying the buckle in the illustration is carved from a piece of jet. The body of the animal is beautifully rounded, and the legs, which stand out in relief, their bend faithfully portrayed, and the toes represented by means of deep grooves, are very well formed. The mouth has the full rounded shape seen also in frog-shaped pottery vessels from the Chaco; and the eyes, consisting of two large pieces of turquoise, firmly set and highly polished, stand boldly out in a manner characteristic of the frog even in conventionalized Indian art. Across the neck there is a broad inlaid band of turquoise, consisting of seven tesserae that conform to the general level of the jet. One of the triangular sets that formed the ends of the band is missing.

The body of the frog has been polished, but it is now crackled to some extent, and on the under surface there is evidence of the action of fire; enough of the original polish remains, however, to convey a good idea of what the appearance of the object must have been when it was new.

The body of the frog is 1 cm. 7.5 mm. thick, 8 cm. 1.5 mm. long, and 6 cm. 5 mm. wide. The width, including the legs, is 7 cm. 1.5 mm. The balls of turquoise that form the eyes are 8.5 mm. in diameter and 3 mm. in height. The object was drilled for suspension, the holes being on the under part directly beneath the inlaid band. The incision made to receive the turquoise pieces forming the band was cut just deep enough to allow them to sink to the level of the surface, save at the ends where it was cut through to the opposite side. At these points the openings were triangular, and in cutting them through a separation was formed between the feet and the body, the parts being joined again at the point where the head and the toes meet.

The frog or the toad is a symbol of water among the Pueblo people of to-day, and there are numerous evidences tending to show that the same water symbol was employed by the ancient inhabitants to as great an extent as by their descendants. In Pueblo Bonito and in nearby villages it has been found in the form of pottery vessels, as well as carved from pure turquoise and scratched on stone slabs. Tadpole figures, which are also water symbols, are likewise represented in turquoise and pottery.

JET PENDANT, BEADS, AND BUTTONS

The largest jet pendant known to have been found in the Southwest was recovered from the same deposit. It is in a fragmentary condition, but enough pieces were recovered to give a general idea of its size and appearance when complete (figure 5). It is 9 cm. 2 mm. long, 6 cm. 6 mm. wide, and 1 cm. 1 mm. thick. The corners are rounded and it is of uniform thickness. The fragments were scattered through the debris, but the largest piece was lying half an inch northwest of and at the same level as specimen No. 4. This pendant was also drilled for suspension, the perforation being made through the edge as shown in the illustration, thus leaving the front surface unbroken. In view of the fact that the jet frog and the buckle are in a perfect state of preservation, so far as their completeness is concerned, it is difficult to account for the cracking and splitting of this pendant. From its present appearance and from the scattered fragments it would seem that it was broken or was in a very fragile condition when left on the platform.

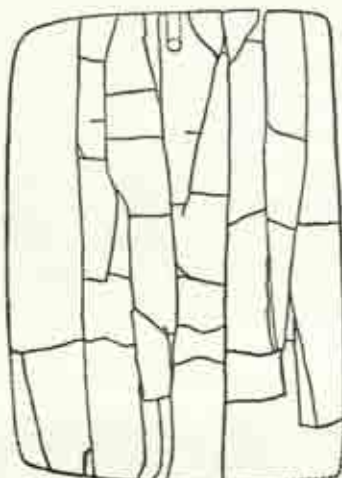


FIG. 5. — Jet pendant repaired.
(Two-thirds natural size.)

Pendants of this shape are not uncommon in the Pueblo area, but the specimen under consideration is exceptionally large. The material from which the latter was cut was used by the ancient Pueblos in making small objects of jewelry, but it was not the practice to employ large pieces even in fashioning ceremonial objects. This pendant was probably used as a breast ornament, either alone or in connection with the necklace of jet and shell beads found near it.

Beads of different sizes were scattered through the sand in which the larger objects were lying. In removing scraper No. 10, the depression in the handle end was found to be filled with sand, imbedded in which were eighty small jet beads, 2 mm. in diameter

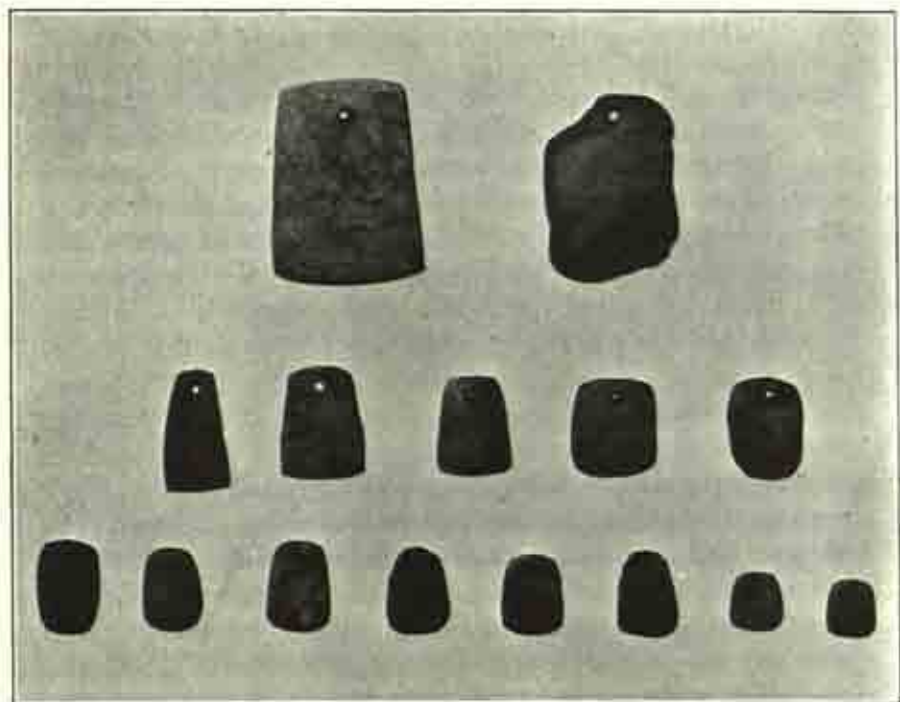
and averaging 1.5 mm. in thickness. In the debris surrounding the scrapers 313 beads of the same material and of the same size and shape were found. Associated with these beads were 46 that measured 3 mm. in diameter, but in other respects they were identical to the smaller ones. With these jet beads there were 19 white ones, made of stone and shell, and of the same size and shape as the others.

In plate xix two black objects (No. 7, 8) are shown in the foreground; these are the jet buttons mentioned in the general description of the contents of the deposit. In form they are oblate spheroidal. No. 7 averages 1 cm. 5 mm. in diameter, and No. 8 is only 1 mm. larger. The former is almost free from flaw, whereas its companion has a broad check line spanning the upper part. Both are perforated on the flat side, and they may have been used as garment ornaments or as pendants. A third button, or perforated ball of jet, was obtained from an Indian who had worked in this room, and had probably been stolen with the other objects above mentioned.

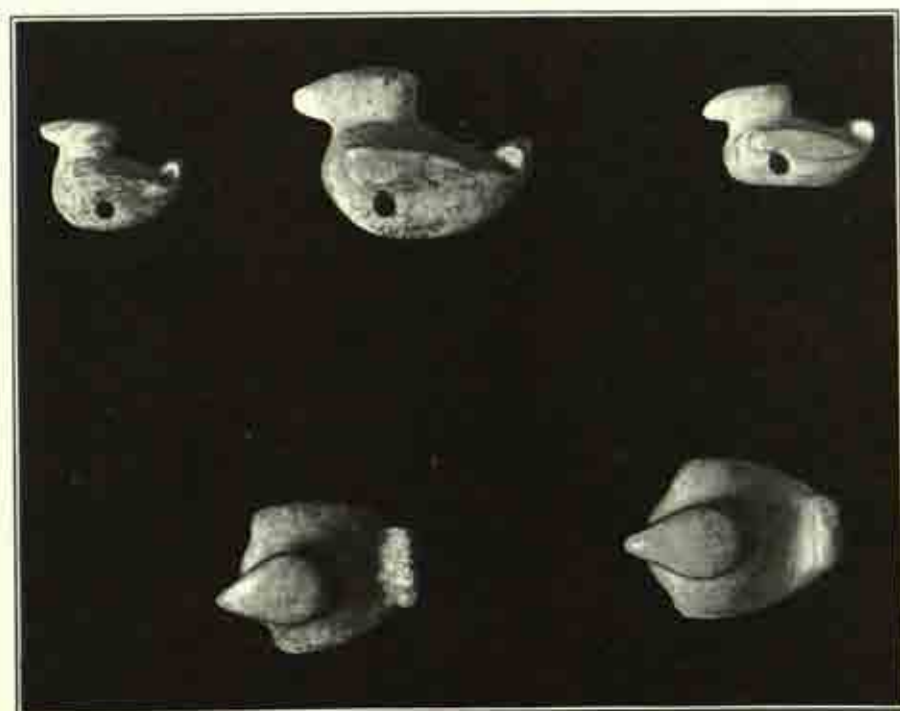
THE TURQUOISE BIRDS

Of the five bird forms found in Room 38, four were perfect and the fifth was represented by several fragments, the largest being the tail end (plate xx, *b*). These birds are cut from decomposed turquoise, and in color are pale bluish green. There is practically no variation in the eight specimens of the type found in Pueblo Bonito. The material from which the birds are carved is so soft that it can be cut with a knife. The figures were probably roughed out with one of the many forms of stone implements, and then ground to the desired shape with sandstone grinders. On the surface of some of the birds may be seen fine lines which, under a glass of low power, have the appearance of file scratches; they are nevertheless the marking made by the sandstone polishers. Lines of this character are in evidence on many of the stone implements found in this region, and are especially noticeable on objects of wood.

Over the surface of each of these five turquoise specimens there is a dull red patina. There are evidences of the matrix in some pieces, but the surface color seems to be due to soil discoloration. In the other three bird forms found in this ruin by the Navaho



A. TURQUOISE PENDANTS (SLIGHTLY REDUCED)



B. TURQUOISE BIRDS (NATURAL SIZE)

workmen, there are indications of this discoloration, but the greater part of it had been removed by carrying the objects about in their medicine bags or in using them as pendants on their necklaces. The head, tail, and wings of the birds are indicated in each instance. The variety represented is doubtless a water fowl, probably the duck, the poise of the head and the general angle of the body suggesting the appearance of a duck when resting on water. This form of bird seems to have been a favorite one with the sedentary people of the Southwest. From Pueblo Bonito alone it is carved from red hematite and stone, and in some Chaco ruins it has been found carved from pure turquoise, shell, and jet. In southeastern Utah, in the Grand Gulch region, some of the large basketry meal trays have a line of these bird figures as a decorative element; and in one of them the design is associated with the butterfly.¹ The largest bird (No. 2) is 2 cm. 7 mm. long, and 2 cm. 1 mm. wide. The smallest (No. 1) is 1 cm. 7 mm. long, and 1 cm. 3 mm. wide. These measurements do not include the projecting beaks, which vary in size in the different pieces, all of them being proportionate to the size of the body. The tails and wings are carved in relief, and all the specimens have lateral perforations below the front or shoulder portion of the wings. The position of the holes causes a top-heaviness when the birds hang free, but against the body they maintain the proper angle, hanging with the head upward.

TURQUOISE PENDANTS AND BEADS

There were fifteen turquoise pendants associated with the larger objects herein described (plate xx, a). Two of these are quite large, but the others are of medium size. The largest, No. 3, may be seen near the turquoise bird No. 2 (plate xix), on a slight elevation northeast of the scrapers. It is 3 cm. 4 mm. long, with a width of 2 cm. at the top and 2 cm. 5 mm. at the bottom, tapering gradually to the rounded base. In color it is delicate blue. The polished surface shows an interlacing of matrix lines, and the back, with the exception of a very small space in the upper right-hand corner, is a layer of brown trachyte—the rock in which the turquoise is found. The pendant has a thickness of 5 mm.; the edges have been

¹ Geo. H. Pepper, *The Ancient Basket Makers of Southeastern Utah*, pp. 13, 15.

smoothed and polished, and there is a perforation in the upper part. The drilling in this specimen, which is at an angle, with the larger opening on the turquoise side, is the most irregular that has been found in the turquoise work from Pueblo Bonito. The most remarkable feature of the specimen is its color, which is very light as compared with the other specimens from this room, whose prevailing shades range from dark blue to dull olive green. The light blue seen in the turquoise of commerce is seldom found.

Of the remaining fourteen pendants the largest is 3 cm. 1 mm. long, and the smallest 9 mm. They vary in shape and thickness, but are typical of the forms found in the various rooms of Pueblo Bonito, as indeed throughout this entire culture area. Other objects of turquoise were 106 flat circular beads and one small tessera. The beads ranged from 3 mm. to 6 mm. in diameter, and averaged 1.5 mm. in thickness.

In removing the small material, a peculiar ball-shaped object was brought to light. It seemed to be composed of fine brown meal, but mixed with it were minute particles of turquoise, shell, and jet. It had been retained in some perishable material that had entirely disappeared, but the rounded form was well defined. The ball, which was a little more than an inch in diameter, fell apart when it was taken up, but the material which composed it was preserved. In examining the contents, five small jet beads were found, also three fragments of jet beads of the larger size. The grindings preserved in this specimen were undoubtedly from the ceremonial objects that have been described. The practice of caring for waste material in the manufacture of ceremonial paraphernalia is well known among the modern tribes of the Southwest. Such refuse, as a rule, is deposited in accordance with ritualistic laws, but in this case, owing to the fact that the material was precious, it was no doubt kept for use in connection with other secret "medicines" in pieces of folded skin or in buckskin bags.

CONCLUSIONS

The ceremonial implements and ornaments that have been considered are extraordinary only as evidence of the development of an art known to most of the ancient Pueblo dwellers. Incrustation of

sacred ornaments or other objects by the ancient sedentary people of the Southwest has been known for a number of years. From the Gila region in southern Arizona there are several such specimens in the Hemenway collection of the Peabody Museum at Cambridge, Mass. Private collections in New Mexico and Arizona also contain objects of jet and shell ornamented with turquoise, and Dr Fewkes obtained one, in the form of a frog, during his excavation of the Chaves Pass ruins in Arizona. Of this specimen Dr Fewkes says: "The most beautiful ornament or fetish of shell incrustated with turquoise was found at the smaller of the two ruins at Chaves Pass. It was a specimen of *Pectunculus giganteus* covered with gum, in which were inlaid rows of turquoise nicely fitted together in the form of a frog or toad. As an example of mosaic work, this object is the only veritable mosaic known to me from ruins in the Southwest."

The researches of Fewkes, Cushing, Hough, and other students have demonstrated that large incrustated objects are seldom found. Pueblo Bonito has furnished the major portion of known examples from the Southwest. Future investigations in this ruin and others of the Chaco group should add materially to our knowledge of the esthetic side of primitive Pueblo life.

AMERICAN MUSEUM OF NATURAL HISTORY,
NEW YORK CITY,

NOTES ON THE ANTIQUITIES OF JEMEZ VALLEY, NEW MEXICO

By W. H. HOLMES

During the summer of 1889 I had the good fortune to accompany a field party of the United States Geological Survey, under the immediate direction of Major J. W. Powell, to northern central New Mexico, and was able to make somewhat extended studies among the antiquities of the Jemez valley. The Jemez river is tributary to the Rio Grande on the west, and its two branches, the San Diego and the Guadalupe, descend from the Jemez mountains through cañons of considerable depth, coming together as they emerge from the cañons 25 miles above the junction with the Rio Grande at Bernalillo. In 1875 I had studied the ancient ruins of southern Colorado and northwestern New Mexico, and had carried my investigations as far to the southeast as the valley of the Rio Chama, which drains the northern slope of the Jemez mountains. The work of 1889 therefore enabled me in a measure to complete a chain of observations connecting the ancient remains of San Juan valley with those of the region now occupied by the Pueblo tribes, and to reach at least tentative conclusions concerning the relations of the people and culture of the extreme northern portions of the Pueblo province with those of the middle and south.

The publication of these notes was delayed in the hope that I might be able to visit the region again and complete my studies, and they are now prepared for publication because of the desirability of placing them on record for convenience of reference in connection with the preparation of measures for the preservation of antiquities by the departments of the Government having control of the public lands.

In the lower Jemez valley there are three inhabited pueblos, Jemez, Sia, and Santa Ana, and there are perhaps as many as twenty or thirty deserted sites, situated mostly in the upper valleys, some of which must have been villages of considerable importance.

reconquest, and numerous interesting details culled from the Spanish chronicles are given by Bandelier in his *Final Report*. The Jemez pueblos were first visited by the Spaniards under Francisco de Barrio-nuevo in 1541. Oñate, in 1598, saw eight villages, and others were mentioned to him. Bandelier says that at the time of his visits in 1880-85 the Jemez gave him the names of seventeen of the old pueblos. He believes that the numerous small villages were gradually consolidated into two, and finally into one, the present pueblo.¹

Ancient dwelling sites. — About half a mile below the village of Jemez (see map, figure 6) are two anciently inhabited sites that show no distinctly marked architectural remains, but the ground is strewn with various minor relics. No specimen was found that suggested Spanish influence, and all varieties could be duplicated from the more northern sites where Spanish influence was never felt. All other sites visited in the valley exhibit in different degrees traces of modern Pueblo influence if not of the presence of the Spaniard. Fragments of coiled ware and of the delicate white pottery with decorations in black were plentiful, and bits of obsidian and agate and small implements of these materials were found. One of the sites is on the low east bank of the creek near the water's edge, and the other on the western side nearly opposite. Similar traces marking other ancient sites are found in various parts of the valley, and probably represent the exclusively prehistoric occupancy.

Ruined pueblo three miles west of Jemez. — On a partially isolated bit of mesa about three miles west of Jemez is a considerable ruin, which does not bear evidence, however, of long continued occupancy. The summit of the mesa is without trees and almost without soil, and water must have been obtained from far below. The walls of the ruin are well defined, and stand in places five or six feet in height; but they are formed of rough, loosely laid stones, and are extremely thin and unstable. They could not have been high at any time, as there is a marked absence of debris, and the dearth of pottery and kitchen refuse would seem to stamp the place as a temporary or emergency abode. The site is favorable

¹ A. F. Bandelier, in *Papers of the Archaeological Institute of America*, Amer. ser., IV, *Final Report*, part II, 1892, p. 208.

for defense, and there are traces of defensive walls along the margin of the summit. The buildings are irregular in plan and comprise three groups, the full length of the groups being about 450 feet and the width 350 feet.¹ A sketch plan is given in figure 7. The pottery of this site is partly archaic, while traces of later Pueblo

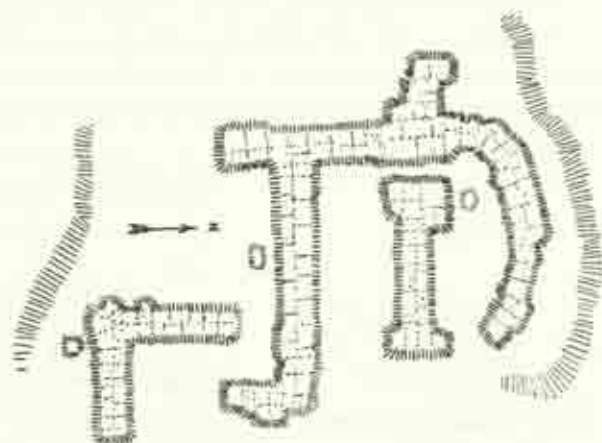


FIG. 7. — Sketch plan of ruined pueblo three miles west of Jemez.

work are common, and the presence of bits of porcelain would seem to indicate post-Spanish occupancy. Fragments of metates and mullers of usual type occur, as well as numerous minor relics of obsidian, agate, and other varieties of stone. There appears to be no definite historic reference to this site.

Vallecito Viejo pueblo. — Two unimportant ruined structures occur three and a half miles northeast of Jemez pueblo, on a bluff overlooking Vallecito creek (figure 8). They are rather unpretentious piles, and by their advanced state of decay would seem to have been long deserted. There are no positive indications of occupancy by post-Spanish inhabitants, although a few pieces of pottery are apparently allied to the later Pueblo forms. Few relics of any kind were observed. Fragments of the archaic varieties of pottery occur, and the usual forms of stone implements. The lower ruin, *A*, about 150 feet above the creek level, is squarish in outline, and

¹ The measurements given in this paper are all mere estimates, and the orientations are only approximate.

is about 175 by 180 feet in extent. It encloses a court in which a shallow circular depression occurs. The ridges of debris are four or five feet in height and two or three rooms in width. The upper structure, *B*, is about 150 by 200 feet in extent, and embodies two courts. The walls are very much reduced.

Ruins of Patokwa (San Juan de Jemez).—Two ruined pueblos, extremely interesting on account of their connection with the events of the Spanish conquest, are found at the confluence of the two main branches of Jemez creek, six miles above the present Jemez

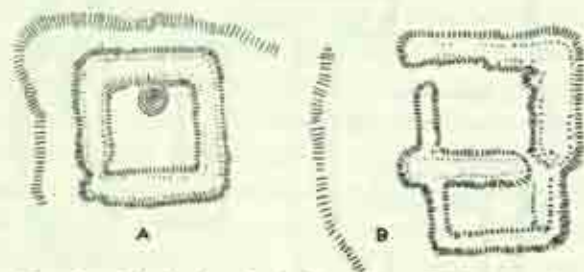


FIG. 8. — Sketch plan of ruined pueblo on Vallecito creek.

pueblo. One is on a low mesa point between the two streams, and the other occupies the end of the great mesa several hundred feet above. The lower site (figure 8, *A*) is one that would naturally be selected for residence by primitive peoples, and may well have been a principal pueblo of the valley in pre-Spanish times. One portion of the ruin is a large mound of debris from which the larger stones have been removed. This represents the prehistoric town. The other portion is in a much better state of preservation, and consists of lines of fallen house rows surrounding two great courts. That this structure is of late date is clearly indicated, not only by its state of preservation but by the presence at one corner of the ruins of a Catholic church. I had time for only a hasty review of these ruins, but found nearly all the usual varieties of artifacts of the valley—shallow metates, flattish mullers of cellular basalt, arrowpoints of obsidian and agate, and pottery of archaic as well as of later Pueblo times, the latter including a black polished ware, mica-finished ware, coarse reddish ollas with figures in black and red paint, and bowls with thickened upright rims and rude glazed decorations.

Ruins of Astialakwa.—An interesting group of ruined buildings is situated on the high and almost inaccessible promontory, a mesa remnant, overlooking the ruin at the confluence of the east and west branches of Jemez creek, just described. The ruins stand a short distance back from the front of the promontory and near the brink of the cliffs on the west side (figure 8, B). The walls are of unhewn stone, and bear evidence of hurried and apparently incomplete construction, there being a notable absence of debris of any kind. Traces of mortar occur in the walls, and a little plaster still remains on the interior surfaces. The walls are in no place more than five or six feet in height. The buildings are in a num-

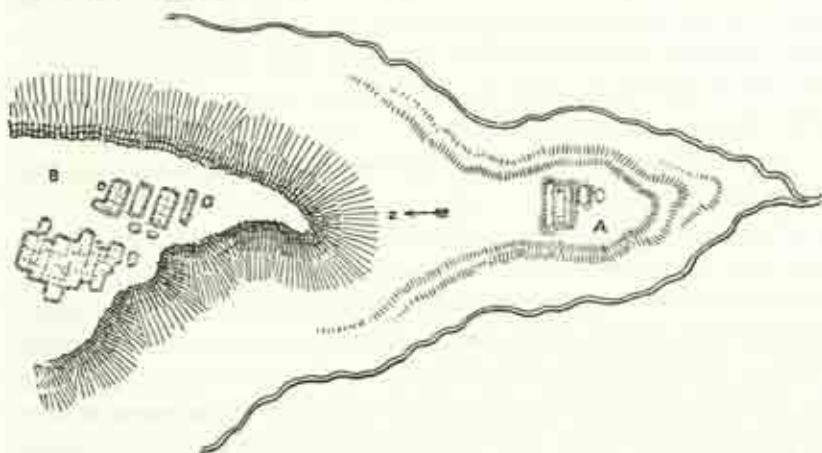


FIG. 9. — Sketch plan of ruined pueblos of Patokwa (San Juan de Jemez), A, and Astialakwa, B.

ber of groups, as indicated roughly in the sketch. There are few traces of household refuse on the almost naked rock surface of the site, but remnants of mortars and mullers of the usual type, as well as of pottery of several varieties, were found—the white ware with decorations in black, of the ancient type; numerous pieces of bowls and pots which show designs in greenish glaze; plain dark and gray cooking pots; and red and black decorated ware of modern type. There were also fragments of some large metates. There can be little doubt that this village was built at the period of Spanish encroachment by the people of the villages below as a place of refuge and defense, and it was here, according to historical

accounts, that they were defeated by the Spaniards and compelled to descend to the lowlands.

When Otermin made his unsuccessful campaign into New Mexico in the fall and winter of 1681, the Jemez retreated to the mesas. They soon returned, however, to retire again to the heights, — possibly upon the approach of Don Domingo Gironza Petriz de Cruzate in 1688. In 1692 Vargas found them in a large pueblo on the top of one of the mesas, and he succeeded after long parleyings in entering their village. The people displayed marked hostility, however, and it required all the tact and courage of the Spanish commander to prevent an outbreak while he was there. He succeeded in conciliating them at last, as well as the Queres of Santo Domingo, who were in their company, and one hundred and seventeen children were baptized on the spot. The Jemez gave the usual promises to behave well in the future, while firmly determined, as the sequel proved, to resist the Spaniards to the utmost. (Bandelier, *Final Report*, p. 212.)

Diego de Vargas visited the Jemez on their mesa a second time, on November 26, 1693.

Vargas, as soon as he reached the friendly Pueblos of Santa Ana and Cia, held a council with the leading men of both villages, and then marched with his force, said to have numbered one hundred and twenty Spaniards and some auxiliary natives, for the mesas above the San Diego Cañon. He left Cia at eight o'clock at night, on the 23d of July, and at a distance of four leagues, near the junction of the two streams, divided his men into two bodies. One of these, consisting of twenty-five Spanish soldiers under command of Eusebio de Vargas and the Indian allies, was to enter the gorge of San Diego and climb the mesa on a dizzy trail, so as to reach the rear of the highest plateau, while the main body, led by Vargas himself, ascended from the southwest. The Spanish commander had ascertained that the Jemez had evacuated their village on the mesa, and retired to a still higher location north of it. The operations were completely successful, and the Indians were taken between two fires; but they offered a desperate resistance. The total number killed on this occasion amounted to eighty-four, five of whom perished in the flames, and seven threw themselves down the cliffs rather than surrender. Vargas remained on the mesas until the 8th of August, removing gradually the considerable stores found in the villages, and the prisoners, who numbered three hundred and sixty-one. Then setting fire to both villages, he withdrew to San Diego, and thence to Santa Fé. During his stay on the

mesas he discovered a third pueblo, recently built there by the people of Santo Domingo, who had joined the Jemez tribe upon the approach of the Spaniards. That village is said to have been situated three leagues farther north, so that, within a distance of about twelve miles from the southern extremity, three pueblos had been constructed between 1688 and 1694, all of which were abandoned after the latter year. (*Ibid.*, pp. 213-214.)

It is an interesting fact that along the margins of the precipice are traces of defensive works built of stone.

Ruins of Giusewa (San Diego de Jemez).—A ruined pueblo of considerable importance is situated at Jemez Hot Springs, twelve miles above Jemez pueblo. At present the chief feature of interest on this site is the ruin of a Spanish church, with its heavy walls and fortress-like tower. It has been constructed of materials derived from the immediate vicinity. The tower and upper parts are of the impure friable limestones of the promontory against which the foundations are built. The lower end of the church and the walled enclosure extend down to the border of the arroyo, and the latter has been built of heterogeneous materials. The adobe mortar has been made from the debris of ancient house sites and is full of fragments of pottery, obsidian chips, and charcoal. A careful examination developed the fact that the pottery contained in the mortar is chiefly of the white ware with black decorations; but there are also some black, slightly polished pieces, and much plain gray ware. A few fragments of coiled vases were also found. Sherds of glazed pottery were observed in the vicinity, but none were included in the walls of the buildings—and this is negative evidence, at least, that this ware was not made here in pre-Spanish times. Its presence about the ruin indicates that it was in use, however, during Spanish occupancy.

At the lower end of the ruin a road has been cut through the razed walls of the ancient village, and excavations have been made by householders here and there. In the course of this work many interesting things had been discovered, and some had been preserved by a local physician, Dr J. M. Shields. When the old houses were excavated many skeletons were found scattered about the floors, and numerous pieces of pottery, flutes of bone, and

domestic utensils were recovered. The pottery in these houses is mostly of the white variety with black decorations, the forms being of usual types. An iron knife occurred in the same connection. In one section examined I found all kinds of pottery to a depth of five feet. This site has been so much disturbed by cultivation and by building, in recent times, that the outlines of the old structures cannot be traced. Bandelier says that this pueblo "formed several hollow quadrangles at least two stories high. It contained about eight hundred inhabitants. The church is a solid edifice, the walls of which are erect to the height of ten or fifteen feet, and in places nearly eight feet thick. It is not as large as the one at Pecos, and behind it, connected with the choir by a passage, rises an octagonal tower, manifestly erected for safety and defense. Nothing is left of the so-called 'convent' but foundations. The eastern houses of the pueblo nearly touch the western walls of the church, and from this structure the village and a portion of the valley could be overlooked, and the sides of the mesas easily scanned. Ginsewa [Giusewa] is an historical pueblo. It first appears under the name of Guimzique in 1626. It seems that it was abandoned in 1622, on account of the persistent hostility of the Navajos, who had succeeded in scattering the Jemez tribes. In 1627 Fray Martin de Arvide obtained permission from his superior, the custodian Fray Alonzo de Benavides, to attempt to gather the tribe again in its old home. The efforts of the monk were successful, and the Jemez Indians settled in two of their former pueblos — at Ginsewa and at Amoxiumqua."¹

Ruins of Amoxiumqua. — On the high mesa overlooking Jemez Hot Springs on the west are the remains of another large and ancient pueblo, which is reached by a tedious and very precipitous trail. The ruin, a sketch plan of which is given in figure 10, stands in an open space in the forest, about a quarter of a mile from the brink of the cañon, and from its walls a glimpse can be had of the lower valley of Jemez creek. It is larger than any of the ruins in the valley below, and appears to represent two periods of occupancy, an ancient or pre-Spanish one, and a more modern one, probably of the Spanish period, the later village having been built upon the ruins of the earlier. Bandelier states² that Amoxiumqua was abandoned

¹ *Final Report*, pp. 204-205.

² *Ibid.*, p. 208.

previous to 1680. In the accompanying sketch plan (figure 10) the old town, which is a mere heap of debris and quite limited in extent, is indicated by a stippled or dotted surface. The newer construction consists of a series of connected ridges, two or three rooms in width and from a few feet to eight or ten feet in height. Some of the room interiors are exposed and still retain the coatings of plaster, and the ceilings are of logs with transverse layers of brush or splinters to support the earthen covering. The stones of the walls, which have been derived from the cliffs in the vicinity, are rather even in size, and have been in cases slightly dressed on the outer surface. The length of the ruin from northeast to southwest is about 350 yards, and the greatest width is some 200 yards. The rows of ruined buildings have a width of from 20 to 30 feet. Seven circular kiva-like depressions are associated with the ruin. Six of these are approximately 20 feet in diameter, and the sixth, a part of the encircling wall of which is intact, is 32 feet in diameter. On the side opposite the cañon is a large depression, 150 feet in diameter and five or six feet deep, which contains a pool of water, and was undoubtedly used as a reservoir. The potsherds are very numerous on this site, and cover the ground for many hundreds of feet around the ruin, extending far down the slope into the timber on the south and west. In the older ruin none but the archaic varieties were observed, and these predominate over the entire site. They include the coiled ware, the white ware with decorations in black, thin black ware, and red ware. The white archaic ware comprises nine-tenths of the fragments, and is uniform in nearly every respect with the prevailing variety of the San Juan valley. The more recent varieties include, especially, the glazed ware, which is uniform in character with that from many other sites of the general region. Metates

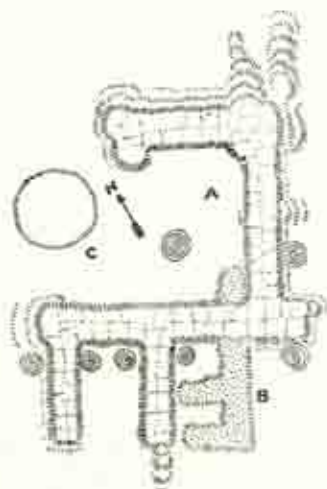


FIG. 10.—Sketch plan of the ruined pueblo of Amoxiumqua.

and mullers of usual form were observed, and arrowpoints and other flaked objects of obsidian and agate are common. A few scraper-like forms were collected.

Ruined pueblo on the plateau three miles west of Jemez springs.—Another ruined pueblo of large size and comparatively well preserved is situated in an open space in the forest on the summit of a spur of the plateau overlooking the cañon of the first northern tributary of the west fork of Jemez creek and some two miles west of the great ruin (Amoxiumqua) overlooking Jemez Hot Springs. This ruin was seen from the opposite side of the cañon, but lack of time forbade an attempt to visit it.

Ruined pueblo 15 miles above Jemez pueblo.—A ruin of more than usual interest is situated on the west bank of San Diego creek, about 15 miles above Jemez pueblo. At the base of the low terrace on which this ruin stands, and between its base and the creek, the Survey camp was established. Two ravines rising close together in the plateau, face to the west, separate as they approach the creek bed, leaving a somewhat triangular terrace remnant with gently sloping surface, on which the ruin is situated. This terrace at the lower margin is about 50 feet in height and 150 yards long, and is perhaps 100 yards deep to the base of the steep slope on the west. The ruin includes one principal centrally-placed group of structures and four or five inferior structures, as indicated on the ground plan (figure 11). The central group, *A*, consists of two wings of unequal length and from 30 to 60 feet in width, connected at the upper end by a transverse group of razed chambers. The length of the longer wing is about 320 feet, and of the other about 150 feet. The mass of debris indicates the outline of the buildings with perfect clearness and is in places 10 feet in height. The chambers were numerous and irregular in arrangement, but the state of the ruin is such as to make the details of the plan difficult to trace. At the upper end of the intramural space is a kiva depression 20 feet in diameter and two or three feet deep; and at the lower end, near the edge of the terrace and next the wall of the longer wing, is another of like diameter and about four feet in depth. On the opposite side, against the wall of the shorter wing, is a stone heap some 10 feet in diameter and a few feet in height. North of the longer wing of

the central structure, 40 feet distant, and extending along the northern margin of the terrace, is a ruin, *B*, some 30 feet wide and 150 feet in length, and in places six feet in height, presenting characters in the main identical with those of the central structure. In the space between the two clusters is a third circular depression, corresponding in size with those previously mentioned.

Higher up the sloping terrace on the northern margin is a small ruin mass, *C*, very much reduced. On the south, separated from

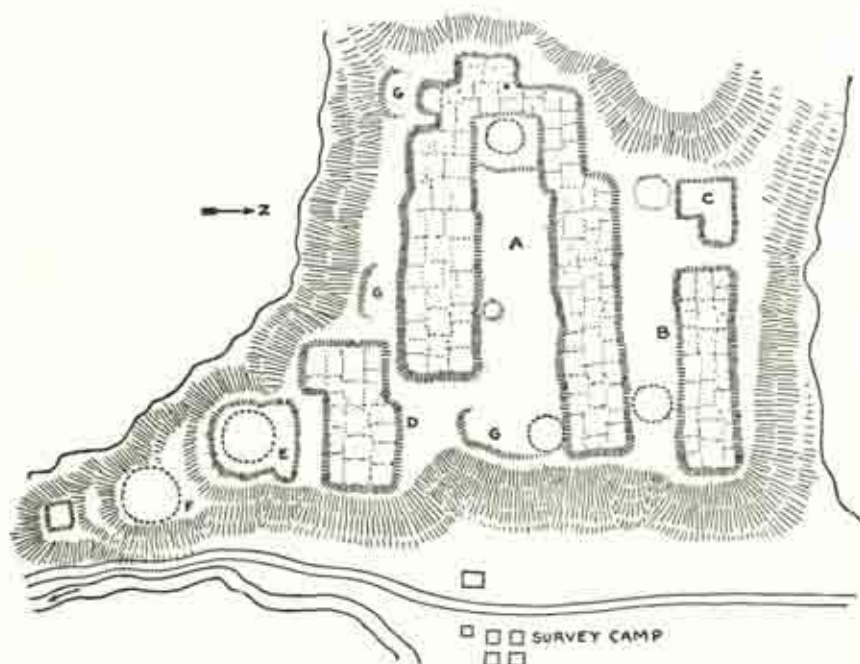


FIG. 11.—Sketch plan of ruined pueblo 15 miles above Jemez.

the corner of the shorter wing of the main building by a space about 10 feet in width, is a fourth ruin mass, *D*, about 40 feet in width by 120 feet in length, the lower end of which extends well down to the margin of the terrace. Its features correspond closely with those of the other structures. South of this again, and 20 feet away on the narrow point of the terrace, are the remains of a minor structure, enclosing a kiva depression 30 feet in diameter and about 4 feet in depth; and below this, again, is another circular

depression 36 feet in diameter and five feet in depth, with which no ruins are connected. Still lower down and at the extreme point of the terrace, 80 feet from the depression just described, is a small ruin mass about 12 feet square and of no considerable height.

An interesting feature of this pueblo is the occurrence of three or four refuse middens, lying on the slope of the terrace near the walls of the buildings. These consist of blackish earth with many impurities, including bones of animals, fragments of pottery, and various implements of stone. On these heaps were growing dwarfish wild potato plants, the tubers, although ripe, not being more than half an inch in diameter. This ruin presents every appearance of antiquity, and, so far as observed, contains no definite trace of the presence of the white man. The fallen roof timbers, which still remain among the debris in some of the chambers, had been cut with primitive tools. The pottery, of which many fragments were collected, is varied and interesting, the several types apparently grading one into the other. There are bits of plain black polished ware, much like the modern domestic black ware of the Rio Grande pueblos; many fragments of small bowls, with enlarged, thickened, or flaring rims, and rude designs in brown, greenish, and blackish glaze.¹ Other specimens have incurved rims and somewhat reddish designs; pieces also of orange and red ware were found, and of the typical white ware with black decoration, the bowls being ornamented both inside and out. There are also handled vessels, mugs and bowls, the handles being simple loops vertically placed; also bowls with wide mouths, and a large percentage of pots that appear to have been used over the fire.

The stone implements collected include a black polished discoidal stone, apparently of hematite, about an inch in diameter and an eighth of an inch in thickness, and handsome polished axes of mottled actinolite rock. Thousands of flakes of black obsidian occur a few miles farther up the cañon and on the slopes of Pelado mountain. Numerous arrowpoints of white quartz and of white and red agate were collected.

Upper pueblo ruin.—About a mile above the Survey camp and 16 miles above Jemez pueblo, occupying a low sloping terrace on

¹ This ware is especially referred to by Bandelier, *Final Report*, p. 185.

the west side of the valley and 30 or 40 yards from the creek, is a small pueblo group, of usual type (figure 12). It is about 40 feet above the creek bed, and covers a space some 50 yards long facing the stream, and 50 yards deep reaching back to the steeper ground. The low crumbling walls of small irregular stones indicate a squarish structure of numerous rooms, including an open space or court, in which are two circular depressions, probably the remains of kivas. A third depression occurs in the midst of the ruined walls on the north side.

The pottery on this site is wholly, or mainly at least, of the archaic varieties, including the coiled ware and the white ware with decorations in black. The stone

implements collected include a grooved ax of usual Pueblo type,

Scattered stone lodges.—A unique feature of the antiquities of Jemez valley are the ruins of small stone houses that are encountered by the explorer at every turn in the tributary valleys, on the steep slopes of the plateaus, and scattered over the upper surfaces of the wooded tablelands. In the foothills they are seen sometimes occupying very precipitous sites, and in riding through the deep forests of the uplands they may be counted by the score. They consist generally of a single room, rarely of two or more rooms, and the dimensions of the apartments seldom exceed ten or twelve feet. The walls are thin and loosely laid up, and to-day are rarely more than three or four feet in height, the dearth of debris indicating that they could not have been more than one story in height at any time. A few potsherds of the white ware with black decoration are about all that could be found in the way of artifacts around these structures. The presence of this ware, however, is good evidence of the considerable antiquity of the work. These houses occur in considerable numbers in the valley of the San Diego near the great bend, twenty miles above Jemez pueblo; in the vicinity of the

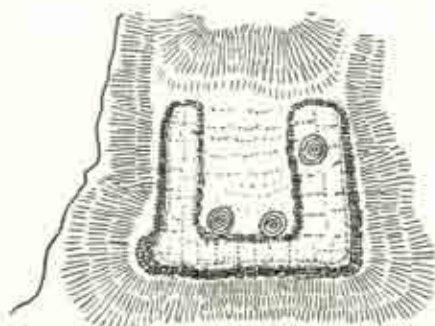


FIG. 12.—Sketch plan of ruined pueblo 16 miles above Jemez.

warm springs a few miles above the bend; on the plateau east of Jemez springs; and along the terrace-like projections of the western slope of the cañon wall. The use of these small structures can only be surmised. They were hardly permanent abodes for families, but seem rather to have been designed for some temporary purpose, as lodges for watchers, hunters, herders (if within the Spanish period), shrines, or places of resort on special occasions connected with religious observances. Some of these structures, as well as the more important ruins, are located on the accompanying map (figure 6).

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THE SHASTA-ACHOMAWI: A NEW LINGUISTIC STOCK, WITH FOUR NEW DIALECTS

By ROLAND B. DIXON

Until quite recently, the extent of the area in northern California and southern Oregon formerly occupied by Indians of the Shasta, or Sastean, stock has been regarded as definitely determined. The area was supposed to be limited to the region along Klamath river from the mouth of Scott river up as far as Bogus creek, including the watershed of the two largest southern tributaries of the Klamath in this portion of its course—the Scott and Shasta rivers. The stock was also supposed to have extended northward across the Siskiyou mountains into Oregon, but how far this extension penetrated beyond the mountains was rather uncertain. There were in addition vague statements as to the early occupancy by the Shasta of the extreme upper course of Salmon river.

In working with this stock in 1900, and again in 1902,¹ more definite information was procured by the writer in regard to the Oregonian extension of the stock. It appears that the Shasta formerly extended northward up the valleys of Cottonwood and Jenny creeks, and occupied the entire valley of Stewart river to its mouth. From here they controlled the area along Rogue river, above the mouth of the Stewart, to Little Butte creek, as well as the basin of the latter stream which heads near the base of Mt Pitt. In addition to obtaining the above particulars, vague rumors were heard of an earlier extension of the stock both to the south into the Sacramento-McCloud drainage area, and to the west toward the Salmon. It was not, however, till the season of 1903 that, acting on the suggestions made by Dr A. L. Kroeber and Dr P. E. Goddard, of the University of California, who had been carrying on work among the Hupa and neighboring tribes, I went to the Forks of Salmon in search of what Dr Goddard had thought

¹ In connection with the Huntington Expedition of the American Museum of Natural History, New York.

might be a slightly variant Shasta dialect. This supposed new dialect proved on more careful investigation to be not essentially different from the Shasta as spoken on Klamath river, but a casual remark by one of my informants, as to "the old people's talk," leading to further questioning, resulted in finding that there had formerly been a small tribe at the Forks of Salmon whose language was distinct from any in the vicinity. Unfortunately the last person known to have spoken the language had died two years previous to my visit, and for a time it appeared hopeless to attempt to obtain any material to determine its affinities. By good fortune, however, the two women who were my informants were able, with much difficulty, in the course of several days, to recollect some seventy-five words and short phrases, which they remembered to have heard their father (a mixed blood of the Shasta and the local tribe) use many years before.

The tribe, according to my informants, was known by the name of Konomi'hū, and occupied the region immediately about the Forks of Salmon, extending for seven miles up the South fork, and five miles up the North fork. The language, as shown by the scanty material obtainable, is in the main entirely distinct from that of any stock in the region, comparisons with Shasta, Karok, Chimariko, and Hupa failing to show any agreement except in the case of one or two words, which are practically identical with Shasta. On the other hand, the general phonetic character of the language is entirely in accord with the Shasta, as well as is also what might be called its "feeling." The two tribes had apparently very close cultural connections, and claimed to be distantly related. A possible agreement also of one or more verbal stems seems not unlikely, so that for the present, at least, it seems justifiable to regard the new language as probably a very divergent member of the Shasta stock.

Further investigations suggested by this discovery led to the finding of what seems to be a second new dialect in this region, spoken by the rumored Shasta occupants of the upper Salmon. It seems certain that the upper courses of the two forks of Salmon river above the Konomi'hū were controlled by a small branch of the stock, speaking a language markedly divergent from the Shasta proper, and that this portion of the stock extended even over the

divide, onto the head of New river. On the whole, this dialect or language is much closer to Shasta proper than is the Konomi'hū, and in some particulars both new dialects or languages agree among themselves. They seem to be sufficiently unlike, however, to warrant their being considered separate dialects.

Although the earlier hints of a greater westward extension of the stock were thus substantiated, no evidence had yet been found of the rumored Sacramento-McCloud tribe and dialect. In 1902 and again in 1903 a number of clues were followed up, only to result in disappointment. Finally, near the close of last season's work (1904) further continued search led to the finding of the long anticipated dialect. From an old woman, living on the upper Sacramento, information was obtained sufficient to show that a small tribe or body of Indians known as the Ōkwa'nuchū had formerly occupied the head of Sacramento river down as far as Salt creek, and the upper portion of the McCloud as far down as Squaw creek, together with the valley of the latter stream. The language spoken by the Ōkwa'nuchū, from the rather scanty material obtained, shows clearly that it is a dialect of the Shasta, but like the New River dialect, while a considerable number of words are nearly or quite identical with Shasta equivalents, there are a large number of forms which show no resemblance at all, either to Shasta or to any other stock language in the region. Contrary, however, to the other new dialects, the general phonetic character of the Ōkwa'nuchū differs quite a little in some points from the Shasta, particularly in its fondness for nasals.

The finding of these markedly variant Shasta dialects brings into prominence once more the question of the possible relationship between the languages of the Shasta and the Achomá'wi, or so-called Pit River Indians. Several years ago Gatschet suggested such a relationship as possible, but did not attempt, from lack of material, to demonstrate it. From the Achomá'wi linguistic material collected by the writer in 1900 and 1903, it seems clear that this relationship is to be regarded as certain, although the detailed analysis of the Achomá'wi is not yet complete. The first result of the investigation, however, is the discovery that the Achomá'wi is not the single language it hitherto has been supposed to be, but in reality consists

of two markedly divergent languages. The one of these is spoken by the Achomá'wi proper, the other by the Atsugé'wi, or Hat Creek Indians, who occupy the valley of Hat creek, together with Burney and Dixie valleys. Of the words of the two vocabularies only about one-third are common to both, if indeed the proportion is not smaller, and many of these show considerable, although regular, phonetic changes. Structurally the two languages are similar in the main, but differ radically so far as regards the actual prefixes or suffixes employed. The two languages, while unquestionably related are yet strikingly unlike.

A comparison of these two languages, the Achomá'wi and the Atsugé'wi, with the Shasta and its dialects, shows clearly that the three are related, although divergent members of a single stock. A considerable number of close lexical correspondences exist, not only between the Achomá'wi, Atsugé'wi, and Shasta proper, but between the former two and Konomi'hū, the New River dialect, and Ōkwa'nuchū. The following brief table will illustrate some of the more important of these agreements.

| | SHASTA. | KONOMIHU. | NEW RIVER. | OKWANUCHU. | ACHOMAWI. | ATSUGEWI. |
|--------------|---------------|----------------|------------|------------|-----------|-------------|
| Eye | oi | ki'oi | ki'oi | ..... | ..... | oi'yi |
| Head | in'nux (hair) | ki'na | kin'nux | in'nux | lax | na'xa |
| Teeth | i'tsau | ..... | ki'tsau | ilcung'wi | i'tsa | i'tsau |
| Ear | i'sak | ..... | ..... | i'sawak | i'itat | ..... |
| Jaw | ti'a'wak | ..... | ..... | ..... | tsoi'twa | ..... |
| Blood | a'xta | ..... | ..... | axta' | axdi' | ..... |
| Liver | ap'ri | ..... | ..... | ..... | ..... | op'si |
| Urine | icuk'wi | ..... | ..... | ..... | disoq' | wissuq' |
| Man | ic | ki'apahiya | ge'ic | ..... | ..... | kus'wawahau |
| Indian | awadik'wa | ..... | ..... | ..... | ..... | awte' |
| Water | at'sa | ..... | ga'ate' | at'sa | as | atsui' |
| Coals | xok | ..... | ..... | ..... | haub | ..... |
| Salmon | ki'Er' | ..... | ki'tun | it'á'ri | ..... | á'nni |
| Grizzly-bear | atsi'e' | qamqá'tuin' au | ..... | ate' tēhē | ..... | ..... |
| Cedar | ná'ho | kin'axo | ..... | ..... | ..... | nat'op |
| Wood | á'wa | ..... | ga'au' | ..... | ..... | á'hawi |
| Spear | arawá'tuu | ..... | ..... | ..... | la'su | na'su |
| Two | xok'toa | ..... | ..... | ..... | haq | hó'ki |
| Three | xat'iki | ..... | ..... | ..... | tsat'di | ..... |
| Eat | ..... | tamá'harot | ..... | ..... | ..... | á'mma |

A preliminary grammatical comparison shows equally important points of agreement. For lack of grammatical material from

the Konomi'hū, New River, and Ōkwa'nuchū, only Shasta, Atsugwi, and Achoma'wi are shown.

| | Shasta. | Achomawi. | Atsugwi. |
|---|---------|-----------|----------|
| Subjective suffix (nominal) | -ka | -ga | [.pa] |
| Instrumental " " | -ta | -a | -a |
| Indep. form 2 ^d pers. pronoun. | mai | mi- | mi- |
| Plural pronominal suffix. | -yawEr | " " | -wir |
| Poss. pronominal suffix. | -mu | -mu | " " |
| Subjective pron. suffix (verbal) | -i | -e | -e |

In view, therefore, of the considerable agreement between these different languages, not only in vocabulary but in important grammatical elements, it seems justifiable to regard them all as members of a single stock. The choice of a name for the new group is a matter of some difficulty, but on the whole the compound term Shasta-Achomawi seems the most satisfactory, as, in spite of its length, it has the advantage of exactly describing the group.

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TWO ANCIENT MEXICAN ATLATLS

By D. I. BUSHNELL, JR.

About three years ago there came to light in Florence, Italy, two Mexican atlatls, true gems of ancient Aztec art. They were fortunately obtained by Professor Mantegazza and are now preserved in the Museo Nazionale d'Antropologia ed Etnologia del R. Istituto di Studi Superiori, in Florence.

The specimens are probably the finest existing examples of the throwing-sticks of the ancient Mexicans. From the high degree of skill shown in the design and execution of the carving, it is evident they were ceremonial or sacred objects and not intended for actual use. Moreover, the carved surfaces of both specimens were originally covered with a thin layer of yellow gold, the greater portion of which still adheres, although on the higher, more exposed parts of the relief, it has been rubbed or worn away. The wood of which they are made is very heavy, fine-grained, and of reddish black hue.

In the following brief description I shall refer to the specimens as *A* and *B*.

Specimen *A* (plate *xxi*) is the larger of the two, the dimensions being:

| | |
|---|---------|
| Length..... | 605 mm. |
| Width { at upper end | 37 mm. |
| { at end of carving | 30 mm. |
| { at lower end..... | 22 mm. |
| Length of carved surface..... | 355 mm. |
| Length of hook..... | 65 mm. |
| Length of groove..... | 540 mm. |
| Width of groove { at base of hook | 7 mm. |
| { at lower end | 5 mm. |

The decoration on the back of this specimen represents human figures and various symbols carved in low relief, but distinct and sharp in outline. As will be seen by referring to the illustration,



Back

Carved surface, back, full size.

Front.

ANCIENT MEXICAN ATLATL (SPECIMEN A)

the decoration is rather uniform and well balanced; the larger and more prominent figures extend down the median line, while the lesser are placed on either side. In this respect it differs essentially from the other specimen, as a comparison of the plates will show.

On the front a narrow line of carving extends along each side of the groove, beginning at the upper end and terminating at a point opposite the end of the carved surface on the back. The groove and hook are without decoration, but are covered with a layer of gold.

Specimen *B* (plate XXII) is the shorter of the two and is the finest example of the ancient Mexican atlatl or spear-thrower known to exist. Its dimensions are :

| | |
|---|---------|
| Length | 575 mm. |
| Width { at upper end | 35 mm. |
| { at end of carving | 27 mm. |
| { at lower end | 25 mm. |
| Length of carved surface..... | 378 mm. |
| Length of hook | 55 mm. |
| Length of grooves | 520 mm. |
| Width of grooves { at base of hook..... | 10 mm. |
| { at lower end..... | 6 mm. |

The peculiarity of this unique specimen is that it has two grooves on the front surface, instead of the single groove, extending from the hooks to the lower end. If this atlatl was ever actually used, which appears to be doubtful, it was evidently intended to

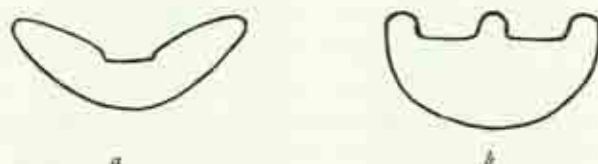


FIG. 13.—Sections of the two atlatls at the ends of the carved surfaces. (Exact size.)

hurl two arrows or spears simultaneously, thus increasing its effectiveness as a weapon.

The complicated decoration on the back, in which are introduced representations of human figures, various symbols, and animal

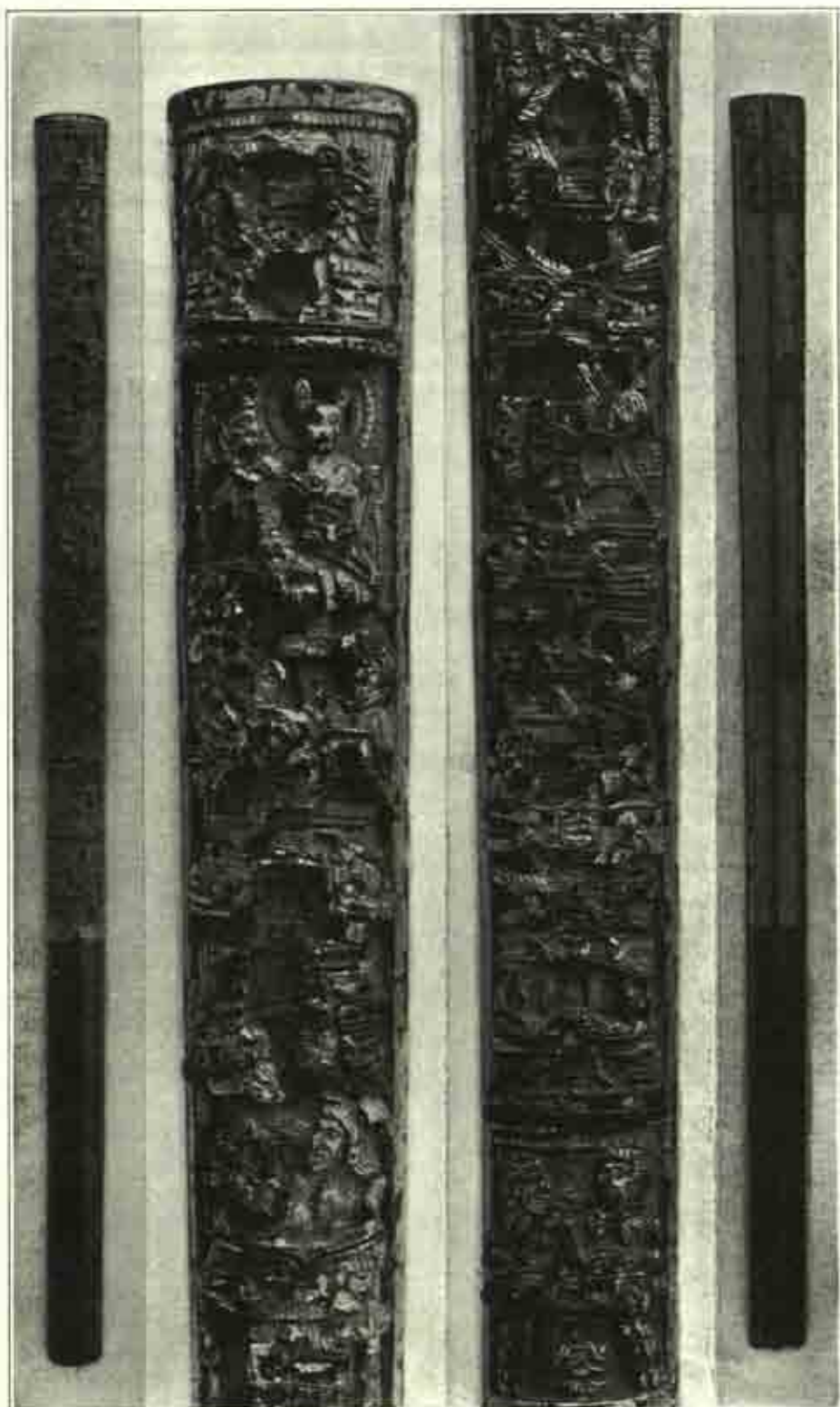
designs, is carved in high, bold relief, extending from 3 mm. to 5 mm. above the surface or background, on which is represented a symbolic design in very low relief, the whole being covered with gold. The carving on the back is divided by two transverse ridges into three distinct sections of unequal size. In each of the end sections are represented two human figures facing inward. In the central section, which includes about four-fifths of the entire carved surface, the decoration is more intricate and confused, and will require one well versed in Aztec lore to decipher the various figures and symbols portrayed.

The front of this atlatl, as above stated, has two grooves, thus constituting a new type, of which this is the only known specimen. The three ridges between which extend the two grooves are of equal size, being about 3 mm. high and 4 mm. wide at the bottom. The bottoms of the grooves are flat and are decorated with a simple design of incised lines. The decoration begins at the ends of the hooks and extends as far as the end of the carved surface on the back. The designs in the two grooves are different. The hooks at the upper end of the grooves are carved in low relief, a human figure, standing and facing inward, being represented on each.

It is to be regretted that the history of these two most interesting objects is not known, but it is evident they have been in Florence for several centuries. They probably belonged to the collection sent by Cortés to Charles V of Spain and by him presented to Pope Clement VII, himself a Medici.

The atlatl in the Kircheriana Museum in Rome¹ is similar to the Florence specimens, being richly carved and covered with gold. Possibly the three belonged at one time to the same collection. The Italian museums are certainly fortunate in possessing the three most valuable and interesting examples of the ancient Mexican spear-thrower known to exist.

¹ This specimen was described, but not figured, by Mrs Zelia Nuttall in her paper "The Atlatl or Spear-thrower" published in 1891 by the Peabody Museum as No. 3 of Vol. 1 of its *Archaeological and Ethnological Papers*. The dimensions of this specimen, according to Mrs Nuttall, which I quote for comparison, are: Length, 558 mm.; width of upper end, 37 mm.; of lower end, 19 mm.



Back.

Carved surface, back, full size.

Front.

ANCIENT MEXICAN ATLATL (SPECIMEN B)

A specimen in the British Museum¹ is decorated with carving covered with gold on the back only, the front being entirely plain. In one respect, however, this is the most perfect of the four; the finger-loops still remain bound on near the lower end. But there is nothing to indicate that similar loops were originally attached to the three specimens in the Italian museums.

The atlatl in Berlin belongs to a type different from those to which I have referred.

¹ The late Dr Hjalmar Stolpe described and figured this specimen in colors in *Internationales Archiv für Ethnographie*, vol. III, 1890, p. 234. The length of the specimen is given as 506 mm.; width of upper end, 33 mm.; of the lower end, 23 mm.

FLORENCE, ITALY,
April, 1905.

SOME VIRGINIA INDIAN WORDS

By WILLIAM R. GERARD

To the April-June, 1904, number of the *AMERICAN ANTHROPOLOGIST* I contributed an article on "The Tapehaneek Dialect of Virginia," a subject which I had had under study for several years and which concerned a peculiar Virginia speech that, in its phonetics, was almost identical with the dialects of the Cree group or division of the Algonquian language. In a notice of that article, in the October-December, 1904, number of this journal, Mr William Wallace Tooker expresses, in regard to the meaning of a certain number of the words mentioned therein, opinions that differ very widely from those which I hold, and which I perhaps too briefly stated. It seems proper, therefore, that I should again go over as much of the ground as the space accorded me will permit, in order to explain more fully the reasons for the statements that I made and which have been called in question by Mr Tooker, whose ideas in regard to the manner in which Algonquian phrase-words are constructed are extremely novel and differ very materially from those which I have gained by a quarter of a century's study of the dialects of this linguistic family, radically, grammatically, comparatively, and especially from the view point of its laws of letter-change, and are certainly far removed from those of the ancient framers of the language. I shall state at the outset that after a careful examination of Mr Tooker's article, which is remarkable, among other things, for the positiveness of its assertions, unmodified by an occasional qualification of "perhaps" or "possibly," and which call to mind the Abnaki saying that *nekemat ghelusin*, I see no reason whatever for changing a single one of the views of a philological nature that were expressed in my former article.

Winauk.—Mr Tooker, following Dr Trumbull, believes that this name stands for *waen-ohke*, and means the 'going-around place.' There are three objections to this view, any one of which would be fatal. In the first place, the name was not that of a

promontory, but of a piece of land of which the southern extremity terminated in a low meadow point on James river¹ ("Careless Point," as Captain Archer named it). In the second, the preposition *waënu*, 'round about,' belongs to the dialects of Massachusetts, none of which was spoken on James river.² In the third, *waënu olkeit* (that is, *olke* with the postpositive preposition, as Algonquian grammar requires in such a case) means 'round about the land,' 'earth,' or 'country,' not 'going-around place,' and could not be used as a name for a locality. The place was doubtless named from the presence there of a conspicuous specimen of *winák*, or sassafras, a tree which in favorable situations attains a great height.

Appamatuck. — By a slip of the pen, I stated that this name was given to several places situated in the vicinity of a river-bend. Although the name is applicable to any decided curve in a tidal river, there is no evidence that it was given to any other in Virginia than the very wide one which James river makes previous to the influx of the Appomattox at City Point. It was a locality on this bend that the first explorers of the river knew as the "Country of Apamatica." This word, spelled also *Apamatecoh*, stands for *Apāmā-tēku*, or better, *Apāmētēku*, and means 'river-bend.' It was the designation of a tract of land on which stood an Indian village of the same name on the site (according to Jefferson) of Bermuda Hundred, in Chesterfield county. The word in a verbal form is *ápāmētēkwé*, meaning the 'river makes a bend,' 'turns about,' and is cognate with Ojibwe *ábāmītēgwēia*, in which the suffix *ia* is that of an impersonal verb. The root *ápām*, *ábām*, 'to turn around,' is found in the dialects of Cree, Ojibwe, Abnaki, and Massachusetts, and probably in those of all other Algonquian groups. The suffix *-tēkwé* = Nipissing *-tēkwéia*, = Ojibwe *-tēgwēia*, = Cree *-tēkwēiaw*, means '(tidal) river.'

Prof. Schele Devere (*Americanisms*, p. 63) tells his readers that the name is "from *Apomatox*, the Indian for Tobacco-plant Country"! Mr Tooker, inspired by a picture of a mulberry tree,

¹ " . . . a sharpe point, which is parte of *Winauk*:" —Archer.

² "The analysis of a geographical name must be sought in the language spoken by the name-givers." —Trumbull in *Coll. Conn. Hist. Soc.*, 11, p. 50.

with an Indian "queen" sitting on a mat beneath it, derives the name from *appu*, 'he (or she) sits,' 'abides,' 'remains,' 'rests,' and *-metuc* or *-matuck*, 'a tree,' and imagines that, by hyphenating these two words, he converts the intransitive verb *apu* into a participial adjective and gives the compound the meaning of 'resting tree'! In support of his "etymology," he offers, as cognates, "Cree *apiw-mistick* (Lacombe), *appu-mistick* (Howse)." It is hardly necessary to say that these two scholarly men, Père Lacombe and Mr Howse, never hyphenated these two words, as might seem to be the case from the enumeration of Mr Tooker's so-called "cognates."

Chickahominy.—The fact that the three last syllables of this word constitute those that form the name of a well-known food product has led to the erroneous conclusion that the two words are in some way connected, and also to the delusion that the suffix in each of them stands for the inseparable substantival *-min*, meaning 'fruit,' 'seed,' or 'grain,' and sometimes used specifically to designate a grain of Indian corn. Such was the idea of Professor Devere, who derived the name from the impossible word *checahaminend*, to which he ascribed the meaning of 'land of much grain.' Mr Tooker also seeing in the word some reference to Indian corn, and laboring under the mistaken belief that it was the name of a people and not of a place, offers in explanation of it a word of so novel construction that I shall pause for a moment to analyze it. This word, to which he attributes the meaning of 'coarse-pounded corn people,' is *chick-aham-min-enough*. In his explanation of this compound,¹ he tells us that the element *-aham* is a "special affix or verb" (*sic*), which implies that he "beats or batters" the object *min* after the manner of the root-word or prefix *chick*. In the eastern Algonquian dialects the intransitive verbal suffix *-hām* and the corresponding transitive *-hāmēn*, denote forcible action, and, when combined with roots meaning 'to hit,' or 'strike,' form intransitive and transitive verbs that assert, respectively, that the subject 'pounds' or 'brays,' or 'pounds it' or 'brays it' (something inanimate). Since *-hām* is an intransitive suffix, and intransitive verbs do not govern objectives, it is difficult to see why Mr Tooker

¹ *Algonquian Series*, ix.

should select an object for his intransitive verb and why he should suffix it to the latter, for even had his verb a transitive form, the object could not be affixed to it, but would have to consist of a substantive standing apart. In order to indicate the *manner* in which the object is brayed, he selects the adjective *kitchi*, which he uses in the sense of 'coarse,' a meaning which it could not possibly have. This adjective denotes, primarily, superiority or preeminence, and, when employed in the sense of 'large,' or 'great,' signifies that the thing qualified is large or great as compared with some object of the same class or similar to it. From its peculiar meaning it could not be used as a root for a verb expressing forcible action. Having abbreviated this adjective to *chi*, Mr Tooker finds that he needs a *k* in his word and thereupon boldly affixes this letter to the adjective and thereby forms a root¹ of entirely different meaning. Of the suffix *anough*, of the meaning of which I have to confess my ignorance, Mr Tooker regards the terminal *y* in the word Chickahominy as a "softened" form. It will be seen from this brief analysis that the combination under consideration does not constitute a word, but is simply a collocation of vowels and consonants.

In the eastern Algonquian dialects, verbs having the inanimate active transitive form of the class ending in *-mèn*² had the peculiarity that they could be used as passive participial adjectives,³ and, from this sense, could pass to that of substantives.

The Indians of Virginia (like those of the three Americas, from Maine as far south as to Peru) made a very nutritious food preparation by parching Indian corn and reducing it to a fine powder, which they called *rokèhāmèn*, 'softened.' This word is cognate with Abnaki *nuk'hāmèn*, used as a designation for flour, and with Lenape *lok'hāmèn*, used as a name for bran or shorts. In Strachey's time (1610-13), this word had undergone no alteration; but later on, it became, in the pronunciation of English-speaking people, *rockahominie* (Beverly, 1705), *rockahomine* (Lawson, 1709), *rocka-*

¹ *Kitchik*, 'to be speckled,' 'spotted,' 'dappled.'

² This suffix has been spelled with all the short vowels of the alphabet: *-mān*, *mān*, *mèn*, *mīn*, *mūn*.

³ For example: Natick, *āsewītāmūn*, 'he names it,' *āsewītāmūn* (pass. adj.) 'named'; *wāsiūkkhāmūn*, 'he writes it,' *wāsiūkkhāmūn* (pass. adj.) 'written.'

hominy (Byrd, 1728). Again, the natives of Virginia, by boiling the acorns of the basket and live oaks (*Quercus michauxii* and *Q. virens*) in water, extracted therefrom an oil which they called *mānā-hāmēn*, 'removed from,' 'skimmed from.' In the pronunciation of the settlers this word soon became *monohominy*. The Virginians also made a food product by coarsely cracking Indian corn, winnowing away the chaff, and sifting out the flour, and, to it, as well as to the porridge prepared from it, applied the name of *ūsēkute-hēmēn*, meaning 'crushed by pounding' (from *ū*, prosthetic vowel; *sēku*, a root meaning 'to crush'; *te*, a particle denoting that the action expressed in the root is done with a blow or stroke; and *hēmēn*, a verbal suffix denoting, in the transitive form of the verb, instrumental action upon an inanimate object). Strachey appears to have been acquainted with this word only in such corrupted forms as *usketehamun*, *uskatahomen*, and *usketehamun*. The English colonists soon became very familiar with this Indian food product, but, finding its aboriginal name altogether too cumbersome for current use, contracted the already corrupted word to its verbal suffix, *homen*, *hamun*, *homin*, etc., and, rounding off this *disjunctum membrum* with a vowel, formed such terms as *homeni*, *hamuni*, *homini*, etc. The very first mention, in print, of this abbreviated word is found in the form of *homini* in Smith's *True Travels, Adventures and Observations*, p. 43 (1630). Thus originated a term concerning the source and meaning of which there has been, up to the very present (the writing of these lines), more speculation than about any other Indian word that has entered the English language.

A few miles above the mouth of a tributary of James river was situated the town¹ of a "lustie and daring people" (independent of Powhatan) on a tract of land called *Tshikehāmēn*² (or, in the spelling of the period, *Chicohomin*, *Chickahaman*, *Chickahamin*), meaning 'scraped,' 'swept,' and implying a clearing. Smith, who was the first to visit this town (on the morning of November 10, 1607),

¹ The exact location of this town, which must have been of some importance, is not known, since it does not appear on Smith's map; but we know from the *True Relation* that it was situated between the mouth of the river and the town of Manascoick, which lay at a point 10 or 12 miles upstream.

² This verb is found in every Algonquian dialect from Maine to Virginia. It is from the root *tshik* (1) 'to scrape'; (2) 'to sweep.'

made its name known in the form of *Chickahamania*, a spelling in which the Latin toponymic suffix *-ia* was an addition of his own, just as was the same suffix in such Indian names as Tanxitania and Shakaconia. The various writers of the period changed Smith's expletive syllables to *e*, *a*, *ie*, and *y*, the latter of which prevailed.¹ Thus originated the name *Chickahominy*, a word which, like *rockahominy* and *monohominy*, has preserved its root and taken on a paragogic syllable, while *hominy*, with its expletive syllable, is simply the corrupted suffix of a verb which has suffered the apheresis of its root (*sēku*, 'to crush').

Pamaunkee. — This was the general name for a tract of land in what is now King William county, beginning at the confluence of what are called the Pamunkey and Mattaponi rivers, and, according to Smith's description, was characterized by numerous high hills composed of sand — probably drift-sand and hence sloping. Speaking of the religious observances of the Powhatans, Smith says that "their principall Temple or place of superstition is at *Vttamussack*" at [that is, in] *Pamavneke*." Mr Tooker, jumping at the conclusion that these words form a compound, hyphenates them and, in a former essay,² thus proceeds to analyze them: *Ut*, he tells us, means 'at,' or 'in.' It really did have that meaning in some of the dialects of Massachusetts, to which the use of it was confined, and none of which was ever spoken on the Pamunkey. *Mussa*, he says, means 'woods.' The Virginia word *mūssi* designated a 'log' or 'billet of wood,' not wood or woods in the sense of a collection of trees. To the terminal *-ack* Mr Tooker ascribes the meaning of 'place,' probably having in view the word *aki*, 'land,' 'country,' 'earth.' The second element of his compound, *Pamaunkee*, Mr Tooker states to be a "form of a verb to hide (*pamukque*, Eliot)."

Uttamussack (= *tāmīssack*, with prosthetic *ū*), which Mr Tooker

¹ The practice of adding a syllable to the suffix of passive adjectives of this class was not confined to the people of the South, for we find an example of it in the North. The Lenape Indians of New Jersey called the thin-shelled nut of the shag-bark hickory (*Carya alba*), *īkkuskandāmīn*, meaning 'crushed with the teeth.' Among the many corruptions which this word underwent in the vicinity of New York City was that of *cuskatominy*.

² *Uttamussac* was at the head of the second northerly bend of the Pamunkey, west of the fork, and was the site of a place put down on Jefferson's map as *Quinlen*.

³ *Algonquian Series*, ix.

has so carefully analyzed, was the Virginia name for a knife,¹ a sharp edged piece of flint or quartzite, generally of triangular shape. The word is an apocopated form of *tāmēsākān*, meaning, literally, a 'sharp-edged cutting utensil.' Uttamasack was probably the name of an Indian "workshop," where these implements were manufactured. The word may be an abbreviation of *tāmēsākānikān*, meaning 'place where knives are made.'

Never having seen in Eliot's translation of the Bible, or in any of his writings, such a word as *pamukque*, meaning 'to hide,' my curiosity led me to look it up. Upon examining the *Natick Dictionary*, I found therein the inanimate passive verbal adjective *assompamukquodt*, which Eliot uses in the sense of 'hiding place,' although the meaning of the word is almost directly the reverse, viz., 'it is seen in a certain manner,' 'it appears so.'² The word is formed from the adverb of manner, *ās*, 'so,' 'in such a way,' and the inanimate passive adjective (*w*)*ompamukquodt*, 'it is seen.' Eliot (as well as Cotton) was in the habit of irregularly and unnecessarily³ forming another adjective from this class by rejecting the termination *-at* and substituting *ε* (= *i*) therefor. His new word in the present case was *assompamukque*. Here, then, we find the origin of Mr Tooker's *pamukque*, which, as will be observed, consists of *p*, the characteristic of the root *womp*, 'to see' or 'be seen,' and the formative syllables *amukque*. To the above-mentioned remarkable compound its author ascribes the meaning of 'a place of secrecy in the woods'!

As I have already stated, *pamaunkee* (= *pāma^aki*) means 'sloping hill,' or 'rising upland,' from *pām* (*pēm*, *pīm*, *pūm*, according to dialect), 'sloping,' 'slanting,' 'oblique,' and *-a^aki*, 'hill,' 'mountain,' or 'highland'; = Ojibwe *-āki*, 'hill' or 'mountain,' in such words as *nissāki*, 'at the bottom of a hill,' *ogidāki*, 'on a hill,' *awassāki*, 'beyond the hill.' The particle *āk*, *a^ak*, *a^ag*, denot-

¹ In Smith's vocabulary we find "*Pamesacks*. Knives," where the terminal *s* is a sign of the English plural, and the initial *P* an error of the press for *T*. Strachey writes the word *damassac*.

² Blunders of this kind are not infrequent in Eliot's writings.

³ Unnecessarily, because the new adjective had precisely the same meaning (that of a passive participial adjective) for the reason that the *kw* (*ku*) of the suffix is a particle characteristic of the passive voice.

ing 'height' or 'elevation,' is used in several Algonquian dialects; e. g.: Abnaki *pēma^hkké*, the 'high land slopes,' *pnēka^hku*, 'sandy hill,' *a^hbagwa^hki*, 'under shelter of a hill,' *nēssa^hki^hrē*, 'he goes to the bottom of a hill,' *usa^hkuk*, 'on a hill'; Natick *sōka^hkwāt*, a height (lit. 'it is very high'); Lenape *māna^hgihleu* (corrupt. to Monongahela), 'it (earth) separates from (*mān*) the hill (*a^hg*) and slides quickly (*-ihleu*), an impersonal adjective verb used substantively as a designation for a landslide. But why multiply examples, when the meaning of the word under consideration is so clear?

Wirowokomāko.—Mr Tooker says that this word is "easy of identification" (interpretation), and yet, instead of at once interpreting it for himself, goes back nearly three hundred years (after stopping for a moment with Trumbull in order to get the latter's opinion) and consults Strachey, who gives him the information, which, without examination, he unhesitatingly accepts, that the word "by interpretation signifies Kinge's house." What little Strachey knew about the language of the Indians with whom he came into contact was merely that which he gained by ear. He knew that the first two syllables of the word under consideration were found in the name for "king," and jumped to the conclusion that the shorter word was incorporated in the longer, whereas the only thing that the two vocables have in common is the root. The name *Wirowokomāko* was applied to a tract of land "vpon salt water, in bredth two myles" (Smith), and not to Powhatan's house, the breadth of which must have fallen short of that figure by 10,540 feet at the very least estimate. As I have before stated, *wirowokomāko* means "fertile land." It is cognate with Natick *winuō^hkomūk*, which Cotton interprets 'fat ground,' and is from the root *wiro*, = Natick *winu*, = Naskapi *welu*, = Montagnais *weru*, = Prairie Cree *weyo* (and, in Old and Modern Lenape, by change of characteristic, *wirā*, *wilā*, = Old and Modern Abnaki *wila*), 'to be rich,' 'fecund,' 'prolific,'¹ and (of land) 'fertile' or 'productive.'

The name for a native ruler among the Virginians, variously written *wirōans*, *weroance*, *werowance*, and *wyroaunce*, means 'he

¹ It is in this sense that it is found in the Natick and Lenape name for the grape, *winomin* and *wilam*, 'prolific fruit.'

is rich,' or, more accurately, 'he lives (or exists) in affluence.'¹ The suffix *-ans*, *-ance*, *-aunce*, is a contraction (due to the shifting of the accent forward to *o*, the characteristic of the root) of *-aⁿt's*, for *-aⁿtes*, for *-aⁿtsu*,² = Ojibwe *-âtsi*, = Cree *-âtsiu*, an animate verbal adjective suffix denoting a manner of being, of existence, or of behavior, and also character.

Aitowh, a 'ball.'—Mr Tooker thinks that I deserve great credit "in a measure," for my remarks on this word, but that I did "not go far enough into the subject to show the exact status of the radical. The word did not signify 'a ball,' 'a round thing': " Had I gone a little farther into the subject, I might have stated that the *Naskapi* (Cree) form of the root is *tuu*, whence the substantive *tuuân*, defined in that dialect as a 'ball,' 'globe,' or 'any round object.' Still, I did not say, or even intimate, that the root means 'to be round.'

My statement that the root is found in the formative of words relating to the game of lacrosse started Mr Tooker on a line of profound philological inquiry that led to a remarkable result. Finding that, in Ojibwe, the name for 'ball-play' is *pagaadowewin*, he at once came to the conclusion, on the doctrine of resemblances, that the "equivalent of the Powhatan term is more fully displayed in the [Narragansett] word *pauochâutowin*, 'a Bable [= a bauble] to play with.'" Erroneously dividing this word, he confidently states that the latter is from *pauochâu* 'to play,' and *antow*, 'a bauble.' *Pauochâu*, however, does not mean 'to play,' but 'he (or she) plays,' or 'dances.' Now, it is quite evident that if *antow* were a substantive, it could not be suffixed to a verb, either intransitive or transitive. The fact of the matter is simply this: in Narragansett, *-towwin* (written also by Roger Williams *-tourwin*, *-teourwin*, and *-teouin*) is an inanimate active transitive verbal suffix. The intransitive verb

¹ The Pequot-Mohegan name, also, for a chief was *wôyâwa'ghu*, 'he is rich' (lives in affluence; = Caniba *wirawighu*).

² In the writing of Indian words, the failure to note the sound of *t* or *d* when preceded by a long or nasalized vowel was a common practice in colonial times. Thus, Eliot writes *aunchemukau* for *aⁿtshimukau*; *puthonchu* for *putaⁿtshu*, etc. A similar elision of *t* sometimes occurred in English words as written by some of the early visitors to this country. Thus, Hariot, who wrote *wiroanz*, Smith, *werowance*, and Strachey, *weruance*, respectively, wrote *inhabitans*, *inhabitaunce*, and *inhabitanse* for the English word *inhabitants*.

pauochân means, as above stated, 'he (or she) plays,' or 'dances,' and the transitive verb *pauochâutourwin* means 'he (or she) plays (or dances) with it'; hence, passively (according to Narragansett grammar), 'what is played with,' say a bauble, or 'what is danced with,' say some object held in the hand. In like manner we have *monaskunem* (intransitive) 'he weeds,' and *monaskunemaitourwin* (transitive) 'he weeds with it'; hence, passively, 'what is weeded with,' i. e., a hoe (not a bauble!).

It will be seen from this that there is the same etymological connection between the Ojibwe and Narragansett words above cited as there is between the English word *ball*, a 'sphere,' and *ball*, a 'dance,' that is to say, none whatever.

Attaangwassuwik (Strachey) = *âta^hkwîsâk*, a 'star.'—In commenting on this word, Mr Tooker observes that Mr Gerard believes it "to be a plural form, but his mistake is evident when we compare the name with its cognates, for the long (*sic*) form is seemingly *attaang*, 'a star,' + *wassuwik* (= Natick *wohsumuk*, 'bright' or 'shining,' Lenape *waselen*, 'bright'), hence 'a shining star' or 'he appears shining'!" It would require but the most elementary knowledge of Algonquian grammar to know that an adjective used attributively cannot be suffixed to the noun which it qualifies. To express the idea that a 'star shines' or 'is bright,' 'shining,' 'brilliant,' or 'sparkling,' requires the use of a predicative verbal adjective that affirms or predicates of the star that it has the property of brilliancy, brightness, or luminosity; as, for example, Cree *wâsisuw atakw*, 'the star shines' (lit. 'is brilliant' or 'shining'); Ojibwe *wâssenagoshka anâng*, 'the star shines' (lit. 'is brilliant,' 'bright,' 'shining').

The Algonquian names for star (that is to say, those that are cognates of the one under consideration) are divided into two classes, one embracing primitive and the other diminutive terms—diminutive in form, but not necessarily so in sense, since the Algonquian diminutive suffix sometimes denotes regard, endearment, or affection. The characteristic *k* or *g* of these names is always accompanied with *w*, or, in dialects in which that letter is not pronounced, *o*. This letter may be lost in the pronunciation of the simple form of the word, but always makes its appearance when the latter takes a suffix

beginning with a vowel. In fact, it is a part of the characteristic. In the word under consideration the primitive form is *āta^hkw*; *ūs* is a diminutive; and *-āk* is an animate plural suffix.

Atemus, 'dog.'—Mr Tooker says that he agrees with Trumbull, who considered the forms *atim*, *anum*, *arum*, *alum*, *ayim*, etc., as derivatives from distinct elements, i. e., "those words which have the *t* in 'certain positions,' like the Powhatan *attemous*, Cree *atim*, Abn. *atiē*, Pequot *ahteah*, indicate that the word is related to the Natick verb *adchu*, 'he hunts,' while those with the form *anum*, *alum*, or *arum* are from the verb *annumaū*, 'he holds [it] with his mouth.' " It is evident from these remarks and others of like character made elsewhere in Mr Tooker's article, that phonetics play no part with him in the study of linguistics. A very slight acquaintance with the laws of Algonquian letter-changes, most of which are invariable, would show that the names for dog given in my study of the subject are cognate words; and, moreover, are radical. Dr Trumbull never made the remarkable statement that Cree *atim* (dim. *atimus*) and Abnaki *atiē* were related words; but what he did say was that *atiē* and its Pequot cognate were related to *adchu*, 'he hunts.' There is no more etymological connection between *atim* and *atiē* than there is between the English words *hound* and *hunt*, or *ear* and *hear*, or between Cree *atim*, = Ojibwe *anim* = Caniba *arem* (primitive form), 'dog,' and Cree *atim*, = Ojibwe *anim*, = Caniba *arem*, 'to turn the back upon.' In explanation of the Massachusetts word *anum*, Dr Trumbull suggested the transitive verb *annumaū*, to which he ascribed the meaning of 'he holds it (some animate object) with the mouth.' There are several objections to this view: (1) the word used by Trumbull in this sense really means, as Eliot employs it, 'he helps him'; (2) active transitive verbs are never used by the Algonquians in the nomenclature of animals; (3) Natick *anum* and its cognates are radical words, the characteristic of which is accompanied with *w* (or *o* in some western and northern dialects) which, although it may be lost in pronunciation, always makes its appearance when the word takes a suffix beginning with a vowel (a diminutive or plural).¹

¹ Speaking of the sound of this letter, which, when it accompanies the characteristic of a root, often distinguishes from each other roots and radical words of an otherwise

Mr Tooker remarks that Mr Gerard writes: "Another Lenape word for dog . . . is *mowekaneu*,¹ 'he eats bones.' " "On the contrary," confidently asserts the commentator, "the word signifies 'he cries or howls in the dark' " ! In support of this extraordinary etymology, the only explanation that he offers is the mere mention of the Natick verb *mañ*, 'he cries,' 'weeps.' As to how such a verb could take a suffix *kaneu* to give it the meaning of 'he cries in the dark,' we, like the dog during his weeping, are all "in the dark." I do not think it probable that it ever occurred to an Algonquian to speak of the weeping of a dog. The Algonquian verb meaning 'he howls' is onomatopoeic, and, in one of its forms, resembles the English word: Naskapi (Cree) *ulu*, = Natick *unu*, = Ojibwe *ono*, = Prairie Cree *oyuw*, etc. (compare Latin *ululat*, 'he howls,' Greek *υλῶω*, 'he howls,' and German *er heult*, 'he howls').

It is perhaps known to every student of Algonquian (if it is not, it ought to be) that one of the commonest methods of forming verbs is by the incorporation of substantives or of semi-radicals representing substantives. *Moweu* means 'he (or she) eats animate food,' or food which is classed among animate objects. In Lenape, by incorporating *kan*, 'bone,' we have *mowekaneu*, 'he eats bones'; in Caniba, by incorporating the semi-radical *-a*riaghw*, meaning 'snow,' we have *mowa*riaghwé*, 'he eats snow'; in Cree, by incorporating *kun*, 'snow,' taken as animate, we have *mowâkûneu*, 'he eats snow'; in Narragansett, by incorporating the word *âttôkw*, 'deer,' we have *moâttôkweu*, 'he eats deer,' and, by changing the intransitive to a verbal adjective suffix, we have *moattôkwus*, 'deer-eater,' a name for the black wolf, called also deer-wolf.² All this is simple, and of so very elementary a character that it did not occur to me to furnish an analysis of the word *mowekaneu* in my article.³

identical form, but of very different meaning, Dr A. S. Gatschet, in speaking of the Abnakis, says: "The Indians who are in daily intercourse with white people are apt to lose this queer sound [something like *ku* in the French word *kuit*] altogether from their colloquial language, but the more aboriginal an Indian remains the more frequently it will be heard when he converses in his vernacular."

¹ This word is written phonetically *možkaneu* by Zeisberger, but more correctly as above by Cummings, in Schoolcraft's "Indian Tribes."

² "These . . . are called *Deer Wolves*, because they are accustomed to prey upon *Deer*." — Josselyn, *New Englands Rarities*, p. 15.

³ To those who are entering on the study of Algonquian, or to those who have

Cuttoundj = *kûtuⁿju*. — This, positively states Mr Tooker, "like many of the sounds uttered by animals . . . is of onomatopoeitic origin; hence to attribute its derivation to a verb signifying 'to make a noise,' or 'to speak,' is a mistake, and to make *cawcawwasough*, 'a captain,' . . . a derivative from 'bark of a dog' is equally erroneous." It is equally erroneous to impute to me any such puerile statements as those just mentioned. All that I said was that *kûtuⁿju* was a doublet of *kârusu*, a statement which would be as incomprehensible to a person who was not thoroughly familiar with the primitive and derivative meaning of Algonquian roots,¹ and with the regular letter changes which they undergo in passing from one group of dialects to another, as would be, for example, to a person ignorant of "Grimm's law," the statement that the two English words *glory* and *slave*, of so dissimilar appearance, are cognates. *Kûtuⁿju* is not an onomatopoeitic word for the simple reason that it is not from an onomatopoeitic root. Its root is *kûtu*, = Cree *kitu* or *kito*, and this, by regular letter change, = the roots: Virginia *kâru*, = Peoria *kâro*, = Ojibwe *gâno*, = Natick *kennu*, = Caniba *kêru*, = Penobscot *kelu*, etc. In order to make it plain how it comes about that *kûtuⁿju* and *kârusu* are precisely the same word in a different dialectic dress would require the use of more space

never been able to grasp the principles of Algonquian word-building, which are invariably, very simple, and easily understood, I would recommend the study of a very scholarly paper on *Some Principles of Algonquian Word-formation* contributed by Dr William Jones to No. 3, vol. VI, of this journal.

¹ Had Mr Tooker a more accurate acquaintance with this very important subject, he would have refrained from making the rash statement (p. 685) that there is no Abnaki root *kol*, 'fine,' 'beautiful,' 'good.' He will find it in Passamaquoddy and Penobscot if he looks for it. I am somewhat doubtful (on account of the vowel) as to whether the Lenape root *kor*, *kol*, 'fine' (as in *korapetchen*, 'fine stream') has any connection except that of sense. But we find *kalanwl*, 'beautiful head,' in the *Watum Olum*. Again, for the same reason, Mr Tooker would not have been quite so positive in his assertion (p. 686) about the Cree root *tâp*. There are just four Algonquian roots of this form, differing in their initial letter according to dialect. One means 'to alternate,' 'reciprocate,' etc.; another 'to suspend' or 'be suspended from'; a third 'to string' or 'to thread'; and a fourth 'to fix one thing to the end of another.' To each of these roots corresponds a Cree root *tâp*. The Ojibwe and Cree adverbs *ntiâb* and *eyâbitch*, 'again,' mentioned by Mr Tooker, have, of course, no connection whatever with these roots. The "fictitious root" (p. 686), Niantic and Pequot-Mohegan *yaⁿs* is found in the word *yaⁿphântk*. Dr Trumbull was the first to call attention to the fact that *y* consonant in these dialects corresponds (as in Prairie Cree) to the *r* and *l* of other dialects.

than I could reasonably ask for, since questions of grammar as well as of phonetics are involved.

Captain Smith, in his *True Relation*, states that the Chickahominyes were governed by their priests assisted by their *caucau-wassoughes*. This word is an error of the press for *caucaurussough*, = *kākārūsu* ("cockarouse"), 'he speaks at some length,' 'he expatiates,' iterative form of *kārūsu*, 'he speaks,' 'talks.' This was originally the name of an adviser—one who gave his views (usually in the form of a harangue, among the Indians), when, at a council held by the *wirōance*, affairs of "state" were under discussion. In course of time, the name lost its connotive character and became simply denotive of a good hunter or of a man who was noted for performing brave or daring deeds.¹ In the early history of Virginia (18th century), the name "cockarouse" was adopted in English as a term for a person of consequence.²

It was upon the above-mentioned misspelled word that Dr Trumbull (who curiously did not observe the typographical blunder) based his word *caucaūsu*, to which he ascribed the meaning of 'he incites,' 'encourages,' etc., and which he offered as the origin of the English word "caucus." The root from which Trumbull's word was formed, I have never been able to find.

Cutsenepo = *crenepo*, 'woman.'—Had Mr Tooker more carefully read what I had to say about these words, and had taken the pains to study them, and had adopted the caution of Trumbull, who was never too proud to say "I do not know," it would have saved him much trouble and prevented him from putting into print some very remarkable crudities. I stated very plainly that the two words above cited were nicknames, which is quite a different thing from saying that they were names for woman (*mulier*). We know very well that the Virginians, like all other Algonquians, had a name for woman, properly so called, and that it was apparently *tskweu* or *askweu*, and, when suffixed to the personal name of a female, was apocopated to *-tske*. Proceeding upon the assumption that *crenepo* was really the

¹ "Thus a Fish finding it self intangled, wou'd flounce and often pull him under Water, and then that Man was counted a Cockarouse, or brave fellow that wou'd not let go,"—Beverly, *Hist. of Virginia*, Book II, p. 33 (1705).

² "Cockerouse is a Man of Quality."—Cooke, *The Sot-weed Factor*, p. 15 (1708).

Virginia name for woman (*mulier*), Mr Tooker is led into some very curious speculations as to the meaning of the word, which becomes so obvious after the root is known, as to need not a particle of guesswork; and, in fact, to use Mr Tooker's words, "is comparatively simple." Oblivious to the fact that the word has an initial *c*, and that in the analysis of an Algonquian word it is absolutely necessary that every letter and every syllable shall be accounted for, Mr Tooker says that *crenepo* "is surely [!] the Lenape (New Sweden, Campanius) *renappi* [= *rēnāpe*] 'man'; Abnaki *arenanbe* [= *ārēna'be*] 'homme.'" "Strachey's *cuchenepe* or *cutsenepe*," he proceeds to state, "has the same suffix, *nepe* (= Natick *neepoh*, 'he stands erect'), a generic for man occurring in all Algonquian dialects"! This is astounding. In what Algonquian dialect or dialects, I would ask, does *nepe*, either disjunctively or as a suffix, mean 'man.' Is it possible that Mr Tooker supposes that, in the Lenape and Abnaki words which he cites, there is a *nappi* and *nanbe* meaning 'man'? The suffix *-āpē* and *-a'bē* in these words is generic for 'man,' but the prefix *rēn* and *ārēn* means 'true,' 'genuine,' 'natural.'

Coming back to *crenepo*, the word is, as I have already explained, from the dissyllabic root *kērē'n* (contracted to *krēn*, owing to the short vowel of the first syllable and the accentuation of the second), 'to carry,' = Lenape *gēlē'n* (old Lenape *gērē'n*), = Penobscot *ghēlē'n*, = Natick *kēnū'n*, = Pequot-Mohegan *kēnū'n*; with the intransitive verbal suffix *-peu*, denoting, in this form, in nearly all Algonquian dialects, action with, by, in, or upon water. The contraction of the suffix to *po* was doubtless due to the Indians themselves, and not to the whites, since Rev. Mr Anthony (a full-blood Delaware Indian) states that the Minsis also pronounce the syllables *-eu* of verbal suffixes as long *o*. To repeat my former statement, which no one with an accurate knowledge of the principles of Algonquian word-formation, and the elements of the word before him, would, for a moment, venture to question, the word means 'she carries water.' Such a word, as a nickname, was not ill-chosen, since in a warm climate like that of Virginia, where a considerable quantity of water must have been needed to allay the thirst induced by heat, in addition to that required for culinary and

other domestic purposes, and where gourds were employed in lieu of pails and pitchers, the woman must have been observed many times during the day going to and coming from the water source.

This was one of the things that attracted the attention of John White (artist of Raleigh's second expedition to Virginia in 1585), who devotes one of the plates illustrating de Bry's edition of Hariot's *New found land of Virginia* to a woman in her rôle of water-carrier, and who is represented in the act of coming from a body of water in the background and carrying in her left hand a gourd which the artist states is "filled with sweet liquid," that is, fresh water.

The word *cutsenepo* (= *kûte' nêpo*, with an assibilated *t*) is a cognate of *erenepo*, although Mr Tooker prefers to go north and derive it from the Narragansett *kutchinnu*, a 'middle-aged man,'¹ + *neepoh*, 'he stands'! Aside from the fact that no Algonquian dialect is so poverty-stricken as to necessitate the transfer of the name for a middle-aged man to a woman,² and to the fact that the Virginians knew nothing about the Narragansett dialect, no compound word can be formed in Algonquian by combining a substantive with the verb with which it agrees. The two words must stand separate and apart as in English.³ That is a question of grammar of so elementary a character that it ought not to be necessary for me to direct attention to it.

Hickory.—Mr Tooker states that the derivation of this word "has long been known." "Long" is not precisely the correct word to use, since it was but nine years ago that I made the history and meaning of the word known, for the first time, in a journal now out of print.⁴ Since this publication was not devoted to linguistics, I simply gave the etymology of the word, which I now embrace the

¹ *Kutchinnu*, 'superior man,' i. e., superior by reason of age.

² The name for an elderly or old woman, corresponding to *kutchinnu*, was *kut-chisqua*, 'superior woman.'

³ Mr Tooker need not have gone outside of Strachey's vocabulary for a word resembling *cutienepo*, since he might have found therein the word *cushenepo*, 'he (or she) has finished sleeping.' It is found in the phrase *mummarcushenepo* (= *nê mās cushenepo*), 'I have been asleep.'

⁴ *Garden and Forest*, ix, p. 263 (1896). See also the *Athenæum*, No. 3591 (1896), in which the article is quoted by Prof. Walter W. Skeat of Cambridge University.

opportunity of explaining from the view point of grammar. *Pākāhikārē*, meaning 'it is brayed,' is an inanimate passive adjective (which, like all Algonquian impersonal verbal adjectives, can be used substantively, as it is in the present case) of which the animate or personal form is *pākālikāsu*. Adjectives of this class are formed from the inanimate indefinite of active verbs (in the present case *pākāhiken*, 'he (or she) brays,' something inanimate understood) by the addition of the suffix *-ārē* (Powhatan),¹ *-āde* (Ojibwe), *-āte* (Nipissing), *-āten* (Cree), for the inanimate passive adjective, and of *-āsu*, = *-āso* (Ojibwe and Nipissing), *-āsuv* (Cree) for the animate or personal form.

It is probably due to the fact that I did not enter into the above grammatical details that Mr Tooker thought that there might be some "conjecture," something "quite erroneous" about it, and so, after making a philological foray upon Massachusetts and Lenape dictionaries, obtains material for two different combinations in explanation of the Virginia word, which is practically self-explanatory. These are "Natick *poqua-hogk8nie* [and] Lenape *poqui-hackeney*," to which are ascribed the meaning of '(that which is) made from broken or pounded shells'! These two productions are perhaps offered merely tentatively with the privilege of withdrawal in the future, should they not strike the fancy of philologists. The first of these remarkable vocables is composed of the root *poku*, 'to break,' and *hogk8nie*, 'made of skins' (see *Natick Dictionary*, p. 103) and the second of the same root and the Lenape word *hakey* (with an epenthetic *n*), the human or animal 'body.'

Tapahanocke = *Rapahanocke* (Smith). — Before attempting to interpret these names, Mr Tooker favors us with the admission that they are dialectic forms of the same word. Precisely, and it was this very fact, which had never before been suspected, that it was one of the objects of my former article to point out and prove by a presentation of the few remaining fragments of the speech of a Virginia

¹ While making a copy of my former article for the press, I accidentally omitted a couple of lines of the foot-note on page 317, which stated that the *t* in a few suffixes ending in the letters *-de*, *-te*, *-ten*, did not undergo the change of that letter to *r*, but that a curious exception to this rule (not rule 5 of the text) was found in the word *pākāhikārē*. The "exception" in this case really "proves the rule" (rule 5 of the text).

people who could not pronounce the letter *r*; but, in his attempt to explain the origin and meaning of these words, Mr Tooker is obliged to take considerable liberty with historical facts in order to adapt them to his etymologies. To explain the name *Rapahanock*, a Lenape word of which the meaning is obvious, and which was duplicated in the name of a river on the east side of Chesapeake bay, Mr Tooker prefers to relegate this to the background for the moment and to devote his entire attention to its doublet. This, he told us in a former essay,¹ stood for *Toppahanough*, meaning, as he said, 'encampment people.' Such a view was, of course, untenable, for the simple reason that there is no Algonquian root *top* meaning 'to encamp,' and no word *anough*, meaning 'people,' and even if there were such a word, it could not be suffixed directly to a verbal root. Since putting this etymology on record, its author has changed his opinion, and would now account for the name by the syllabic combination *toppa-án-ock*, meaning, as he thinks, 'the country of exceeding plenty,' and which he analyzes thus: *toppa*, 'enough' 'sufficient,' 'plenty,' + the verbal root *an*, 'more than,' 'exceeding,' 'surpassing,' + *ock*, 'country,' 'land.' To such a "word," were it permissible so to call it, several serious objections may be urged, any one of which would prove its undoing. In the first place, the Algonquian root meaning 'enough,' 'plenty,' is *tép*, *téb*, *déb* (French close *é*),² and not *top*,³ which is a radical of very different meaning. In the second place, there is no Algonquian root *an*, meaning 'to exceed,' 'surpass,' or 'excel,' and, even if there were, it could not occupy the secondary position accorded to it by Mr Tooker in the combination which he offers, since Algonquian words are not constructed through an assemblage of primordial radicals. The root meaning 'to excel,' 'surpass,' 'exceed,' 'go beyond,' is a dissyllabic one having the form of: Natick, Mohegan, and Ojibwe *āniu* = Lenape *ālōu*, = Quiripi *ārōn*, = Prairie Cree *āyiu*, = Wood Cree *āthiu*, etc. No dissyllabic radical, of course, can be split in two. The root: Natick and Narragansett *ān* = old

¹ *Algonquian Series*, ix.

² *Téb* in Narragansett, and *tép* in Mohegan, which changes *é*, *ā*, and *ū* to *ē*; but these two dialects were foreign to Virginia.

³ *Top*, 'to be immature'; (of corn) 'to be in the milk.'

and modern Lenape, and old and modern Abnaki *är, ä'*, = Cree *āt*, means 'to be or to become rotten,' 'putrescent,' 'corrupt.' In the *Natick Dictionary* (p. 9), this monosyllabic root is confounded with the dissyllabic one above mentioned. The termination *-ock*, 'country,' 'land,' in Mr Tooker's combination presumably stands for *-aki*, and this would have given the original word the form of *Tapahanaki*. The root *tép* under no circumstances (except through a typographical blunder in print) could become *riþ*, and so, of course, there could be no such word as *riþahanock*; and *tapahanock* and *rapahanock* could not be cognates, as Mr Tooker admits that they are.

Since I have discussed this subject with sufficient thoroughness and given the meaning of the words in my former article, I shall not occupy space with a reiteration of the statements contained therein. Under the same root with these two stream-names, I placed *tapantām*, the Tapahanek name for deer, and its doublet *rapantām*, meaning 'he chews again,' 'once more.' Mr Tooker confidently asserts that "these two words have quite a different meaning, for the termination *-antam* . . . is a characteristic formative expressing a disposition of the mind [1] and was of common use both in Powhatan and Natick." "In the Powhatan it occurs also in *tsepaantamen*, 'to kiss,' i. e., 'to be separately-minded' [1]; . . . *naantam*, 'a wolf,' . . . i. e., 'he grieves,' 'he is sorrow-minded,' referring to his 'mournful howling'; hence *uttapaantam* and *rapaantam*, when applied to deer and to venison, indicated food that 'enough-minded,' i. e., 'satisfied' or 'contented them,' and not that which 'he chews once again'!" To use one of Mr Tooker's phrases, all this "presents some curious ideas in speculative analysis."

In the dialects of the Algonquian language, the action of the mind is expressed in verbs by a particle placed before an animate and an inanimate suffix, which has precisely the same form as that which denotes the action of the mouth, but which, of course, has a different meaning. In the N-dialects this particle is *ēn*,¹ in the R-dialects *ēr*, in the L-dialects *él*, in Prairie Cree *éy*, and in Wood

¹ Eliot writes this particle *ān*, the acute accent denoting that the vowel has its long English sound. In Narragansett and Mohegan it is *-ān*, and in Fox *-ān*.

Cree *éth*. Since what is called "Powhatan" was an R-dialect, it is obvious that a word meaning 'he is enough-minded,' 'satisfied,' would have had the form of *tepèrèndām*, not that of *tepāntām*, in which the suffix *-antām* denotes the action of the mouth on an inanimate object (understood, since the suffix is intransitive). As there could be no root *rép* corresponding to *tép*, it follows that there could be no word *repèrèndām*, and, according to Mr Tooker's fanciful etymology, there could, therefore, have been but one name for the deer, whereas we know that there were two, and that these were doublets.

The same confusion of ideas in regard to verbal suffixes leads Mr Tooker to assign to the word *tsepāantāmen*, 'to kiss,' the meaning of 'to be separately-minded,' although it is supposable that two persons who indulge in the act of osculation have one mind in common, and, for the time being, at least, "two hearts that beat as one." Algonquian verbs expressing the act of kissing are formed with suffixes denoting the action of the mouth, not of the mind. The Virginia word cited above means 'he (or she) parts the mouth on it' (some inanimate object). The animate transitive form would have been *tsepāmwār*, 'she parts the mouth on him,' or 'he parts the mouth on her.' In *naantām*, the name for wolf, we have still another suffix,¹ which denotes this time the action of the ear. *Nāntām* = Ojibwe *nōndām*, = Natick *nūtām*, 'he hears' (any kind of noise); the name referring to the animal's well known acuteness of ear, which is found also in other members of the dog family.

Coīacohanauke = *Kaiākuhānek*. — In his remarks on this word, Mr Tooker is pleased to say that my interpretation of it is an example of "curious speculation," and then proceeds to substitute some guesswork of the wildest sort for a statement which has at least in its favor the merit of plausibility. If the name is correctly spelled by Strachey, the word can have no meaning except the one that I assigned to it, i. e., 'gull creek.' There would have been nothing strange about such a name, since we find in our own geographical nomenclature the name of this natatorial bird, which seeks its food (mollusks and fishes) in streams and lakes often far inland. The

¹ *-awen* in the animate transitive form, *-āmen* in the inanimate transitive, and *-tām* in the intransitive.

same name in common was formerly (as at present) applied to two streams at some distance apart, which Smith calls the "two rivers of *Quiyoughcohanocke*." Strachey seems to intimate that this spelling is incorrect; and that is probably the case, since no meaning can be extracted from the prefix *Quiyoughco*, unless we suppose that Smith used such spelling in the belief that the first part of the word, as he heard it, was a corruption of the root found in the name for a priest. This is possible, since he relates a story, a mixture of fact and fiction, to the effect that the Tapehaneks annually held a sacrifice of children which was presided over by a *quiyoughcosu*, or priest, appointed for the purpose. Fifteen children, between the ages of 10 and 15, after having been painted white, were passed between two files of men armed with bastinadoes, each child being led by a guard who protected it from the blows aimed at it by receiving them upon his own naked body. After this, some of the children were killed in a wild revelry of the would-be bastinadoers in which the latter "tore down trees [!], branches and boughs with such violence that they rent the [children's] body." The cadavers were then thrown in a heap in a valley, while the survivors were kept in the wilderness nine months and were finally made priests and conjurors. The practice on which this story was based was one that was observed also by the Indians on the north side of the James (and also by those of Massachusetts), and was a species of "hazing" to which young men were submitted in order to prepare them for entrance into public life. This practice, which came to be known to the inhabitants of Virginia as "huskanawing,"¹ consisted in selecting a certain number of promising young men who had reached the age of virility, sending them into the woods under guard, enclosing them in a hut, withholding food from them, and dosing them with *wisakan* (= 'it is bitter'), an infusion of the roots of the spreading dogbane (*Apocynum androsaemifolium*), a drug having emetic properties

¹This word which is now admitted into our dictionaries as a verb and substantive, is from Powhatan *uskinaweu*, 'he has a new body' (from *uski*, 'new,' *naw*, 'body,' and *eu*, 'has he'), said of a youth who had reached the age of puberty. The same idea is expressed in the Natick word *woskitomp*, 'man' (*vir*), from *woskitu*, 'new-born,' and *-omp*, 'male'; the idea of the Massachusetts Indians having been that after a youth (*nunkomp*, 'agile male') had reached the age of virility he had been created anew.

of about two-thirds the strength of the officinal ipecac. The effect of this treatment was to make the subjects of it delirious and to cause them temporarily to forget everything that had passed in their life. Thus, says Beverly, they unlied their former life and began as men (prepared to perform the function of priest, cockarouse, etc.), by forgetting that they had ever been boys.

Mr Tooker, after deriving the name of a priest from a supposed word *quiyoughqu*, having the imaginary meaning of 'boy,' + the adjective *suck*, 'black' or 'dark-colored,' which, of course, could not be suffixed to the substantive which it qualifies, proceeds to say that "the *quiyoughqu-osucks*, to use the best notation, were therefore 'the lesser priests,' or 'black-boys,'¹ who were taught or chosen to be such; hence *Quiyoughqu-ohan-ock*, 'the place or country where the lesser priests or boys were beaten or initiated into the mysteries of the cult [!], a compound of *quiyoughqu* + the verb [*sic*] *-ohan*, 'to beat,' or 'to strike,' together with the locative *ock*, 'place' or 'country.'" From this it appears that the suffix *-hanock* in another stream-name does not, after all, really mean, as we were told, 'exceeding' or 'surpassing country,' but 'beating country,' and that *-ock* does not stand for *aki*, 'land,' 'country,' but is a locative suffix, which would, in that event, mean 'at,' 'in,' or 'on.' Here we have, indeed, "speculation" run wild.² In what Algonquian dialect, I would ask, is there any semi-radical *-han*,³ capable of entering into composition with the meaning of 'beating'? In what Algonquian dialect is there to be found any word *quiyoughqu*, or any term resembling it, meaning 'boy'?

As to the meaning of the Powhatan name for a priest, variously

¹ Mr Tooker, in a footnote, says that "Smith (p. 373) on the margin has: 'Their solemn Sacrifices of Children which they call Black-boys.' This I regard as a free translation of the word *Quiyoughquosuk*." Smith's word "black," however, is merely a misprint for *black*; modern *bleak* (Anglo-Saxon *blæc*, *blac*), meaning 'pale,' 'wan,' 'pallid.' The "boys" were so called by Smith, of course, because they were painted white.

² Since there were two *Quiyoughquohanocks*, there must, therefore, have been two "beating places." This was certainly pretty hard on the Tapehanek "black boys."

³ In answer to this question, Mr Tooker, in a footnote, explains it as "a verb [*sic*] that appears in several Powhatan names in varying forms, such as *Rok-oha-min*, parched corn ground small." Of this word I have given the meaning under the name Chickahominy.

spelled *quiyoughcosough*, *quiyoughcosuck*, *quiyoughquosicke*, *quiquasake*, I shall offer a suggestion, which may be taken for what it is worth. The first vowel *i* of the root doubtless had its long English sound, and we should therefore write it *ai*; the *ough*¹ = *u*, and this, in one spelling, is replaced by *o*; the characteristic, *k*, of the root is accompanied with *w* or *o*. From these data we have the root *kwaiukw*, or *kwaiokw*, which is possibly the Powhatan form of the Ojibwe root *gwaiúkw* or *gwaiákw* (= Prairie Cree *kwaiáskw*, = Wood Cree *kwaiúskw*), 'straight,' 'straight-forward,' 'upright,' 'just,' 'true,' etc. From this root we should have the animate verbal adjective *kwaiukosu* or *kwaiokosu*, 'he is straight,' 'just,' 'true,' 'perfect,' 'without guile,' etc. The name was applied also by the Powhatans to any one of the petty gods whom they worshipped. In Natick the root *sampw*, 'straight,' was used by Eliot with similar derivative meanings: 'upright,' 'right,' 'righteous,' 'just.' In Lenape, also, the root *schachachg*, 'straight,' is employed in the senses of 'upright,' 'right,' 'righteous,' 'true,' 'just,' 'correct,' etc. If my surmise in regard to the meaning of the root whence the name of a Virginia priest was derived is correct, Smith's *Quiyoughcohanok* would mean 'straight stream'; but, inasmuch as neither of the creeks so called is straight, the probability is that the name given by Strachey is the correct one.

Massawomek. — My intimation that this word was a mispronunciation by the English settlers of *Máchewomik* was unfortunate, since the two names are merely dialectic forms of the same term.

A picturesque valley of the Susquehanna, in Luzerne county, Pa., is bordered on each side by a broad plain or flat, about twenty miles in length, which was formerly the domain of several Lenape clans, by whom it was called by a name meaning 'great flat' or 'plain,' which in the guttural Minsi dialect was *M'chewomi*.²

¹ The combination *oughk* was an orthoepic device used by Smith and other early English writers in Virginia to represent the peculiar pronunciation of *u* in Algonquian.

² This word with the addition of the postpositive preposition, making *M'chewomink*, 'at (or on) the great plain,' gave rise, through corruption, to the name Wyoming, which was rendered famous by Campbell (1809) in his once widely read poem entitled *Gertrude of Wyoming*, whence the application of the name to so many places (and finally to a state) in the United States. The Iroquois name for this flat was *Shahentowane*, 'great meadow (or plain),' a term which was applied also to extensive meadows in other localities, and became corrupted to "Shenandoah."

These Algonquians were conquered and "put in petticoats" by the Minquas, a powerful and warlike Iroquoian people, who settled upon the land of the vanquished and lived there previous to and at the advent of the Europeans. It was certainly these belligerent Minquas, and not people of the same linguistic stock from the Great Lakes (as Smith supposed) that occasionally organized war parties and paddled down the Susquehanna into Chesapeake bay in their bark canoes (with which all the Iroquois were provided), and struck terror into the hearts of the natives of the tidewater region of Virginia. The word *Māšewomik* means 'people of the great plain'; from *mās*, 'great,' *womī*, 'plain' or 'flat,' and *k*, the characteristic of the animate plural suffix.

Mr Tooker says he translates "it 'those who travel by boat,' *massow-omeke*." There could be no such Algonquian word formed to have that meaning. The Powhatan word to render the English phrase 'those who travel by boat,' would have been *mēshurhānkik*. It was nothing surprising to the Virginians that their enemies should travel by boat, since that was precisely the way in which they themselves traveled when they went by water.

Vttasantasough = *Utāsantāsu*. — I deeply regret that I made any reference to this word, since I have never been able to work out its meaning. The origin of the terminal *-antāsu* is plain enough; that is simply an adjective suffix derived from the intransitive verbal suffix *-antām*, which, according to the root used with it, might denote the action of wearing clothing, eating, accompanying, etc. The meaning of the root *tās* (Pamptico *tosh*) is problematical. A root used in one dialect often dies out in others and is replaced therein by one of a different form having practically the same meaning. No root *tās* that would form a verb with the suffix *-antām* can now be found in any other dialect. Mr Tooker, taking as his model the Narragansett word *eenantowash* (miswritten for *ininantowash*, imp. 2d sing. of *ininantowen*) 'speak thou Indian!' forms a combination *k'uttass-antowash*, to which he ascribes the meaning of 'he speaks a strange language.' Such a word, if I may so call it, would have seemed fully as strange to the Powhatans as did the foreigners who suddenly appeared among them. In the first place, there is no Algonquian root *kuttass*, meaning 'to be strange'; and, in the

second, if the suffix represents *-antowen* denoting the action of speaking in the manner designated by the root, it would have here, as in the Narragansett word just cited, the form of the 2d pers. sing. of the imperative mood. The meaning of the word *ūtāsantāsu* will never be known, and it is therefore useless to make frivolous guesses in regard to it.

Mr Tooker's etymons of the names for "paint" and "bark dish" may be disposed of in a few words. The idea that the first syllable in the name for paint is an adjective root meaning 'fine,' 'pretty,' 'handsome,' is very absurd, as well as quite antiquated. If such were the case, the root vowel, when the word takes an adjective prefix or enters into composition, would be preserved; but, instead of this, the first vowel of the word disappears under such circumstances, thus showing that it is merely expletive. Again, the cognate Lenape names, in addition to *wulāmān*, are *ālāmān* and *wālāmān*, and the Prairie Cree name is *wiyāmān* — words in which, in Lenape, neither *āl* nor *wāl*, and, in Cree, neither *wi* nor *wiy* means 'fine,' 'pretty,' 'handsome.' Finally, the comparative study and analysis of the word which I presented in my former article, and in which I stripped it of its expletive prefix and its formative and laid bare its root, gives all that we can ever expect to know in regard to a term the actual meaning of which, like that of the name of the kettle, spoon, bark dish, and some other primitive utensils, has long been lost to the Indians themselves.

The fact that the names for a bark dish are, as I have already fully explained (*Amer. Anthropologist*, vi, p. 328, f. n.), derived from a verb would suffice to show to any one having even but a slight acquaintance with Algonquian grammar that *-āgān* is the formative of a verbal noun, and not a generic substantival suffix which can be used to form a word in combination with an adjective or with a substantive used attributively. Verbs in *-ākeu* or *-āgeu*, and, consequently, substantives in *-āgān* can be formed only from intransitive verbs or animate adjectives, and never directly from a root. The Algonquian root meaning 'to be concave' or 'hollow' is not, as Mr Tooker seems to imagine, *wur*, *wun*, *ol*, *on*, etc., but: Caniba *wa'r*, Penobscot and Lenape *woł*, Natick *wōn* (*wān*), Ojibwe *wān*, Prairie Cree *wāy*, Wood Cree *wāth*, etc. From this

root is formed the Caniba name for a plate, *wa^aradë*, meaning 'it is concave.' In the same dialect, the name for a bark dish is *ura^agän*, a word which, like all its cognates, is derived from an intransitive verb formed from a root of which the meaning is lost.

"From the same element" [*i. e.*, the supposed root found in the name for a bark dish], says Mr Tooker, is derived the "Narragansett *wunnauanounuck*, a 'shallop,' . . . from *wunnau*, 'a shallow vessel,' and *-anounau*, 'to carry,' + *-uk*, 'that which.'"

In this Narragansett word, the generic substantival suffix *-ounuck* (= *unûk*, written also *-onûk*, = Natick *onag-*, = Caniba *-uräk*, = Lenape *-oläk*, = Ojibwe *-onäg*, = Cree *-otäk*) means 'boat' or 'canoe.' The signification of the substantive prefix *wunnauan*, used attributively, has not been ascertained; but what may be stated as absolutely certain is that *wunnau* does not mean 'hollow (*wän*) vessel,' and that *anounau* does not mean 'to carry.'

Paqwantevun = *päkwatshun*. — In this word Mr Tooker sees lurking the Narragansett name for an 'apron,' viz., *äutawhun*, "Hence," he says, "*paqwantevun* = Narr. *pahk-äutawhun*, 'a clean apron'!" To use Mr Tooker's language, the Narragansett word shows simply one of those accidental similarities that sometimes occur in words belonging to remote dialects, "for there is no etymological connection between the two names," — none whatever. The root and grammatical structure of the words differ *in toto*. Mr Tooker's grammatical explanation of the structure of the Narragansett name for "apron," I am sorry to say, I cannot grasp: "The particle *un* is the nominative of the impersonal verb, when the object for which it stands is expressed by the verb, *i. e.*, *autawhun*, 'it hides.'"

Bagwanchybasson (= *päkwatshpissun*), says Mr Tooker, is the same name as Natick *puttukwobbesin* (= *pütükwäbisun*), = Abnaki *pëtëgwäbisun*, "from *puttuckqui-au*, 'it girdles,' and *mobee*, 'hip'!" It would certainly be difficult (except, perhaps, to a myope) to see any resemblance between the roots *päkw* and *pütükw* or *pëtëgw*, the first meaning to 'wind about' or 'be wound about,' and the second 'to be round.' The meaning of the Natick and Abnaki words above cited is simply 'round tie' or 'band' (*-bisun*). The semi-radical *mobee*, 'hip,' does not enter into the composition of

the word. The *bb* in the Natick word simply represents a gemination of the consonant *b* belonging to the suffix. Girdles are worn around the waist, not around the hips. The Nipissings call the waist by the same name as the sash or girdle that encircles it.

Finally, Mr Tooker directs his attention to the word *wintuc*, *wintuccum* (= *wintúk*, *wintakuw*), ghou, regarding which he positively asserts that "neither Strachey nor the copyist made a mistake, for this word means a 'fool,' and not a 'ghoul.'" Was it no mistake of a copyist, then, that in Strachey's vocabulary the pronomial adjective *cuttak*, 'another,' is given as the name for an 'otter,' that *pussequembun* (= *púsikwibún*), 'he rose,' is given as the name for a 'rose,' that *meisutterask*, a 'cove,' is given as the name for an 'owl'? In support of his assertion that the Virginia word means 'fool,' Mr Tooker offers "*wintuccum* = Mass. *ween-tuhkekun*, 'he is head-heavy,' 'he is a fool.'"

Inasmuch as the Natick word *ween* is the name for 'marrow,' not 'head,' and as *tuhkekun* is a verbal adjective meaning 'it is heavy,' Mr Tooker's "cognate" would be written in two separate words, *ween tuhkekun*, and assert that 'marrow is heavy.' As another "cognate," he gives Lenape *wil-tak*, 'head-heavy,' 'a fool,' 'a sot,' 'a drunkard'; a combination entirely original with him, in which *wil* means 'head,' and *tak* is simply a product of the imagination, since there is no Lenape adjective root *tak*¹ meaning 'heavy.' A compound consisting of a substantive connected by a hyphen with a mere root, and a suppositional root at that, is certainly a philological curiosity.

In closing this article, I cannot refrain from warmly commending Mr Tooker for the able, conscientious, and fearless manner in which he performed the task (doubtless painful and onerous) of pointing out and correcting the mistakes which he found skulking "in nearly every paragraph" of my former communication. In dragging forth some of these mistakes to the light and submitting

¹The Lenape name for "lead," given in Brinton and Anthony's *Lenape-English Dictionary* as *takachun*, and quoted in the *Natick Dictionary* (p. 163) and there interpreted 'heavy stone,' is miswritten for *wtakachun*, 'soft stone' (i. e., metal). The Natick root *tá'kikw*, = Abnaki *t'kikw* (not on record in Lenape), meaning 'to be heavy,' is dissyllabic.

them to so intelligent an examination, I think he has done but right; for I hold it to be the bounden duty of every person who has the interest of the reading public sincerely at heart, and who feels himself sufficiently well equipped to assume the functions of critic, promptly to call attention to and correct any glaring errors that he may observe in print, to the end that the evils resulting from the dissemination of false teachings may, in a measure at least, be attenuated.

TRADITIONS OF PRECOLUMBIAN LANDINGS ON THE WESTERN COAST OF SOUTH AMERICA

By ADOLPH F. BANDELIER

The origin of the people inhabiting the New World was one of the first problems that busied European minds as soon as it became realized that America was an independent continent. How could man have reached this land, that was so widely separated from the rest of the known world? In reality this question was not a new one, for it had been asked in regard to every distant island found inhabited by animals and plants as well as by man. Solutions had been proposed long prior to the fifteenth century—theories in harmony with the state of knowledge and with the religious fervor of the period. Among others, Saint Augustine, in the fifth century, speculated on the problem of how quadrupeds, such as beasts of prey, that are of no use to man, came to live on distant isles (1).¹ I wish to lay stress on these precolumbian speculations, for when the origin of the American Indian became the subject of investigation, the autochthonous theory was as freely discussed as any other. But the general trend of opinion in the sixteenth century was in favor of the belief that the "aborigines" of America were not in reality aboriginal, but that at some more or less remote period they had migrated from other sections of the globe. Many were the theories proposed in regard to the regions whence these migrations might have come; but this is not the place to discuss their relative merits.

The belief in an extra-American origin of the Indians has direct bearing on the value of Indian traditions, as recorded by Europeans who were under the influence of that conjecture, for it naturally led Spanish investigators, for example, to interpret any tale that might be construed in favor of the assumption that man came to America from the outside world. I am by no means favoring the hypoth-

¹ See the notes at the close of the article.

esis of an independent creation or evolution of the Indian on this continent. All I desire to call attention to is the danger of early Indian lore having been colored, by those who gathered it, so as to support a favorite theory. Such coloring is a serious obstacle to the critical use of aboriginal American lore supposed to embody historical information.

Among Indian myths that appear to touch on an extra-American descent of the natives in the western parts of South America, we must discriminate between (1) allusions to the appearance of strange individuals or groups of individuals, long before the epoch of Columbus but while the land was already peopled; (2) tales mentioning a primitive settlement of parts of South America from other parts of the globe; and (3) stories of landings on the western coast of the southern continent.

The tale of Tonapa (sometimes identified with Viracocha), in the interior of Peru and Bolivia, has already been discussed by me, so far as the scanty material and its nature permitted (2). The Tonapa story, in its later version by Calancha, begins in Brazil. It tells of the wanderings of two white men, at a time quite remote, but still after the beginning of our era. These white travelers are reputed to have landed on the Brazilian shore, whence they pushed inland, preaching to and teaching the natives after the manner of Christian apostles or missionaries. They are accredited with accomplishing the portentous journey through southern Brazil, Paraguay, and northern Argentina into western Bolivia, where, near the shores of Lake Titicaca, one of them suffered death at the hands of the natives, while the other pursued his way to the Pacific and there disappeared. This version, however, dates from the middle of the seventeenth century (3), and extends the scope of the original Tonapa or Viracocha lore obtained in southern Peru and in Bolivia. It bears the stamp not merely of confirmation, but of explanation and adaptation to Christian legends about apostolic labors in remote corners of the earth. The early, hence more authentic, versions of the Tonapa and Viracocha story, heard not later than sixteen years after the arrival of Pizarro, and probably even within a decade of that event, either represent the origin of that mysterious individual from Lake Titicaca (not necessarily from the island of that

name) or make him appear on the Bolivian plateau from the south and to direct his steps toward the north where, on the shores of Ecuador, he disappears, together with his companions, on the waters of the ocean. In the heart of Peru a similar tradition was found among the Indians at an early date, and while these tales must be accepted *cum grano salis*, they may have had their nucleus in original recollections that already had become veiled and distorted prior to the sixteenth century.

The traditions of central western Peru differ partly from the tales of Tonapa-Viracocha in that they also mention a *settlement* of strangers. The report of the Augustines on their investigations among the Indians of Huamachuco between 1552 and 1561, states that most of the settlers perished and that the few survivors were driven out of the country. But this part of the story appears to be distinct from the tale of white "teachers" of the Tonapa legend, and to refer to another set of individuals (4). The term "culture-heroes" has been introduced into American ethnology for such personages. In this case their labors would have left few, if any, cultural traces.

Almost parallel with the Tonapa and Viracocha lore is the myth of Bochica or Nemtherequeteba (Nemtherequeteba), also called Zuhé, among the Muysca or Chibcha Indians of Colombia. The four names apply, according to Piedrahita, to one individual. Fray Pedro Simon, who wrote somewhat earlier, discriminates between Bochica and Nemtherequeteba. Piedrahita asserts that, according to Chibcha tradition, Bochica "came" to the plateau of Bogotá — whence, he does not state. He describes him as with a long beard and wearing long garments, as having walked with bare feet and gone about preaching and teaching the Indians a better mode of life. At Sogamoso, in the Colombian highlands, Bochica lived two thousand years, and died there after performing many miracles, among which the opening of the cleft at Tequendama is most conspicuous. There is a certain analogy between this personage and Tonapa or Viracocha. In Peru, as is well known, the Indians called and still call the whites *Viracochas*. Piedrahita asserts that the surname Zuhé, given to Bochica, was used by the Chibcha to designate the first Europeans they saw (5).

Simon has Nemtherequeteba (whom he also calls Zuhé) reside east of the Bogotá plateau, in the Orinoco region of Venezuela, for fourteen hundred years. Thence he went to the Colombian tableland, disappearing about Sogamoso (6). His personal appearance is described in the same manner as by Piedrahita, but the miracle at Tequendama Simon ascribes to Bochica (7). The former remarks: "And some say that there was not one stranger alone, but three, who at distinct times entered preaching, but the most common and usually believed is that there was but one with the three surnames mentioned." (8)

Elsewhere I have called attention to the possibility of these traditions not being fully primitive.

The Jesuit missionary Father Anello Oliva was a contemporary of both Simon and Piedrahita. He spent forty-five years of his life in Peru and in what is now Bolivia, the latter being the scene of his apostolic labors for many years (9). It is not known that he ever paid attention to Colombian topics. It is strange, therefore, that Oliva represents the peopling of South America as having taken place from the side whence the mysterious white men are said to have reached the Bogotá plateau, namely, from the east. The chief sources of his work were, according to his own statements, some writings of Father Blas Valera from the second half of the fifteenth century, and especially stories related to him by an Indian from Cochabamba in central Bolivia. This Indian, whose name was Catari (an Aymará word signifying "snake," "viper," a venomous serpent in general, distinguished from the innocuous kinds which the Aymará call *aseru*), was particularly well versed in ancient lore of the Inca tribe; hence it appears unlikely that Oliva should have gathered information, at least directly, from Colombian sources (10).

According to Oliva the first settlers of South America landed on the coast of Venezuela near where the city of Caracas now stands, whence they gradually spread over the continent, reaching, among other places, Santa Elena in Ecuador, where they settled. Of these settlers some bands in course of time traversed the coast southward, occupying Tumbez and Lima. While these immigrants from eastern South America were establishing themselves on the coast of Ecuador and Peru, there took place at

Santa Elena a landing of "giants." What Oliva says of the fate of these giants appears to have been taken almost literally from Cieza and Zárate. To this I shall refer later. After the reputed destruction of the intruders by fire from heaven, the settlers on the coast continued to extend their excursions with more or less success: some went in the direction of Chile and the straits of Magellan, and were not heard of again; others settled at various points on the Peruvian shore; still others penetrated inland and reached Lake Titicaca and the Cuzco region. It is noteworthy that these reputed settlers from the coast found the interior already inhabited and the shrine on Titicaca island in full operation (11).

Assuming, for the present, that Oliva reported primitive, hence genuine, Indian lore, the following appear to be the essential points of his tales:

(1) The earliest landing in Venezuela, therefore in northeastern South America.

(2) A gradual spread over the northern sections to the westward as far as the coast of Ecuador.

(3) Coast voyages thence to the south as far as the southern extremity of the continent.

(4) After the settlement on the western coast had been effected and some of these voyages were in progress, there took place a landing, from parts unknown, of strange people who were destroyed by some cataclysm and left no impression beyond some remains and recollections of their appearance.

(5) A gradual spread from the coast to the eastward into sections that were already peopled.

The first part of this story recalls *Colombian* traditions, while the landing of the so-called giants is a *local* tale heard by the Spaniards on the shores of Ecuador at a very early day. The coast voyages also, as I shall show, were mentioned by Spanish sources half a century prior to Oliva's time.

Oliva acknowledges another source of information — "original papers" given to him by a Dr Bartolomé Cervantes, of Charcas, Bolivia (12). Under any circumstance all his knowledge is derived at second hand. It bears the stamp of compilation from various sides, as well as the impress of *adaptation* to the favorite belief in

the peopling of America from the old world. Parts of his material, so far as based on local tales, may contain a nucleus of primitive Indian recollection, but it is manifestly woven into a general story highly colored by European ideas.

Among Indian lore collected soon after the conquest, and therefore presumably genuine, there are traces of the drifting of tribes into the interior of Peru from the western coast. On this point Cieza states:

"They also relate what I have written in my first part, that on the Island of Titicaca, in former centuries, there were white men, bearded like ourselves, and that, sallying from the valley of Coquimbo, a captain whose name was Cari, he came to where now is Chucuito, whence, after making a few more settlements, he passed with his people over to the island and made such war on the people of which I speak that he killed all of them." (13)

If the word "Coquimbo" is correctly rendered from the original text, and not one of the clerical mistakes that so frequently crept into copies of old manuscripts, then Cari and his men came from the coast of northern Chile. But, as in the case of those who, according to Oliva, would have reached Lake Titicaca from the Peruvian coast, they found the shores and islands of that lake already inhabited. Concerning the white men exterminated by Cari, Cieza fails to state whence they came, but he assures us that he heard the tale from an Indian who may have been well versed in ancient lore.

Montesinos, a contemporary of Simon, Oliva, Calancha, and Piedrahita, treats of the peopling of America in a general way, making the earliest settlers appear from every quarter of the globe, hence also from the South sea. In his own words:

"At that time, which as far as I have been able to ascertain was six hundred years after the deluge, all these provinces filled up with people. Many people came from the direction of Chile, others by the Andes, others by the mainland and the South sea, so that its coasts became settled from the island of Santa Elena and Puerto Viejo to Chile; this can be gathered from the poetry and ancient songs of the Indians," etc. (14)

Salcamayhua, an Indian writer of the same period, bases, as he claims, on original lore preserved by the Indians of "Orcasuyo, between Canas and Canchis of Collasuyo," the traditions which he says he heard from his father and other old men. He relates:

"They say that, in the time of *Purunpacha*, all the nations of Tahuantinsuyo came from the direction of above Potossi in three or four armies ready for war, and so they came settling, occupying the places, every band remaining on unoccupied lands." (15)

This hints at a movement of tribes from south to north, in upper Peru and Bolivia. How far the tales are genuine, that is, wholly pre-columbian, is not yet easy to ascertain. Salcamayhua makes most fervent protestations of Christianity, so fervent, indeed, that there arises a suspicion of the infiltration of many European elements in his version of native lore. It is particularly marked in what he relates of the person, travels, and deeds of Tonapa (16). And he merely mentions some migrations to the interior of the continent, without stating whence the settlers originally came.

Pedro de Cieza remarks in a general way: "In Peru the Indians speak of nothing else than that the ones came from one part [direction] and the others from another." (17)

Similar to the stories preserved by the Augustine missionaries, in the sixteenth century, are tales recorded by Miguel Cabello Balboa in his "Antarctic Miscellany" concluded in 1586. But he also furnishes a long story to the effect that South America, or at least the coast of Chile, was peopled originally by pirates from the East Indies. To Balboa I shall return later, having yet to refer to some traditions found in the interior of Peru, likewise in the second half of the sixteenth century and recorded in the year that Balboa finished his work, hence they are either a coincidence or Balboa obtained them from the same source or was told of them by the authorities of Guamanga, who wrote the report on the "Repartimiento de los Rucanas Antamarcas," dated January 27, 1586. This report contains the following statement:

"The old Indians say that they have notice from their forefathers, by hearsay, that in very remote times, before the Incas ruled them, there came to this country people whom they called *Viracochas*, not many of them; and that the Indians followed them, listening to their speech, and now the Indians say they were Saints."

I call attention to the last phrase—that *now* the Indians call these people "Saints," (18)

Returning to Miguel Cabello Balboa, it is noted, as before stated,

that he attributes the settlement of southern Chile to pirates from the East Indies, whom he calls *Nayres*. He traces the career of these people over nearly the whole eastern world, making a part of them finally land near the southern extremity of America. According to Balboa they were "the origin and trunk of the Indians of Chile, from whom also descend the Chiriguanaes, or (rather) Chiliganaes. By these were made those strange fortifications that in Ayavira and Tiaguanaco (and in other parts of this section of the world) are seen," etc. After the "Nayres" had "conquered the austral regions, they penetrated inland and were never afterward heard from. Their intrusion in these our Indies is conjecture, for the reason that old Indians state they have it from ancient traditions of their forefathers, who told them that from that part of the world there came these pestiferous tyrants [the Nayres], and those of Chile say the same, pointing out that they came from this side of the straits which we call of Magellan." (19)

While the eagerness displayed by Balboa to defend a favorite theory renders his statements liable to suspicion, it is worthy of investigation whether the tales are genuine or not, but I have not at my command the material necessary. While in Peru Balboa joined the order of the Jesuits and was a contemporary of Acosta and of the Dominican Fray Gregorio Garcia (20). Neither of these, in their classical works on America, makes any mention of his story, a lack manifestly due to their being unacquainted with the "Miscellany," only a part of which, to this time, has appeared in print as a French translation by Henri Ternaux-Compans.

But Cabello Balboa does not confine himself to ancient lore of a *general* character; he also has preserved what bears every mark of being a genuine local tradition of Indians from the northern Peruvian coast. According to him, the aborigines of the villages of Motupe and Lambayeque said that "in times very remote, so remote that they cannot count them, there came from the upper parts of this Piru, with a great fleet of rafts, a mighty warrior, of great valor and many qualities, called Naymlap, and he had with him a number of concubines, the principal of whom they say was called Ceterni; and with him and in his company he brought many followers whom he led as captain and leader. This chief Naymlap, with his entire

retinue, landed and disembarked at the mouth of a river (now called Faquisllanga, where they abandoned their rafts and penetrated inland." (21)

This indicates a coastwise expedition, possibly from some point on the shores of Ecuador, as far as the vicinity of Chiclayo and Lambayeque. It recalls the coast voyages told of by Oliva, and seems to confirm them. There is no apparent connection, however, between the sources of Balboa (who alludes to direct Indian information from tradition) and those mentioned by Oliva; nor is it said that the people led by Naymilap were of extra-American issue.

When Pizarro first visited the coast of Ecuador and the north-western extremity of Peru, he sent the pilot Bartolomé Ruiz with one of his frail craft to explore the southern coast for two months. Ruiz coasted as far as southern Ecuador and perhaps to the latitude of the Peruvian boundary, although it is not possible to determine the southern limit accurately. While on this voyage he captured a craft, carrying about twenty men, which he describes as follows:

"This vessel which I say he took, appeared to be of as many as thirty tons; it was made after the manner and [with] a keel of canes as thick as posts, bound together by ropes of a kind they call eneguen [henequen], which is like flax, and the upper parts [bulwarks] of other canes more slender, bound with the same ropes, where they placed their persons and the merchandize together, as the hold was with water. It had its masts and spars of very handsome wood and sails of cotton of the same description, like those of our ships; and very good fishing tools of the same eneguen mentioned that is like flax, and for anchors stones after the manner of barbers' grinding-stones." (22)

After the return of Ruiz, Pizarro set out himself, and at Tacamez [Atacames] was met by fourteen large craft manned by Indians. "Balsas" (rafts) are frequently mentioned (23). A complete description of one of these large vessels is given by Father Bernabé Cobo. Although of the first half of the seventeenth century, hence a full century after the conquest, it agrees well with the indications previously quoted.

"The largest balsas used by the Peruvian Indians that live close to forests, like those of the ports of Payta [in Peru], Manta, and Guayaquil [in Ecuador], are composed of seven, nine, or more timbers of *palo de*

balsa, in this manner: that they tie them one to the other lengthwise with *bejucos* [lianas or creepers] or ropes, over others crosswise. The one in the middle is longer at the prow than the others, which become smaller in proportion as they recede on the sides; the middle one is longest at the prow, so that at the prow they are like the fingers of an extended hand, whereas at the stern they are equal. On these they build a platform of boards so that the people and cloth that go in it may not get wet from the water entering through the joints of the timbers. They navigate on the sea with sail and oars, and some are so large as easily to accommodate fifty men." (24)

An earlier description is that by the Licentiate Salazar de Villante, dating from about 1574. It refers only to the balsas used on the Rio Guayas without sails, but with as many as seven oars on each side, or fourteen oarsmen in all (25).

Oviedo never visited Peru, but gathered much information from Spaniards who had been with Pizarro at the beginning of the conquest. He speaks of the large rafts used by the Indians of the southern coast of Ecuador, saying that they carried on the sea as many as three horses. His description agrees very well with the preceding, mentioning sails and the oarsmen on the sides. South of Payta the craft, according to him, were made of reeds (26).

With such craft the short distance separating the mainland from the island of Puna, for instance, could easily be traversed. Long voyages along the coast were also possible. Of attempts to venture far into the open sea, I find as yet no traces.

The Jesuit Joseph de Acosta mentions canoes of seal-skin in which the Indians from Ica and Arica (the latter now pertaining to northern Chile) made long voyages "to some islands far away in the west," and he adds: "Hence there is no lack of indications that the South sea was navigated before the Spaniards [came]." (27) The islands visited by the Indians of Ica may have been the Chincha isles, to which the journey can be made from the port of Pisco in a comparatively short time. That these guano deposits were frequently touched by Indians in precolumbian times is well established. The islands that were reached from Arica are a matter of conjecture, but I should be quite loath to accept the vague statement of Acosta as a basis for assuming that the tales apply to voyages as far as Easter island or other distant Pacific groups. Distance is very

elastic in the mind of the Indian, and as no direction is given the trips may as well have been along the coast as to the west. Besides, the seal-skin craft mentioned could hardly have withstood wind and wave for many days beyond reach of succor. Cobo describes these craft as follows:

"They make them of two skins of seals, filled with air, which they tie together like the two fagots of which are made those of grass. Only one Indian goes in each, and he goes fishing in the sea as far from shore as in any of the others. But as these rafts are wont to collapse in the water, in order to prevent their sinking each Indian carries a hollow reed, and out on the sea he from time to time unties and blows them up again, like air-bags. They are as light and swift in the water as the substance with which they are filled, which is air. No sails are used, as little as with those of reeds; only oars, as in the latter." (28)

The only traditional record of a *landing* on the western coast of South America is that of the "giants," near Punta Santa Elena in Ecuador. According to Zárate, it was known to the Spaniards prior to 1543, but not credited until the discovery of large fossil bones in that year furnished, in the light of knowledge of the times, an apparent confirmation. The finding of fossil remains of unusual size was not altogether accidental. The captain Juan de Olmos, lieutenant governor at Puerto Viejo in the year aforesaid, hearing of "all these things, caused excavations to be made in that valley, where they found such large ribs and other bones that, if the skulls had not appeared at the same time, it would not have been credible they were of human persons. . . . Teeth then found were sent to different parts of Peru; they were three fingers broad and four in length." Although these remains were found beneath the surface, it is possible that some skull had previously been seen by the Indians who founded thereon an "observation myth" (29). On the other hand, the tale may probably be a distorted reminiscence of some precolumbian occurrence on the coast of Ecuador.

It is not likely that the earliest Spanish discoverers of Peru had already heard of the tradition. Oviedo surely would have mentioned it, as he carefully recorded everything that came to his notice at the time. He conversed with Diego de Almagro on the return of the latter to Panama from the first expedition in 1527; in 1534 he questioned several of the returning members of Pizarro's corps,

on the island of Santo Domingo, and in 1536 conversed with Pedro de Alvarado. Had any of these mentioned the "giants," Oviedo would not have failed to note it in his voluminous work. It is therefore likely that the Spaniards first heard of the tradition between 1536 and 1543 (30).

The earliest reports on the "giants" are by Cieza and Zárate, printed in 1553 and 1555, respectively. The former says:

"The natives tell, from what they heard through their forefathers, who heard and had it from far back, that there came by sea in rafts of reeds after the manner of large boats, some men who were so tall that from the knee down they were as big as the full length of an ordinary fair-sized man, and the limbs were in proportion to their bodies, so misshapen that it was monstrous to look at their heads, as large as they were, and with the hair that came down to the shoulders. The eyes they give to understand were of the size of small plates. They affirm that they had no beards and that some were clad in skins of animals, while others came as nature made them, and there were no women along. Arriving at this point, and after making on it their settlement in the form of a village (even at the present day the sites of the houses are known), they did not find water, and in order to supply the need thereof, made some deep wells, a work that is certainly worthy of remembrance, performed by as strong men as it is presumed they were, judging from their size. And they dug these wells in the live rock until they found water, and afterward lined them with stone to the mouth, in such manner that they will last for many ages, in which [wells] there is always good and savory water, and always so cold that it is a great pleasure to drink it. Having thus established themselves, these tall men or giants, and having these wells or cisterns out of which they drank, they ate and wasted all the food they could find in the land, for each one of them consumed more than fifty of the natives of the country, and as the supply was not sufficient for them, they killed much fish in the sea by means of their nets and contrivances which, it stands to reason, they must have had. The natives abhorred them, for they killed their women in making use of them, and the men they killed for other reasons. The Indians did not feel strong enough to kill these new people that had come to take their country and domain, although great meetings were held to confer about it; but they dare not attack them. After a few years, the giants being still in the country, and having no women, and those of the Indians not suiting their great size, or because it may have been by advice and inducement of the

demon, they resorted to the unnatural vice of sodomy, which they committed openly in public, with no fear of God and little shame of themselves." (31)

Then followed the punishment of which I shall treat at length in a subsequent paper—an angel appeared in a mass of fire from heaven and killed them all. Cieza is fully convinced of the truth of the story and refers to the large fossil bones in evidence, showing that he obtained his data after 1543.

Agustin de Zárate differs but little from Cieza in his main statements, except that he does not mention their landing on the coast (32).

After these two primitive sources, the tale was often repeated, with slight variations (33). I shall refer to only a part of one of the later versions, contained in an anonymous description of the "government" of Guayaquil, dating from about the year 1605, apparently an official document by one who was intimately acquainted with the district. It says:

"They drink water out of wells, especially of one they call of the Giants which, according to the sayings of the ancient Indians, lived in that country, not as original inhabitants, but from other parts."

The fossil remains of large size are also alluded to: "They are chiefly preserved in the deposits of pitch, of which there are few." (34)

It thus seems that the tale of the landing of so-called giants on the coast of southern Ecuador is a genuine Indian tradition from a period antedating the sixteenth century. It appears also that it refers to people entirely distinct from the American natives; but we are at a loss to find even an inkling as to whence these people may have come.

Under these circumstances it is at least premature to attempt conjectures as to the part of the globe whence the so-called giants came. If their original home lay beyond the American continent, some of the island groups of the South sea might be considered as affording the answer. How far the craft in use by the islanders might have enabled such long voyages, and in what manner oceanic currents and winds might have favored or impeded them, are subjects for investigation on the islands themselves.

It is possible that the strange beings came from some point on the western coast of America, although the marked difference in appearance between them and the coast Indians of Ecuador would rather indicate an extra-American origin.

The large stature attributed to the intruders should not be taken too literally. During the course of many ages traditional personages easily assume exaggerated proportions. The Indians of Ecuador and Peru are of low stature, comparatively speaking, and anyone above their average height becomes, in their eyes, first a tall, later a very tall man. If to unusual size, hostile demeanor is added, after a lapse of time aboriginal lore converts him into a monster, morally and physically, and it is in some such sense that the term "giant" should be understood—a being with superior physical power and destructive tendencies. As for the manner in which the "giants" came to be exterminated, it may be said that, while the natural phenomenon described in connection with their destruction seems to indicate the fall of a meteorite of unusual size, the possibility of some volcanic disturbance should not be excluded.

NOTES

1. *De Civitate Dei*, cap. 7, lib. xvi.
2. The Cross of Carabuco, *American Anthropologist*, vi, No. 5, 1904.
3. *Crónica moralizada del Orden de San Agustín en el Perú*, vol. 1, 1638, lib. II, cap. II, III, IV; also cap. X on Viracocha.
4. Having frequently quoted, in previous papers, the sources to which I must refer, I abridge titles in order to save space and to avoid repetition. The report of the Augustines is in vol. III of the *Documentos inéditos de Indias* under the title "Relacion de la Religion y de los Ritos del Perú," etc. The passage is found on p. 22: "Pues finge el demonio, y los indios lo tenian muy creido, que Atagujú envió á el mundo desde el cielo á este Guamansuri, y este vino á el mundo á la provincia de Guamachuco, que de allí se habia de comenzar, y cuando vino halló en él cristianos, que en lengua de Guamachuco se llaman *Guachemines*, y él andaba muy pobre entre ellos. Y los guachemines le hacian trabajar y hacer sus chacaras: tenian estos guachemines una hermana, que llamaban *Cantaguan*, la cual tenian muy encerrada que no la veia nadie; y un dia fueron los hermanos fuera, y entonces Guamansuri fué á ella y con halagos y engaños la hubo y empujó. Y como los hermanos guachemines la vieron preñada y supieron el negocio, y que Guamansuri habia sido el estrupador y agresor, prendieronle y quemaronle y hicieron le polvos; y dicen los indios que los polvos se subieron al cielo y que se quedó allá con Atagujú; y por esta causa por entonces no hobo la erecion de los indios y á

ella pusieron à muy buen recabdo." This bears a suspiciously Christian tinge. (p. 23): "Y entonces dice quel fuerte mancebo mató à los guachemines, y à algunos que quedaron echóles de la tierra." The story of the followers of Viracocha, or Tonapa, is entirely different. Compare Juan de Betanzos, *Suma y Narracion de los Incas*, cap. II, p. 8. From the report of the Augustines it would seem that the "Guachemines" inhabited the country before the Indians, for Catequil, who was the son of Cantaguan, killed the so-called Christians: "Entonces subióse al cielo y dixóle à Ataguju: 'ya la tierra está libre y los guachemines muertos y echados de la tierra, agora te ruego que se crien indios que la habiten y labren.'" Thereupon Ataguju (to whom creation is attributed) directed Catequil to go to a height between Lima and Truxillo, "y que fuesen à el dicho cerro y cavasen con taquillas ó azadas de plata y oro y de allí sacaria los indios y de allí se multiplicarian y se multiplicaron todos; y así se hizo y que de allí salió su principio." Hence the "Guachemines" occupied the region *before the Indians*. Their identification with "Christians" is certainly posterior to the conquest and invented by the Indians to explain and excuse, to a certain extent, their opposition to the Christian faith. This results plainly from p. 24: "Lo segundo es que dicen los indios, que porque los indios mataron los guachemines y los echaron, agora los cristianos son sus enemigos y les hacen tanto mal y los roban y toman sus mujeres y haciendas; y por esto ellos son nuestros enemigos, y el demonio, porque mataron los guachemines à Guamansuri, quiere mal à los cristianos y los teme, y no querria que en cosa recibiesen la ley de los cristianos, y no hay que dubdar sinó que es grande el odio que nos han tenido." The traditions about "white men" from the vicinity of Ayacucho, and the tales connected with the ruins of the Rio Vinaque, will be treated farther on. They bear some analogy to the Huamachuco stories.

5. Lucas Fernandez de Piedrahita, *Historia general de las Conquistas del Nuevo Reyno de Granada* (1688, lib. I, cap. III, p. 17): "Tenian alguna noticia del diluvio, y de la creacion del mundo; pero con tanto adición de disparates, que fuera indecencia reducirlos a la pluma: y comunicados en esta materia referian, y lo hazen al presente por tradicion de vnos en otros, que en los passados siglos aportó a aquellas regiones vn hombre extranjero, a quien llaman vnos Nemquetheba, otros Bochica, y otros Zuhé, y algunos dizen, que no fue solo el extranjero, sino tres, que en diferentes tiempos entraron predicando; pero lo mas comun, y recibido entre ellos es, que fue vno solo con los tres epitetos referidos. Este tal, dizen, que tenia la barba muy crecida hasta la cintura, los cabellos recogidos con vna cinta como trença puesta a la manera, que los antiguos Fariseos vsaban los Philacterios, ó Coronas con que se rodeaban las cabezas. . . . Andaba este hombre con las plantas desnudas, y traia vna Almalafa puesta, cuyas puntas juntaba con vn nudo sobre el ombro; de donde añaden aver tomado el trage, el vso del cabello, y de andar descalços" (p. 18). He preached to the Indians and, "del Bochica refieren en particular muchos beneficios, que los hizo, como son dezir, que por inundaciones del rio Funzha en que intervino el arte de Huy-

tháca, etc." The miracle of Tenquendama follows (p. 19): "Ultimamente afirman del Bochica, que murió en Sogamoso despues de su predicacion; y que aviendo vivido alli retirado veinte vezes cinco veintes de años, que por su cuenta hazen dos mil, fue trasladado al cielo." . . . "El averle dado entre otros el epiteto de Zuhé, que es el mismo, que dieron despues a los primeros hombres blancos, que vieron en las conquistas." On the heels of Bochica there appeared a very beautiful woman who, however, was as bad as Bochica was good, and whom the latter, according to some, converted into an owl, or into the moon according to others (p. 18). This woman is sometimes called Huytháca, again Chia and Yubecayguaya. To her evil arts the inundation of the Rio Funzha is attributed. I have elsewhere called attention to the difficulty of determining whether these traditions, as told in the seventeenth century, existed as early as 1536, when the first contact of the Chibchas with the whites took place. The writings of the conqueror Quesada, finished in 1539, preserved in manuscript in the national historical archives of Spain, can alone throw light on this question. The title of this precious document is *Epítome del Nuevo Reino de Granada*. See Jiménez de la Espada, *Relaciones geográficas de Indias*, vol. 1, p. xlv, "Antecedentes."

6. *Noticias historiales de las Conquistas de Tierra firme en las Indias occidentales* (MS. in the Lenox branch of N. Y. Public Library; pt. II, noticia IV, cap. 3, p. 261): "A q^a ayuda mucho una tradicion certissima q^a tienen todos los de este reyno, de haver uivido en el veinte hedades y cuentan en cada edad 70 años, un hombre no conocido de nadie ya mayor en años y cargado de canas, el cabello y barva larga hasta la cintura cogida la cabellera con vna cinta. . . . Dicen q^a vino por la parte del Leste q^a son los llanos q^a llaman continuados de Venezuela, y entró á este reyno por el pueblo de Pasca al sur de esta Ciudad de S^a Fé." . . . (p. 262): "Desde alli vino al pueblo de Boza donde se le murió vn Camello q^a traía, cuyos guesos procuraron conservar los naturales, pues aun hallaron algunos los Españoles en aquel pueblo quando entraron, entre los quales dicen q^a fué la costilla q^a adoraban en la laguna llamada Bozassio: los Indios de Boza y Suacha, á este pusieron dos ó tres nombres segun la variedad de las lenguas q^a havia por donde pasaba." On p. 265 he describes the wanderings of that man over the highlands of Bogatá, preaching.

7. *Noticias historiales*, MS. pt. II, not. IV, cap. IV, p. 266.

8. Piedrahita, *Historia general de las Conquistas*, p. 17. Simon, *Noticias historiales* (pt. II, not. IV, cap. IV, p. 264) says of Bochica: "El Bochica era Dios mas universal y aun casi Señor de este otro."

9. According to Enrique Torres Saldamando (*Los antiguos Jesuitas del Perú*, Lima, 1882, p. 107), Oliva was a Neapolitan and came to Lima in 1597, where he was consecrated and sent to Juli, on the shores of Lake Titicaca. He remained in Bolivia a number of years, chiefly at Chuquisaca (Sucre) and Potosí. In 1636 he was rector of the college of Jesuits at Callao. He died at Lima in 1642. His book, *Historia del Perú y Varones insignes en Santidad de la Compañía de Jesus*, was approved in 1631, the year of its completion.

10. *Historia del Perú*, 1719 (p. 5). He says of his Indian informant "pero mejor á mi ver hace relación dellos el quipocamayó y cacique llamado Catari viejo antiguo del valle de Cochabamba y hijo de los quipocamayos coronistas de los Reies Incas por que aunque admite," etc.

11. *Historia del Perú* (pp. 23-37). It would take too much space to quote the whole. He says, among other things: "Aportaron a Caracas, donde poblaron y hicieron alto; y de donde despues el tiempo adelante se fueron estendiendo en las demas tierras y prouincias de Peru. Destos primeros pobladores passaron algunos a las partes de Sumpa, que es aquel paraje que aora los Españoles llaman la punta de sancta Helena que esta en dos grados." He goes on to tell of several expeditions from Santa Elena to various parts of South America, including Brazil and Paraguay. After the "giants" had been exterminated, voyages were made farther down the coast as well as into the interior. The stories are confused, and there is such a mixture of pretended lore from Ecuador and from Peru that it presents an exceedingly suspicious appearance. Finally (p. 32), he causes Manco Capac to be born on the island of Puná, near Guayaquil, whence he coasted with his people as far as Lima, "y Manco con la gente que le siguió aporó acia la costa de Rimac." On account of a severe storm and earthquake Manco continued his voyage down the coast and went inland to the Collao. He found the Títicaca region already inhabited. All this does not read like genuine Indian folklore.

12. *Historia del Perú* (lib. 1, cap. 2, p. 23): "Y en el tiempo que estoy escribiendo esta vinieron a mis manos unos papeles originales, que me dió el doctor Bartholome Ceruantes, racionero de la Sancta yglesia de los Charcas en que halle con puntualidad lo que muchos años a e deseado saber."

13. *Segunda Parte de la Crónica del Perú*, cap. iv, p. 4.

14. *Memorias antiguas historiales y políticas del Perú*, p. 3.

15. *Relacion de Antigüedades deste Reyno del Pirú*, p. 234: "Dizen que en tiempo de Purunpacha todas las naciones de Tauantinsuyo benieron de hazia arriba de Potossi tres ó quatro exercitos en forma de guerra, y assi los venieron poblando, tomando los lugares, quedandose cada vno de los compañías en los lugares baldios."

16. Compare pp. 236 to 240, and his profession of faith, p. 234.

17. *Primera parte de la Crónica del Perú*, p. 453.

18. *Descripcion de la Tierra del Repartimiento de los Rucanas Antamarcas de la Corona real, Jurisdiccion de la ciudad de Guamanga*, 1586, in *Relaciones geográficas de Indias*, vol. 1, p. 210: "Respóndese al capítulo veinte y uno, que junto al pueblo de La Vera Cruz de Cauana está un pueblo derribado, al parecer, antiquísima cosa. Tiene paredes de piedra labrada, aunque la obra tosca; las portadas de las casas, algunas de ellas algo mas de dos varas en alto, y los lumbralles labrados de piedras muy grandes; y hay señales de calles." It may be that these edifices are those mentioned by Cieza (*Primera parte de la Crónica*, p. 434, cap. LXXXVII) as on the Rio Vinaque, "adonde estan unos grandes y muy antiquissimos edificios, que cierto, segun están gastados y arruinados, debe de haber pasado por ellos muchas edades. Pregun-

tando á los Indios comarcanos quien hizo aquella antigualla, responden que otras gentes barbadas y blancas como nosotros, los cuales, muchos tiempo antes que los ingas reinasen, dicen que vinieron á estas partes y hicieron allí su morada." If the ruins on the Vinaque are the same as those near Cauana, then the Spaniards must have heard the tradition shortly after the conquest.

19. *Primera parte de la Miscelánea Antártica* (MS. in the Lenox branch of the New York Public Library, fol. 257). The "Nayres" were originally from Malabar, I am informed by Dr Berthold Laufer, the distinguished student of eastern Asiatic anthropology. According to Cabello Balboa these Nayres, in the course of their depredations, came from Asia to Chile and "fueron el origen, y cepa de los Yndios de Chile, de quien tambien descenden los Chiriguanaes (ó mejor diciendo) Chiliganaes de estos fueron fabricadas aquellas fortalezas estrañas que en Ayavira, y Tiahuanaco (y en otras partes de este pedazo de mundo) se an visto," etc. (cap. 19, fol. 257). "Se metieron en a tierra austral, y de alli jamas se tuvo nueva y noticia de ellos La entrada que ellos añade [?] en las n^{ras} Yndias es congetura por las razones que los Yndios antiguos dan para tenerla por las antiguas tradiciones de sus mayores que les decian que de acia aquella parte del Mundo avian venido estos pestilentes tiranos, y la misma razon dan los de Chile señalando su venida de acia el estrecho aqui en llamamos de Magallanes." This passage is confused. In the first place, Balboa says that nothing was known or learned about the "Nayres" after they had once penetrated inland, yet he attributes to them the construction of the ancient edifices near Ayaviri (probably the remains of Pucará are meant) and Tiahuanaco. Again, he intimates that the Nayres were the original inhabitants and settlers, whereas he also states that the Indians of Chile spoke of them as ruthless invaders. All this shows that he has arranged, but not objectively rendered, the traditions claimed by him to be original and primitive. What might possibly be gathered from his statements is that there existed in his time, among the Indians of Chile, lore, perhaps ancient, relative to landings on the southern Chilean coast of people coming from the direction of Asia. This is said with every proper reserve.

20. The manuscript of Balboa, in all likelihood, was not known to Barcia, the editor of Garcia's *Origen de los Indios*, 1729. In cap. xxiii, p. 247, Garcia treats of the possibility of an East Indian origin of the Indians of southern Chile, but he quotes as authorities Hugo Grotius (*Diss. I de Origin Amer.*) and Hornius (*De Originibus Americanis Libri quatuor*, 1652, lib. 1, fol. 55, 56), which indicates that the quotation is by Barcia, as the first edition bears date 1607.

21. *Miscelánea*, etc., (MS., pt. III, cap. 17, fol. 509): "Que en tiempos muy antiguos que no saben numerarlos vino de la parte suprema de este Piru con gran flota de Balsas vn padre de Campañas, hombre de mucho valor y calidad llamado Naymlap, y consigo traia muchas concubinas, mas la muger principal dicese averse llamado Ceterni, trujo en su compañía muchas gentes que así como á Capitan y caudillo le venian siguiendo. . . . [p. 511:] Este Señor Naymlap con todo su repuesto

vino á aportar y tomar tierra á la boca de vn Rio (aora llamado Faquisllanga) y auiedo alli desamparado sus balsas se entraron la tierra adentro."

22. *Relacion de los primeros descubrimientos de Francisco Pizarro y Diego de Almagro* (in *Doc. para la Historia de España*, vol. v, p. 196). This document states (p. 193) that Pizarro and Almagro left on their expedition in 1525. He was at Panamá again in 1528.—*Informacion hecha en Panamá á pedimento de García de Jarén*, Aug. 3, 1528 (*Doc. para la Hist. de España*, vol. xxvi, p. 259). If the craft captured by Ruiz was "de cabida de hasta treinta toneles," it was not much smaller than the smallest vessels of Pizarro. *Relacion de los primeros descubrimientos* (p. 193): Partieron en el año de 25 con dos navios de cuarenta y setenta toneles y un bergantin pequeño."

23. *Relacion de los Descubrimientos* (p. 198): "Salieron á los dichos navios catorce canoas grandes con muchos indios."—Pedro Pizarro, *Relacion del descubrimiento y conquista de los reinos del Perú* (*Doc. para la Hist. de España*, v, 215).

24. *Historia del Nuevo Mundo* (IV, 221): "Las mayores balsas que usan los indios peruanos que habitan cerca de montañas, como los de los puertos de Payta, Manta y Guayaquil, son compuestas de siete, nueve ó más maderos de palo de balsa, por este orden: que los atan á lo largo unos con otros con bejucos ó cuerdas sobre otros atravesados; el de enmedio es por la proa más largo que los otros; los cuales van siendo más cortos unos que otros cuanto más se apartan á los lados; de suerte que vienen á quedar en la proa con la figura y proporción que guardan los dedos de la mano extendida, puesto que por la popa son iguales; encima hacen tabladros, para que no se moje la gente y ropa que va en ellas con el agua que les entra por las junturas de los leños. Navegan por la mar á vela y remo, y son algunas tan grandes, que caben holgadamente cincuenta hombres."

25. *Relacion general de las poblaciones españolas del Perú* (*Rel. geogr. de Indias*, I, 13): "Por este rio arriba hasta el Desembarcadero que hay diez y nueve leguas, se va en unas que llaman balsas; en lugar de barcos, y son como palos grandes atados uno con otro, ni más ni ménos que la escalera de una carreta, digo como una carreta quitadas las ruedas, salvo que van los palos juntos; el de en medio es más largo y es la proa de la balsa, en la cabeza del cual va siempre gobernando un indio, y á los lados van cada tres, ó cada dos ó cada cinco indios, segun son las balsas y la carga que llevan; porque algunos son de siete palos, y de aqui no suben: van llanas por el agua, que algunas veces las baña el agua, y los regalados y gente de respeto hacen poner unas tablas sobre unos palos atravesados, y allí van echados. Otras veces hacen poner á los lados unas estacas y atravesados palos como las varas de carreta, por si llevan niños no caigan en el agua; y así subí yo con mi muger y hijos; y por el sol hacen un dejadillo de paja, de manera que cuando esta balsa va así, parece una choza de pastores." These rafts recall the "callapas" in use on the confluence of the Amazon in eastern Bolivia, which, however, are usually two rafts attached at the sides and each with its platform.

26. *Historia general y natural de Indias* (vol. iv, lib. xlvii, cap. xvii, p. 222): "Son hechas de unos palos gordos é livianos tablados como vigas, é otros atravesados, en que van atados, é sus barbacaoas enmedio, é sus velas latinas, é remeros por los lados con sus nahe." "

27. *Historia natural y moral de las Indias* (ed. of 1608, lib. i, cap. 19, p. 68): "Tambien cuentan los Indios de Yca, y los de Arica, que solian antiguamente nauegar a vnas Islas al Poniente muy lexos, y la nauegacion era en vnos cueros de lobo Marino hinchados. De manera que no faltan indicios, de que se aya navegado la mar del Sur, antes q^a viniessen Españoles por ella."

28. *Hist. del Nuevo Mundo* (iv, 220): "Hácenlas de dos cueros de Lobos Marinos llenos de aire, los cuales atan uno con otro al modo de los dos haces de que se hacen las de Enea. En cada una va solo un indio, y entran á pescar en la mar tanto trecho como en las otras. Mas porque estas balsas suelen alojarse en el agua y descrecer, para que no se hundan, lleva cada indio un cañuto, y enmedio de la mar se pone de cuando en cuando á desatarlas y rehenchirlas á soplos, como si fueran pelotas de viento. Son tan livianas y ligeras en el agua, como la materia de que son compuestas, que es aire; nunca se les pone velas, como ni á las de Enea, y sólo se navega en ellas á remo, como en las primeras."

29. Agustín de Zárate, *Historia del Descubrimiento y Conquista de la Provincia del Perú* (In Vedia, vol. ii, cap. v, p. 464): "Y con todo esto, nunca se dió entero crédito á lo que los indios decian cerca de estos gigantes, hasta que siendo teniente de gobernador en Puerto-Viejo el capitán Juan de Olmos, natural de Trujillo, en el año de 543, y oyendo todas estas cosas, hizo cavar en aquel valle, donde hallaron tan grandes costillas y otros huesos, que si no parecierán juntas las cabezas, no era creible ser de personas humanas; y así, hecha la averiguación y vistas las señales de los rayos en las peñas, se tuvo por cierto lo que los indios decian; y se enviaron á diversas partes del Perú algunos dientes de los que allí se hallaron, que tenia cada uno tres dedos de ancho y cuatro de largo." The fact that the lieutenant-governor caused excavations to be made leads to the inference that the Indians suggested to him that the remains of the "giants" were buried. In the *Descripción de la gobernación de Guayaquil* (*Doc. de Indias*, ix, 273) it is stated that the bones are specially found in the deposits of asphalt near Santa Elena, which are well known; hence it is not impossible that the Indians may have seen one or more of the skulls on the surface. That the remains are those of mastodons is made likely by the great resemblance that they bear to human crania of enormous size, as Prof. H. F. Osborne, of the American Museum of Natural History, has kindly shown to me.

30. *Historia general y natural* (vol. iv, lib. xlvii, p. 257; also pp. 146, 213, etc.). Since he mentions (p. 219) the asphalt deposits, he would have spoken of the "giants" had he known of the tale.

31. *Primera parte del Crónica del Perú* (Vedia, ii, cap. lxi, p. 405). The translation is not as literal as might be desired, yet it conveys Cieza's meaning, I hope, with sufficient adherence to his style.

32. *Historia del descubrimiento* etc. (Vedia, II, cap. V, p. 465): "No declaran de qué parte vinieron." He further says: "Vieron los españoles en Puerto-Viejo dos figuras de bulto destos gigantes, una de hombre y otra de mujer." It is in the vicinity of Santa Elena and Puerto Viejo that the carved stone seats have been found, representing human figures on all fours. Examples may be seen in several museums of this and other countries. The fact, mentioned by Zárate, that one of the carvings represented a woman, might militate against his assumption that it was intended to depict the mythical giants, since the latter had no women with them.

33. I would only mention Gregorio Garcia, *Origen de los Indios*, 1729 (lib. I, cap. IV, p. 35): "Dicen, que aquellos Gigantes vinieron por mar." Oliva, *Historia del Peru* (p. 25): "Ay tradicion que estos gigantes llegaron alli por mar en balsas."

34. *Descripción de la gobernación de Guayaquil* (vol. IX, p. 275): "Colonchillo está poblado en el puerto de la punta de Santa Elena, veinte y cinco leguas de Guayaquil y siete de Colonche, que es de donde se proveen de las cosas que les faltan; la tierra es estéril y sin aguas; beben de pozos, especialmente de uno que llaman de los Gigantes, que segun relacion de los indios viejos, los hubo en aquella tierra, no nacidos en ella, sino venidos de otras partes."

A KEKCHÍ WILL OF THE SIXTEENTH CENTURY¹

By ROBERT BURKITT

You said that you would like to see a copy, which I had, of an old Indian will. I have the pleasure of sending it. I am afraid you will find it rather stupid. The will was brought to my notice four or five years ago, in Cobán, by a German investigator—Mr Chas. Sapper, who wished me to see what I could make of it; there were difficulties, both of reading and of interpretation. The will had been found in Carchá, Mr Sapper said, and sent to the Berlin Museum; when, or by whom, I do not now remember. Of that original he had obtained a tracing, and the tracing was what I saw. I told him what little I could, at the time, and I took a copy.

On looking over it to send to you last year, it was plain to me that the text would be of little or no use without something in the way of elucidation; and a number of words remained to be identified. This delayed me. Sometimes it was a question of deciphering the writing; sometimes the recovery of a word nearly out of use and unknown to most Indians; sometimes immediate verification would have required a particular journey. I have not made out everything, as you will see, but I have done a good deal; more, perhaps, than the thing deserves.

The will is the will of a dying widow. What she bequeathes are articles of clothing, a grinding stone, a couple of mattocks, etc., some Indian corn, a field of peppers, and a garden. Part goes to the church, to pay for masses. The rest is divided between two Indians. The instrument is witnessed by town officers and others, and signed by the Spanish scribe in the presence of the testatrix and of at least one of the legatees. The place is not mentioned, but it was either Chamelco or Carchá. The date is the 3d of December, 1583.

¹ This paper, originally a letter of Mr Burkitt's, is presented practically in the form in which it was received. — *Editor*.

The handwriting is of the round order, small and crabbed, with frequent idiosyncrasies. For instance, the sequence *ts* is constantly so written as to look like a capital *B*. Yet the main is legible. Uncertain characters are few, and those few I have attempted to imitate in the copy.

The disposition of the words, syllables, and letters is much as my copy represents. Words are misunited; and words are broken apart, often, apparently, at haphazard. The tale of syllables is usually complete. Much of the will, however, is in the style of notes jotted down from speech; and not mere syllables, but words, and even phrases, are probably missing.

The punctuation is rude, and sometimes obscure. Periods are separated by dashes, but not always. Little or no use is made of capital letters. Only one or two periods begin with a capital, and a few of the proper names.

There are uses in spelling to be noticed:

(1) The letters *b* and *v* are used indifferently, not only for the sound of *b*, as is still common in Spanish, but also for the sound of *w* or of *gw*. *Alguacil* is spelled 'alvacil'; the Indian *guan* is both 'ban' and 'van'; *bī* and *gwī* are alike spelled 'vi'; and so on.

(2) The right sound of *h* is written *h*; but sometimes the letter is silent, as in modern Spanish; and again it often stands for the guttural *j*. *Awabej*, for instance, is written 'hauabeh'; and *jun* is sometimes 'hun.' The Cajabón manuscript,¹ too, uses *h* for *j* constantly.

(3) There is no attempt, at this early date, to distinguish the sound of *k* from that other palatal which I write *q*; they and their modifications, *k̄* and *q̄*, are alike written *c* (or *qu*, as Spanish orthography may require). So with *ī* and *ē*; etc. In fact the only improvement on the alphabet of present-day Spanish is the Catalan use of *x* for the consonant which in English we write *sh*.

(4) When that consonant, however, is the possessive prefix, it is not written *x*, but *y*; a custom which may still be found in Cajabón. Thus, *oxib* (three) the will spells correctly; while *xīsaq* (its price) is 'y tzac,' with *y* for *x*.

¹ The Cajabón manuscript referred to here and elsewhere in this article is in possession of Charles P. Bowditch, Esq., of Boston, Mass. See *Amer. Anthropologist*, 1902, IV, p. 456.

In other cases *y* is either for the vowel *i*, as in Spanish, or for the Indian consonant *y* (English *dy*, nearly).

(5) *Z* has the sound of *s*; in these colonies *z* never has had any other sound.

(6) Contractions are frequent, especially by omission of *n*, as the custom was. And contraction is usually indicated by a superscript vinculum or similar mark.

Some other peculiarities and aberrations of spelling will be seen in reading.

In the following text of the will the large type represents the original. The interlinear is the same thing made plain; that is, the Indian is deciphered in my phonetic alphabet, each word apart and without abbreviation. The Spanish words that occur are distinguished in the interlinear by italics. I have supplied some marks of punctuation in the interlinear, but the language itself is in no way varied. Those parts of the text which I cannot make out with certainty are shown in the interlinear by dots. I shall speak of them in detail; and for the sake of reference I have numbered the lines.

1. testamento rech M^{na}
 Testamento retx Mathalena
2. rixq' l dī hernātez camenac
 rixqil . . . *Hernandez kamenaq.*
3. cey cabay Dios hauabeh Dios caholbeh Dios spū sancto
 Sē xkābā i *Dios* awabej, *Dios* t̄kajolbej, *Dios Espíritu santo*
4. ta in tic quib vi in testamento retal rahom in chol y chum in chol
 ta in tikib bī in *testamento* retal rajom in t̄xol, xtxum in t̄xol,
5. chi rixc le vech chi rixc chīc vi in canabahem nac quin
 txi rixk le gwetx, txi rixk txik bī in kanabahem naq in
6. chi camc = hun pot hū ca caib y miffa chi uxc
 txi kamq. Jun pōot, jun k̄ā, k̄āib i *misa* txi uxq
7. chinbehen — hun uec hoob y tostō on que oxib y
 tx' in behen. Jun . . . , ōob i *tostōn* o'n k̄e, oxib i
8. miffa chi uxc chinbehe chi rixc ruquin ar chiele
 misa txi uxq tx' in behen txi rixk; ruk̄in . . . txi elq
9. y cantela ru quineb p^o hoob an chal y misfa nan tzama
 i *candela*; ruk̄in ēb p^o ōob antxal i *misa* na'n t̄sama.

10. — ma xic an chal ce rochoch y Dios le hal ruqn
 . . . xik antxal se rotxotx i Dios le hal rukin
11. hū ach capupul hū hacha caib miffa mati uma
 jun jun . . . kāib mifa . . .
12. chīxixc hū bech chā Yah . . Gū y bailom chā a yah
 txi xixk jun gwetx txan . . . Juan a . . . txan a yaj.
13. bāob! hunyocote chich chi re chā a luis Cal racah
 Gwan arwin jun yokotē txiix txi retxan a Luis Qāal, . . .
14. vacunac chācayah hunyocote chich chi re chā
 . . . , txank a yaj. Jun yokotē txiix txi retxan
15. Jū yat vi hovi y chac raby bahilom nac ocame chāayah
 Juan Yat bī, jōgwī xtxaqrah x . . . naq o kamk, txan a yaj.
16. — hun acha ca pupul chi re chā luis Cal chā ayah
 Jun txi retxan Luis Qāal, txan a yaj.
17. Balthafar *Baillif* — jū chīc chā ē precarabi chāc
 Balthasar Jun txik txank . . . , txank
18. ayah *Vcmno* — jū ah quīnam xiyab neb
 a yaj. . . . Jun aj kinam xiyab . . . eb
19. chī quehec hū acha ca pupul chī quehec rech chā ayah —
 txi keheq jun txi keheq retx, txan a yaj.
20. hunca xa chī re chā vi jū yat van y ce rosohil chā a yah —
 Jun cāfa txi retxan bī Juan Yat, gwan x-cerrojo-il, txan a yaj.
21. hū caxa mahi y ce roso hil chī re chā luis Cal chā ayah —
 Jun cāfa, majl x-cerrojo-il, txi retxan Luis Qāal, txan a yaj.
22. hun tep ic chī re chanluis cal chā ayah —
 Jun tep ik txi retxan Luis Qāal, txan a yaj.
23. hunpat in pot van chicaz ruqū jū y [obliterated] z laheb y tomin
 Jun . . . in pōot gwan txi kas rukin Juan Yats, lajeeb i tomin
24. chicacao bahxa tac cal rahlāq' y bahilo ixcabha *W* hū
 txi kakaw, gwaqxax taq kal rajlankil, Jun
 v[ERASED]ach
 gwakatz
25. o cācruq'n gaspar tū uccal chin to hac vi chāc αcal chīc
 o kamk rukin Gaspar Tun, gwaq kal tx' in toj āq bī, txank; ox kal txik,
26. y tzac tzi hotuc achal chī cacao — ox petet chīc in noc
 xtsaq tsi; otuk antxal txi kakaw. Ox petet txik in noq,

27. vena quin y quirac chin qe mac chā ayah —
gwey naq in txi kīraq tx' in kem āq, txan a yaj.
28. havt le in choch p^a cheb echanc ruquin anchal
Ā ut le in t̃xot̃x pē tx' eb etxanq rūkin antxal
29. vauib | carnicas | tul | o | pata, | turazno | coyou tem
gwawim; granodillas, tul, o, pata, durazno, koyow, tem.
30. Comi vech chi ru ch y dios ruquin in babilom camenac
Kamk gwetx txi rutx i Dios, rūkin in . . . kamenaq,
31. chā ayah chi ruch eb mathalena chi ruch eb ah valebe
txan a yaj [ABOVE STRUCK OUT] Mathalena; txi rutx eb aj-gwalebj
32. atts regitores y cana vinaql y ratin ayah chiruch
. . . , regidores, xkanagwinaqil i ratin a yaj, txi rutx
33. luis Cal Cana vinac ex quin tziba y ratin qe martes
Luis Q̃lal. Kanagwinaq ex k'in tsiba i ratin sē martes,
34. chi ça oxib y y be y po te ciembre mil y qui ni entos y
txi sã oxib i xbe i po diciembre, mil y quinientos y
35. ochēta y tres años
ochenta y tres años.

Gonzalo
merezatto *de domines*
tecuzma
att
Sumetex
ah tzib *oxib regidor*
dial vacil mayor
lorēco mayor
tomo

Gonzalo
Merez . . .

. . . Ints
de Guzman
. . .
Juan Mendez,
aj-tsib.

Oxib regidor.
. . . alguacil mayor.
Lorenzo mayor-
domo.

Lines 1 and 2, which I have placed as a heading, are scribbled on the back of the original.

Testamento . . . kamenaq. 'Testament of Mathalena [Magdalena], wife of Hernández, deceased.'

dí hernátex. The first word must be short for something Spanish, *d* not being an Indian sound. In adopting Spanish words,

Indians turn *d* into *t*; so the surname Hernández is written with a *t* to imitate Indian pronunciation.

3. *Sē xēbā . . . Santo.* 'In the name of God the Father, God the Son, and God the Holy Ghost.'

cey cabay. In neither case does the final *y* belong to the word to which it is joined; the first represents the possessive prefix *x*, to be joined to *kabā*; the second is the proclitic *i*. See remarks (4) on the spelling.

Dios. Indians say '*Tiox*'; and it is commonly supposed that *Tiox* is a corruption of *Dios*. This may be doubted. The same word sometimes means 'pupil' (of the eye). *Tiox* also appears in the vocable *bantiox* ('thanks'), and is the base of *tioxi* ('be thankful for'). If the Greeks had conquered Mexico, it is likely they would have supposed the Aztec *Tecotl* to be a corruption of *θεός*.

spā sancto. Where the original uses a long *s*, I copy it. The half-Latin spelling of these words, and, farther on, the constant spelling of '*missa*' for *misa*, might be taken to signify that the scribe had learned his letters among clerics. The Indian for 'God the Spirit' is *Tiox Musiq̄bej* (*musiq̄*, 'breath of').

4, 5, 6. *ta in tikib . . . txi kamq.* 'I begin, then, my testament, the record of my heart's wish, my heart's desire, respecting what is mine, respecting too what I have to leave when I die.'

4. *ta in.* So also in the Cajabón MS. Modern speech would elide the *a*, making *t'in*.

retal rajom in Ixol. An Indian rendering of the previous Spanish word, a practice frequent in the old compositions called 'parlamentos.'

5, 6. *in txi kamq.* This arrangement is now seldom heard, the *txi* being fully assimilated to an index of tense, and put first: *tx' in kamq*.

In the spelling *nac quin*, of the original, the *qu* is merely a false repetition of the final palatal of *naq*. Cf. *tic quib* for *tikib*, line 4.

6, 7. *Jun pōot . . . tx' in behen.* 'A shirt, and a grinding-stone [are to pay for] two masses to be performed on my behalf.' *Pōot* is the short, loose shirt, without sleeves, which is the upper garment of the women. It is of white cotton among these Indians, and frequently embroidered with colors.

7, 8. *Jun* [*uug?*], *ōōb* . . . *txi rixk*. 'A [*skirt?*] — five *tostones* I gave [for it] — [is to pay for] three masses to be performed for me afterward.'

ucc. Such appears to be the spelling, but no such word is known. It has been proposed to read *gwer* (trousers); but I cannot think the last letter a miswritten *x*; besides the price, five *tostones*, would be too much. *Tostón* was the old half-dollar. I think the word must be *uug*, 'skirt.' Among these Indians the skirt is a dark blue. It may be very voluminous. A well-off woman wears as much as ten yards.

8, 9. *rukín* . . . *candela*. 'Therewith candles are to go'; i. e., with the masses. This at least is one rendering, and perhaps the best. It supposes that the word which seems to be written *ar* is meant for the third personal pronoun *an*, enclitic to *rukín*.

cantela for *candela*. See note on *hernates*, line 2. An Indian word for candle is *ātsūnj*, though not much used in that sense.

9. *rukín eb pē ōōb* . . . *īsama*. 'So, with them, I ask for five additional masses.' That is, with the first two masses and the subsequent three she gets the total of five; 'additional,' I suppose is meant, to the regular office of the dead.

pē. This particle occurs again, on line 28; and both times it is so written as to look like an abbreviation, which it is not. I have rendered *pē* here by the introductory 'so.' Better, perhaps, would be our 'you see': 'With them, you see, I ask for five,' etc. These particles *pē* and *bī* (especially *pē*) are out of place in a prepared statement or monologue; they belong to conversation. The use of them is evidence that the will was not a prepared statement, but pieced together on the spot with fragments of talk; and not very coherently pieced, either, as further reading shows. Throughout this paragraph (lines 7-9) the punctuation, and in some degree the sense, have been matter of dispute. I have given what seems to me the most natural.

10, 11, 12. These three lines present such a disposition of doubtful or unrecognizable words that hardly the drift of the meaning can be guessed. In the original, these lines are in a handwriting which is notably different from that of the rest, and some have supposed a different writer.

10. *ma xik*. There is a particle of negation, *ma*; but no such construction as *ma xik*. The least unlikely guess I can offer is that *ma* should be read *na*, the present-tense index, which makes things intelligible as far as *hal*: *Na xik antxal . . . le hal*, 'The corn also goes to the house of God'; i. e., to the church, doubtless to pay for the masses mentioned in the next line. The proceeding would be nothing unusual.

ruqn, short for writing *ruquin*, as again on line 25, where the abbreviation mark is written. The context of *rukin* is as doubtful as everything else here. I should incline to put a pause after *hal*, and perhaps translate *rukin* by 'therewith,' referring to the corn as a means of payment. This is one of the places where it is easy to suspect something missing, with the scribe's attention divided between his ear and his pen.

11. *ach capupul*. This mysterious phrase is the great *crux* of the will. It occurs again on line 16, and again on line 19; but with slight variations: *acha* instead of *ach*, and *ca* separated from *pupul*. *ca* might be *qa* (our); but more likely is *kā* (two). *pupul* has all the appearance of a noun formed on a base *PUP*, like *lukul* from *LUK*, *ṭupul* from *ṬUP*, etc.; but my inquiries and those of others have failed to elicit any *pup* or *pupul* from the speech of the day. Possibly the word might be recovered from the Cajabón MS. One Indian thought the word should be *ṭupul*, in the sense of 'piece,' 'portion'; but the spelling is plainly *pupul*, thrice over.

As for *ach*, or *acha*, to most readers it immediately suggests the Spanish *hacha*. But if an 'axe' was meant, why say it in Spanish? Indians always use their own word, *māl*, and so does everybody, talking Indian. Another suggestion is that the word is still the Spanish *hacha*, but in the sense of 'torch,' or 'great candle,' used in church processions, etc., and perhaps to be used in the *kāib misa*, 'two masses,' which are now in question. But then this meaning is not suitable to the context in lines 16 and 19. The only thing in Indian, I know of, that *ach* could be, is the root *AṬX*, found in *ālṣab*, 'slacken,' 'let go'; but there is no help in this.

hā hacha. Last letter probably *a*, though it looks more like *u* in the original. These words may be a repetition of the *hun ach*,

or *hun acha*, already discussed. But the initial *h*, of *hacha*, may be for *j*; and we might read *jun jatx a käib misa*, 'a half of the two masses.' *Jatx*, 'fraction,' especially 'half'; *a*, the. This would suggest that elsewhere the word *ach* should be *hach*, i. e., *jatx*; and we should understand the meaning to be that the corn, above mentioned, and the other articles farther on (lines 16, 19) are to be apportioned between the two beneficiaries.

ma ti uma. Such appear to be the letters. No meaning. The context seems to indicate a verb. We might therefore suppose *ma* to be *na*, as in the case of *ma xik* on line 10. As for *ti uma*, perhaps a final *n* is suppressed without mark, as happens elsewhere; we should then have the ending *-man*, of the gerundive; and so finally evolve something like *na tiwman*, 'it is to be eaten' (*tiw*, 'bite,' 'eat'). But the meaning 'eat' does not fit, unless it referred to the corn, and in that case the word would not be *tiw*, but *kux*.

12. *txi rixk jun gwetx*, 'after one for me'; meaning, apparently, 'after one mass for me.' But the translation might be varied, putting a pause after *rixk*.

cha yah. The first letter of the second word looks like an *r* with an accidental 'tail'; or it may be a misshapen *y*. If *y*, then the word is *yaj*, 'sick'; and we must assume the omission of the article 'a' to complete the oft-recurring phrase *txan a yaj*, 'says the sick (one),' meaning, of course, the testatrix. If this reading is accepted, then *yaj* ends the sentence. The two dots which follow are evidently intentional, and may be meant to mark a period, though no other period is so marked.

G n y bailom. The first letter cannot be a capital G, but is a capital I or J, begun with a flourish. Both *Juan* and *jun* are elsewhere contracted to *jū*. Here the word is doubtless *Juan*, the christian name of the person termed *bailom*.

The latter word, with the spelling *bahilom*, occurs three times again. From line 15 it is seen that *bahilom* denoted a person, deceased, whose directions about some property are confirmed by the testatrix. And from line 30 it is plain that her *bahilom* was one whose memory she cherished. We know from the outset that she is the relict of one Hernández. The conclusion is natural that *ba(h)ilom* somehow represents the word *belom*, 'husband.' I can-

not believe that *bahilom* has been transmuted into *belom* since the time of the will. The change would be too great, and without a known parallel. All I can suggest is that *bahilom* may have been a collateral variant of the word, but confined to local use and now obsolete.

txan a yaj, 'says the sick (woman).' Here the strange handwriting ceases, and I put a period. On the whole, the thing seems to mean that two more masses are to be said, for the woman, perhaps, or for her late husband John (Hernández); and paid for in corn.

13. *Twan arwin . . . a Luis Qaal*, 'There is here an iron mattock, to be owned by Lewis Caal.'

baw bi. Here *bā* = *ban* = *gwan*. See remarks (1 and 6) on the spelling. The will writes no accents, and the mark which looks like one is an abbreviation-mark tilted up; hence *bi* = *bin*; but no Indian word at all suitable ends in *-bin*. The *b* must then be read *tw*, or *gw*; the hieroglyphic which looks like the Greek omega must somehow represent the letters *ar*; hence, finally, *arwin* or *arwin*, an obsolescent variant of *arwin*.

retxan. The usual form now would be *retxa*.

a Luis Qaal. The use of the semi-demonstrative *a* shows that Lewis Caal was actually present; as in fact is stated further on (line 33).

13, 14. *racah vacunac*, 'son of my eldest son.' At least, this is the best interpretation offered. It supposes that *racah* is meant for *reqaj*, 'substitute of,' frequently used in the sense of 'son of,' indicating in all likelihood that the father is dead. As for *vacunac*, it appears that in Pokomchi there is a word *guacunac*, meaning 'my-eldest-son'; and the word was perhaps current at the time, in whatever part of the Kekchi country the will was written. There is no such word now in Kekchi.

The use of certain forms (*sē* for *sā*, */ukin* for */ikin*, */etx* for */e*) indicate that the will was written either in Carchá or in the neighboring village of Chamelco; more likely the latter. The Chamelco district, which is not large, lies between Carchá and the Xukaneb mountains, next to the Pokom country. The church is the oldest in these parts, and has a chime of bells said to be the gift of no less

a person than the emperor Charles V. A fantastic effigy of the Austrian eagles is still apparent on the wall. As the emperor abdicated in 1556, the church would have been built at least 27 years before the writing of the will. There is therefore nothing wonderful in finding an old Indian woman the "widow" of a Spanish colonist, and the Indians already baptized with christian names.

14, 15. *Jun yokotē . . . txan a yaj.* 'One iron mattock John Yat is to own, as was the command of her [husband?] when he died, quoth the sick (woman).' The Indian *txan*, like the English 'quoth,' is supposed to report a speaker's own terms. Hence, if *bahilom* means 'husband,' we should expect '*in bahilom*,' 'my husband,' as we do find in line 30. But both here and on lines 12 and 24 we find *y ba(h)ilom*, 'her husband' (the *y* being for the possessive prefix *x*, of the 3rd person). This confusion of 'her' and 'my' may be an oversight on the part of the scribe; yet it is an oversight which could not occur in speech, and the scribe makes the blunder, it seems, only in connection with *bahilom*.

16. *txi retxan . . . a yaj*, 'let Lewis Caal have it, says the sick; 'it' being whatever is meant by *hun acha ca pupul* (see note on line 11).

17. Here follows the signature of one Balthasar, whose surname appears as *Ḍau:ill^{es}*, ending with what seems to be a *y* scratched out, and *es* written above it. The initial letter is like a *d*, Greek fashion. There is no such surname in Indian; nor in Castilian either, that I know of. It has a Valentian or Catalanian look.

Below this name are the letters *emno*, preceded by what looks like the arithmetical sign of square root. This hieroglyphic I take to be a capital *T*, and the whole an abbreviation of *Testimonio*, which in old Spanish was sometimes used to mean *testigo* ('witness'). A line is drawn about signature and all. It is evident from the space occupied that the thing was not squeezed in afterward, but written then and there, before the document went further. The witness perhaps could not wait, and signed his name at the stage then reached; an irregularity quite in keeping with the style of the instrument.

Jun txik, txank, 'Another, says (she).'

precarabi. Mere gibberish; yet the spelling seems clear. PR is not an Indian sequence of consonants. There must be something wrong, or something missing. The sentence ends at once, with the repetition of *txank a yaj*, 'says the sick.'

18. *Jun aj kinam xiyab*, 'a single *kinam* (-wood) comb.' This does not fit the following plural, *eb*: *eb txi kekeq*, 'let them be given.'

neb, I read *eb*. I cannot understand the initial *n*, unless it be a miswritten *h*, silent. *eb txi kekeq*, modern style *tx' eb kekeq*; cf. in *txi kamq*, line 5.

19. *hū acha ca pupul*. See notes on lines 11 and 16.

txi kekeq retx, txan a yaj, 'be it given to him, says the sick.' To whom? Again the legatee's name is omitted. Both on this line and the preceding it is evident the sentences are mangled.

20. *Jun caja . . . yaj*, 'One box let John Yat possess, that has a lock, says the sick (woman).'

caxa = caja. *X* and *j* were used alike in Castilian. The modern guttural *j* was hardly known in Castile before the end of the XVIth century, and was not general in the colonies till the end of the XVIIth. To the Indians a box was evidently a foreign contrivance. To this day the word they use is a corruption of *caja* or of *cajón*.

çe rosohil. A corruption of the Span. *cerrojo*, with the addition of the Indian "appropriating" termination, *-il*. As an index to the scribe's proficiency, note that the *c* has a needless cedilla; as again on line 33.

21. *Jun caja, maji . . . yaj*. 'One box, no lock to it, let Luis Caal possess, says the sick.'

maji. Modern style would say *makā*. *Maji*, nowadays, means 'not yet,' excepting in one or two expressions, like *Txan naq maji?* 'Why not?' The Cajabón manuscript also uses *maji* as a simple negative, without connotation of time.

22. *Jun tep . . . yaj*. 'A chile field, let Lewis Caal have it, says the sick (one).'

Lines 23-27 are parenthetical; they enumerate certain assets, but make no bequests. It will be seen that these lines are sepa-

rated from the rest by a couple of scratches, or dashes, reaching into the margin.

23. *Jun pat in pōot . . . yaīs.* 'One *pat* of shirting of mine is on debt with John Yats,' as we should say, 'on credit'; he owes her for the stuff. The woman, as we see further on, was a weaver. With the Indians, weaving is a business of women; sewing and tailoring a business of men, even to the embroidering of womens' shirts (*pōot*). John Yats may have been the tailor.

pat. All that is clear is that this was some unit, in speaking of shirt-cloth. Some have wished to read *pac*, and render 'a cut of shirting,' etc. But the spelling *pat* is plain. There is a fossil word *pāt*, whose proper meaning is uncertain, the word occurring only in the vocable *junpat*, or *jumpat*, 'a moment,' 'quickly,' etc.

Yaīs. In the original, the surname begins with *Y* and ends with *s*, the middle of the word being obliterated. There would be room for about two letters; and *Yaīs* (or, as the scribe would spell it, *Yats*) is the only surname that fits.

23, 24. *lajeeb . . . rajlankil*; [worth] 'ten silver (pieces) in cacao, reckoning them eight score each.' The shirt-cloth, in other words, is valued at ten pieces-of-eight; the piece-of-eight, or silver dollar, being reckoned, in cacao, as equal to eight score seeds. The *real* was therefore worth a score. Cacao must have been scarce or silver plenty. A few years ago, before silver money disappeared, the rate was two score for a *real*, and old men tell of its being even four score.

gwaqxaq. In the original, written *bahxa*; *b = gw*; the *h* is due to mistaking *q* for *j*; and the final palatal is missing — slurred over by effect of the following *t*, of *taq*.

rajlankil; written *rahlāq'*; the second contraction-mark tilted up, as on lines 13 and 25.

y bahilō, i. e., *xbahilom* (see remarks on *bahilom*, lines 12 and 15). No connection is traceable between this and what goes before. As for the following *ixcabha*, all I can say is that it does not contain *xkabā* (his, her, its, name), nor *xkab* ('secondly'), nor anything else that might be fancied beginning with the possessive prefix *x*, as the scribe invariably writes *y* for that *x*.

The next thing on this line (24) is an unintelligible sign which

has some likeness to capital upsilon, standing on what is perhaps one of the usual dashes marking a period.

24, 25. *Jun gwaḱatx . . . txank*, 'A turkey of mine which died at Gaspar Tun's, seven score I'll pay [for it], said he' — meaning seven score of cacao. It is common to lend birds for breeding.

gwaḱatx. In the original, begins with *v* (= *gw*) and ends with *ach*, the intervening letters being obliterated; there would be room for two.

gwuq kal. The original writes *uccal*, which most readers took for *uḱal* ('earthen pot'), but an earthen pot would be no adequate payment for a turkey; besides there is no determining word, such as *jun* (a, one), before *uccal*. Others have read *ḍ kal* (five score), turning the *u* into *o*. There can be no doubt about the truth of my reading; the *u* means *gwu*;—*g*, as usual, is not recognized before the sound of *w*. The sequence *wu* is not Spanish, and a Spaniard is very apt to reduce it, in writing, to a mere *u*. *gwuq kal* also accounts for the *cc* of *uccal*. And last, but not least, the meaning 'seven score' makes sense of the remainder.

25, 26. *ox kal . . . kakaw*. 'Three score more, price of dog — 200 additional of cacao.' The Gaspar Tun debt, of 7 score and 3 score, makes 200 of cacao, additional to that owed by John Yats.

ox kal. In the original, the initial hieroglyphic, which is said to resemble the algebraic sign of variation, must be a sort of monogram of *ox*.

xīsaq īsī. Dogs and puppies, even the most wretched curs, have a price, and are not given away by Indians, but sold.

26, 27. *Ox petet . . . a yaj*. 'Three spindles (-full) more of cotton I have, (which) in case that I get well I mean to weave, says the sick (one).' — The ruling passion strong in death.

gwey, represented in the original by *ve*.

naq, like the English 'that,' is here superfluous.

in txi kīraq. Modern style, *tx* in *kīraq*. Cf. *in txi kamq* (lines 5, 6); and *eb txi keheq* (line 19). There can be little doubt that the *y* of the original represents *txi* in the present instance. There was frequent confusion of the letters *y*, *i*, and *x*.

28, 29. *Ā ut . . . tem*. 'And as for my land, why, let them

possess [it?], together also with my plantation; *granadillas*, plantains, alligator-pears, guavas, peaches, *koyows*, *tems*.'

'*le in*,' modern *l' in*, eliding the vowel of the article.

pē, 'why' or 'well,' etc. See note on *pē*, line 9.

etxanq. If there is nothing wrong with this word, it would be proper to supply *retx*, answering here to the English 'it.' Here again, as in line 19, the instrument omits to name the beneficiaries; doubtless John Yat and Lewis Caal.

gwawim. Written *vauib*. Final *b* and *m* are easily confounded.

carnicas. Corruption of *granadillas*, a fruit I know only under its Spanish name.—*turazno*, *t* for *d*.—*koyow*, *tem*; I have no European names for them.—The names, except the last two, are separated in the original by vertical scratches, meant as commas.

30-33. *Kamk gwetx* . . . *Luis Q̄aal*, 'I am about to die before God, with my dead [husband?], says the sick (one) Magdalen; in presence of their worships [attesting?], *regidores*, witnesses to the words of the sick, in presence of Luis Caal.'

Kamk, written *Com*. Final *k* not distinguished from the following *g*; *o* a miswritten *a*.

bahilom. See under lines 12 and 15.

31. *chi ruch eb* is scratched out, the first time, to put in the woman's name.—*ah valebc*; the final *c* should be *j*. For a contrary mistake see line 24.

32. *atts*. A person acquainted with law papers of the period might know what this meant. I suppose it is an abbreviation for *atestados*, or something similar. Cf. *atto* and *att*, after two of the signatures below.

regitores: *t* for *d*. But the imitation of Indian goes only part way; the plural ending should be struck off, as it is in '*oxib regidor*' farther on. *Regidor* means a sort of town officer, like inspector of roads, or of police, of public works, etc.

xkanagwinaqil. See *kanagwinaq*, next line. For the scribe's abbreviation of the last syllable, cf. *rixaqil*, line 2, and *rajlanquil*, line 24.

tvi rutx Luis Q̄aal. I connect this with what goes before it, and so end the sentence. This punctuation makes as good sense as any, and seems to be authorized by the capital *C* of the next word.

As the other legatee, John Yat, is not mentioned here, it is probable he was not present.

33, 35. *Kanagwinaq* *éx* . . . *años*, 'Ye are witnesses, I have written her words on Tuesday, upon the third of the month December, a thousand and five hundred and eighty three years.'

Kanagwinaq. The original, *Cana vinac*, was long a puzzle. Some Indians proposed *kanajenaq* ('remaining'); others *qajenaq* ('departed'); and what not. I discovered the word, under the form *canaguenac*, in reading an old composition which also gave the translation 'testigo.' The word is nearly obsolete. It was only lately that I found an Indian who knew it—a man from Cajabón. There is a similar word for 'witness' in the Kiche-chi.

sē martes. I have not examined whether the day of the week agrees or not with the rest of the date.

txi sã. After *txi*, the *sã* must be accented; and the fact of its being written with *a* shows that it was accented. Otherwise the word becomes *sē*, in the style of the will; and also in the style of Carchá and Chamelco to the present day.

i xbe i po. Modern style would reduce this to either *i be i po* (in Cajabón), or *xbe li po* (Cobán); literally, 'the moon's course.'

diciembre, written 'te ciembre.' These Indians had a native almanac, with twenty months in the year; and the names of them are still to be found in medicine-talk.

mil y quinientos, etc. All this might as well have been Indian.

The signature which comes first is *Gonzalo Meres*. The next I guess to be *Inés de Guzman*. In the original, the part *ines* is underlined; as for *tecuzma* I suppose the *t* and the *c* to be meant as Indian imitations of *d* and *g*, respectively, as happens elsewhere; and final *n* is often dropped; so I arrive at 'de Guzman.' The part 'dō dom' I cannot make out, though it looks as if it might somehow involve 'Doña.'

As for *atto* and *att*, see note on *atts*, line 32.

The third group contains one Indian word, *oxib* (three). The *di* before *alguazil*, is likely the same as the *di* before *Hernandez*, in line 2, q. v. 'lorēco' must be read *Lorenzo*; the *c* should have a cedilla; cf. the Portuguese spelling *Lourenço*. This Lorenzo ('majordomo' of the *cabildo*, most likely) seems to have signed for

the three *regidores* and for the *alguacil mayor*. All the signatures, of course, are adorned with those flourishes, however clumsy, which these people consider to be as essential as the name.

Last of all, at the bottom, is the name *Juan Méndez*, so I read it; *aj-īsib*, 'scribe.'

I have supposed throughout that the reader is not new to the language. Be that as it may, there will be interest, and perhaps help for him, in the following short glossary. It embraces all the Indian of the will that has been read with confidence—the Indian of the interlinear. Meanings are given with the least amount of grammar; and no secondary meanings of a word are mentioned unless they conduce to the text.

It is well to say, that many words as they occur in speech, or in the will, begin with *gw*, with *r*, or with *x*; and yet will not be found here under those headings. When that happens, those sounds are merely inflexional prefixes; and removing them, let the reader look for what remains. Thus, not finding *gwawim*, or *rotxotx*, or *xīsaq*, let him look for *awim*, *otxotx*, *īsaq*. See *gw*/, *r*/, and *x*/, which I have entered, for explanation's sake, as if they were separable words, like the prefix *in*.

No regular derivatives will be entered independently; they will be noticed each under the entry of its principal part; although the latter may not be used in the will. So *ajlankil* will be found under *ajla*, *kajolbej* under *kajol*, *oxib* under *ox*.

Various forms, as *ajlankil*, *kajol*, *kabā*, *ixaqil*, will be found with a line drawn before them; which signifies, that owing to the nature of their meaning, they can be used, in general, only with a possessive prefix. I sometimes speak of them as 'appropriating' forms.—Certain English words may be followed by (v.); which means that they are to be taken as *verbs*, not as nouns.

Accent will not be written, unless in a few cases: to distinguish, for instance, the tonic *sā́*, belly, etc., from the proclitic *sā*, in. By accent I mean capacity for stress. The Indian syllable of accent is always the last—often, of course, the only syllable. For effects of accent, an *enclitic* word is the last syllable to its principal; a *proclitic*, a first syllable.

a, proclitic; one of the two definite articles (the other being **li** or **le**), *the, this, that*, unemphatic; Fr. *ce*. See note on line 13.

ä, prepositive; particle of introduction; may sometimes be rendered by *but, as for*, line 28.

aj-, prefix of correlative person, frequently agent. **aj-tsib**, he of writings; see **tsib**.

aj, particle postpositive to numeral expressions, in the sense of *only, just*, etc.: **jun aj**, *just one . . . , a single . . .*, line 18.

aj, **ajok**, etc., *wish, desire* (v.). **/ajom**, appropriating subv., (*one's*) *wish, wish* (of): **rajom in txol**, *my heart's wish*, line 4.

ajgwalebaj, *person of worship or authority, headman*, etc.

ajla, **ajlank**, etc., *count, reckon*. **/ajlankil**, appropriating instrumental, *count* (of), *reckoning* (of), line 24.

akatz, *turkey*.

antxal, postpositive, *also, withal, besides, in addition*, etc.

aq, enclitic; energizing or dramatizing particle, without English equivalent. Attached to verbs, as in lines 25 (**tojáq**) and 27 (**kem áq**), its effect is to put the action, as it were, in sight.

arwin, or **argwin**, obsolescent, the usual word now being either **arin** (in Cobán), or **ahí**, *here*.

ätin, *word, speech*.

/äwa, or **/ägwa**, *father* (of), but only in figurative senses. [Not connected, apparently, with the ordi-

nary **gwä**, *father*.] **awabej**, or **agwabej**, ditto, undetermined, *father, ruler, governor* of a country, etc.

awim [irregular, of root **aw**, *sow*; cf. **ajom** and **aj**], *that is sown or planted, crops, plantation*, Span. *siembras*.

be, *path, road, course*.

/behen (in Cobán **/been** or **/bēn**), *top* (of). Chiefly in prepositional phrases, following **sä** or **txi**: **txi /behen**, '*on top of*,' in more or less figurative senses; *over, above; on behalf of*; cf. **bxep** with gen. **tx'** in **behen**, *over me, on my behalf*, line 7.

bī, postpositive particle of response, real or constructive, indicating assent or corroboration. May sometimes be rendered by '*why yes*,' '*to be sure*,' '*then*,' etc., or oftener perhaps by the Span. '*pues*.' **ta in tikib bī** . . . , *I begin 'then'*. . . , line 4. Attempts at direct translation, however, are apt to be clumsy or trivial. See **pē**.

eb, proclitic and enclitic; pronoun indicative of the 3d pers. pl.: *they, them*; but often to be rendered by merely pluralizing some word in the translation.

el, **elk**, **elq**, etc., *go out, come out*, Sp. *salir*.

étal, *sign, token, record*.

/étx (in Cobán **/e**), primitively, *mouth of*; (2) *that is of, for, or to*; (*one's*) '*have*'; the translation is usually effected by a possessive pronoun; or by a preposition, *of, for, to*, followed by a noun or pronoun: **gwetx**, *mine; of me, to me*,

for me; **retx** his (*hers, its, theirs*); for him, for . . ., etc.

etxa [ETX + formative vowel **a**], **etxank**, **etxanq**, etc., *own, possess*: **txi retxa**, let him possess (*it*); in the will, **txi retxan**, with *n*-augment. See note, line 13.

ex, proclitic and enclitic; indicative pronoun, 2nd pers. pl., *ye*.

gw/, possessive prefix, 1st person sing., to names beginning with a vowel; *my*, etc.; see **in**. **gawim**, *my plantation*, see **awim**. **gwetx**, *my 'have,' mine*, see [etx. **jun gwakatz**, 'one my turkey,' i. e., a turkey of mine.

gwan, predicate of passive being, as **yo** is of active being; *existing, in being, present, situated* somewhere or somehow. Translation usually involves some part of the verb *be*: **gwan arwin jun yokotē**, (*there*) *is here a mattock*, line 13. But **gwan** often disappears in translation; e. g. when followed by a noun with a possessive prefix: **gwan x-cerrojo-il**, *having a lock, with a lock*, line 20; more literally, '(there) *is its lock*.'

This predicate **gwan** is not to be confused, grammatically, with the verb **gwan**, **gwank**, **gwanq**, accompanied by indices of tense.

gwaqxaq, *eight*.

gwey, *if, in case*.

gwuq, *seven*.

hal, *Indian corn in the ear*.

i, proclitic; an early 'constructive' demonstrative, similar to the definite article, but now disused, excepting in the Cajabón style or in

certain traditional phrases. Where it occurs in the will, modern style would either drop it altogether as superfluous, or replace it by a more specialized form — **li**, *the*; or **txi**, *q. v.*: **i Dios = li Dios**; **i xbe i po = xbe li po**; **kāib i misa = kāib txi misa** (*two 'of' masses*).

ik, *chile* (peppers).

in, proclitic; denoting possession by the 1st pers. sing.; *my, of mine*: **in txol**, *my heart*, line 3. When attached to a verb, however, the possessive prefix is no longer translated explicitly, but by means of the respective English pronoun: **ta in tikib**, *I shall begin (it)*; more literally, (*it*) *will be 'my begin'*, line 4. Before names which begin with a vowel, **in** is replaced by the prefix **gw/**, *q. v.*; see also 'n.

in (identical in form, though not in meaning, with the preceding word; cf. the Sp. *mi*, which means both *my* and *me*), proclitic and enclitic pronoun, 1st pers. sing., *I, me*: **in txi kamq**, line 5; **in txi kīraq**, line 27.

/ixaqil [irregular appropriating of **ixq**, *woman*], *wife (of)*.

/ixk (more commonly **/ix**), *skin (of), exterior (of)*; **txi /ixk**, 'at skin of,' hence *outside, behind, about, respecting*, etc.: **txi rixk le gwetx**, *respecting what I have*, line 5.

jögwi, *likewise; as also; as*.

jun, *one; a, an*.

k', for the aorist index, **ki**, before any proclitic beginning with a vowel.

kā, *grinding-stone* (for grinding corn).

kā, **kāib**, *two*.

/kábā, *name (of); sake (of)*.

/kajol, *offspring (of), son (of)*.

kajolbej, ditto undetermined, *son, offspring*. Cf. **/awa** and **awabej**.

kakaw, *cacao*.

kāl, *score*; **ox kál**, *three score*.

kam, **kamk**, **kamq**, etc., *die*; **kamk gwetx** ('*dying is mine*'), *I am about to die*, line 30; **kame-naq**, *dead*.

kanab, **kanabank**, etc., *leave* (v.); middle irreg., **kana**, etc. **kanabahem** (or **kanabaem**), irreg. appropriating of **kanab**, *that one has to leave*, e. g., to one's heirs.

kanagwinaq, *that assures, witness*; **kanagwinaqll**, ditto, appropriating, *witness (to)*. See note, line 33.

kas, *debt*.

ke, **keok**, etc., *give; put*; passive, **keē**, etc., with q-augment **keeq**. **keheq** for **keeq**, with intrusive **h**, style of Carchá.

kem, **kemok**, etc., *weave*.

ki, proclitic, index of aorist tense. See **k'**. Occasionally Indian uses the aorist where English prefers the perfect, as in line 33.

kinam, a certain tree, and its wood, of which combs are made.

kira, **kirak**, **kiraq** (independent neuter, though formed like an irreg. middle of the reduplicating conjugation, cf. **kana**), *get well, convalesce*.

koyow, a fruit-tree, much like the alligator-pear.

laje, **lajeeb**, *ten*.

le, proclitic, *the*. This variant of **li** is now confined, so far as I know, to Cajabón style. The Indian def. art. may of course disappear in English: **le gwetx**, *what is mine*, Span. *lo mio*, line 5; **le in t̄xot̄x**, *my land, 'the land I have,' Ital. il mio terreno*, line 28.

maji, *not yet; not*. See note, line 21.

'n, in Carchá style, for the possessive **in**, by elision of its vowel after the tense indices **na** and **o**. Thus **na 'n** = **na in**; **o 'n** = **o in**.

na, proclitic, index of present tense.

naq, proclitic, *when* (the conjunctive adverb), *that* (conjunction, not the relative or demonstrative pronoun), *as*: **naq in t̄xi kamq**, *when I die, as I die*, line 5. **noq**, *cotton*.

o, (style of Carchá or Chamelco, and somewhat old-fashioned for **x**) proclitic, index of perfect tense. Indian, like French, uses the perfect incessantly, where English would usually have the aorist: **naq o kamk**, Fr. *lorsqu'il est mort*, but English, *when he died*, line 15.

o, *alligator-pear*, Span. *aguacate*. **ō**, **ōob**, *five*.

ōtūk, *two hundred*. [The word is a compound of **ō** and **tūk**, as is proved by interposition of **taq**: **ō-taq-tuk**, *200 each*. The **ō** is probably *five*; but of the part **tūk** there is no certain explanation; it has no

meaning alone, and occurs only as above.]

otxotx, dwelling house, lodge.

ox, **oxib**, three: **ox k̄al**, 3 score; **oxib i misa**, 3 masses, line 7; **ox petet**, 3 spindlefuls (of cotton), line 26, not **oxib petet**, because here **petet** is taken as a mere unit of reckoning, like **k̄al**, the real object in mind being the cotton. In other words, the use of **ox**, and not **oxib**, implies the translation of **petet** by 'spindleful,' not *spindle*. Similar remarks would apply to **ō** and **ōob**, **kā** and **kāib**, **laje** and **la-jeeb**, q. v.

pata, guava.

pē, particle (either postpositive or prepositive) indicating surprise; which, however, may be purely constructive. It may sometimes be rendered by such expressions as 'Dear me!' 'But!' 'See!' 'There now!' 'Why!' 'So,' etc. But these are clumsy and vague. **pē**, like **bī**, is best rendered by suitable inflexion of the voice; or by a corresponding gesture; with **bī**, a confirmatory nod or toss of the head; with **pē**, perhaps, raising the eyebrows. See **bī**, and note to line 9.

petet, spindle; spindleful.

po, moon; lunar month, loosely, month.

pōot, Indian woman's 'shirt'; cotton 'shirting' for making it. See note on **pōot**, line 6.

Q̄aal, an Indian surname, one of the commonest.

r/, possessive prefix, of the 3rd person; Span. *su(s)*; Eng. *his, her, its, their*, as the case may be. **rixaqil**, his wife (see **/ixaqil**), **ratin**, her words (see **ātin**).

The possessor's name follows, if mentioned: **rixaqil li gwinq**, the man's wife; **ratin a yaj**, words of the sick one, the sick one's words, line 32; and direct translation of the prefix has to be abandoned. So in many other cases: **txi keheq retx** (be it given, 'his have,' i. e.), be it given to him, line 19. See **/etx**, **/ixk**, **/ukin**.

When the prefix is attached to the stem-form of a verb, the Indian 'possessor' turns up in translation as the 'subject' of the verb: **txi retxa(n) a Luis Q̄aal**, let Lewis Caal possess it (Indian idea: be it Lewis Caal's 'possess'). Cf. under **in**.

Before a consonant, **r** is transmuted into **x**, q. v. The change is merely euphonic.

/sā, belly (of); hence, inside (of); **txi sā** (for **txi xsā**), on (its) inside, within (it); upon (a certain day, line 34). In modern style the full phrase, **txi sā**, is used only when emphatic, or final (cf. the Fr. *dedans*); when the name of the thing follows, **txi sā**, is cut down to **sā** alone (Fr. *dans*); thus the noun **sā** becomes a preposition; and it can bear no emphasis. For this unaccented **sā** the style of Carchá, and of the will, employs the variant **sē**, q. v.

sē (in Cobán, **sā**) proclitic (cf. Gr. *ἐν*), *in*; *at*, *on*, etc. If the meaning of the preposition is to be emphasized, **txi sá** must be used instead. See **/sā**.

ta, proclitic, index of future tense. The Indian 'future,' however, has a variety of uses out of keeping with the English tense of that name; on line 4, '**ta in tikib**' is better rendered by an Eng. 'present': *I begin, I am beginning*.

taq, atonic interpositive particle, signifying that the numeral with which it is combined is to be taken in a distributive sense. The translation, usually, involves such words as '*apiece*', '*each*', '*every*': **gwaq-xaq taq kal**, *eight score each*, line 24.

tem, a certain tree, planted in gardens for shade.

tēp, *body*, *lot* (of anything); *precinct*, *field*.

tikib, **tikibank**, etc., *begin*. Middle, **tikla**, etc.

toj, **tojok**, etc., *pay* (v.).

tsāma, **tsāmank**, etc., *beg*, *ask* *for*.

tsaq, *price*, *worth*.

tsī, *dog*.

tsīb, '*scripture*' — *writing* or *drawing*. **aj-tsīb**, *writer*, *draughtsman*; *scribe*, especially *scrivener*. See **aj**.

tsība, **tsībank**, etc., *write*; neuter, **tsībak**, etc.

tul, *plantain*.

tumin, *silver*; *silverpiece*; *money*.

Tun, an Indian surname.

tx', for **txi**, before any proclitic beginning with a vowel.

txan, or with **k**-augment, **txank**, answers the purpose of our '*says*', '*said*', '*quoth*'; and like them, it immediately follows the language it reports. — Notwithstanding this apparent congruence of **txan** and '*says*', yet **txan** is not a verb, and does not of itself mean *say*. Its initial meaning, as examples in another syntax would show, is *what like*; *how*; or *as*.

txaqrab, *commandment*, *orders*.

txi, proclitic, *at*, *to*; *on*; etc.

Txi/behen, **txi /ixk**, **txi /sā**, **txi /utx**; see **/behen**, etc. The closest parallel to these expressions, and often a convenient translation of them, is found in those words of ours which are formed with the prefixes *be-*, *a-*, or *with-*; as *behind*, *before*; *within*, *without*; *ahead*, *astern*; etc. These prefixes are the just counterpart of **txi**; not merely in situation, and in want of accent (for they cannot be emphasized); but also in meaning, being a mixture of *at* and *to*.

txi answers to *in*, or *of*, in expressions like **ōtuk . . . txi kakaw**, *200 in cacao*, line 26.

The uses of **txi** are multifarious; in a way which might be explained as elliptical, **txi** has come to be construed like an index of tense, taking the same verbal forms with it as the future index **ta**. The effect of this **txi** may often be rendered by the Span. 'present subjunctive', or by

some sort of 'imperative,' or other future expression of purpose or expectation, to which, as it were, the mind is stretched: **txi uxq**, (Sp.) *que se hagan*, line 6; **txi keheq**, *be it given, let it be given, it is to be given*, etc., line 19; . . . **noq** . . . **tx'inkem**, . . . *cotton* . . . *for me to weave, or which I mean to weave*, line 27; **naq in txi kamq** (= **naq tx'in kamq**), *as I (look to) die*, line 6. This **txi** may be termed the index of 'ethical' future, or 'future of interest.' The difference between this **txi** and **ta** may sometimes be ignored.

txik, postpositive, *more, else, other, besides, too*, etc.: **jun txik**, *another*, line 17.

txitx *metal*, especially *iron*.

txöl *heart*; figuratively, *heart, breast; mind*.

txotx, *earth, land*.

txum (obsolescent), *desire, fancy, whim (of)*.

ukin (in Cobán **ikín**), *with; at (so and so's), Fr. chez; together with; etc.*: **rukín**, *with (him, it, etc.), therewith*; **rukín Gaspar Tun**, *with Gaspar Tun, at Gaspar*

Tun's, line 25. Though translated by prepositions, **ukin**, like **sē**, is by rights a noun.

ut, sometimes postpositive (cf. Latin *que*); particle of continuation, generally translatable by 'and.'

ūt (in Cobán, and generally, **u**), *face (of), front (of)*. **txi** **utx**, *in front of, before, in presence of; etc.*

ux, uxk, uxq, *be done, be executed, take place*.

x/, for **r**/, **q**. v., before a consonant: **sē xkabā**, *in his name*, line 3; **xtxum in txöl** ('*its desire my heart*'), *my heart's desire*, line 4.

xik, *go*.—The final **k** is not a palatal augment, but part of the stem. **xik** is irregular in having no imperative of its own; and is not used in past tenses.

xiyab, *comb*.—The verb is quite different: **tē, tēok**.

yaj, *sick*.

Yāt, an Indian surname, nearly as common as **Qāal**.

Yāts, another Indian surname.

yokotē ['*wooden crook*']; **yokos**, *crooked*; **tē**, obsolete variant of **txē**, *wood*], **mattock** (for hoeing corn, etc.).

It is 320 years since the writing of the will; and considering the bad penmanship, the vacillating spelling, stupid abbreviations, omissions, want of punctuation, and what not, the wonder is not that parts of the document should be obscure, but that so much of it should be clear. Not counting repetitions, the known words established in it, surnames and all, are about 112 Kekchí and 36 Spanish. Inspection of the dubious words, or groups of letters, shows that some 10 or 11 of them may be set down to Kekchí,

and 4 or 5 to Spanish. The proportions are small, and favorable, if anything, to the Indian.

It has been affirmed that barbarian languages are unstable; and even change so fast that a boy and his grandfather may hardly understand each other. The merit of the will is its violent testimony to the contrary. If "Juan Méndez, scribe," had been a better scribe, there would be little but the date to show that his Indian was not written yesterday.

SENAHÚ, GUATEMALA, 1904.

EXCAVATION OF INDIAN GRAVES IN WESTERN MASSACHUSETTS

BY HARRIS HAWTHORNE WILDER

During the previous autumn (Oct.-Nov., 1904) excavations of Indian burial-sites were made in two places along the east bank of Connecticut river, one under the auspices of Smith College, the other by Amherst. As both were successful in finding well-preserved skeletons, a brief account of the results may be of interest, especially since little seems to have been recorded concerning the mortuary customs of the Indians of this locality.

The Smith College excavations were carried on between Oct. 1 and 15 at North Hadley, on the spot indicated by the accompanying map (figure 14). The northwestern portion of the town, including the branch road running northward, is situated on a level sandy plain, the bottom of the post-glacial "Hadley lake," and this formation is prolonged into the bend of the river where it forms a rectangular field, the burial site. About this the land slopes down abruptly to the lower level of the present river-meadows. Almost continuous with the northwest curve of this is a rectangular knoll 300 to 400 feet across, which is probably not a farther continuation of the lake-bottom plateau, but a sand dune, or drumlin. Local tradition locates here an Indian settlement, and although this knoll has been under cultivation for years and is now covered with a crop of clover, we were able to pick up on the surface several potsherds and a broken quartz arrowpoint, confirmatory indications of the truth of the tradition. At the present time the river lies at some little distance from both the village and the burial sites, except on the north, but as the bed of the river at this place has been the scene of repeated changes, as is evidenced by the traces of several ox-bows to the west, it is probable that at the time of the Indian occupancy the water came to the foot of the terraces, thus enclosing the knoll and the plateau on three sides, and giving the site an exceptional location, with an open prospect both up and down the

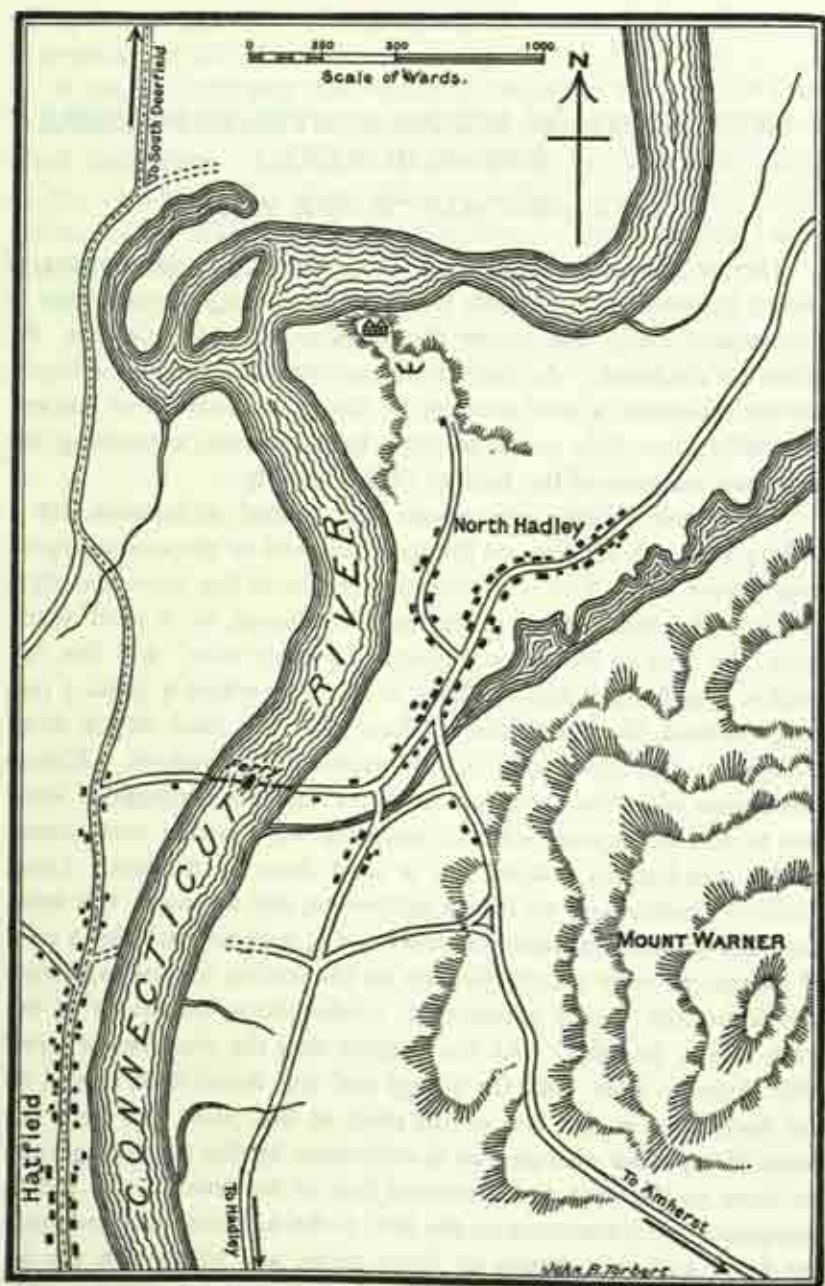


FIG. 14.—Map of North Hadley, Mass., showing site of aboriginal village and burial-place.

river. It had long been known that there was an aboriginal burial site somewhere in this vicinity, but the exact locality had become lost, and was rediscovered the previous spring (1904) by the chance plowing up of some bones near the northern edge of the rectangular field. The northwest corner of this field was almost immediately excavated by a representative of the Peabody Museum of Harvard University, who found there the skeletons of two adults and a child of six or seven years. The right to dig in the remainder of the field was then granted by Mr L. P. Bullard, its owner, to the Smith College authorities, who located a claim along the northern side, adjacent to that of the Peabody Museum, but postponed the actual excavation until after the summer vacation.

The burial site, where these excavations were made, is now a cultivated field, planted with tobacco. The field is covered with a brown surface loam, 14 to 16 inches thick on a level, below which lies a compact yellow sand of unknown depth. The skeletons occurred in this latter formation, their highest parts not more than 4 to 6 inches below its surface, or 18 to 22 inches from the top. As the color contrast between the brown surface loam and the yellow sand is a marked one, and as the top soil is very mellow from long cultivation, it was possible to scrape the loam into heaps with a two-horse road scraper, leaving about an inch over the sand, and then dig over the territory thus uncovered with spades. Although the depth thus reached was sufficient to disclose the skeletons, the chief reliance was placed upon the mixture of the two colors of earth which necessarily occurred over each grave, a point which could be easily determined by watching the cuts made by the sharp spades. In each case the mixed earth formed an approximately circular area about three feet in diameter, the more superficial portion strewn with pieces of charcoal much mixed up by the years of cultivation to which the field had been subjected.

In this way a fairly large area was thoroughly searched, resulting in the discovery of two skeletons in good preservation. In five or six other instances there were uncovered the characteristic areas of mixed earth with pieces of charcoal, but with no trace of either bones or teeth, although in every such case the earth was excavated to a considerable depth, and careful search made. Whether these

spots indicated graves from which all traces of the human remains had disappeared, or had been caused by the uprooting of ancient trees, we have been unable to decide, as their exact similarity to the actual graves points to the one conclusion while the entire absence of remains suggests the other.

The first of the skeletons found is shown in the accompanying photograph (plate XXIII, 2). The sand, at the time of the excavation, was moist from recent rains, and held the bones well in place, and the skeleton was prepared for the photograph by removing the sand from above bit by bit, allowing the bones to remain absolutely undisturbed. The only bones which had been moved before the photograph was taken were the tarsal and other bones of the feet, which are seen lying upon a piece of burlap at the right of the figure, and the right tibia and patella, which became accidentally loosened during the removal of the sand, but were exactly replaced in their former position. In taking the photograph the camera was placed at the edge of the excavation, standing perhaps a foot above the highest level of the bones, and was pointed almost directly downward, so that the photograph must be held nearly horizontally to reproduce the exact relationship.

It is shown by this that there had been some change in the original position of the bones prior to the excavation, due probably to such various causes as the action of water, earthworms, and the growth of roots. Thus the bones of the hands had wandered from their original position and were found at various depths in the vicinity of the head, some not being recovered at all. The bones of one entire finger were firmly imbedded in the earth that filled the cranial cavity and came to light when the skull was cleaned in the laboratory several days later. This dislocation of parts, especially of the smaller bones, which must have occurred long after burial, leads one to be cautious in drawing sweeping conclusions concerning the original disposal of the limbs when in the flesh, although the retention of the natural relationships of the larger bones assures us that the shifting of position of the limbs as a whole could have been but slight, as for example, a possible dropping of the knees from a more upright original position. It is thus sufficiently clear that the body was buried with its arms and legs folded up, the hands about the



1. INDIAN SKELETONS IN DOUBLE GRAVE AT HADLEY, MASS.
(Photographed in place, with camera almost directly above)



2. INDIAN SKELETON (MALE) FOUND AT NORTH HADLEY, MASS.
(Photographed in place with camera directed obliquely downward)

head, and the knees close to the body. This is the *Höckerstellung* of German archeologists, and may be interpreted as an intentional symbolism, referring to a second birth, the position being similar to that of the child in the womb. The skeleton was headed almost due east, as shown by a compass, the face being to the north. The body lay upon its right side. A later examination of the pelvis showed that the skeleton was undoubtedly that of a man, and the sutures of the skull indicated that he was probably between 20 and 30 years of age. The length and breadth measurements of the skull, 182 x 135.5 mm., give a cephalic index of 74.45.

The excavation of the second skeleton was not quite as successful, owing in part to a somewhat deeper burial and in part to the fact that the bones were smaller and more fragile. This skeleton was that of a small aged person, with a lower jaw of the extreme senile type, and showing but two stubs of teeth, besides two other alveoli nearly filled with bone substance. The general position was similar to the first, that is, it was doubled up with the knees close to the chest, but it seems to have been cast into the grave with but little care, as the face was directed downward. It lay upon its left side, with the head directed nearly to the south.

No implements or utensils of any kind were found in connection with these skeletons, but the field has yielded an abundance of arrow-points for many years, and it is at present plentifully bestrewn with flint flakes. Baking stones, reddened by heat and often cracked or split, were found here and there in the soil, especially in the vicinity of the spots of disturbed earth; these were rendered conspicuous from the fact that the soil, owing to its formation, is naturally without stones of any kind.

The Amherst College excavations were conducted a few weeks later by Dr Edward Hitchcock. These were also on the east bank of the Connecticut, but about six miles farther south by the road, or double that distance along the windings of the river, at a well-known locality between Hadley and South Hadley, where skeletons and utensils have been obtained in the past. The spot is known locally as "Indian Hill," the name being applied to a low ridge of sand, the longer axis of which runs approximately east and west, at right angles to the river bank. Its southern slope is abrupt, but its northern

dips gradually into the surrounding level. The east bank of the river at this place is apt to be undermined by the action of the spring freshets, and it is reported locally that this action once disclosed a skeleton which was seen protruding from the cut section of the bank. In the spring of 1900 the washout included the highway, which ran near the river bank at this place, necessitating the construction of a new highway some distance farther east; and in the cut which was made through the ridge for this purpose parts of five skeletons were found at that time, together with a number of stone implements, variously interpreted as hoes, hatchets, and gouges. It thus seems probable that the entire ridge was used by the Indians for burial purposes, and as little of the ground has been dug over it is to be expected that the ridge still contains considerable material. The ground is unbroken and covered with sod, and no excavation on a large scale has ever been attempted. In the course of the present investigation two finds were made, both upon the east side of the new cut. One of these was that of a child of twelve, the other a double grave containing two adults, lying side by side, with their limbs entwined. This find is of so unusual a nature that a photograph of it, given me by Dr Hitchcock, is here reproduced (plate XXIII, 1).

As will be seen, the photograph was taken in strong sunlight, and with the camera pointed almost directly downward, as in the other case. The skeletons lay with their heads to the south and facing west. No utensils or charcoal were found in connection with either grave, although, as stated above, many stone implements were discovered with the bones found four years ago in excavating the cut for the highway, the edge of which was but eight feet from the double grave. The relation of these implements to the skeletons does not seem to have been recorded.

SMITH COLLEGE,
NORTHAMPTON, MASS.

SOCIAL ORGANIZATION OF THE CHINGALEE TRIBE, NORTHERN AUSTRALIA

By R. H. MATHEWS

In 1900 I contributed to the Anthropological Society of Washington an article entitled "The Wombya Organization of the Australian Aborigines,"¹ accompanied with a map showing the geographic limits of the territory within which it prevails. The Wombya or Wombaia type of organization is distinguished by the tribe being divided into eight sections, which intermarry one with the other in conformity with certain laws. This type is in force in the northwest corner of Queensland, the northern corner of West Australia, and over the greater part of the Northern Territory.

Since presenting the article referred to, I have made further investigations respecting the laws of intermarriage, and have thought it right to report the result of my work for the information of the ethnologists of America and Europe. The Chingalee tribe will again be taken as our example and a table used to illustrate the intermarrying divisions. The names in this table are the same as those given in the table accompanying my former article, excepting that I have omitted the termination *-injah*, which is common to nearly all of them, in order that they may occupy less space.

I have also found it convenient to alter somewhat the arrangement of the sections constituting the two phratries, A and B, each phratry comprising four sections. The table shows the husband, wife, son, and daughter belonging to each of the eight divisions, on the same line across the page.

If we take the first name in the table it will serve as an illustration of all the rest. Chimitcha's tabular or direct wife is Nungalee, which we shall call No. I. He can, in certain cases marry, Nala, which we have denominated his alternative wife, or No. II. Or he can, subject to prescribed restrictions, take a Nana as his wife, which

¹ *American Anthropologist*, N. S., II, pp. 494-501, with map.

we shall distinguish as No. III. Moreover, Chimitcha may occasionally espouse a Namitcha maiden, whom we shall set down as No. IV.

TABLE I

| PHRATRY | HUSBAND | WIFE | SON | DAUGHTER |
|---------|-------------|------------|-------------|-------------|
| A | Chimitcha | Nungalee | Taralee | Naralee |
| | Chuna | Nala | Tungaree | Nungaree |
| | Chula | Nana | Chemara | Nemara |
| | Chungalee | Namitcha | Champachina | Nampatchina |
| B | Chemara | Naralee | Chula | Nala |
| | Champachina | Nungaree | Chungalee | Nungalee |
| | Tungaree | Nampachina | Chuna | Nana |
| | Taralee | Nemara | Chimitcha | Namitcha |

No. I is the normal or usual wife of Chimitcha, and is the one most generally married. No. II is the next most frequently allotted wife. Nos. III and IV are not of such common occurrence, although quite in accordance with the aboriginal law.

Again, Chuna marries Nala as his tabular wife, or No. I; he takes Nungalee as his alternative spouse, or No. II; he mates with Namitcha as No. III; and he can marry a Nana woman as No. IV.

Similarly, Chula and Chungalee can marry either of the women opposite their respective names in Table I as their No. I and No. II wives. Or they can take a Nala or a Nungalee as their No. III and No. IV wives. It is evident, therefore, that any man of Phratry A can marry any one of the four women mentioned in that portion of the table, subject to the modifications stated above.

Everything that has been said respecting the people in Phratry A applies to the marriages of the men and women in Phratry B, *mutatis mutandis*.

In all cases the section name of the progeny is determined through the mother. If Chimitcha marry Nungalee, his children are Taralee and Naralee; if he take a Nala, they are Tungaree and Nungaree; if he choose a Nana, they are Chemara and Nemara; and if he be allotted a Namitcha, his children will be Champachina and Nampachina.

Space will not permit the use of genealogical tables and explanations for exhibiting how intermarriages are regulated, hence this

matter must be passed for the present. By means of trustworthy correspondents residing in the territory of the Chingalee tribe, I have been trying for some years to ascertain definitely how the totems descend — whether through the men or through the women ; but I am not yet satisfied. In describing the organization of kindred tribes in adjacent districts, Spencer and Gillen have endeavored to show that descent is through the men, but I am equally dissatisfied with their conclusions.

One of my most valued and careful correspondents has sent me the following tabulated list of sixteen members of the Chingalee tribe, in which, at my request, he has given me the English name, together with the section and totem, of each individual ; the totem of his or her father ; the totem of his or her mother, and the totem of the offspring.

TABLE II

| No. | Individual (man and woman). | | | Totem of Individual's Father. | Totem of Individual's Mother. | Totem of Individual's Offspring. |
|-----|-----------------------------|----------|-----------------------|-------------------------------|-------------------------------|----------------------------------|
| | Name | Section | Totem | | | |
| 1 | Charlie | Chuna | Black striped snake | Black striped snake | Fish | Black striped snake |
| 1a | Lucy (wife) | Nala | Native bee | Streculia | Native bee | |
| 2 | Harry | Chuna | Earthworm | Nut-grass | Earthworm | Iguana |
| 2a | Nora | Nala | Iguana | Black striped snake | Iguana | |
| 3 | Jacob | Chuna | Sleepy-lizard | Sleepy-lizard | Wallaby | No children |
| 3a | Daisy | Nana | Sulky-snake | Sulky snake | Dog | |
| 4 | Old Dad | Chuna | Sleepy-lizard | Sleepy-lizard | Wallaby | Sleepy-lizard |
| 4a | His wife | Nana | Stone knife | Stone knife | Dog | |
| 5 | Toby | Tungaree | Water snake | Iguana | Ground honey | Water snake |
| 5a | Belle | Nemara | Honey and kangaroo | Bandicoot | Tree honey | |
| 6 | Rowley | Chula | Kangaroo | Kangaroo | Bandicoot | Kangaroo |
| 6a | His wife | Nana | Honey | Streculia | Honey | |
| 7 | Palmer | Chula | Honey | Honey | Nut-grass | Honey |
| 7a | His wife | Nana | Kangaroo | Water snake | Kangaroo | |
| 8 | Jack | Chula | Iguana | Streculia | Iguana | Streculia |
| 8a | Mary | Nungalee | Streculia and Wallaby | Wallaby | Streculia | |

In the above table, Nos. 1, 2, 6, and 7 are married to the normal or "direct" wives, whom we previously distinguished as No. I.

No. 5 in the table has an "alternative" or No. II wife. No. 8 is married to a No. III woman, which may be called "rare." Nos. 3 and 4 are united to "exceptional" or No. IV wives.

According to Table II the children of Nos. 1, 4, 5, 6, and 7 have the same totem as the father. Nos. 2 and 8 take the totem of the mother. Again, on examination of the totems in the fourth, fifth, and sixth columns, it is seen that some of them follow the father, some the mother, and some follow neither parent. Other individuals have two totems.

In other instances not included in this table, I have discovered that even among the offspring of the same parents there is considerable irregularity — some of the children having one totem and some another. I am inclined to think, however, that if one could prepare genealogies showing two or three generations, taking into account all the ramifications caused by the marriages I have numbered I, II, III, and IV, the laws of descent might be found more regular than at present appears.

It may be stated that I am the only student up to the present who has reported the marriages herein referred to as No. III and No. IV among the Wombya or any kindred tribe; and no author has before attempted to arrange the sections composing the phratries as they now appear in Table I. The present article is necessarily very brief, but it is believed that it will result in shedding new light on the social organization of Australian tribes and enable investigators to start anew.

PARRAMATTA,
NEW SOUTH WALES.

THE CHAMORRO LANGUAGE OF GUAM—V

By WILLIAM EDWIN SAFFORD

IX. — VERBAL DIRECTIVE AND LOCATIVE PARTICLES

1. **Magi**, or **mage**. — This particle, which corresponds to *mai* of the Sawaïori languages, is used to express motion *toward the speaker*; as *Chule magi i hānom*, bring *hither* the water; *maiudai hao magi?* were you carried *hither*? (did you ride *hither*?). It is interesting to note that whereas in Polynesia the particle *mai* is used also as a preposition 'from' (*mai-hea*, Hawaiian, from where), this is not the case in the Chamorro language (*ging-mano*, from where), in which it is used only as a directive particle having the sense conveyed by *hither* (German *her*). It is possible that the verb *maila*, to come, is connected in some way with the particle *magi*, but I have been unable to trace the connection.

2. **Guatu**, or **guato**. — This particle corresponds to *atu* of the Sawaïori languages; it is used to express motion *away from the speaker* (German *hin*); as *chule guato i hānom*, take *hence* the water. *Guato gi manchagô na tano*, forth to distant lands. It is not used as a preposition, but is simply a verbal directive. From it is formed a verb *guáguato*, to go to (German *hingehen*).

3. DIRECTIVE PARTICLES ABSENT FROM PHILIPPINE DIALECTS. — So far as I have been able to learn, these particles are absent from the dialects of the Philippines. They are essentially Polynesian, playing a far greater part in the eastern Pacific groups than in Guam. In Samoan we have *au mai*, bring *hither*; *avatu*, take *hence*; *o mai ia te a'u*, come *hither* unto me; *o atu ia Iosefa*, go *hence* unto Joseph. In Hawaiian we have, *e awe mai*, bring *hither*; *e awe aku*, take *hence*; *e hele mai*, come *hither*; *e helo aku*, go *away*. I have found nothing corresponding to this in the Philippine dialects, but the identity of the Polynesian and Guam directives is certain.

4. **Nae**, or **nai**. — In addition to the above particles, which indi-

cate the *direction toward which* or *from which* an action tends, there is another particle very much used in the Chamorro, indicating the *place or time at which* the action of the verb is performed. This may be called a **locative** particle. It corresponds to the English *at* or *on* (French *à*, German *an*), in the adverbial phrases, at what place, at what time, on Monday, at evening. Its use does not accord, however, with the rules of English grammar, since it is used with adverbs of place and time; as *mano nae gaege*, where at is he? *ngaian nae mato hao?* when at did you come? *pagô nae*, at now — phrases which become proper in our language when changed to, 'at what place is he? at what time did you come? at present.' This particle is applied even to Spanish words which have found their way into the Chamorro, as *este nae*, here, at this place; *nunka nae*, never, at no time. It is also combined with the adverbial conjunctions *an*, *gin*, when or where, used to join a subordinate to a principal clause in complex sentences, forming *anae*, *ginae*, etc.

X. — ADVERBS

1. ADVERBS OF PLACE AND MOTION. — The common adverbs of place and motion are in reality abbreviations of phrases composed of the demonstrative pronouns preceded by the preposition *gi*, *at* or *to*. They correspond with the demonstratives very much as the French adverbs *ici*, *là* (here, there) correspond with the demonstratives *celui-ci*, *celui-là* (this, that), although in Guam it is the demonstrative which is the primitive word and the adverb the derivative. Thus we have:

guini, here, from *gi yini*, at this (place);
guenao, there, from *gi yenao*, at that (place);
guihe, yonder, from *gi yuhe*, at yon (place);

From the names of directions are derived adverbs preceded by *iya*, or by the prefix *san-*, the latter of which has the effect of modifying the radical vowel as in the case of the article *i*.

| Primitive word | With <i>iya</i> | With <i>san</i> |
|---------------------|---------------------------------|----------------------------|
| <i>hulô</i> , up | <i>iya hulô</i> , on top | <i>sanhiô</i> , above |
| <i>papâ</i> , down | <i>iya papâ</i> , at the bottom | <i>sanpâpâ</i> , below |
| <i>halom</i> , in | <i>iya halom</i> , inside | <i>sanhâlom</i> , inward |
| <i>huyong</i> , out | <i>iya huyong</i> , outside | <i>sanhiyong</i> , outward |

| Primitive word | With <i>iya</i> | With <i>san</i> |
|----------------------|---------------------------------|--------------------------------|
| <i>tate</i> , after | <i>iya tate</i> , behind | <i>santäte</i> , on the rear |
| <i>lago</i> , north | <i>iya lago</i> , in the north | <i>sanlägo</i> , on the north |
| <i>haya</i> , south | <i>iya haya</i> , in the south | <i>sanhäya</i> , on the south |
| <i>katan</i> , east | <i>iya katan</i> , in the east | <i>sankätan</i> , on the east |
| <i>luchan</i> , west | <i>iya luchan</i> , in the west | <i>sanlichen</i> , on the west |

In indicating the direction of an action the above words are preceded by the prepositions **falag**, toward; **gine**, from, as —

falaghulö, upward; *ginehulö*, from above; *falagluchan*, to the west.
falagpapä, downward; *ginipapä*, from below; *ginikatan*, from the east.

The use of the possessive suffixes with these adverbs has already been noticed,¹ as —

gi lägo-ko, on my north; *gi hilö-mame*, on our upper side, above us;
gi häya-mo, on thy south; *gi päpä-miyo*, on our lower side, below us;
gi kätan-ña on his east; *gi menan-ñiha*, on their front, before them;
gi lichen-ta, on our west; *gi täten-ñiha*, in their rear, behind them.
entalo, among, between; *gi entalo-miyo*, in your midst, among you.

ADVERBS USED WITH LOCATIVE AND DIRECTIVE PARTICLES:

mano nae, **mano nai**, where? at what place? where at?

enao nae, there, at that place;

ayu nae, **ayo nai**, yonder, at yonder place;

guaha nae, at any place, anywhere; somewhere;

taya nae, at no place, nowhere;

este² nae, at this place, here.

este magi, **guini magi**, in this direction, hither;

este magi nae, at this place, to this place (toward me);

guenao guato, in that direction, thither;

enao guato nae, in that place (away from here);

ayu guato nae, **ayo guatu nai**, in yonder place (away from here);

todohä nae, in every place, at all times;³

iya guiya nae, with it, therein.

SUFFIX -ñaion, or **-ñaehon**. — This suffix often has the force of the adverb 'away'; as *unfakñaehon i guinaha-mo gi famaguon-mo*, thou-dividedst-away thy property among thy children.⁴

¹ *Am. Anthr.*, vol. v, p. 512; p. 29 of the reprint.

² *Este*, adopted from the Spanish, is gradually superseding the Chamorro *ini*, this.

³ From Spanish *todo*, every, all, and the Chamorro *hä*, indeed, really.

⁴ See Verbal Suffixes, *Am. Anthr.*, vol. vi, p. 113; p. 65 of reprint.

2. ADVERBS OF TIME AND SUCCESSION:

pāgo, now, today; *pagō na haane*, this day;

pāgohā, *pāgogohā*, right now, only today, just now;

naya, formerly, in olden times;

hagas, formerly, once on a time; as *hagas magalahe hao*, formerly you were governor.

lāmona, presently, later (literally, more ahead);

monhayan, *monhan*, already (before a past act);¹

agupa, tomorrow;

agupahā, repeatedly, day after day;

inagpañā, day after tomorrow;

nigab, yesterday;

inigabñā, *i halacha*, day before yesterday;

taftaf, early;

taloane, late, tardy, tardily (when spoken in the morning);

poeñge, *pueñge*, late, tardy, tardily (when spoken in the afternoon);

am-am, behind-hand, tardy, a long time;

tī am-am, not long; a short time;

tī am-amhā, quite a short time;

seso, *sesu*, frequently, often;

lacha, once; *fahagua*, twice; *fafatu*, three times, etc., are now obsolete.

taplung, frequently;

ekalag, *ekākalag*, rarely, seldom;

halag, rarely, seldom;

talo, again, once more (French, *encore*);

tī talo, not again, nevermore: *tī hu-isao talo*, I will not sin again;

finēnana, firstly, in the first place;

i mina-dos, secondly, in the second place,² etc.

With Locative Particle *nae*, or *nai*:

ñigaian nae? when? at what time?

ayo nae, *ayu nai*, at that time;

pagō nae, now, at this time;

taya nae, *tat nae*, never, at no time.

guaha nae, at some time, at times, at any time.

Adopted from the Spanish:

siempre, *siemprehā*, always, ever;

¹ See vol. VI, p. 510; p. 80 of reprint.

² From the Chamorro *mina*, and the Spanish *dos*, two.

nunka nae, never ;
kadarato, frequently, many times ;
kadadia, tolosdias, every day, daily ; *kadadia hu-gagagao si Yuus*, I
 beg God daily ;

yesta, trabia, already ;
trabia, (in a reply, like Spanish *todavía*), not yet ;
untiro, unabés, un biahe, once ; *dos beses, dos biahes* twice.
untirôhâ, derepente, suddenly, all at once.
atrasão, tardy, behind-hand.
entônses, then ; *antes*, before, already ; *despues*, afterward.

3. ADVERBS OF MANNER AND QUALITY.—To express the manner or quality of an action the Chamorros use either a prefix to the verb or adjective, an illustrative adverb like *taiguini* (thus), or a phrase formed by the preposition *kalang* (like) and an object ; or they may use an adjective or denominative verb to describe an action, placing the verb indicating the action in the infinitive form. Thus, 'The crow *flies swiftly*' is rendered *Sahyao gumupo i äga*, which is literally 'Swift to fly is the crow,' or, in better English, 'The crow is swift in flying.' In the same way nearly all derivative adverbs ending in English in *-ly* (Spanish *-mente*, French *-ment*,) may be used as adjectives or denominative verbs.

Adverbial Prefixes :

well, *góf-, géf-, gés-*;
 ill, *chat-* (from the Malayan *jahat*, ill).
 Nearly, almost, on the point of, *katna-, ké-*.
 Easily, readily, liable to, prone to, *gusê-*.

It is interesting to note that the formation of many words in Chamorro can readily be traced to the use of some of these particles prefixed to verbs. Thus from *gof*, well, and *lûi*, see, we have the verb *goflûi*, or as it is usually written *gufûi*, 'to love,' literally, 'to see well.' From this, by the interposition of the particle *in* before the radical vowel (which has the effect of modifying it to *i*), we have the noun love, *ginifûi*. By prefixing the particle *a-*, which has a reciprocal sense, we have *agufûi*, friend, friends being those who look well, or kindly, at one another. In the same way a great many words are plainly traced to the prefix *chat*, ill or bad, and *lûi*, to see ; *chatlûi*, to hate, literally, 'to look ill' at some one ; and from

it are formed *chinatlî*, hatred, and other derivatives. In a similar way from *halom*, in, and the prefixes *gef* and *chat* are formed the words *gefhalom*, generous ('kind-interior'), and *chathinalom*, mean ('bad-interior'). The possibility of tracing many words to their original sources is an interesting feature of the Chamorro language, showing clearly that the words were formed by the Chamorros themselves, who use them in their primitive sense. This is a sharp contrast to our use in English of such words as benevolent, malevolent, benediction, malediction, benefactor, malefactor, the significance of the component parts of which are seldom brought to the mind of the speaker.

COMPARISON. — In answering the question 'How?' the Chamorros have a series of adverbs formed by the prepositional prefix *tai*, like, and the adverbs of place here, there, yonder, forming words which are all rendered by the English 'thus' —

haftaimano? how (literally, what-like-which)?

taiguini, thus, like this (here);

taigenao, thus, like that (there);

taiguihe, thus, like that (yonder);

taigünehâ, just like this.

Examples: *Umafatinas i pintô-mo gi tano taiguihe i Langit*. Thy will shall be done on earth like (yonder) in Heaven.

4. ADVERBS OF MEASURE AND DEGREE. — The measure or degree of an action or quality are usually expressed by prefixes, as has been shown in treating of the verb and the adjective. The most common of these prefixes are:

sen-, very, most;

sesen-,¹ exceedingly;

chá-, equally;

achâ-, equally;

-hâ (suffix), truly quite;

-ña (suffix), more.

taotaohâ, truly human;

magahethâ, quite true;

lâ-, more, a little more;

chat-, incompletely, imperfectly;

pinât-, excessively, too greatly;

Among the independent adverbs of this character are:

¹ *Sen* and *sesen* are in all probability identical with the Nahuatl *cen* (*zen*) and *cecen* (*ezen*), introduced in early times by priests or soldiers from Mexico. Thus we have in Nahuatl *kualli*, good; *zen kualli*, very good; *sesen kualli*, exceedingly good.

| | |
|---|---|
| <i>megæ</i> , or <i>megai</i> , greatly, much ; | <i>kátnahâ</i> , nearly, almost ; |
| <i>dididê</i> , or <i>dididi</i> , a little ; | <i>mampos</i> , excessively, too much ; |
| <i>achaigua</i> , equally ; | <i>talo</i> , more (repetition) ; |
| <i>nahong</i> , sufficiently, enough ; | <i>lokue</i> , besides, also ; |
| <i>palo</i> , the rest, the remainder. | |

Adopted from the Spanish are : *mas*, more ; *menos*, less ; *dema-siâo*, too much.

5. ADVERBS OF MODALITY :

| | |
|--|----------------------------------|
| <i>magahet</i> , truly, certainly ; | <i>siña</i> , possibly ; |
| <i>magahethâ</i> , very truly, quite certainly ; | <i>siñahâ</i> , quite possibly ; |
| <i>sen-</i> (prefix), truly ; | <i>tisiña</i> , impossible ; |
| <i>bunte</i> , perhaps, | <i>tî</i> , not ; |
| <i>huguan</i> , doubtfully ; | <i>sentî</i> , not at all ; |
| <i>enao-minâ</i> , therefore ; | <i>gin siña</i> , if possible. |

6. AFFIRMATION AND NEGATION :

| | |
|--------------------------------|---|
| <i>huñgan</i> , yes ; | <i>ahê</i> , no ; |
| <i>hûo</i> , yes ; | <i>senahê</i> , no indeed ; |
| <i>hêkuâ</i> , I don't know ; | <i>tisiña</i> , it is impossible ; |
| <i>siña</i> , it may be so ; | <i>chamo</i> ! (precative) do not ! |
| <i>magahet</i> , it is true ; | <i>timagahet</i> , it is not true ; |
| <i>mandage</i> , it is false ; | <i>senmandage</i> , it is quite false ; |
| <i>taya</i> , nothing ; | <i>sentayahâ</i> , absolutely nothing at all. |

INTERROGATIVES. — Several of the interrogatives used by the ancient Chamorros have become obsolete ; among them *fia*, how many,¹ used in asking questions of time, as 'how many days?' *fafia*, how many, in asking questions as to the number of living things ; and *fiyai*, how many, in asking questions as to measurements, as 'how many fathoms, or arm-lengths?' In the same way *fahafa*, how many times, is no longer used. These words have been supplanted by *kuantos*, how many ; and *kuantos bises*, *kuantos biâhes*, *kuantos tiros*, how many times, how many trips, how many shots, adopted from the Spanish. The Spanish *porque*, 'why,' is also used.

In many cases the interrogative is followed by the locate particle *nae* (or *nai*) :

¹ Identical with the Samoan *fia*, Tongan *fika*, New Zealand *kia*, how many. See *Am. Anthr.*, vol. v, p. 526 ; reprint, p. 43.

ngalan nae? when? at what time?

mano nae? where? at which place?

mano? whither? to which place?

guaña? is it true that?

ada, peradventure; as *ada ti mauleg*? is it peradventure not good?

hafa? why? what for? *Porqué*, why (from Span. *porqué*) is now used.

haftaimano? *hafataimano*? how? what like?

XI. — PREPOSITIONS

1. CLASSES OF PREPOSITIONS. — The Chamorro has a few primitive prepositions, some of which are used independently, others as prefixes, and others as suffixes. Like other languages it contains many compound prepositions indicating time, place, or order, composed of a noun and one or two prepositions; as, 'on top of,' 'inside of,' 'at the front of.'

2. *Gi*. — This preposition is the most frequent of all. It has various shades of meaning, being used like the Latin *ad* (to) followed by the accusative; or in some cases like the Latin *apud* or *in* (at) followed by the ablative, and like the English *at* (German *an*) in what may be called the locative. When it is followed by the definite article *i*, it combines with it, remaining unchanged. When followed by the locative article *iya*, it forms the combination *giya*. When followed by the article *si*, used before the names of persons, it is dropped, and the latter becomes *as*.

i tãsi, the sea;

i tãno, the earth;

langit, heaven, sky;

lamasa, table;

iya hita, our house (Fr. *chez nous*);

iya Hagadña, Agaña;

si Huan, John;

gi tãsi, to the sea, by the sea.

gi tãno, on the earth.

gi langit, in heaven.

gi lamasa, at the table.

giya hita, at our house, with us, in our keeping.

giya Hagadña, at or to Agaña.

as Huan, to or with John.

3. *Nu*. — This preposition is also very much used, and its use is sometimes difficult for a foreigner to understand. It may be translated 'with,' 'from,' 'by,' 'in,' or 'of,' and is used in many cases where in Latin the noun would be put in the ablative without a preposition. In constructions where, according to the usual Eng-

lish form, the verb would have a direct and indirect object, corresponding to the dative case of the person and the accusative of the thing ('He gave grain to the Athenians'), the usage of the Chamorro language corresponds to the Latin accusative of person and the ablative of thing; as, *Athenienses frumento donavit*, 'he presented the Athenians with grain.' Examples:

Nae-ham págo nu i agon-mame, Give us today our bread, lit., 'Present us this day with our bread.'

Putá i chandiha nu i sēsē, Cut the watermelon with the knife.

Nafanlibre-ham nu i tailaye, Deliver-us from evil.

Madálalag hao nu i famagúon, You were pursued by the boys.

Hachahlao i kahet nu i akagueña, He caught the orange with his left.

Nalie-yò nu i lachi-ho, Convince me (cause me to see) of my error.

Hafañague yò nu i paki-ña, He threatened me with his gun.

Hafanague yò si Palí nu i gramatika, The priest instructed me in grammar.

Tisiña yò malefa nu hamyo, I cannot be forgetful of you.

In English the usual forms of these expressions would be: Give us our bread, Show me my error, The priest taught me grammar, etc.

4. **Yan.**—The primitive signification of this word is that of the conjunction 'and.' It is, however, used as a preposition, signifying with, together with, in company with. In the Chamorro the use of this preposition is not nearly so common as in European languages. Thus, Go with him, is rendered: *Hanao enhamyo*, Go ye two; or *Dálalag gui*, Follow him. With whom did you come hither? is rendered: *Hayi gachochong-mo magi?* or, Who (was) your companioning hither? I will go with father: *Si tata gachong-ho humanao*, or, Father (is) my companion to go (in going).

5. **Gine, or gini.**—This signifies 'from.' Unlike the corresponding preposition in the Polynesian dialects, it is quite distinct from the directive particle (*magi*). It is often used as a prefix, as *Gini-mano hao?* From-where (art) thou?—forming a verb which is conjugated like an intransitive; thus, the plural of the preceding compound is *Mangini-mano hamyo?* From-where (are) ye? *Gini-Hagat yo*, from-Agat (am) I, is conjugated like a verb, 'to-come-from-Agat,' taking forms which correspond to the progressive, 'I

am-come-from-Agating,' etc. This preposition can however be used independently; as, *Gini i mañaina-ta as Adan yan Eva*, From our parents Adam and Eve; *Ha-nahuyong gini i taya i liion yan i tiliion*, He-made-come-out from the nothing the visible and the invisible.

6. **Falag, malag.**—This corresponds in usage with the preceding, but has the opposite significance. With a noun or an adverb denoting direction it forms a compound verb, as *Falag-tate!* (Go) to the rear! *Malag-tate i patgon*, the boy went to the rear. *Falag* is used in the imperative, and *malag* in the present and past tenses of the indicative mode. In the same way we have:

falag-mona, toward the front, to the front, forward;

falag-kalan, toward the east, to the east, eastward;

falag-luchan, toward the west, to the west, westward;

falag-halomtano, toward the inland, to the forest (Samoan *i uta*).

falag-tasi, toward the sea, to the sea, seaward (Samoan *i tai*).¹

7. **Iyon.**—This may be considered as a phrase signifying 'property of,' 'pertaining to,' or 'belonging to,' formed from the noun *iyō*, property, or attribute, and the ligation *n*, 'of.' It has already been shown, under Possessives, how independent possessive pronouns are formed from this root; as, *iyō-ko*, my or mine (property-of-me); *iyon-mame*, our or ours (property-of-us). In the same way we have *iyon langit*, belonging to heaven, celestial; *iyon tano*, belonging to earth, terrestrial; *iyon tataho*, belonging to my father, etc.

8. **G e, or gâi.**—This may be considered as a preposition signifying 'with,' although it is usually employed as a prefix to a noun and is translated as a verb, to have. Thus, *gâi-salape si Huan*, may be translated either John has money, or with-money (is) John; *gâi-salape na taotao*, may be rendered 'moneyed man'; *gâi-gima hao*, thou hast a home, or with-a-home-art thou; *gâi-payo yô*, with-an-umbrella-am I, or I have an umbrella.

9. **Tâe, or tãi.**—This is the opposite of *gâi*, indicating non-possession, and may be regarded as a preposition, 'without.' Thus, *tãi-salape si Huan*, may be translated, John has no money, or without-money is John, or moneyless is John. In the same way we

¹ The Chamorros do not use the expressions 'landward' (*i uta*) and 'seaward' (*i tai*) to the same extent as the Samoans and other Polynesians. They usually designate boundaries, directions, sides of the house, etc., by the points of the compass.

have *tai-tutuhon*, without beginning; *tai-hinekog*, without end, endless, infinite; *tai-chii*, without limit, boundless; *tai-minapot*, without difficulty, easy; *tai-anlae i lahe*, without fear is the man, fearless is the man.

10. **Mi** and **ê**.—These may be considered prepositional prefixes, *mi* signifying 'full of,' abounding in, and *ê* signifying lacking in, scant of, poor in; as, *mi-salape*, abounding in money, rich; *mi-hito*, full of lice; *ê-hinaso*, lacking in understanding, scant of brains.

11. **Kalañg**.—This is an independent preposition signifying 'like,' like unto; as *kalañg guaho*, like me; *kalañg patgon*, like a child.

12. **Tai**.—This prefix, when used with demonstratives, may be considered a preposition, 'like,' as *taiguini*, like this, thus, so; *taiguenao*, like that; *taiguihe*, like yonder. *Tumañgis-hao taiguihe i palo*, thou didst weep like the rest yonder (like yonder the others).

13. **COMPOUND PREPOSITIONS**.—The following compound prepositions are closely connected with corresponding adverbs of place and direction. They are formed from roots which may be considered nouns:

| | |
|------------------------------------|---|
| <i>fona</i> , front; | <i>gimena</i> , in front of, opposite to, before. |
| <i>tate</i> , rear; | <i>gitate</i> , in rear of, back of, behind. |
| <i>hulô</i> , top; | <i>gihulô</i> , on top of, above, upon. |
| <i>papâ</i> , bottom; | <i>gipâpâ</i> , underneath, below, under. |
| <i>halom</i> , inside, interior; | <i>gihâlom</i> , inside of, within, in. |
| <i>huyong</i> , outside, exterior; | <i>gihuyong</i> , outside of, without, out of. |
| <i>entalo</i> , midst, middle; | <i>gi-entalo</i> , in the midst of, between, among. |
| <i>agapa</i> , right hand; | <i>gi-agapa</i> , on the right side of, on the right. |
| <i>akague</i> , left; | <i>gi-akague</i> , on the left side of, on the left of. |
| <i>lago</i> , north; | <i>gilago</i> , on the north of, north of, north from. |
| <i>haya</i> , south; | <i>gihâya</i> , on the south of, south of, south from. |
| <i>katan</i> , east; | <i>gikatan</i> , on the east of, east of, east from. |
| <i>luchan</i> , west; | <i>gilichan</i> , on the west of, west of, west from. |

14. **PREPOSITIONAL SUFFIXES**.—In expressing an action which is directed to or for some one or something, instead of an indepen-

dent preposition, a suffix is used, which combines enclitically with the verb in somewhat the same way as the Latin prefix *ad* (at) is combined with *mirari* (to wonder) to form *admirari*, from which we derive our verb 'to admire.' These suffixes, as we have already seen in connection with the verb, are *-e*, *-ye*, *-ge*. Examples:

| | |
|---|---|
| <i>tolâ</i> , to spit; | <i>tolâe</i> , to spit at. |
| <i>tunog</i> , to lower; | <i>tunoge si Luis</i> , lower for Louis. |
| <i>talag</i> , to look; | <i>talage</i> , to look at, to look toward. |
| <i>tayuyut</i> , to pray; | <i>tayuyute yô si Yuus</i> , pray for me to God. |
| <i>sangan</i> , to say; | <i>sangane</i> , to say to (some one). |
| <i>adingan</i> , to speak; | <i>adingane</i> , to speak to, to address. |
| <i>chule</i> , <i>chuli</i> , to carry; | <i>chuliye yô</i> , <i>chulie yô</i> , carry for me. |
| <i>sausau</i> , to wipe off; | <i>sausauge si nana i lamasa</i> wipe off for mother the table. |

15. PREPOSITIONS ADOPTED FROM THE SPANISH. — On account of a misunderstanding of the above forms and constructions of a similar nature the early missionaries introduced into the Chamorro the prepositions *pot* (*por*), for; and *para*, to, for, in order to. They also introduced the Spanish prepositions *antes de*, *después de* (after), *fuera de* (beyond), *contra* (against), and many others. In the catechism written for the natives such expressions as the following are common:

- para hamyo*, for ye;
- para utaka*, in order to get;
- para unâhanoa*, in order to remove (cause to go);
- pot i tinayuyut*, by the mediation, by the praying;
- pot i minaañao nu sasalaguan*, through the fear of hell;
- con todo i minalagoña*, with all his-will.

para uasii todo i manmagas yan i mandikiki na isao, in order to pardon all the great and small sins.

XII. — CONJUNCTIONS

1. CLASSES OF CONJUNCTIONS. — In Chamorro there are certain words which may be regarded as pure conjunctions; others may be regarded as conjunctive phrases formed by joining certain prepositions to demonstratives, while others now in use have been adopted from the Spanish.

2. ORIGINAL CONJUNCTIONS. — The original conjunctions are :

| | |
|--|---------------------------------|
| ya , and (joining clauses); | lao , but; |
| yan , and (joining words); | sa , for, because; |
| pat , or; | gin , if; |
| na , that (with present or past); | kao , whether; |
| nu , that (with future); | an , if, when; |
| lû , nevertheless; | yan , if, provided that. |

3. COMPOUND CONJUNCTIONS. — These are formed by affixing the preposition *minâ* (on account of) to the demonstratives, or the locative particle *nae* (or *nai*) to simple conjunctions, assuming an adverbial sense and joining a subordinate to a principal clause in a complex sentence :

ena-*minâ*, therefore, on that account;

ayu-*minâ*, therefore, on yonder account;

este-*minâ*,¹ therefore, on this account;

annae or **anae**, where, when; as *Matae gi kiluus anae hachuda i hagâ-nâ*, He died on the cross, where he shed his blood. **Anae matae i asagua-mo** . . . when thy wife died. . .

ginnae, **ginae**, when, if (German *wenn*).

yagin, if, provided that; as *Yagin i taotao hagugufii si Yuus* . . . If man loves God **when** a man loves God.

4. CONJUNCTIVE PHRASES ADOPTED FROM THE SPANISH. — In certain cases where the Chamorro had no exact expression to correspond with a Spanish idiom, the early missionaries introduced the Spanish idiom itself; as the correlative **asikomo** (*asi como*), as . . . so; **maséa**, **maskeséa** (*mas que sea*), although; **kontóke** (*con todo que*), notwithstanding; **mientras ke**, while, during the time that; **antes ke**, before the time that; **despues ke**, after the time that; **para ke**, in order that, so that; **pot ke** (*porque*) because that.²

Sometimes there is a combination of Spanish and Chamorro forms, as in such sentences as "As pants the hart for cooling streams, so longs my soul for thee," the initial *as* of which would be rendered

¹ *Este* is adopted from the Spanish; it has almost entirely superseded the original *ini* of the Chamorro.

² The necessity for the use of the letter *k* instead of the Spanish *c* and *qu* has already been explained in speaking of the changes taking place in the vowels of such words as *kolat*, fence; *i kelat*, the fence (from the Spanish *corral*), which would have to change the initial letter *c* to *qu* before *e* if the Spanish system of orthography were followed.

by the Spanish *asikomo*, and the correlative *so* by the Chamorro *taiguenao* or *taiguihe*, signifying 'thus.' The expression 'so as not,' is rendered in Chamorro *para umunga*.

5. INTERROGATIVES.—In case of the use of a question in a subordinate clause the interrogative adverb is used; as *Nihe talii hafataimano uta-nafanlibre i anti-ta*, Come let-us-see how we-shall-make-free our-souls.

6. CONNECTIVE PARTICLES.—The ligations *na* and *-n* have already been explained in treating of the adjective and the noun.¹

XIII.—INTERJECTIONS

1. TRUE INTERJECTIONS.—These are used as exclamations, denoting strong emotion. Some of them have evidently been adopted from the Spanish:

Di, Behold! Look!

Diâhâ, Just look! Only look!

Hei, Hoe, Hello! Oh!

Uhu (without opening the lips), Ah!

Ae (pain, or shock), Ouch!

Nihe, Nihi (exhortation), Come! (Lat. *venite*.)

Puf (aversion), Ugh!

He, Hu, Pu (contempt), Pshaw!

2. IMPERATIVES USED AS INTERJECTIONS:

Lii, Liâhâ, Look! Just look!

Gusê, Hurry! Be quick!

Sahyao, Hurry! Go quickly!

Falago, Hurry! Go! Run!

Lâttanao, Begone! Get out! Go away!

Pâkakâ, Silence! Hush! Hold your tongue!

Adahe! Beware! Be careful! Look out!

Cho (to animals) Whoa! Stop!

3. FROM THE SPANISH.—Expressions containing the names *Yuus* (Dios), *Hesus*, *Maria*, are not held to be profane in Chamorro. As in the Spanish, they are frequently used, and on the slightest provocation:

¹ *Am. Anthr.*, vol. v, p. 519; reprint p. 36.

Yuus-maase, Thanks!

Hesus (joy, admiration), How beautiful! How strange!

Hesus ke (contempt), What a miserable . . .!

Ásaena (wonder), Lord! Good gracious!

Ohalá (desire), I hope so! Would to God!

Ai de mi (sorrow), Alas for me! Poor me!

4. VOCATIVE SUFFIX.—After nouns in the vocative case the suffix **lao** is used; as *Tata-lao*, O father! *Francisco-lao*, O St. Francis!

BOOK REVIEWS

The Chukchee. I—Material Culture. By WALDEMAR BOGORAS. *Memoir of the American Museum of Natural History. The Jesup North Pacific Expedition.* Vol. VII. Leyden: E. J. Brill. 1904. 4°, 280 pp., maps, plates, and figures.

The Jesup North Pacific Expedition, the funds for which were provided by Mr Morris K. Jesup, President of the American Museum of Natural History, New York, and which was organized and carried out under the direction of Prof. Franz Boas, had for its prime object, by a careful and thorough study of the primitive tribes still surviving on the northern coasts of the Pacific ocean, the elucidation of the great problem of racial, linguistic, and cultural connections between the two continents in primeval times.

The results of that great undertaking are now steadily being published. So far, thirteen comprehensive issues on the archeology, linguistics, and ethnology of the tribes of the coast of North America, richly illustrated, have appeared. Now we have a new, comprehensive volume on the most important tribe of extreme northeastern Siberia—the so-called Chukchee. This volume is by Mr W. Bogoras, the well-known ethnologist, who during many years has made extensive linguistic and anthropological studies among this tribe and its neighbors; and it is to his close studies that we are indebted for the discovery that the Chukchee, the Koryak, and the Kamchadal are of the same linguistic stock. For the solution of the problem of the Jesup Expedition, the close investigation of the Chukchee is of the highest value.

The Chukchee belong to that mysterious group of North Asiatic tribes (including the Gilyak, Yukaghir, Cott, Yenisei Ostiak, and Aino) which have been called paleoasiatic by L. Schrenck, and whose enigmatic trait is the complete isolation of their languages among themselves as well as from the great linguistic stocks of Asia. The isolated character of the Chukchee, moreover, as is shown by Mr Bogoras through his extensive measurements (of about two hundred persons) and observations, is not limited to their language. Like the Aino, the Chukchee are enigmatic from an anthropological point of view. Though having amalgamated for many centuries with the Mongolian tribes, they present features strikingly different from the Mongolian type.

"Their eyes are straight, and frequently as large as those of Caucasians, and the *plica* occurs but rarely among them. Their hair is often wavy or even curly. . . . Fifteen percent of the Chukchee of the Pacific coast have dark-brown or even light-brown hair, and beards are more frequently seen among them than among the Lamut or the Yakut."

Their folklore, which has little in common even with that of the Koryak—their immediate neighbors and a closely related tribe—affords additional significant testimony as to their isolated position.

To this enigmatic people Mr Bogoras is to devote four large volumes, treating of their material culture, religion, mythology, and social organization, besides their linguistics, which forms a separate series. The volume now before us takes up the material culture only (trade, reindeer and dog breeding, hunting, fishing, war, habitation, food, manufactures, clothing, games, etc.), giving an exhaustive and highly scientific treatment of these topics.

The rule of modern ethnology—to describe every ethnographical fact or object with the minute objectivity of the naturalist, not neglecting even the smallest detail, but considering each as important—has been observed by the author in the strictest manner. At the same time he has been able to give to his objective descriptions an animated and life-like setting by numerous comparisons and enlivening details which reflect views of the Chukchee themselves. These he was able to present, owing to his intimate acquaintance with the language and the habits of thought of the tribe described, as well as owing to his comprehensive understanding of the general problems of ethnology. We must await the continuation of this work before drawing all the interesting inferences suggested by the present volume; but it already presents, besides an exhaustive picture of the material life of the tribe described, a great store of facts highly suggestive for a comparison with similar cultures of other primitive tribes, as well as for general ethnological conclusions.

From the first point of view, the chapters devoted to reindeer breeding and driving, the most characteristic feature of the arctic regions of northern Europe and Siberia, are of great interest. As far as we know, this is the first attempt at so detailed a description of reindeer-breeding, and it were well if it were followed by similar descriptions of the peculiar form of breeding among other arctic tribes. The absence, or at least the fragmentary character, of such information, is as yet the main obstacle to a solution of the question as to the origin and gradual spread of the domestication of the reindeer. How important such exhaustive inquiries are, can be seen by the difficulties experienced by Mr Bogoras himself in discussing the question.

The vast body of data brought forward by the author, including traditions and survivals in modern life, suggest that, among the Chukchee, dog-breeding preceded reindeer-breeding, the latter being probably borrowed from the Tungus, the reindeer people *par excellence*; but, strangely enough, the reindeer-race of the Chukchee, as it seems to Mr Bogoras, is quite different from that of the Lamut, the one of all the Tungus tribes nearest allied to the Chukchee. However, this question is still an open one, because, in the present state of our information about racial differences of the reindeer among all the arctic tribes of Asia, it is impossible to decide whether the physical differences are due to original racial differences or to mere differences in the methods of breeding or using the animals. For instance, the original, and even now the most usual, form of reindeer locomotion among the Tungus tribes was by riding with the saddle fastened on the neck; the Chukchee drive on sledges. For so slender an animal, and one with so little endurance as the reindeer, such different forms of treatment are factors that, in the reviewer's opinion, are capable of producing, in the long-run, physical differences that can easily appear as differences of race. Moreover, as far as the present writer's experience goes, the Tungus at the present time continue to increase their herds by capturing wild animals and taming them; but it is not so with the Chukchee, and this is not an unimportant cause for producing physical differences independent of original descent. As it is, the fund of information about the Chukchee manner of reindeer-breeding is a valuable contribution to this question.

Dog-breeding is treated by Mr Bogoras on a still larger scale. Close investigation and comparison of the methods of dog breeding and driving among the different peoples of Siberia have given the author an opportunity not only of making an analysis of dog-driving instructive in itself, but also of deducing interesting inferences as to the great cultural influences in early times among the most distant tribes of the North Pacific. The profusion of minute details presented by the author in this chapter, although perhaps a little tiresome for the lay reader, are of great value to the ethnologist. Everywhere we find old methods preserved among tribes that for centuries have lost all communication (compare the sledges of the Chukchee and Kamchadal), and instructive survivals that suggest ideas of relationship between tribes separated by many thousands of miles, and seemingly without any communication (compare, for instance, the custom of the Chukchee of putting the corpse, at a funeral, in a riding position, astride, and the usual manner of riding of the Gilyak).

With the same acuteness of observation and detail as to minutiae,

the author treats the other departments of material culture, making his work a storehouse of facts highly suggestive for comparison and deduction, to which the last volume of the publication of the Expedition, entitled "Summary and Final Results," will be devoted.

Of peculiar interest to the ethnologist are the chapters devoted to ornament, decorations, hair-dressing, and tattooing. Without any attempt at theorizing, the author simply presents facts, and the facts show that all these phenomena are of religious origin. He says: "The tonsure and fringe are resorted to whenever it is thought necessary, for superstitious reasons, to change one's appearance; for instance, for protecting one's self from the spirits of contagious diseases, or by a murderer to conceal his identity from the revengeful soul of his victim" (page 253).

"Childless women tattoo on both cheeks two lines, etc., and this is considered as one of the charms against sterility. . . . Tattoo-marks on men are intended as charms against spirits" (pages 254, 256).

"Chukchee men and women embellish their persons with various adornments of rudest fashion, most of which are regarded as protecting charms or amulets. Most prominent among these are necklaces. Some of those who have been baptized add to them a brass crucifix. . . . Middle-aged men often wear a kind of head-band. It is made of a narrow strip of leather adorned at intervals with a few large beads. These ornaments are also amulets. In olden times the attachments consisted of small blocks of wood representing protecting spirits, called 'wooden manikins.'¹ Similar manikins are also on the breast-bands of the women. . . . Many men wear also ear-ornaments, generally by order of the shamans. . . . Single beads on long leather strings are sewed to the clothes, serving at the same time both as charm and as ornament."

The ornamental designs represent also, as far as could be learned from the natives, figures of religious origin, as the sun, stars, mountains, rivers, and so on; and the same designs are to be found tattooed on the body.

Attention should be called to the two introductory chapters, containing a discussion of the general characteristics of the tribe; their habitat, climate, statistics, anthropological peculiarities, and lastly some considerations of former migrations, drawn from linguistic and folkloristic data, all of which lead to the curious conclusion of a southern origin of the Chukchee. One tradition, that about the boa-constrictor, deserves particular attention, as all kinds of snakes are wholly absent from the modern

¹ "See p. 258. This is a remarkable fact, because wooden manikins are very common all over northern Asia. See my paper on the Inau, in the *Transactions of the Russian Anthropol. Soc.*, 1905."

habitat of the Chukchee. Strange to say, a similar tradition was found by the present writer among the Orochee, thousands of miles distant from the Chukchee, on the coast of the Tatar strait.

The volume is richly illustrated with maps, numerous text illustrations, and plates, all bearing on and elucidating the minute descriptions of the text.

Before closing I will take the liberty of correcting a slight error due to misinterpretation of one of Schrenck's plates. In the chapter on dog-breeding, the author gives a design of a Chukchee dog-harness,¹ a so-called one-band "oblique" harness, saying that "this form of harness was introduced from the south," and adding that "it is in use among the Amur tribes, as may be seen from the description and drawings by Schrenck (II, plate xxvi, figs. 3, 4, 5)." As a matter of fact the regular dog-harness of the Amur tribes, that of the Gilyak, is quite different, its peculiar feature being the absence of the back-band, the dogs pulling by the neck. This is clearly seen from the description in the text, as well as in Schrenck's plate (figs. 2, 3) quoted by the author. He has evidently been misled by figs. 4 and 5. The upper band, which he took for a back-band, really serves for holding a head-decoration for the dog, used on solemn occasions.

Speaking of the senses of the Chukchee, the author says that "taboo against bringing into the sleeping-room any objects connected with the hearths and households of other families is founded chiefly upon their unfamiliar odor," referring to a case of a woman having fallen sick when seeing an old Chukchee wooden case brought by the author from another place. She declared that "an unfamiliar odor given off by the case made her feel giddy and sick" (page 39). I would not try to explain the individual case cited by the author, but I think that taboos connected with the family or clan fires and hearths need not be explained in such an unusual way. It would be more rational to suppose that the "sickness" of the woman in the alleged case was but a nervous fit associated with the fear of violating a taboo, and that it also was an effect of the taboo, not its cause. Indeed, we know many cases where men have suddenly died after having violated a taboo.

L. STERNBERG.

Conferencias del Museo Nacional. Sección de Etnología. Núm. 1. Los Popolocas. Por el PROFESOR DR N. LEÓN. México: Imprenta de Museo Nacional. 1905. 8°, 28 pp.

This lecture, delivered at the Mexican National Museum by Dr León, résumés part of the information obtained by him during his visit among

¹ See page 108, fig. 25, a.

the Popolocás in 1904-'05 (the detailed monograph will appear in the *Annals of the Museum*). After a historical introduction and some notice of the confusion concerning the use and interpretation of the term *popoloca*, which Brinton once proposed to bar from the ethnic vocabulary, the author sketches briefly the ethnology of this linguistic stock, whose pre-columbian habitat was the southern part of the Tlaxcaltecan territory. To-day the area of the Popoloca tongue embraces Azingo and Mezontla in the state of Puebla, and several places in Oaxaca. In Guerrero the Popolocás are almost extinct, and such of them as are said to exist in Vera Cruz speak Mixe. The *Pupulucas* of Guatemala are of Cakchiquel lineage, and those of Nicaragua of Lenca stock: with both of these the Mexican *Popolocás* have been wrongly affined by various writers. Remnants of ancient idolatry flourish among them and witchcraft is very prevalent. Indeed, the Catholic priest is to them "no more than a wizard endowed with a certain power, less, however, than that of their own." Endogamy is practised and the religious rites of the Catholic church are added to by many old heathen ceremonies. Snakes are much venerated. The influence of woman in society is great, and her word and counsel control all actions. The vocabulary of some 2,000 words obtained by Dr León enabled him, by comparison with Mixtec and Chuchona, to prove the relationship of these tongues. The physical characters of these three peoples point also to identity of race. The so-called "Mixtec eye" (as the author proposes to term a phenomenon which is "neither the 'Mongolian eye' nor the teratological epicanthus") occurs in all individuals of pure blood among the Popolocás, Mixtecs, and Chuchones. The archeological remains in the Popoloca country corroborate these conclusions: "The Popolocás, Chuchones, and Mixtecs belong to the same ethnic family."

ALEXANDER F. CHAMBERLAIN.

La Colección Boggiani de Tipos indígenas de Sudamérica Central. Publicada por ROBERT LEHMANN-NITSCHÉ, Dr phil. et med. Buenos Aires, 1904. Casa Editora de R. Rosauer, Rivadavia 571. *Suplemento.* Buenos Aires: 1904.

As the accompanying brief catalogue in Spanish and German explains, this collection of 100 photographs (the Supplement adds 14 more) of men, women, and children, of various Indian tribes of central South America, is the posthumous work of Guido Boggiani, the ethnologist, who fell a victim to some of the savages of the Gran Chaco a year or two ago. The reproductions, excellently done, are on cards, rather larger than postals, with titles in Spanish only; the catalogue gives the

German translations, however. The tribes represented are: Sanapaná, 1; Angaité, 3; Lengua, 5; belonging to the Maskoi stock. Caduveo (Mbayá), 15; Toba, 1; Payagua, 6; of the Guaicurú stock. Bororó, 4. Chamacoco, 79. This makes altogether a most valuable album for the ethnologist in easily usable form covering considerable variety of aboriginal life and activity, and is a welcome addition to the eye-data of distant Indian tribes. Among the most interesting pictures are a Sanapaná Indian with tame parrots, No. 1; a Mbayá with bow and arrow, No. 13; Indian holding a snake, Nos. 42-43; Indian with labret, No. 50; Indian woman carrying infant in net, Nos. 87 and 89; a group of children, Nos. 35A and 35B. There are a number of fine pictures of old men. Tattooing is well represented in Nos. 16-19, 21-24, 77-81, 85, 86, 93, 94; and those who argue for a connection between these South American Indians and the Polynesians may find some consolation in the resemblances suggested by the tattooed aborigines of the Chaco in comparison with Maori chiefs, etc. Dr Lehmann-Nitsche has both performed a pious deed and benefited anthropology by editing this collection.

ALEXANDER F. CHAMBERLAIN.

Zeitschrift für Demographie und Statistik der Juden. Berlin. 4°.

Under this title a new monthly, devoted to the anthropology and statistics of the Jews, made its appearance at the commencement of the present year. It is edited by Dr Arthur Ruppín, under the auspices of the Bureau for Statistics of the Jews in Berlin. Within the compass of sixteen small quarto pages, of which each number is composed, a large amount of readable matter and interesting information is compressed, and, although it has to do with the anthropological, sociological, and economic features of a special people, the tone and tenor of the journal are entirely objective, *sine ira et studio*, neither polemical nor apologetic.

The table of contents of the first two numbers will convey an idea of the richness and variety of the subject-matter. Thus, the January number contains (1) under the heading "Abhandlungen": Contribution to the Physical Anthropology of the Jews, by Prof. F. v. Luschán; Marriages between Jews and Christians in Copenhagen during 1880-1903, by Julius Salomon; Criminality among Christians and Jews in Germany during 1899-1902, by Dr A. Ruppín. (2) Under the heading "Statistisches Archiv": Changes in the Local Distribution of the Jews in Germany since 1871; The Jewish Population of Württemberg; Mixed Marriages in Hamburg; Education in Prussia; The Number of Foreigners in the Kingdom of Saxony; Statistics of Vocations in Austria on the

Basis of the Census of 1900; Mixed Marriages in Buda-Pesth; The Jews in Italy according to the Census of 1901; Immigration into the United States; The Jews in British India. In the February issue appear: (1) The Conception of the Jews of their being a Chosen People and its Biological Significance, by Curt Michaelis; The Pan-Jewish Labor Union in Russia, Poland, and Lithuania, by Esther Schneerson; (2) Age Statistics of Christians and Jews in Hamburg; Criminality among the Jews in the Netherlands; Cities in Germany with more than 1,000 Jewish Inhabitants; Results of the Census of 1900 in Serbia; The Jews of the Oasis Mzab; The Vernacular of the Jews in Austria; Census of 1901 in New South Wales; The Jewish Colonies in India.

I. M. CASANOWICZ.

Romanische Meistererzähler, unter Mitwirkung . . . Herausgegeben von DR FRIEDRICH S. KRAUSS. I Band. *Die Hundert alten Erzählungen. Deutsch von* JAKOB ULRICH. Leipzig: Deutsche Verlagsactiengesellschaft, 1905. 8°, i-l, 1-141 pp.

This volume by Professor Ulrich, of Zürich, is the first of a proposed series of "Romanic Master Raconteurs," put into German under the editorial supervision of Dr Krauss of Vienna, aided by some twenty collaborators from among the leading literary critics of the principal German university towns. It is dedicated to Ancona, of "Cento Novelle Antiche," from which it takes its name. The series, to consist of a number of small volumes to appear at the rate of six or eight per year, is intended to embody all that has endured as worth preserving of the countless short tales, midway between folklore and epic, that passed current among the Romanic nations, particularly France and Italy, in the Medieval period down to about the close of the XIIIth century. Many of these were of Hindu, Arab, or other Oriental origin, brought back by returning Crusaders and adapted to European ideas by knights and minnesingers. They are of all sorts, from Bible parables and miracle stories to the originals on which our best-known humorists have built their reputations. In construction they are all built on the same model — short, simple, and direct, as was necessary to appeal to illiterate auditors, who wished to be amused or lightly instructed, without too long a strain on their intellects. They are the prose counterpart of the ancient ballad, and the delight which the work affords to one brought up in the European tradition is akin to that with which in mature age we turn over the pages of the old fourth reader of our childhood. Each volume contains a critical introduction by the translator, with an appendix of literary and historical notes for each story.

JAMES MOONEY.

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

André Lefèvre. (R. de l'Éc. d'Anthr. de Paris, 1904, xiv, 383-96, portrait.) Memorial addresses by MM. D'Echerac, Thulié, Deniker, Delbet, Hervé, on the life, character, and works of the distinguished French anthropologist. His chief publications were on Religion and mythologies, Man through the ages, Myths and religions, Races and languages, Slavs and Teutons, Ancient Italy, etc. By his will he left to the École d'Anthropologie "my head—face, cranium and brain,—and more, if useful."

Balfour (H.) The relationship of museums to the study of anthropology. (J. Anth. Inst., Lond., 1904, xxxiv, 10-20.) Argues for individualization, variety, and cooperation. Museums must not be mere scrap-heaps of "curios", a type now fast disappearing. Great Britain needs a National Museum and "Folk-Museum," and special museums to illustrate special subjects (environment, etc.)

Banchi (A.) Intorno ai presunti ritratti di Andrea de Sarto. (A. p. l'Antrop., Firenze, 1904, xxxiv, 301-13, pl.) Discusses from an anatomical point of view the six portraits of Andrea del Sarto, alleged to be in existence. From his physiognomic analysis Dr B. concludes that the portraits in question represent at least three different individuals; which is Andrea is still doubtful.

Beddoe (J.) The somatology of eight hundred boys in training for the Royal Navy. (J. Anth. Inst., Lond., 1904, xxxiv, 92-99.) Details of color observations of 800 boys 16-17 years of age, and head-measurements of 200 compared with 86 reformatory school and 122 other boys of like ages. The navy boys

have larger heads and are darker-haired than the reformatory and industrial school boys. London-born boys are oftener darker-eyed, darker-haired, and dolichocephalic.

Binet (A.) Questions de technique céphalométrique d'après M. Bertillon. (Année Psychol., Paris, 1903 [1904], x, 139-40.) From measurement of 104 subjects it was found that in 38 there was no difference in length of head when measured from the glabella and from the root of the nose; in 29 the first diameter was less, in 37 greater. The individual differences are greater with the greater excess of the glabellar measurement.

Bréal (M.) André Lefèvre. (R. de l'Éc. d'Anthr. de Paris, 1905, xv, 1-2.) Brief appreciation of life and works. Among other literary efforts, Lefèvre, the anthropologist, published two volumes of poems pantheistic in sentiment and classic in style and form. He was also the author of a translation of Lucretius.

Delvaile (J.) La vie sociale. (R. Philos., Paris, 1904, LVIII, 583-601.) The author does not accept the theory that social phenomena are a mere prolongation of biological phenomena. Many comparisons of this order are superficial and exterior. Human changes are due to individual minds, but science alone cannot create civilization. Moral ideas, individual energies escaping scientific formulae are also necessary.

Duff (R. A.) Proverbial morality. (Int. J. Ethics, Phila., 1904, xiv, 172-9.) From a consideration of proverbs or maxims concerning human conduct, etc., D. concludes that "if the ideal of con-

duct which most popular maxims present is not of very high type, it is at least a many-sided and self-corrective one." For most of the popular maxims another one of opposite import exists. The antagonisms, uncertainties, and contradictions of life are well expressed.

Giuffrida-Ruggeri (V.) Le ossificazioni di spazi suturali e i parietali divisi. (Mon. Zool. Ital., Firenze, 1904, xv, 172-8, 4 figs.) Treats of ossifications of sutural spaces in relation to divided parietals. G. holds that inter-central membranous spaces can independently ossify. Divided parietals may be real and pseudo, one part of the so-called "divided parietal" being really an independent ossification in the sutural space.

Il canale infrastomale di Gruber e altre particolarità morfologiche nella regione temporale, canale interstiziale e processo ensiforme. (Ibid., 298-303, 1 fig.) Describes the occurrence of Gruber's canal in two European (Roman Apulian) male skulls out of 1,300 examined. It did not occur once in 400 Papuan skulls, and the only other example was in an infantile Peruvian skull. The occurrence of the ensiform process is noted in four Peruvian skulls. In the Italian skulls when it occurs (ca. 1 : 350) it is not so typical.

Gli pseudo-parietali tripartiti del Frassetto. (Ibid., 1905, xvi, 64-70.) Critique of article by Frassetto in same periodical for Dec., 1904. G. considers that the cases of Zoja and Fusari, Ranke, and the Egyptian skull of the Paris Museum cited by F., can be interpreted otherwise than as divided parietals, and attributes to him "an extraordinary facility for seeing divided parietals." The theory of the ossification of the periparietal sutural spaces is advocated by G.

L'indice tibio-femorale e l'indice radio-omerale (A. di Anat. e di Embr., Firenze, 1904, iii, 546-65.) The conclusions of this interesting paper are that, contrary to the opinion of Taruffi, macrosomia (giantism) does not alter the respective proportions of femur and tibia; nor does microsomia (pygmyism) alter them according to any fixed law. The radio-humeral index is higher in male, and not in females (as Calori maintained); the greater development of the humerus in giants, relatively to the radius, is not proved. Taruffi's "law", that low stature is accompanied

by an augmentation of radial length, is disproved. The great majority of the lower races have high anti-brachial indices, independent of stature.

Un cranio acrocefalico. (A. d. Soc. Rom. di Antrop., 1905, xi, extr., pp. 1-17, 2 figs.) Describes with measurements an acrocephalic skull belonging to an individual ca. 8 years of age, and discusses the general subject (views of Topinard and Hanotte, — for the latter acrocephaly and oxycephaly are synonymous). The precocious closure of a great part of the coronal and of the anterior part of the sagittal suture is the cause of the excessive reaction causing the peculiar form of the skull, its prognathism, etc. The capacity is 1,330 ccm., the cephalic index 96.7. The parietal bosses are asymmetrical.

Partecipazione della donna al progresso. (Riv. Pop., Napoli, 1904, estr., 10 pp.) Discusses rôle of women in human progress in ancient and modern times. In the Homeric age and corresponding epochs elsewhere woman represented a progressive element; man was priest and warrior and conservative. Woman's conservatism to-day is retrogression; she has been mechanized by religion, etc., and civilization has lost infinitely much. Woman must be allowed again to infuse into human culture her grace and gentleness, by acquiring a clearer intellect and a deeper sincerity. Woman ceases to study before she is twenty; what would man do if he were in like status? Matrimony and child-birth are, after all, episodes, not all of life.

de la Grasserie (R.) De l'expression de l'idée de la sexualité dans le langage. (R. Philos., Paris, 1904, LVIII, 225-46.) Author holds that sexual gender is the slowest and latest of several strata to appear. Gender appeared long before sexuality was recognized in this category; biotic and logistic preceded sexual gender.

Greenwood (M.) A first study of the weight, variability, and correlation of the human viscera, with special reference to the healthy and diseased heart. (Biometrika, Camb., 1904, iii, 63-83.) Gives statistics of weight, variability, correlation, etc., of heart, liver, spleen, and kidneys, based on 1,382 cases from general hospital population and from 358 to 413 cases of healthy hearts. Special

diseases and general want of health both tend to increase variability and reduce correlation. Heart-kidney correlation is highest. In health heart-weight increases with age, but the healthy heart is much smaller than the heart in disease. The weight of the average healthy heart has been underestimated.

de Helguero (F.) Determinazione della grandezza e della forma degli organismi in somatometria. (*A. d. Soc. Rom. di Antrop.*, 1905, XI, 17-26.) Emphasizes importance and distinction of size (mass) and form of organisms. Stature seems to be the best index of size, all organisms being reduced to a common stature of 1000 units, and the somatic coefficient being determined. The value of the relation between brain-weight and body-weight is somewhat doubtful. In woman the brain-weight is, relative to the body-mass, greater than in man. Indices are not generally independent of the absolute masses of organism.

Hellmich (H.) Der Götze'sche Bösungsmesser. (*Z. f. Ethn.*, Berlin, 1904, XXXVI, 885-90, 3 fgs.) Gives results of practical experience with the Götze scarp-measure. See *American Anthropologist*, 1904, N. S., VI, 554.

Hervé (G.) Le journal de voyage de Relian. (*R. d. l'Éc. d'Anthr. de Paris*, 1904, XIV, 415-22.) Gives extracts on maritime superstitions (use of powdered shark brain as medicine), the Hottentots ("their language resembles more the cry of a turkey than the voice of man"), manners of the Europeans at Batavia in Java (they keep slave mistresses, selling them when tired), the Chinese in Java (a "Chinese question" existed then as now), poisoning by female slaves abandoned by their European paramours, the Chinese of Canton (industries, religion, medicine, etc.), the orangutang (called "a wild man"), etc. from a Ms. of the 18th century (1754) by a ship's surgeon named Relian, of Geneva.

ten Kate (H.) Die blauen Geburtsflecke. (*Globus*, Brunschwig, 1905, LXXXVII, 53-8.) Discusses the occurrence of "blue birth-marks" (Mongolian spots) in Asia, particularly Japan and China, Indonesia (they are not unknown among the Papuans), America (Mayas, Brazilian Indians, etc.), whites of Europe, etc. Dr. ten Kate concludes that the evidence in hand indicates that these "blue spots" are an isomorphism (in

the sense of Lehmann-Nitsche), and "occur with different intensity and frequency in all human races." Folk-lore in Japan attributes them to colts during pregnancy; in parts of China to "the slap of a fairy," the mark of the king of the lower world, etc.; in Java to the "lick" of dwarf-like spirits, the lick of a snake, etc.

Lamieri (Vittoria) Folk-lore et pedagogia. (*R. di Psicol. Appl.*, Bologna, 1905, I, 26-31.) Author describes a game of proverbs introduced by her into the school for the feeble-minded at Bologna and the good results therefrom.

Lapicque (L.) Sur l'emploi d'une toise horizontale en campagne; expérience faite dans le Sud de l'Inde. (*Bull. Soc. d'Anthr. de Paris*, 1904, v^e s., V, 337-40.) Describes a measure for taking the length (height) lying, etc., of human subjects, used by the author in southern India. The principle of the apparatus was suggested by Papillault. L. finds the difference between the height standing and the length lying to be about 2 cm.

Lejeune (C.) La communion. (*Ibid.*, 404-11.) Discusses various theories (Lefèvre, Reinach, Maury) concerning the origin of communion as practised by the Christian churches, etc. For L. the Catholic ceremony is a survival from the cannibalism of remote ages—*anthropophagy*. The author looks upon Catholicism as the greatest danger of the future.

von Lendenfeld (R.) Bemerkungen über die Bedeutung der Rückbildung für die Anpassung. (*A. f. Rassen- u. Ges.-Biol.*, Berlin, 1904, I, 793-7.) Discusses the significance of regression for adaptation. Regression of unused parts is not retrogression but progression, for it increases the regression of the whole organism. To get rid of the superfluous is an advantage, — to accomplish the most, with the least expenditure. Negative variation leads to the regression of what is unused, superfluous, unproductive.

MacDougall (R.) The significance of the human hand in the evolution of mind. (*Amer. J. Psych.*, Worcester, 1905, XVI, 232-42.) General discussion. M. holds that there is "an intimate connection between the features of the hand and the soul of man," that its individ-

ality is "no less characteristic than that of the human face," and that "in its features and capabilities is symbolized all that man has achieved in his long upward march from the primeval ooze."

Mahoudeau (P. G.) Poudre de crâne. (R. de l'Éc. d'Anthr. de Paris, 1904, XIV, 332.) Note on a recipe of powder made from the skull of one who has died a violent death, given in a botanical and pharmaceutical dictionary published in Paris in 1716.

Mann (R.) Facial expression. (Intern. Quart., N. Y., 1905, XI, 148-62.) General discussion. Education and inheritance constantly increase the differences between adults. The infantile and adult faces among civilized peoples are farther apart than among savages. Aristocratic and socially-selected classes have greater social expressiveness. The contrasts between the faces of men and women are greater among civilized than among savage peoples.

Manouvrier (L.) L'individualité de l'anthropologie. (R. de l'Éc. d'Anthr. de Paris, 1904, XIV, 397-410.) Address at St Louis Exposition, September 23, 1904. General discussion of the individualization of anthropology as a distinct science. Anthropology is concerned with anatomical, physiological, psychological, and sociological differences, and the connection of these with one another is not to be forgotten. The practical organization of the science is of great importance. The theoretic recognition of its individuality in the minds of all anthropologists dominates all other questions.

Mantegazza (P.) Primee linee di psicologia positiva. (A. p. l' Anthr., Firenze, 1904, XXXIV, 143-82, 193-241.) Sections XXV-XXXII, treating of inferior intelligences, psychic processes in human societies, pathology of thought, higher forms of human endowment, memory, imagination and fancy, speech and gesture in races of man, ethical character of human thought (every thought of weak brains is low), etc. Memory increases with hierarchy of races. In biology and psychology $100 = 100$ is of more importance than $2 = 2$. *Invita Minerva* applies to muscular effort.

Minakov (P. A.) O posôdênii volos. (Russk. Antrop. Zhurn., Moskva, 1903,

No. 2, 1-12, 2 pl.) Treats of the growing gray of the hair. M. opposes Metchnikov's *pigmentophagi* theory—the *pigmentophagi* are really pigmentophors of Riehl, Kölliker, etc.

de Mortillet (A.) Les tumulus. (R. de l'Éc. d'Anthr. de Paris, 1904, XIV, 247-62, 6 figs.) Treats of names, number (exceeds 3000 in France—infinitely more have been destroyed without record); classification (true tumuli or *tombelles*; pseudo-tumuli: *mottes*, *buttes*, etc.); *buttes* due to mineral exploitation; *murgers* or more or less modern funeral cairns, also called *pierriers*; *tombelles* or sepulchral tumuli of earth (barrows); neolithic tumuli, etc. De M. holds that, except those buried directly in the ground, all dolmens were covered by tumuli.

Mott (L. F.) The Round Table. (Publ. Mod. Lang. Assoc. Amer., 1905, XX, 231-64.) Treats chiefly of the Arthurian "Round Table" as a courtly festival celebrated on some great feast day. Author seeks to show that "all the known features of Arthur's Round Table are found in primitive agricultural celebrations," the basis being Celtic folk-custom.

Nicollé (C.) Reproduction expérimentale de la lèpre chez le singe. (C.-R. Acad. d. Sci., Paris, 1905, CXI, 539-42.) Describes the inoculation of a female *Macacus sinensis* with leprosy from a human being. Other related experiments are in progress at the Pasteur Institute.

Pearl (R.) A notable advance in the theory of correlation. (Science, N. Y., 1905, N. S., XXI, 32-5.) Calls attention to the importance of Pearson's recent memoir *On the theory of contingency and its relation to association and normal correlation* (London, 1904, pp. 1-35) in widening the range of problems and material which can be effectively handled by biometric methods.

Pièstremont (C. A.) Les races chevalines dans les temps et dans l'espace. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 412-36.) Discussion and critique of Zaborowski's recent article *Le cheval domestique en Europe et les Protaryens* (C.-R. Ass. franç. A. d. Sci., 1903, 845-62.) Z. is in error in applying the term large (*grand*) to the Asiatic race of Sanson and to the Assyrian

horses and those of the Parthenon. Nor were the horses bestridden by Cesar's Teutons so small as Z. thinks. There is no evidence that any race of horses has grown larger before the 19th century (at this epoch, improvements of the soil and climate and domestication with better and more abundant food have combined to improve the breed). P. thinks that the peninsular Arabs of the time of Mahomet already possessed what might be called a breed of horses.

Pittaluga (Rosetta) Su un caso di ossa wormiane etmo-lacrimali e del palato duro. (A. d. Soc. Rom. di Antrop., 1905, XI, 52-5, 2 figs.) Treats of two small etmo-lacrimal wormian bones and two large wormian bones in the hard palate of a female skull (from Siena) belonging to a person not more than 15 years of age. Facial asymmetry and dental anomalies were also present. Rachitic influence is suggested.

Preuss (T.) Der Ursprung der Religion und Kunst. I. Der Zauber in Körperöffnungen. (Globus, Brunschwig, 1904, LXXXVI, 321-7, 355-63, 375-9, 388-92, 10 figs.) Treats of the "magic" of the bodily openings in connection with the origin of religion and art: Magic song of animals (e. g., grasshopper as bringer of heat,—animals thus become deities), magic of defecation (among Aztecs, etc., excreta and urine in rites and ceremonies), magic of cohabitation (Peruvian and Mexican ceremonies for the "renewing" of nature, sexual orgies of gods and men), magic of breath (breathing into mouth of woman as necessary as *infusio virginis* for completion of child), magic of animal dances (men imitate animals and increase power)—these are matters of magic, not mere representations of scenes and ideas (this occurs after the dances have become secular, or at a higher stage of development). The conception of a magic power or *orenda* in the whole of man was preceded by the idea of the "magic" of separate portions of the body and of fixed acts. Personal magic began with the belief that out of the openings of the body came magic powers and magic stuff—out of the nose breath; out of the mouth breath, voice, spittle, and other excreta out of the anus, penis, and genital organs. The magic of man is the origin of religion and of art.

R. (J.) Ein Oberkiefer mit überzähligen Zähnen. (Corr.-Bl. d. deutschen Ges. f. Anthr., München, 1905, XXXV, 57, 1 fig.) The supernumerary teeth grew after the wisdom teeth in the twentieth year.

Rhumbler (L.) Klaatsch's und Schoeten-sacks Theorien über Abstammung und Urheimat des Menschengeschlechts. (A. f. Rassen- u. Ges.-Biol., Berlin, 1904, 798-808.) Critical discussion of Klaatsch's theory of the separation of the human stock branch and the anthropoid-stock branch at the period of the mammal, or the *primatoid*, pre-simian ancestry of man, and the argument of Schoetensack that Australia was the scene of the origin of mankind,—here the natural environment was especially favorable to the development of such a being. R. considers both hypotheses untenable. The discovery of fossil human remains, etc., in Australia must occur before Schoetensack's theory can have a status.

Salmon (P.) Influence du sexe sur le dessin. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 332-7.) Dr S. holds that drawing is homosexual and of the corresponding sex,—it is easier for a girl to draw a woman, for a boy to draw a man. The personal equation is large even in famous artists. There are "natural drawings" and "influenced drawings." The esthetic sense hardly appears, even with education, before the thirteenth year. There exists in man an innate tendency to draw. Drawing is precocious in the race and in the individual.

Shaler (N. S.) Earth and man: an economic forecast. (Intern. Quart., N. Y., 1905, XI, 227-39.) According to S., "the *genus homo* is one of those exceptional groups, of which there are many, which have a peculiar capacity for withstanding those influences which bring about the death of organic groups." Man's intellectual quality exempts him from calamities and accidents of extinction and "he is not to pass from the earth in all foreseeable time, but is to master it and himself for ages of far-reaching endeavor."

Slaughter (J. W.) Music and religion: a psychological rivalry. (Intern. J. Ethics, Phila., 1905, XV, 352-61.) According to the author, "music and religion are rivals for the same claims in

human nature, and so long as music occupies its present place in the general consciousness, we can look for no widespread revival in religion."

Stoops (J. D.) Three stages in individual development. (*Ibid.*, 1904, xiv, 81-90.) Author seeks to show that in the individual, and correspondingly also in society, there exist three developmental stages: organization; negative, exclusive self-consciousness; reorganization between growing sense of self and deeper life.

Strats (C. H.) Das Kind als Erzieher. (*Vrtljhrs. f. Körp. Erzieh.*, Wien, 1905, i, 17-22, 1 fig.) We should not only educate children but we ought also to let them educate us—especially in the light of *mens sana in corpore sano*. The child must not be deprived of its natural and healthy instinct for nakedness and its expression.

Strauch (Hr.) Ueber eine Methode farbiger Konservierung frischer Leichenteile für die Zwecke der somatischen Anthropologie. (*Z. f. Ethn.*, Berlin, 1904, xxxvi, 671-5.) Gives author's experience with the Littlejohn wet method of preserving fresh parts of the body, which he highly approves. A woman's head has been preserved by this method since Nov., 1903. The realism of the specimens is remarkable.

Stückelberg (E. A.) Ueber Pergamentbilder. (*Schwz. A. f. Volksw.*, Zürich, 1905, viii, 1-15, 4 pl., 5 fig.) Treats of the so-called "parchment pictures," of which the author has seen some 10,000 (at the Second International Congress of the History of Religions at Bâle), or memorial pictures for pilgrims and devotees, of saints, etc. The pictures themselves, their origin, use, etc., are discussed, also the inscriptions on them. Their flourishing period was the time of the barok and rococo style and they were made in monasteries, etc., as e. g., at Einsiedeln. These *heiligen* are still sometimes presented to children or put into coffins, or hung on chamber walls.

Symington (J.) John Gratton's craniometer and craniometric methods. (*J. Anat. and Phys.*, Lond., 1904, xxxviii, 259-74, 2 pl.) Describes, from G.'s article in the *Ulster Journal of Archeology* for 1853, an apparatus for tracing on paper the curves of skulls, the methods used, etc.

Tenchini (L.) Di un canale perforante arterioso (infra-parietale) nella volta cranica dell'uomo adulto. (*Mon. Zool. Ital.*, Firenze, 1904, xv, 101-10, 1 fig.) This phenomenon of arrest occurred three times in 430 skulls of criminals and in 120 normal skulls investigated by the author.

Terman (L. M.) A study in precocity and prematuration. (*Amer. J. of Psych.*, Worcester, 1905, xvi, 145-83.) Treats of infancy, education and prematuration, over-pressure, criminal and religious and sexual precocity, precocity and unbalance, nervousness, etc. There are race-precocity, individual precocity, and "prematuration" (the result of outside influences).

Tovo (C.) Le forme del cranio nello sviluppo fetale. (*A. d. Soc. Rom. di Antrop.*, 1905, xi, 27-44.) Gives results of examination by Sergi's method of 86 Piedmontese fetal skulls (second month 3, third 4, fourth 5, fifth 11, sixth 9, seventh 7, eighth 5, ninth 11, term 31). Of these skulls 37 were pentagonoid, 22 ellipsoid, 20 ovoid. Before the seventh month 96.9 % are ellipsoid-ovoid, after that period 74.5 % pentagonoid. Normally, therefore, the fetal skull assumes from the seventh month of intra-uterine life a pentagonal form; before this comes a distinct period with an ellipsoid-ovoid form. The pentagonal form in adult skull is probably a fetal residuum. Cephalic indices are given.

Volkov (Th.) Variations squelettiques du pied chez les primates et dans les races humaines. (*Bull. Soc. d'Anthr. de Paris*, 1903, v^e s., iv, 632-708; 1904, v, 1-50, 201-331, 57 figs., 172 tables.) Detailed and valuable monograph based on the study of some 200 human subjects (43 Amerinds), 57 anthropoids, monkeys, etc., and 24 other animals. The European foot is the result of the very slow and gradual transformation of the foot of a climbing ancestor, the transitory forms of which still occur in the flat foot of the fetus and of modern savages. The arch of the foot is the most essential anthropological character, and the index of curve, or relation between the height and the length of the foot, is an important datum. Very important also are the foot of the new-born and the so-called supernumerary bones. In the *Hylobates* and the

gorilla in part occur the beginnings of adaptation to the upright position and bipedal progression.

Vram (U. G.) *L'indice alveolare inferiore*. (A. d. Soc. Rom. di Antr., 1905, XI, 49-51.) Gives the results of measurements of the prognathism of the jaw in 34 Bolognese (males 17), 13 Fugians (males 8), and 6 Milanese skulls, according to the relation of the intergonial-alveolar line to the intergonial pogonon (Török). An index below 103 indicates a prognathic chin, above 103 a prognathic alveolus and a retreating chin. Here the relation of two linear measurements is substituted for the measurement of an angle.

— *Un quarto molare in un cranio di un Cercocebus*. (Ibid., 47-48, 1 fg.) Brief description of a fourth molar in the skull of a macaque from Sumatra, —very small, as was the fourth molar in a human skull recorded by V.

Waldeyer (H.) *Os tibiale externum* Pfitzner. (Z. f. Ethn., Berlin, 1904, XXXVI, 881-2.) Brief note on four cases of this variation, one on both sides.

Whitelaw (C. E.) The origin and development of the Highland dirk. (Trans. Glasgow Archeol. Soc., 1905, N. S., V, 32-42, 3 pl.) Author distinguishes four types, developed from the form of "the simple dagger knife in use over western Europe from the 14th to the 16th centuries inclusive." As a distinctive weapon the Highland dirk does not seem to exist earlier than the 17th century, although at that time the "universal type" of dagger knife was then in use. W. believes that "the existence of Celtic ornament on weapons of the 17th and 18th centuries was a revival rather than a survival."

Wilder (H. H.) Duplicate twins and double monsters. (Amer. J. Anat., N. Y., 1904, III, 387-472, 11 fgs., 2 pl.) Treats of multiple births and their relationship to composite monsters, intra-uterine relationships in twin gestations, triplets and other multiple births, duplicates among lower animals, relation of duplicate twins to double monsters, classified list of double monsters (diploplagi, autosite and parasite), origin of composite monsters (recent theories, etc.), configuration of the friction-skin (palms and soles) in twins and triplets, physical measurements of duplicate twins (four

sets). Good bibliography (pp. 465-472). Among the conclusions reached in this valuable monograph are these: Twins are either duplicate (invariably of same sex — "the result of the total separation of the first two blastomeres of a single egg") or fraternal (of same or different sex — "resulting from the simultaneous ripening and consequent fertilization of two separate eggs"). Duplicate twins usually "resemble each other to the point of confusion"; fraternal twins may or may not resemble each other. Symmetrical double monsters (diploplagi) are closely related to duplicate twins; unequal double monsters (autosite and parasite) are due to "the secondary fusion of two embryos." Twins show greater differences from each other in the soft than in the skeletal parts.

EUROPE

Abercrombie (J.) A method of arranging British bronze-age ceramics in chronological order. (Trans. Glasgow Archeol. Soc., 1905, N. S., V, 54-60.) Author argues that "the beaker is the oldest bronze-age type in Britain, and came from the continent." Paper appeared in full in *J. Anthr. Inst.*, London, 1903, XXXII, 373-97. See *American Anthropologist*, 1903, N. S., V, 560.

Adler (B.) Die deutsche Kolonie Riebensdorf im Gouvernement Woronesh. (Globus, Braunschwg., 1905, LXXXVII, 21-27, 37-44, 15 fgs., plan.) Interesting account of the German colony of Riebensdorf in the Government of Voronej (founded in the latter part of the 18th century by immigrants from Sulzfeld, near Heilbronn) and its people. The language is Swabian with a few Little Russian loan-words. The colony originally numbered 209 souls; the population in 1902 was 1,192, practically stationary since 1881. The people have retained their Protestantism, thrift, and industry. Agriculture and cattle-breeding are the bases of material culture. Government interference (law of 1871) gave the colony a blow from which it never recovered.

Ammon (O.) Die Bewohner der Halligen. (A. f. Rassen- u. Ges.-Biol., Berlin, 1904, I, 84-98.) Critical résumé and discussion of Waldenburg's recent work *Das iscephale blonde Rassenlement unter Halligfriesen und jüdischen Taubstummen* (Berlin, 1902, pp. 46).

W. attributed the frequent occurrence of isocephaly to hereditary taint in both cases. A. explains the condition of affairs in the Frisian islands by references to his theory of the emigration of the dolichocephals.

Anderson (L. F.) The Anglo-Saxon scop. (Univ. of Toronto Stud., Philol. Ser., 1903, 1, 1-45.) Author concludes that "professional singers existed among the Anglo-Saxons as well as among the other Germanic races of the 6th, 7th and 9th centuries." The scop was warrior, poet, sage, teacher, historian.

Bardon (L.) et Bouyssonie (J. et A.) Monographie de la grotte de Noailles, Corrèze. (R. de l'Éc. d'Anthr. de Paris, 1904, xiv, 283-94, 8 figs.) Describes the "Chez Serre" grotto near Noailles, condition and contents,—archaeological strata, flints, piercers and borers, nuclei and flakers, etc. The "new type" of borer was common here. The fauna and implements of the cave attach it to the Solutrean-Magdalenian epoch. There are analogies with Brassempouy and Sordes especially. One carving was found. The number of non-retouched flints was great.!

Bartels (P.) Ueber Schädel der Steinzeit und der frühen Bronzezeit aus der Umgegend von Wurms a. Rhein. (Z. f. Ethn., Berlin, 1904, xxxvi, 891-7, 2 figs.) Gives account of examination of some 50 skulls in the Paulusmuseum, from the stone age and the early bronze age in the neighborhood of Wurms. Two bronze-age types and two stone-age types are distinguished.

Baudouin (M.) Présentations des documents relatifs aux coutumes des Maratchens du pays de Mont, Vendée. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 390.) Notes on two series of photographs representing various phases of "maratchinage," a "maratchin" wedding, "maratchin" dances, etc. See *American Anthropologist*, 1905, N. S., VII, 140.

Borobro y Dias (P.) Les colonies scolaires ou colonies de vacances à Saragosse, Espagne. (Int. Arch. f. Schulhyg., Leipzig, 1905, 1, 101-4.) Gives anthropometric data, weight, height, chest-girth, strength of hand, etc., of 20 boys belonging to a "vacation colony" from Saragossa, aged 7-13 years.

Brecht (Dr.) Ueber die Eolithen von Biere. (Z. f. Ethn., Berlin, 1904, xxxvi, 750-2.) Brief notes in addition to Dr Hahne's account of the discovery of "eoliths" at Biere, Saxony. The original finder seems to have been August Rebe, a teacher.

Bruce (J.) Report and investigations upon the Langbank pile-dwelling. (Trans. Glasgow Archeol. Soc., 1905, N. S., v, 43-8, 4 pl.) Treats briefly position and construction, objects of shale (one showing human face), shell, stone, bone (a highly ornamented comb) and horn, bronze fibula, etc.

Bryce (T. H.) Report on animal bones from Langbank pile dwelling. (Ibid., 49-51, 2 pl.) Bones of oxen (chiefly), deer, pig, goat, sheep were found. The remains correspond with those found at other Scotch pile dwellings. The ox is the *Bos albifrons* or Celtic short-horn, the pre-Roman domestic species. One sheep presents characters not found in any existing variety.

— On certain points in Scottish ethnology. (Scott. Hist. Rev., Glasgow, 1905, II, 275-86 11 figs.) Treats of chambered cairns, their contents and human remains. Author holds that when the east of Scotland was occupied by an Eur-Asian (Ripley's "Alpine") people, the west was inhabited by an Iberian tribe whose customs and culture have certain characteristic features. The Eur-Asians brought with them the beaker, — the food vessel was apparently native. There took place "a degeneration *in situ* of the Iberian before the Eur-Asian type of custom and culture."

Brydall (R.) Notes of incised and sculptured stones at (1) Luss; (2) Inch Cailleach, Loch Lomond; and (3) at Glendaruel in Argyleshire. (Trans. Glasgow Archeol. Soc., 1905, N. S., v, 23-31, 7 pl.) Describes the stone effigy of St Kessog (?) at Luss found in a cairn, and a "hog-backed" stone and other relics from the churchyard; cross-stones from Inch Cailleach; and several carved stones from the churchyard of Kilmoran, district of Glendaruel.

— Inscribed mottoes, etc., on arms and armor. (Ibid., 1-22.) Gives numerous inscriptions from Scandinavian, Old English, French, Scotch, German, Spanish, and Oriental weapons, armor, powder-flasks, etc. Such inscriptions

consist of magic themes, weapon-names, sacred words, monograms and devices, patriotic sentiments, historical references, political mottoes and legends, famous names, marks, names and monograms of makers and places of manufacture. The inscribing of swords and knives (Corsica, Sicily) is not yet extinct.

Capitan (A.) L'homme et le mammouth à l'époque quaternaire sur l'emplacement de la rue de Rennes. (C.-R. Acad. d. Sci., Paris, 1905, CXL, 168-9.) From examination of the region in question the conclusion is reached that "at the period of the deposition of the lower Quaternary gravels, man, elephant, rhinoceros lived in the valley of the Seine, on the very site of the modern city of Paris."

Capitan (A.), Breuil (P. Abbé), et Ampou-lange (M.) Une nouvelle grotte pré-historique à parois gravées. (R. de l'Éc. d'Anthr. de Paris, 1904, XIV, 320-5, 4 figs.) Describes grotto of Grèze in Dordogne discovered in 1904 (the eleventh so far known), its contents, engravings, etc. The Grèze grotto seems to put an end to questions as to the authenticity of these mural pictures, since the sand and clay accumulation had long covered them up and indeed preserved the few now existing—the cave was once full of such mural engravings of bison, horses, deer, etc. Their rudeness also indicates their antiquity. The bison figure, though profile, has both horns represented. Flints and bones were also found.

Capitan (A.), Breuil (P. Abbé), et Peyrony (M.) Une nouvelle grotte à parois gravées, La Calévie, Dordogne. (Ibid., 379-81, 2 figs.) Brief account of the grotto with decorated walls at La Calévie (the figures are of horses) in the Dordogne. The engravings belong to the same series as do those of the other caves in this region, particularly the figures of Pair non Pair.

Deecke (W.) Zur Eolithenfrage auf Rügen und Bornholm. (Mitt. d. Naturw. Ver. zu Greifswald, 1905, XXXVI, 1-11.) On geological grounds the author concludes that the so-called eoliths on the islands of Rügen and Bornholm are post-glacial.

Deniker (J.) Les Bulgares et les Macédoniens. Note complémentaire à la communication du Dr Wateff. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V,

459-66, map.) Discusses the distribution of the cephalic index in Bulgaria and Macedonia, according to the investigations of Wateff, Pittard, etc. In the region north of the Balkans brachycephaly predominates, in the south dolichocephaly. Western Rumelia is especially dolichocephalic. The indices for women follow about the same course as for men. In the discussion M. Atgier attributed the brachycephaly of the north to a Celto-Slav and the dolichocephaly of the south to an "Ibero-Pelagic" element.

Finn (Hr.) Ueber neuere Ausgrabungen in Skandinavien. (Z. f. Ethn., Berlin, 1904, XXXVI, 668-70.) Notes on a bridge of the early stone age near Næstved on the island of Seeland, a find (ca. 400 A. D.) of various metal objects from Finnestorp, Westgotland, urn-graves (8th cent. A. D.) at Alsten near Stockholm, a chisel and two axes of stone of the Lapp stone age ("Arctic" stone age) from Lillsund in Swedish Norrland, and the richly carved Viking ship of Tönsberg—a "national treasure."

Funde (Die) im Maglemose und ihre Zeitliche prähistorische Stellung. (Globus, Brunschwig., 1904, LXXXVI, 363-4.) Résumés Sarauw's account in the *Aarbøger for Nordisk Oldkyndighed*, 1903, of the important discovery at Maglemose on the west coast of the island of Seeland of a large number of stone implements, tools of bone and horn, etc., indicating a "station" belonging to the earliest neolithic period, or perhaps the period of transition between the paleolithic and the neolithic periods.

Giglioli (E. H.) Pietre adoperate per la pesca. (A. p. l'Antrop., Firenze, 1904, XXXIV, 315-6.) Brief account of the *moie*, or net-stones, in use on the Italian lakes, identical with those of the American Indians, Pacific Islanders, etc.

Giuffrida-Ruggeri (V.) Terzo contributo all' antropologia fisica dei Siculi eneolitici Grotto della Chiusilla, alle Madonie presso Isnello circ. di Cefalù. (A. d. Soc. Rom. di Antr., 1905, XI, 58-103, 1 pl., 4 figs.) Gives detailed description, with tables, of the measurements of 12 skulls, 9 femurs, 16 tibia, 8 humeri, 5 radii, several sacrum and a number of fragmentary bones, etc., from the burial grotto of Chiusilla. The pottery and other industrial remains are now in the Failla-Tedaldi collection. The

prevailing cranial form is the cuneate ellipsoid. The average capacity of 14 skulls is 1477.6 ccm., the cephalic form for 13 male skulls is dolicho-mesate cephalic. The estimated stature for males is 1,686 mm., for females 1,590. These rather tall eneolithic people may be the ancestors of the tall Sicilian element of to-day, related to the race of Cro-Magnon, the "Berbers," and the "littoral type" of Deniker, all one and the same thing. Apparently a tall type has existed in Sicily since eneolithic times.

Goldstein (F.) Die Malthusische Theorie und die Bevölkerung Deutschlands. (Globus, Brnshwg., 1905, LXXXVII, 46-50.) Author considers "social overpopulation" the menace, not "Malthusian over-population"—the first has been present in Germany for some time and is becoming more and more oppressive. Not lack of food but excess of work, overfilling of occupations, is the real trouble.

Gorganović-Kramberger (K.) Der paläolithische Mensch und seine Zeitgenossen aus dem Diluvium von Krapina in Kroatien. (Mitt. d. Anthr. Ges. in Wien, 1904, XXXIV, 187-99, 3 pl., 9 figs.) Supplementary paper. Describes remains found by Dr G.-K.'s assistant, S. Ostermann, in 1902. The finds include some 400 bones of animals, the lower jaw of a seven-year-old child, some teeth of children and adults (in all 32), a few skull fragments (one showing a marked *tuber parietale*), and portions of humeri and clavicularæ of two types. The author finds two varieties of men (the presence of the second due to some irruption of a foreign horde) of the same old diluvial species *Homo primigenius* to be represented at Krapina.

Gustafsons (G.) Ueber das Schiff von Tönsberg. (Z. f. Ethn., Berlin, 1904, XXXVI, 670-1.) Brief description of the highly ornamented Viking ship found near Tönsberg, Norway. It is ornamented with animal figures in the Norse style, in relief. The boat was used as a grave.

Halbfass (Hr.) Der Einfluss des Genfersees auf die Bevölkerungsverteilung in seiner Umgebung. (Globus, Brnshwg., 1905, LXXXVII, 34.) Brief résumé of the section in Prof. A. Forel's *Le Léman* treating of the influence of the Lake of Geneva on the distribution of population.

The riparian zone has great attractive power,—the lake is a source of food, and land-attacks are more easily repelled. Other factors, geographic, climatic and meteorologic, have also been at work to favor this zone against country behind it.

Handschin (C. H.) Das Sprichwort bei Hans Sachs. I. Teil: Verzeichnis der Sprichwörter. (Bull. Univ. Wisc., Phil. Lit. ser., 1904, III, 1-153.) Lists alphabetically under key-words the proverbs and cognate expressions in Hans Sachs. Rare in the art-epic of Knight-hood-times (in *Iwein* only 42; in *Parzival*, 37; in the *Wigalois* 60), proverbs abound in the folk-poetry of the 16th century.

Handtmann (E.) Brettchenweberei. (Z. f. Ethn., Berlin, 1904, XXXVI, 748, 749.) Brief notes on weaving-boards lately or now in use in various places in northern Germany.

Heermance (T. W.) Excavations in Corinth in 1904. Preliminary report. (J. Amer. Arch., Norwood, Mass., 1904, II s., VIII, 433-41, 2 pl., 1 fig.) Describes the new *stoa* near the old temple of Apollo, and certain pieces of sculpture, etc., found.

Hervé (G.) Les Alsaciens sous le rapport moral et intellectuel. (R. de l'Éc. d'Anthr. de Paris, 1904, XIV, 295-319.) First part of ethnological study. Among the marked characteristics of the Alsations are good-nature, honesty, and industry, but they are lacking in vivacity and initiative, considerably addicted to drunkenness, brave, gay, with a good humor. Their habits and customs are patriarchal, simple, and conservative, with much survival of superstition and popular rites and ideas which have affected the Christianity of the country. "Reversions" have been common through the ages and sectarian spirit has been fierce.

— La colonie allemande du Klingenthal. (Ibid., 331-332.) Résumés the account of this German colony (founded in 1830, by reason of the manufacture of side-arms) in Alsace given by P. A. Helmer in the *Revue d'Alsace* for 1903.

— Le Morvan en 1794. (Ibid., 1905, XV, 35-6.) Gives extracts on the "lourds paysans du Morvan," their habits and customs, from a book of recollections, etc., of the revolutionary com-

mittees of 1793-95, published at Paris in 1830, by M. G. Audiger.

Houssay (F.) *Trois nouveaux polissoirs*. (Ibid., 1904, XIV, 326-30, 2 figs.) Describes rocks used for polishing stone implements, as the holes and "pits" indicate at Chissay in Loir-et-Cher, and La Crémallière, Monthon-sur-Cher. Many similar "polishers" have doubtless disappeared, leaving but few to represent prehistoric times.

Kaindl (R.) *Neuere Arbeiten zur Völkerkunde, Völkerbeschreibung und Volkskunde von Galizien, Russisch-Polen und der Ukraine*. (Globus, Brnschw., 1904, LXXXVI, 315-18, 330-3, 4 figs.) Notes the recent (1902-03) literature on the prehistory, ethnology, ethnography, folk-lore, etc., of Galicia, Russian Poland, and the Ukraine, contained in the publications of the Cracow Academy of Sciences, the folk-lore journal *Lud*, issued by the Lemberg society, the Tchevstchensko society of Lemberg, etc., among which are included very important works by Fedorowski on the White Russians; Kolessa on Galician-Ruthenian folk-songs; Gnatiuk on Galician-Ruthenian folk-tales (2 vols.); Franko on old Russian folk-tales, etc. *Résumés* are also given of recent works by Majewski, Ketrynski, Niederle, Talco-Hryniewicz, etc., on Slavic ethnology, Ciszewski on the ethnology and history of the heart, Windakiewicz on the ancient Polish folk-drama, etc. Suchiewicz's work on the Huzula is also noteworthy.

Korolev (S. A.) *Astrachanskie Kalmyki*. (Russk. Antrop. Zhurn., Moskva, 1903, No. 1, 22-47, 4 figs., 3 diagr.) Gives results of observation and measurement of 200 Kalmycks of both sexes and various ages. K. compares the Kalmycks with their Asiatic relatives the Torgots,—the effect of the European environment of ca. 130 years is seen, but the basal race characters remain. Of 93 males between the ages of 21 and 65 years, 56.99 % had a stature between 1576 and 1675 mm. The average cephalic index of 96 males of like ages was 81.08.

Larson (L. M.) *The king's household in England before the Norman conquest*. (Bull. Univ. Wisc., Hist. ser., 1904, 1, 55-204.) A good, well-documented account, with index, of the old English court, its constitution, officials, etc.

Lissauer (A.) *Erster Bericht über die Tätigkeit der von der Deutschen anthropologischen Gesellschaft gewählten Kommission für prähistorische Typenkarten*. (Z. f. Ethn., Berlin, 1904, XXXVI, 537-607, 62 figs., 3 maps.) This valuable first report of the committee of the German Anthropological Society on prehistoric type-maps presents distribution maps of flat and rimmed bronze axes, oar and disk head needles, and wheel head needles, for the German empire, with indications where specimens are now preserved and references to literature. The rimmed bronze axe has the following varieties: Armorican type, North German, South German, Saxon, "nicked," long-stemmed, East Baltic. Transition forms are very numerous. L. wishes to ban the word *Celt* and use only *Ax* (axe). The Armorican type is the simplest, the East Baltic very limited in occurrence. The oar needle has 4, the disk needle 2 types, — there is also an East Baltic type of the disk needle with flat ribbon-spiral head. Of the wheel needle there are 4 types (earless, Upper Rhenish with one eye, Central German with two and four ears, Hanoverian with three ears). L. opposes the idea that the wheel needles were developed from the disk needles. Long after the bronze age, in the Roman imperial period, the use of wheel needles appears again in Livonia, etc.

Mehlis (C.) *Die neuen Ausgrabungen im neolithischen Dorfe Wallbühl bei Neustadt a. d. H. und ihre Bedeutung für die Kulturgeschichte*. (Globus, Brnschw., 1905, LXXXVII, 128-34, 27 figs.) Describes the important recent neolithic finds at Wallbühl in 1904, seeming to indicate the existence of a village (22 huts have been noted), a new fact for Bavaria and the Palatinate. The most interesting objects are ceramic objects, amulets, idols, beads, flints, etc. This find establishes a settled population in this region at ca. 2000 B. C., with trade relations with western Switzerland, northern Italy, the Danube country, and the shores of the Aegean. Curious is the *m* on a pottery-fragment.

Meier (S.) *Volkstümliches aus dem Frei- und Kellersamt*. (Schwz. A. f. Vlk., Zürich, 1905, VIII, 32-51.) This fifth section treats of folklore and folk-custom connected with the various saints' days, etc., of the year (St. Martin's, St.

Nicholas', Christmas with its choral singing, St. John's, St. Silvester's and its songs of which specimens are given, New Year, The Three Kings and the star songs, St. Anthony's Week, Candlemas, St. Blasius', St. Agatha's, "dirty Thursday," Lent).

Meisner (Dr.) Ueber Danewerk und Hedeby Ein Rückblick auf vormittelalterliche Befestigungen. (Z. f. Ethn., Berlin, 1904, xxxvi, 675-97.) Discusses the pre-medieval fortifications, Danewerke, etc., about Hedeby near Schleswig, which once guarded the approach to the Jutish peninsula (Krummwall, Danewerk, Hobburg, Osterwall, attributed to the Danish King Godfrey, ca. 808 A. D.).

Melville (R. D.) The use and form of judicial torture in England and Scotland. (Scott. Hist. Rev., Glasgow, 1905, II, 225-48, 28 fgs.) Treats briefly of thumb-screws, "pilnewinkies," the rack, branks, stocks, joughs, anklets, headsman's axe, repentance stool, "the maiden," etc. In Scotland, contrary to legal theory (not practice) in England, judicial torture seems to have been lawful.

Montessori (Maria). Sui caratteri antropometrici in relazione alle gerarchie intellettuali dei fanciulli nelle scuole. (A. per l'Antrop., Firenze, 1904, xxxiv, 243-97.) Detailed results of measurements (weight, height, finger-reach, chest-girth, cranial, facial) of 105 pupils (as to intellectual development: mediocre 30, worse 40, better 35) in the elementary schools of Rome. The measurements for each individual are given in the tables - also the same details for 23 best pupils and 23 backward pupils. The more intelligent pupils were found to have a greater development of the head and better of the face. The two classes (more and less intelligent) as determined by the teachers showed chiefly physiological differences, which tended to vanish (accentuating the cranial differences in favor of the more intelligent) when De M. arranged the two series. Better development of head would seem to prevail among the well-to-do and the more intelligent. One problem has to do with the intelligence, another with nutrition.

Nerong (O. C.) Haus- und Viehmarken auf der Insel Föhr. (Globus, Bruchswg., 1904, lxxxvi, 353-5, 3 fgs.) Describes

house and cattle marks on the island of Föhr, belonging to the 17th and 18th centuries—their age is ca. 400-500 or 600 years. There are also duck-marks (boring the web-skin, etc.). The cattle are marked by snipping the ears. The house-marks are used on all sorts of utensils, tools, etc. House-marks were sometimes engraved on seals.

Ochsner (J.) Volkstümliches aus Einsiedeln und Umgebung. (Schwz. A. f. Volksk., Zürich, 1904, viii, 296-315.) Gives from MS. of Jakob Ochsner (1798-1871) ca. 1867-1871 items of folk-lore and folk-custom from the region of Einsiedeln, concerning spirits and gnomes, animals, insects, plants, witches, *zinnmenschdillen* (a sort of *charivari*), "Kindlestein," exorcism, Easter fire, etc.

Oesten (G.) Ueber die bisherigen Arbeiten der Rethra-Kommission. (Z. f. Ethn., Berlin, 1904, xxxvi, 758-64, 3 fgs.) Gives account of recent excavations in the Lipe region. Author finds evidence of Slav settlement.

Oliphant (J.) The marriage de convenance in France. (Intern. J. Ethics, Phila., 1905, xv, 189-98.) The *marriage de convenance* is an historical convention and has an *ex post facto* defence, outlined here. It is materialistic in origin and effect. The convent-education of girls enabled it to continue, but free intercourse of young people has not yet that completeness which will abolish it.

Ottolenghi (S.) La nuova "cartella biografica dei pregiudicati" adottata nell'amministrazione di P. S. (A. d. Soc. Rom. di Antrop., 1905, xi, 104-29.) Reproduces, with explanatory notes and instructions for observers, the "biographic record" for prisoners adopted by the police authorities of the Italian government in 1899, and since amended or rather remade by Professor O. in 1902 and adopted by the Government in Jan. 1904 for all Italy.

Pellandini (V.) Usi e costumi di Bedano, Ticino. (Schwz. A. f. Volksk., Zürich, 1904, viii, 241-67.) Treats of region and localities, parish and church, industry, professions, trades, etc., folk foods and drinks, religious festivals and usages, carnival customs, "stable evenings," baptism, and christening, weddings, personal nicknames, language (glossary of Bedano dialect, pp. 258-67), Bedano

(population 332) was a century ago the cradle of artists of no mean sort and even now its fame for learned men is not at all extinct.

Pernice (E.) Ueber die Gräber in Thurrow bei Züssow. (Z. f. Ethn., Berlin, 1904, XXXVI, 752-8, 4 figs.) Describes stone graves at Thurrow and contents, urn-burial, pottery fragments, gold spiral, bronze needle, etc.

Pittard (E.) De la survivance d'un type crânien négroïde dans les populations anciennes et contemporaines de l'Europe. (A. d. Sciences phys. et nat., Genève, 1904, XVII, 625-39.) From examination of 47 skulls from the ossuary (early medieval) at Sierre in the canton of Valais, P. discovered two female skulls (indexes 71.05, 76.84) resembling the Grimaldi type, and pronouncedly negroid. P. believes that the representatives of this Quaternary type were not confined to southern France.

Pudor (H.) Nordische Reise. (Mitt. d. k. k. geogr. Ges. in Wien, 1905, XLVIII, 133-72.) Treats of Stockholm (architecture, painting, museums, etc.), St Petersburg (social phenomena, street-life, markets, etc.), Moscow (architecture), Finland (architectural renaissance, the Finnish question, art and artists, Runeberg, Vallgren, Edelfelt, Gallen with his Aino-myths, Jämsfelt, Sibelius, composer of music), etc.

Reich (E.) The present state of Europe. (Intern. Quart., N. Y., 1905, X, 211-26.) Treats of the cyclone of imperialism and its innominate anti-cyclone, etc. British imperialism is "need-born," German, "brain-born," Russian, the expansion of space, not force. The price of Spanish imperialism was bigotry. French *luminisme* is skin-deep. Amid all these war is imminent.

Roberts (P.) The Slavs. (Intern. Quart., N. Y., 1904, X, 32-45.) General discussion of history, race, and recent progress. The author, who spells the name "Slav," speaks of "the coming of the Slav to Europe," adopting outgrown ethnological theories. On the average, he "is as good an animal as the average member of any European people." Socially and industrially, but not physically or intellectually, he occupies a lower place. Ethno-sentimental motives are factors in Russian progress. Another Peter the Great may make a reality of Pan Slavism.

Report of committee appointed by the Society, at the request of Mr Bruce, to cooperate with him in the excavation of a pile structure at Langbank in October, 1902. (Trans. Glasgow Archeol. Soc., 1905, N. S., V, 52-3, pl.) Corroborates Mr Bruce's details.

Schenk (A.) Les squelettes préhistoriques de Chamblandes, Suisse. (R. de l'Ec. d'Anthr. de Paris, 1904, XIV, 335-78, 15 figs.) Describes, with details of cranial measurements especially, the human remains (29 skeletons in all, of which a number were not in condition to examine carefully) found in the "cubic graves" of Chamblandes, near Lausanne, in 1901. One female skull is treated at length (349-354). The average cephalic index is 74.94; the estimated brain-weight raises the Chamblandes people above those of modern "lower races" and tends to approach that of the Europeans of to-day, although they were of small stature. Three chief cranial types (Hervé's *Baumes-Chaudes*, probably the descendant of the Magdalenian paleolithic race of Laugerie-Chancelade; the Grimaldi type of Verneau, of negroid nature; a neolithic dolichocephalic type of northern origin,—two skulls only) are recognized. The other remains (flints, ornaments, axes, etc.), indicate the first part of the age of polished stone as the period of sepulture, and complicated funeral ceremonies were probably in vogue. S. considers that the remains at Chamblandes prove that Switzerland was inhabited at the end of the paleolithic and beginning of the neolithic age by the ancient prehistoric races of northern and western Europe.

Schmidt (H.) Troja-Mykene—Ungarn. Archäologische Parallelen. (Z. f. Ethn., Berlin, 1904, XXXVI, 608-56, 34 figs.) Discusses archeological parallels in the prehistoric culture of Troy, Mycenæ, and Hungary. Bodily ornaments (buckles, spirals, etc.), the culture of the Thracians, the neolithic culture of the Danubian and Balkan countries (Lengyel, Tordos, etc.),—painted ceramics in particular. S. holds that the evidence justifies the belief that certain ceramic and ornamental forms were carried by migrating tribes from central Europe to the Aegean culture-area, and that Thracian peoples had their share in the development of the narrower Mycenaean culture.

- Schmit (É.)** Investigation d'un puits funéraire de l'époque néolithique (période carnéeenne) à Pocancy, Marne. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 466-9.) Brief account of a burial pit of the Carnéan epoch and its contents (several skeletons discovered some 15 years ago; two amulets of serpentine, etc.). M. Schmit, with Manouvrier, points out the importance of a scientific investigation of dolmens, etc., previously explored in non-scientific fashion.
- Schneider (K.)** Die Entwaldung Istriens. (Globus, Brnschw., 1904, LXXXVI, 297-9.) Sketches the history of the deforestation of Istria, from early times to the present. The remains found in the prehistoric "stations" indicate forests where none are now. Neither the Romans nor the Venetians, but the inhabitants of the peninsula are to be credited with most of the destruction.
- Schoener (J. G.)** Die Kolonization Südwest-Finnlands durch Schweden. (Mitt. d. k. k. geogr. Ges. in Wien, 1905, XLVIII, 173-4.) Résumés the views as to the Swedish colonization of Finland contained in Wiklund's recent work *När kommo Svenskarne till Finland?* (Upsala, 1901). Montelius holds that the Swedes have inhabited Finland for some 4000 years, while the Finns came there only after the beginning of the Christian era. Archeologic and linguistic data alike indicate the presence of the Swedes in Finland ca. 2000 B. C.
- Stasi (P. E.) & Regalia (E.)** Grotta Romanelli (Castro, Terra d'Otranto) stazione con faune interglaciali calde e di steppa. Nota preventiva. (A. per l'Antrop., Firenze, 1904, XXXIV, 17-81, 4 pl.) Detailed account of grotto with interglacial (warm epoch and steppe period) animal remains, among them an Asiatic member of the *Equidae*—all introduced into the cave by hunters. In the early part of this epoch man possessed, besides fire, a lithic industry no longer primitive, later a stage corresponding to a part of the Solutrean. During the subsequent glacial period, and since, the cave seems to have been visited by man.
- v. Stenin (P.)** Der Geist der Getreide-darre und sein Namensfest bei den Grossrussen. (Globus, Brnschw., 1904, LXXXVI, 366.) Résumés Balof's account in the *Shivopinaia Rossia* of the grain-drying or protective deity of the grain-driers among the Great Russians and the celebration of his name-fest.
- Tarbell (F. B.)** Some present problems in the history of Greek sculpture. (Amer. J. Arch., Norwood, Mass., 1904, II s., VIII, 442-459.) Discusses ideal history, rôle of copies in reconstruction of history of Greek sculpture, variation in the works of a single master, etc.
- V.** Ein altnordisches Freilichtmuseum. (Globus, Brnschw., 1904, LXXXVI, 296-7.) Brief account of the open-air museum for Norwegian archeologic and ethnographic antiquities recently established in the little town of Lillehammer in the heart of Norway,—the *Majhaugen*, as it is called. Here the objects are preserved in the very houses themselves; art and architecture are genuine and real.
- Restaurierung der hanseatischen Ringmauer in Wisby. (Ibid., 379-80.) Brief account of the restoration, now completed, by the Swedish government, of the famous ring wall of Wisby, one of the most important remains of Hanseatic architecture and fortification in the North.
- Vorobiev (V. V.)** Astrachanskje Kalmyki. (Russk. Antrop. Zhur., Moskva, 1903, No. 1, 1-22.) General description of the physical characteristics of the Astrakan Kalmucks based on the author's observations of 75 individuals. The chief anthropometric data concerning these 75 are compared (p. 12) with those obtained by Metchnikov, Kollmann, Deniker, Erkert, Ivanovski, etc. Vorobiev's average stature, 1642.2 mm., is higher than that of the others. The limbs of the Kalmucks show the effect of nomadic horse-life. The average cephalic index is 83.05. The Mongolian characters are especially marked in the young.
- Waagen (L.)** Fahrten und Wanderungen der nördlichen Adria. (Mitt. d. k. k. geogr. Ges. in Wien, 1905, XLVIII, 3-30.) Treats of the islands of Veglia (with the *kolo* dance and *bugarija* or hero-songs), Cherso (with the tomb of St. Gaudenis, who banished all poisonous snakes) and Arbe, whose cathedral contains St. Christopher's head.
- Wateff (S.)** Contribution à l'étude anthropologique des Bulgares. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 437-

58, 7 fgs.) Résumés the results of anthropometric observations on 36,493 soldiers (age 19-25), 319,841 school-children (age 6-20), several hundred other Bulgarians of all ages, 500 brains of Bulgarians of all ages, and 1,330 crania, a few of which belong to the 13th century. Height, color of eyes, hair and skin, measurements of head and face, and weight of brain are considered. The Bulgarians are predominantly (50 per cent.) brunet, only 5 per cent. being blonds; have an average stature of 166.5 cm. for men (women 156.7); are largely (77 per cent.) mesocephalic; have an average brain-weight of 1388 gr. for men and 1260 for women. The heaviest brains come from the Macedonians, the lowest average from the southern Bulgarians. The male country people have heavier brains than the urban population. The heaviest male brain (1850 gr.) belonged to a peasant, as did also the heaviest female brain (1440 gr.)

Wibling (C.) Drottninghögen i Helsingborg. (Ymer, Stockholm, 1904, xxiv, 259-280, 13 fgs.) Describes a prehistoric tumulus at Helsingborg and contents (flint objects, potsherds, pitted and "cup" stones).

Wilser (L.) Urgeschichtliche Neger in Europa. (Globus, Braunschweig, 1905, LXXXVII, 45-6.) Résumés data as to the existence in Europe in prehistoric times of a negroid race. The earliest evidence was the skull from the Maas Valley described by Spring in 1855. Since then the finds in Monaco (Doule), on Lake Geneva (Schenk), in Armorica (Verneau, Hervé), etc., have strengthened the case, and now little doubt exists, according to W., of the former presence of negro-like peoples in southwestern Europe.

Zaborowski (S.) L'autochtonisme des Slaves en Europe. Ses premiers défenseurs. (R. l'Éc. d'Anth. de Paris, 1905, xv, 3-17.) Treats of the various theories as to the European origin of the Slavs, from the ancient Russian *Chronicle of Nestor* down to ethnologists, etc., of the 18th and 19th centuries — Suro, wiecki, Schafarik, Lelewel, Malte-Brun, Wilser, Samokrasov, etc. Z. upholds the European origin, — probably in the Danubian region.

Zindel-Kreissig (A.) Die Knabengesellschaft von Sargana. (Schw. A. L.

Volkst., Zurich, 1905, VIII, 52-5.) Gives the 25 articles of organization of the Knabengesellschaft or youth's society, of Sargana in 1833. See *American Anthropologist*, 1905, N. S., VII, 141.

Zürcher (G.) u. Reinhard (M.) Allerhand Aberglauben aus dem Kanton Bern. (Ibid., 267-81.) Gives 160 items of popular superstitions, etc., from the Canton of Bern concerning children, domestic animals and industries, clothing, dreams, folk-medicine, marriage, death, sickness, bewitching, ghosts, etc.

AFRICA

Bagge (S.) The circumcision ceremony among the Naivasha Masai. (J. Anth. Inst., Lond., 1904, 167-9.) Describes briefly the *E-unoto* feast, the boy's feast, the operation of circumcision after these; also the circumcision of girls. The *E-unoto* lasts for 3 months, the other for two days. For girls the operator is a female (usually the mother), for boys a member of the Andoro-tribe, who are cattle-slayers. No uncircumcised youth can have connection with a circumcised woman, but may with an uncircumcised girl.

Besuch (Ein) beim Bangalahauptling Katchungo. (Mitt. d. k. k. geogr. Ges. in Wien, 1905, XLVIII, 103-7.) Reproduces from the *Nat. Zeitung* a description of the Bangala, a little visited tribe of central Africa, who are said to be still cannibals. The chief and his surroundings are discussed.

Blyden (E. W.) The Koran in Africa. (J. Afric. Soc., Lond., 1905, IV, 157-71.) Treats of the influence of the Koran, the Arabic language, and the feast of Ramadhan, in negro Africa. The African Muslims object to being called Muhammedans and pay less regard to tradition than to the words of the sacred text. Their chief objections to Christianity are: Its desocializing influence (breaking up family ties, disintegrating communities), its priesthood caste, its countenance of the liquor traffic and liquor drinking. In many respects the Muslim facts are best and acts of Christian missionaries and their countrymen, not preachings, are necessary. The Koran (chap. 31 is said to refer to a negro) and the Muslims have no negro-phobia.

- Crawford (D.)** African shibboleths. A new check in philology. (*Ibid.*, 232-7.) Among these are Arab *w* for *v* (e. g. Luban), Vemba *f* (Luban *v*), Rugaruga *g* for *k*, Lunpula *c* for *ck*, etc. The Arab, "willy-nilly, is a disturbing feature both in African lands and African languages." He has "marked indelibly his Semitic phonology on the musical Bantu tongues." The blend of the east coast is Arab in mouth and African in mind. The Luban makes fun of it in a little song.
- Cummins (S. L.)** Sub-tribes of the Bahr-el-Ghazal Dinkas. (*J. Anthr. Inst.*, Lond., 1904, XXXIV, 149-66, 1 pl., 3 figs.) Notes on customs, occupations and pursuits; legal, ethical, and religious ideas; superstition (witchcraft, hostile magic); arts and designs (clay models of cattle); music and song (English versions of four given), etc., of the Dinkas and Golo, with a few notes on the Jur. Among the Dinka a ceremony of speech obtains. The Dinkas are better spearmen and cattle-herds than hunters; possession of cattle is the great ambition, and tending them the chief occupation. Force of public opinion regulates conduct. The Dinkas have a good map-making sense.
- Darker (G. F.)** Niger delta natives, with special reference to maintaining and increasing the population of southern Nigeria. (*J. Afric. Soc.*, Lond., 1905, IV, 206-26, 2 pl., 3 maps.) After introductory remarks on the decrease of primitive peoples, author discusses the population of southern Nigeria as divided into three classes, according to hygienic zones: Waterside peoples—people of the mangrove swamps (the "islands" are ideal places for keeping slaves; each is a little town, with a "chief"); inland peoples near the coast—people of the bush (producers of oil and nuts); inland peoples proper near to Africa civilization; grass and forest men (hardier type, with iron industry and cotton cloth). Diseases are discussed, also native hygiene, with proposals for health improvement. In two appendices (pp. 220-6), "Negroes in the United States" and "Negroes in the West Indies" are considered.
- David (J.)** Weitere Mitteilungen über das Okapi. (*Globus, Brnshw.*, 1904, LXXXVI, 385-6.) Gives some of the native names of this animal, notes on its distribution, knowledge of the pygmies, etc.
- Deyrolle (—)** Les haouanet de Tunisie. (*Bull. Soc. d'Anthr. de Paris*, 1904, V^e s., V, 395-404, 3 figs.) Treats of the sepulchral chambers known as *haouanet* ("shops") from their resemblance to the shops of the Suks of the Barbary coast. Of 188 existing in Tunis, the author has visited 138, of which 94 were discovered by him. Variations in form, etc., ornamentation, sculptures, engravings, paintings (ornamental, symbolical, animal) are briefly described. The sculptures recall the South Algerian rock carvings, etc. The *haouanet* themselves find analogues in Sicily and in the artificial grottoes of Marne.
- Fairclough (T. L.)** Notes on the Basuto, their history, country, etc. (*J. Afric. Soc.*, Lond., 1905, IV, 194-205, 4 pl.) Treats of the early history of the Basuto, who intruded on the Bushmen, their first chiefs, wars, etc.; names of mountains and rivers; rain-making; guilds and initiation schools for boys and girls; burial customs, salutations, etc. A famine-origin of cannibalism is suggested (p. 197). In the rain-making of 1885 more than 10,000 people took part in the Leribe district alone. Left-handed natives are rare. The native population of Basutoland increased from about 218,500 in 1891 to 347,731 in 1904.
- Fies (K.)** Der Hostamm in Deutsch-Togo. (*Globus, Brnshw.*, 1905, LXXXVI, 13-17, 2 figs.) Treats of history and migration of the Ho (Ewe) people, their wars with Ashanti, their attachment to the Germans of Togo, etc. Religion (heaven and earth are husband and wife), chiefdom and government (king, judges, male assembly of those above fifteen years of age) are briefly considered.
- van Gennep (A.)** Ueber das Tätouieren in Nordafrika. (*Z. f. Ethn.*, Berlin, 1904, XXXVI, 749-50.) Adds to article of Träger (see *Amer. Anthropol.*, 1904, N. S., VI, 732) facts concerning tattooing among the Khumir, a mountain-people of Tunis. Words for tattooing are discussed. The cross here is not of Christian origin.
- Giglioli (E. H.)** Il sale-moneta dell' Etiopia. (*A. per l'Antrop.*, Firenze, 1904, XXXIV, 183-7.) Describes the "salt-money" of Ethiopia, obtained from Aròh, in the territory of the Taltal,

its use and how it is obtained. There are four varieties—*ganfūr*, *lemedign*, *amolite*, and *fesset*.

Huguet (J.) La valeur physique générale des indigènes Sahariens. (R. de l'Éc. d'Anthr. de Paris, 1904, XIV, 263-82, 11 figs.) Résumés data as to constitution, temperament, stature, chest-girths, acuity of vision, vaccination, intelligence of 119 men from various parts of the south and extreme south of the Algerian Sahara, examined as to aptitude for military service and all Arabs by races, with ethnographic notes. More than half were rejected. The average stature was 1.68 m. The chest-girth of the nomad shepherds exceeded that of the nomad hunters. There was one myopic. The Saharians are more intelligent than the people of the Tell.

— Contribution à l'étude sociologique des femmes Sahariennes. (Ibid., 411-14.) Brief notes on Arab, Berber, Tuareg, Mazab, and other women of the Saharian tribes. The absence of the men from the family tent for days leads to a certain freedom on the part of the women, grudgingly given by jealous husbands and often cruelly avenged. Daughters are property and disposed of as such. Virginity is often relative (the Tuaregs practise infibulation). Famous are the *Ulad Nall* or Saharian prostitutes, who had their representatives in antiquity.

Hutter (F.) Aug. Chevalier's Forschungs expedition von Ubangi durch das Stromgebiet des Schari nach dem Tsadsee. (Globus, Brnschw., 1904, LXXXVI, 299-302.) Résumés the results of Chevalier's Tchad expedition, with a few notes on the natives (Galla-Homer). In German Bornu an old Sô settlement was discovered, with traces of another almost extinct people.

Johnston (A.) French policy in Madagascar. (J. Afric. Soc., 1904, IV, 78-81.) Brief notes on statistics and facts relating to the French colony contained in Gen. Gallieni's eighth annual report (1903). The authorities are endeavoring to reduce the mortality of new-born infants and women in child-birth. A children's *fièvre* has been instituted. The European population is slowly increasing.

Kirk (J. W. C.) The Yibirs and Midgams of Somaliland, their traditions and dialects. (Ibid., 91-108.) Treats of present condition, tribal names, activities,

of these two outcast peoples, who speak Somali, but also have each their private dialect kept secret from other tribes; traditions concerning Mohammed Hanif, the ancestors of the Yibirs language, specimens of word-formation and brief lists of words are given. (The dialects are based on Somali, and one Midgán said "his language was invented by his ancestors in the jungle as a secret code").

Lederbogen (W.) Duala fables. (Ibid., 56-77.) Gives English text (translated from German of author by Miss M. Huber) of 14 fables from the Duala of the Cameroons.

Malerei (Die) in Abessinien. (Globus, Brnschw., 1904, LXXXVI, 237-329, 6 figs.) Résumés Dr C. Keller's article *Ueber Maler und Malerei in Abessinien* in the Jahresbericht d. Geogr.-Ethnogr. Ges. in Zürich for 1903-04. Abyssinian painting is of Christian Byzantine origin and the best specimens are in the churches. To-day European influences are making themselves felt in many ways.

Manouvrier (L.) et Capitan (A.) Étude anthropologique et archéologique de l'Égypte d'après le récent livre de M. Chantre. (R. de l'Éc. d'Anthr. de Paris, 1905, XV, 18-30, 9 figs.) Résumés the anthropological (Manouvrier) and archaeological (Capitan) data in Chantre's *Recherches anthropologiques dans l'Afrique orientale. Égypte* (Lyon, 1904) relating to the ancient and modern Egyptians. Chantre concludes that Egypt represents an autochthonous Libyan culture, on which foreign inroads have made little or no durable impression. The Egyptians are morphologically one with the Bedja, Berbers, etc. In the Egyptian regions neolithic "stations" are abundant, megaliths rare.

Meinhof (C.) Ueber M. Merker's "Massai." (Z. f. Ethn., Berlin, 1904, XXXVI, 735-44.) Critique of Merker's *Die Massai* (Berlin, 1904). Meinhof discusses and rejects Merker's theory that the Massai and the Israelites were once one people and that the Massai legends are older than those of the latter as contained in the Bible. The Massai are rather a Hamitic people.

Nathan (M.) The Gold Coast at the end of the seventeenth century under the Danes and Dutch. (J. Afric. Soc., Lond., 1904-5, IV, 1-32.) Translation (pp. 10-32) from a description of the country

of Guinea by Eric Tylleman, published at Copenhagen in 1697, with introduction by author. Treats of the towns and forts on the Gold Coast, the kingdom of Acara, the gold on the Gold Coast, etc.

— Historical chart of the Gold Coast, compiled from various sources. (Ibid., 33-43.) Enumerates dates and events, 1426-1900. Gives list of governors of the Gold Coast, Kings of Ashanti, etc.

Plehn (A.) Beobachtungen in Kamerun. Ueber die Anschauungen und Gebräuche einiger Negerstämme. (Z. f. Ethn., Berlin, 1904, XXXVI, 713-28, 4 figs.) Treats of the secret societies of the Dualla, etc. (Kongolo, Tambimbe, Mbomako or stilt-walkers, Bajongs—slave society—Mungi, Djingo), goblins (Edumo, an evil earth-spirit; Ekellekette, a tormenting sprite, etc.), magic and "medicine," charms, soul-lore, anthropophagy (human sacrifice is not so widespread on the Gulf of Guinea as cannibalism). Remarks by Hr Staudinger are appended.

Renner (W.) Native poison, West Africa. (J. Afric. Soc., Lond., 1904-5, IV, 109-11.) Treats of the effects of eating food (fish) poisoned by means of the ground fruit of *Chaetelia toxicaria*, locally known in Sierra Leone as "broken back," from its inducing paralysis of the lower limbs in animals—a species of ratsbane. It is used by the Timnes and Mendis to poison wells and streams.

Ruete (S.) Die Schlafkrankheit im Kongogebiet. (Globus, Brnswg., 1905, LXXXVII, 17-18.) Résumés recent report of the expedition of the Liverpool School for Tropical Medicine. The tsetse-fly is regarded as the carrier of infection in sleeping-sickness.

Schütze (W.) Die Handelszonen des Sambesi. (Ibid., 5-12, 7 figs.) Treats of development of watershed of Zambesi, policy of Portuguese, British, etc.

Schweinfurth (H. G.) Ueber steinzeitliche Forschungen in Oberägypten. (Z. f. Ethn., Berlin, 1904, XXXVI, 766-830, 49 figs., 1 pl.) Third contribution to study of stone age in the neighborhood of Thebes. Describes 58 types of eoliths (natural pebbles, flakes natural and intentional) of various uses, and compares them with European series. The great majority of these eoliths cor-

respond to the most primitive type of Reutel.

Seiner (F.) Ueber die Ursachen des südwestafrikanischen Aufstandes. (Globus, Brnswg., 1905, LXXXVII, 1-5.) The author, who was in the Herero country in 1903, attributes the uprising of the natives to the "civilization" of the protectorate, the increase of the German power, the rinderpest of 1897 and its consequences, the actions of the traders, and the reservation question.

T. (H. R.) The opening up of British East Africa. (J. Afric. Soc., Lond., 1904, IV, 44-55.) Treats of chief duties and action of officials. The strength of the district officer "lies in the support of the authority of tribal chiefs and in their realization of the extent of the responsibility." The hut tax is of very recent introduction into East Africa and Uganda.

Tate (H. R.) Notes on the Kikuyu and Kamba tribes of British East Africa. (J. Anthr. Inst., Lond., 1904, XXXIV, 130-48, 4 pl., 1 fig.) Treats of physical type, clothing, personal ornaments, language (vocabularies of 300 words each, compared with Swahili and Teita). The Akikuyu are hard-working, thrifty and moral, with an assured future; also extraordinarily prolific. The Akamba are primarily agriculturists, but not so thorough or neat as the Akikuyu. The languages of both are Bantu.

Tepowa (A.) Notes on the (Nembe) Brass language. (J. Afric. Soc., Lond., 1904-5, IV, 117-133.) Grammatical notes, vocabulary of some 550 words and 30 easy sentences. In Nembe pleasure is "sweet-mind" (*biobéle*); yesterday, "passed-to-morrow" (*bogotébe bai*); family "one or a belly" (*göörifuro*). There are four articles.

Wallis (B.) The "poro" of the Mendi. (Ibid., 1905, IV, 183-89.) Brief account of the *poro* (law, or "one word"), "the governing and ruling power of the natives, embodying everything or anything good or bad in the country, that requires framing into order, keeping secret among the masses, guarding as public property, and making into law. It is confined to boys and men and has a course of special training and preparation. There are civil and religious "arms,"—the former for special purposes. There are a *poro*-house and a *poro*-"devil." The author sees some

past and much possible future good in the *poro*. Its treatment of malarial (blackwater, etc.) fevers has been recognized by some Europeans. The "peace *poro*" has done good work. Also the *poro* tabu.

Werner (A.) Note on the terms used for "right hand" and "left hand" in the Bantu languages. (*Ibid.*, 1904, IV, 112-116.) Among the results of the author's investigations of 37 languages of the Bantu stock are: In 18 (or possibly 21) the right hand is known as "easing hand"; it is often called "male hand," and, less frequently, "strong, great, or the hand." The left hand is sometimes (but not so often as might be expected) called "the female"; also "the inferior"; in many, if not most instances, the word for left hand (in contrast to that for right) "can be traced to no other meaning, and is probably a root denoting 'the left hand.'"

— A "hare" story in African folklore. (*Ibid.*, 139-41.) Gives native text and English version of a tale obtained in 1894 at Pa Ntumba in the West Shire district from a girl named Mbaya. The hare is the symbol of astuteness and lives by imposing upon the other animals.

— Hottentot roots in Bantu click-words. (*Ibid.*, 142-3.) Author argues that Bantu roots under Hottentot influence has directly or indirectly acquired clicks, though originally without them. See *American Anthropologist*, 1904, N. S., VI, 565.

Whitehouse (A. A.) An Ibo festival. (*Ibid.*, 134-5, 2 pl.) Notes on four photographs (European carved in hammock, hippopotamus devouring child, girl lying down to have teeth sharpened, and dressing back hair) of clay and wood figures made in connection with the *mbiri* ("beautiful"), or yearly festival of the town fetish in the Owerri district.

"Yuzbashi." The Bari. (*Ibid.*, 1905, IV, 226-31.) Notes on population, food, rain-making, funeral ceremonies, hunting, rafts, industries, houses, clothing. The Bari, who live on the Nile from Bor to Dufile, number some 30,000 and are increasing. Chief Loron called his big dog after Emin Pasha. The chief meal is eaten after sunset.

ASIA

Atgier (M.) Craniométrie comparée de crânes mongoloïdes, Chine et Annam. (*Bull. Soc. d'Anthr. de Paris*, 1904, V^e s., V, 391-5.) Describes a male Chinese and male Annamese skull (criminals dying at the penitentiary of Poulo-Kondor), Mongoloid, rather than Mongolian, with métis characteristics. The craniometric indices are 76 and 76.66.

Berkowitz (H.) The moral training of the young among the Jews. (*Intern. J. Ethics, Phila.*, 1905, XV, 173-88.) Discusses past experiences and modern tendencies. When Judea fell "Judaism abode henceforth in safety in the schools." The Ghetto narrowed the life of the Jewish schools. The house still remains the safeguard of the people.

Birkner (F.) Zur Anthropologie der Mongolen. (*A. f. Rassen u. Ges.-Biol.*, Berlin, 1904, I, 809-21, 6 fgs.) Treats of the physical anthropology (color and "Mongolian spots," skin, hair, stature, bodily proportions, forms, etc., of head, face, nose, "Mongolian fold," physical types) of the Mongolian or "yellow race." B. considers the term "yellow" justified. As compared with Europeans the Mongolians have a thicker skin and hair, less and later beard and body hair, smaller average stature. The longer trunk and shorter legs, and different bodily proportions ascribed to them by various authorities need further measurements for their substantiation. The form of the head (mesocephalic to brachycephalic) has no characteristics that are *ad genericis*. The face profile of the Mongolian depends essentially on the thickness of the soft parts, and the physiognomy is further influenced by the form of the nose and the peculiarity known as the "Mongolian fold." The great extent of the Mongolian habitat has led to the formation of a fine and rude type, recognizable everywhere, the second being Baels's Malayo-Mongol, the first his Manchu-Korean.

Bobinsky (Graf) Ueber die Fälschung einer von Hrn. Wilke-Grimma erworbenen Statuette. (*Z. f. Ethn.*, Berlin, 1904, XXXVI, 758.) Brief notes on the bronze statuette of a warrior described by Wilke (*Z. f. Ethn.*, 1904, 89), which B. regards a "forgery," made for the trade (*ad usum viatorum*).

- Bogoras (W.)** Idées religieuses des Tchouktchis. (Bull. Soc. d'Anthr. de Paris, 1904, 7^e s., v, 341-55, 3 figs.) Treats of the evolution of primitive religion as exemplified by the ideas of the Chukchi. B. recognizes five stages: 1. Identification of man with nature, subjective and amorphous. 2. Search for outward resemblances (however vague) between material objects and man. 3. Supposition of two forms of objects, one ordinary, the other transfigured and anthropomorphic. 4. Assumption of existence of genii living within material objects and capable of leaving them at will; the idea of the human soul as distinct from the body. 5. Idea of spirits, human-like, independent from objects, invisible and moving freely about the earth; conception of dead as living after the destruction of the body, — beginning of ancestor-worship. The material accumulated by B. will be published by the American Museum of Natural History, New York (see p. 320 of this issue). An English abstract (6 pp.) of this paper also appeared in the protocol of the Congrès International des Américanistes at Stuttgart in Aug., 1904.
- Casanowicz (I. M.)** The Wat Chang pagoda of Bangkok, Siam. (Smithson. Misc. Coll., Quart., Washington, 1904, II, 273-4, 1 pl.) Brief description of the "great monastery" pagoda, of which a wooden model is in the U. S. National Museum. The shape recalls the terraced towers of Babylonia.
- d'Enjoy (P.)** Associations, congrégations et sociétés secrètes chinoises. (Bull. Soc. d'Anthr. de Paris, 1904, 7^e s., v, 373-86.) According to d'E. the Chinese have a special vocation for social solidarity — they are born societative, devoted to combination, impassioned for mutuality. By family, origin, profession, political ideas, religious conceptions, private and public life, the Chinaman is a mutualist. Even in death he fears solitude. Abroad, this character makes societies take root and thrive at once. They are an *imperium in imperio* and mingle religion and politics. The Lily society has over 2,000,000 members. The present dynasty fears them much.
- Fischer (A.)** Chinesisch-Japanische Neuerwerbungen. (Z. f. Ethn., Berlin, 1904, XXXVI, 698-9.) Notes on new acquisitions in the author's Chinese-

Japanese collection at Zehlendorf: A painted carved modern wall-picture (Ming dynasty); "the dragon-bridge," a Japanese wall ornament; a 200-250 year old picture of the interior of a Japanese No-theater; silk and paper Japanese wall pictures; two bronze lion heads (ca. 1200 A. D.); paintings (ca. 150 years old) of the *Makemono* procession; examples of metal art, etc.

Fisher (C. S.) The Mycenaean palace at Nippur. (Amer. J. Arch., Norwood, Mass., 1904, 2d s., VIII, 403-32, 3 pl., 20 figs.) Describes palace resembling that at Tiryns and characteristic features. Author thinks that this part of the nearer East was the last influenced by Mycenaean culture: this because of its being "the place to which some Mycenaeans migrated after their expulsion from the mainland of Europe by Dorians." This sudden extension of the Mycenaean area to the center of ancient Babylonia is indeed remarkable.

Holcombe (C.) The moral training of the young in China. (Int. J. Ethics, Phila., 1904, XIV, 445-468.) Treats of boys and young men exclusively. Training is now as it was ages ago. The Chinese "are peculiarly given to acts of indirection." Text-books and examinations are discussed briefly. Confucius is still the great power for social and political virtue in China. The Chinese are still the most peace-loving race, individually or *en masse*, in the world.

Ivanovski (A. A.) Kirgiz srednei ordi. (Russk. Antrop. Zhurn., Moskva, 1903, No. 2, 54-77, 4 figs.) Gives details of measurements of 156 Kirghiz of the middle horde made at Semipalatinsk in southwestern Siberia in 1888-89. Color of hair and eyes (no blonds; only 5% mixed), cephalic index (av. of 99 subjects 89.39, — no dolichocephals) and other head, face and nose measurements, stature (av. of 99 subjects 1651 mm.), chest-circumference, size of hands and feet, etc., are considered. The Kirghiz are a mixed race, and the various hordes differ not a little from one another.

Lauffer (B.) Ein buddhistisches Pilgerbild. (Globus, Brnschw., 1904, LXXXVI, 386-8, 1 fig.) Describes a Japanese *kakemono* (painted on paper) from Nagasaki, now in the Cologne Museum, in which Hailan Tsang (602-664 A. D.), the famous Chinese

Buddhist and traveler, is represented in a group with deities and men.

Macdonald (D. B.) The moral education of the young among Muslims. (Int. J. Ethics, Phila., 1905, xv, 286-304.) Gives Moslem view from the Koran and the *Ihya* of al-Ghazali (d. A. D. 1111), "a man of the intellectual rank of Augustine." The order of education is: Mechanical imitation and practice; habit, intellectual acceptance and devotion. The *Arabian Nights* is also referred to as valuable.

Niehus (H.) Das Ramfestspiel Nordin-diens. (Globus, Braunschwg., 1905, lxxxvii, 58-61, 7 figs.) Describes the yearly 10-day festival of Ram (hero of the *Ramayana*) as celebrated at Ghazipur on the Ganges, at an expense of 2,000 rupees. The representation consists entirely of pantomimes with the reading of the texts of the *Ramayana*. No stage is used and the scene is changed almost daily. The action follows the *Ramayana*.

Sakhokia (Th.) Présentation d'objets ethnographiques de la Géorgie. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v., 370-3, 3 figs.) Notes on a calabash vase, an implement for softening skin-thongs, a distaff and bobbin-ring, a bean-crusher, wooden vases and other dishes, sort of snow-shoe, a bee-smoker, a New Year's offering or *ichitchilagui*, two stone amulets, one suspended over a door to protect against the evil eye, the other worn by a wife to cure her husband's sickness.

Seklemian (A. G.) The Armenian alphabet. (Armenia, Boston, 1904-5, i, No. 6, 39-45.) Historical account of the "invention" by Mesrob (b. 361 A. D.) of this alphabet. Before this the Armenian had used the Phœnician alphabet, and, much earlier, cuneiform writing. Mesrob, who was assisted by the calligrapher Rophanus, made his alphabet read from left to right.

INDONESIA, AUSTRALASIA, POLYNESIA

Bouchal (L.) A. Henry Savage Landor's Reisen auf den Philippinen. (Mitt. d. k.k. geogr. Ges. in Wien, 1905, xlviii, 31-51.) Critical résumé of Landor's *The Gems of the East* (2 vols., Lond., 1904), with references to the chief litera-

ture of the subject. The brevity of Landor's journey causes one to ask whether he himself could have made some of the detailed observations recorded. Only the averages of the anthropological measurements are given by L.

Chinesen (Die) auf Java. (Ibid., 93-4.)

The Chinese in Java number 265,000 with strong yearly increase; are no mere servants, but capitalists, promoters, business men, traders, land-exploiters, speculators. The Japanese term the Chinese "swine," but the latter rise in spite of all opposition and are now indispensable. They learn in a few weeks what does not come to a Malay in his whole life-time. They can be relied on, too.

Giglioli (E. H.) Lo scudo pubico e l'astuccio penico degli indigeni del sud e sud-ovest della Nuova Guinea. (A. per l'Anthrop., Firenze, 1904, xxxiv, 317-18.) Describes briefly the "pubic shield," made of the *Cymbidium melo* and known as *lorda* or *vedere ere*, in use in parts of southern and southwestern Guinea. The *lorda* is often ornamental. Besides the "pubic shield," a penis cover is also sometimes used.

— Di alcuni strigili litici e specialment di uno bellissimo dei Landak di Borneo. (Ibid., 319-20.) Brief account of "skin-scrapers" (used after a bath) from Hawaii, — called there *po'haku kuai-kuai*, — and from the Landak, a tribe of land-dyaks in Borneo. The latter is an elegant and artistic instrument, putting to shame a modern English scraper of pumice.

Howitt (A. W.) and **Siebert** (O.) Legends of the Dieri and kindred tribes of central Australia. (J. Anthr. Inst., Lond., 1904, xxxiv, 100-29, 1 fig.) Gives English texts of the origin of the Mardus and the Kana, how the Mura-Mura Pariwilpa perfected mankind, Mandra-Mankana (Belly hind-before), Kadri-pari-wilpa-ulu (Two Milky Ways), Malko-malku-ulu (Two Invisible Benefactors), Yuri-ulu (Two living ones), The Wanderings of the Yuri-ulu, A Circumcision Legend, The Piramalkara (Big Girl and Little Girl), The Fira and Wapiya Legend, The Antietya and the Ngarduetya (Hunter and *maráo*), Darana Legend, Kakakudana and the origin of the Mound springs, the Mardu legend.

Joly (P. R.) Notes sur les Nouvelles-Hébrides. (Bull. Soc. d'Anthr. de Paris, 1904, 1^{re} s., v, 356-69, 3 fgs.) Brief notes on the natives of Erromango, Anatom, Tanna, Vati, Api, Mallicollo (especially, pp. 357-65), Ambrym, Pentecost, Aurora, Aoba, Espiritu-Santo. The New Hebridians are Melanesian (Papuan and Melanesian people) with a Polynesian element, in some regions recent and still clearly noticeable, and, perhaps, Negrito traces. The natives of Api are famed for their skill in vegetable poisons. Those of Mallicollo live in "a mixture of ferocious savagery and joyous childishness." They fear not only the dead but also the living, shamans. Impotent old men and the helplessly sick are put to death. Caste-systems exist for both men and women. The fragments of old pottery at Olal on the coast of Ambrym are probably exotic, since except in northern Espiritu-Santo no pottery is now made in the New Hebrides. Dances are common, lasting often for hours. Three races are discernible in Espiritu Santo.

Mathews (R. H.) Language of the Wuddyawurrri tribe, Victoria. (Z. f. Ethn., Berlin, 1904, xxxvi, 729-34.) Brief sketch of grammar, with vocabulary of 150 words. This language has a trial number. M. says that the native texts given by R. B. Smith in his *Aberigines of Victoria*, II, 48-49, are "mere ungrammatical jargon."

AMERICA

Azara (F. de) Geografía física y esférica de las Provincias del Paraguay, y misiones Guaraníes. (An. d. Mus. Nac. de Montevideo, Secc. Hist.-Filos., 1904, I, i-cxxxii, 1-478, 10 maps, 5 plans, 3 pl.). Azara's description of Paraguay from MS. of 1790 in the National Library, with bibliography (pages liii-lx) introduction (lxiii-cxxxii), containing valuable ethnographic and linguistic matter, and notes by R. R. Schuller. The "descripción general" includes (353-427) notes on the Payaguás, Mbayás, Guaná, Lengua, Tupis, Guayanás, Caingua, Guaraní, and other Indian tribes. Also items concerning negroes, mulattos, etc. The linguistic matter by Schuller includes a comparative vocabulary of the Guaycurú family, also one of the "Nu-Aruak." The tribal names are discussed in detail by S.

Bleyer (Dr) Ueber die wilden Wald-indianer Santa Catharinas: die "Schokleng." (Z. f. Ethn., Berlin, 1904, xxxvi, 830-44, 5 fgs.) Treats briefly of physical appearance, dwellings, dances, food (preponderatingly animal; fond of honey), basketry, ornament, weaving, wood-carving, flute, weapons, hunting and capture of animals, bow and arrow, relations with whites, Shokleng skull, kidnapping, diseases (syphilis and leprosy unknown), death and burial. They live in small hordes, have no hammocks, do not smoke, have no plantations.

Burnham (J. H.) The coming of the Mississagas. (Ont. Hist. Soc., Pap & Rec., Toronto, 1905, vi, 7-11.) Records on the authority of Chief Paudash, grandson of Cheneebesh (d. 1869, age 104), "the solemn tradition of the Mississagas respecting their present place of settlement in Ontario and the migration which led them thither." The Mississagas are incorrectly said to be "Shawnees," and to them is attributed the Otonabee serpent mound—a structure said by Boyle to be "most undoubtedly the work of a people who occupied the soil long before the coming of the Mississagas."

Dr Herrmann Meyers deutsche Ackerbau-Kolonieen in Südbrasilien. (Globus, Braunschwg., 1904, lxxxvi, 346-9, 4 fgs.) Brief account of the German colonies in the heart of Rio Grande do Sul, founded in 1897 by Dr Meyer, after his first Xingú expedition.

Du Bois (W. E. B.) The development of a people. (Int. J. Ethics, Phila. 1904, xiv, 292-311.) Discusses history of negro under slavery, etc. Argues for public and industrial schools. Dr D. believes in the efficacy of "group leadership."

Ehrenreich (P.) Bericht über den 14. Amerikanistenkongress in Stuttgart. (Z. f. Ethn., Berlin, 1904, xxxvi, 862-66.) Brief résumé of proceedings and papers read.

Fehlinger (H.) Die Neger der Vereinigten Staaten. (Globus, Braunschwg., 1905, lxxxvii, 62-64.) Discusses the figures and facts of the census of 1900 in relation to the present condition and future prospects of the negro in the U. S. Two marked tendencies exist, a migration North and West, and a massing in certain parts of the South. F. does not

agree with the idea (Ward and others) of an ultimate amalgamation of whites and blacks.

Fewkes (J. W.) Porto Rican stone collars and tripointed idols. (Smithson. Misc. Coll., Quart., Washington, 1904, II, 163-86, 8 pl., 1 fig.) Discusses the forms and types of these relics, the theories as to their origin, use, etc.; based on the author's investigations in Porto Rico, 1902-03, and comparisons with other material. These stone "collars" are practically confined to Porto Rico, and they do not occur in the shell heaps. The "tripointed idol" is equally Porto Rican. Dr. F. considers most suggestive the theory of J. J. Acosta that "these stone collars were united with the tripointed stones to form a serpent idol."

Flom (G. T.) The Scandinavian factor in the American population. (Iowa J. Hist. and Pol., Iowa City, 1905, III, 57-91, map.) Based on census statistics of 1900. Treats of causes of emigration from Scandinavia, growth and distribution of Scandinavian population in the U. S., and of the three nationalities (Norwegians, Swedes, Danes) in state, city, country. About 70 per cent. reside in the northwestern states.

Förstemann (E.) Liegen die Tonalmatl der Mayahandschriften in bestimmten Jahren? (Z. f. Ethn., Berlin, 1904, XXXVI, 659-67.) Discusses the question whether the *tonalmatl* fall in fixed years. (F. uses as material 188 *tonalmatl* in the Codex Madridensis and 60 in the first part of the Codex Dresdensis). Of the 1888 in the Madrid Codex 44 fall on the day *akau* (17), of those in Dresden Codex 13 on the same day. The settlement of the fixation of the *tonalmatl* and the order of succession would be a real progress in Mayan epigraphy.

— Vergleichung der Dresdener Mayahandschrift mit der Madrider. (Ibid., 369-70.) Notes 17 points of comparison between the Dresden and Madrid Codices.

Ganong (W. F.) Upon aboriginal pictographs from New Brunswick. (Bull. Nat. Hist. Soc. New Brunswick, 1904, 175-8, 1 pl.) Only four real or supposed aboriginal pictographs so far reported from N. B. Gesner's pictures on wood (now disappeared), the St. George medallion of 1863 (probably not Indian),

the Passamaquoddy in the N. B. University Museum (markings are of glacial origin, not Indian), and the Oromocto sandstone boulder (of natural origin). The "pictograph" described and figured by Prof. G. from French Lake may also have received its markings from nature and not from man.

Gardiner (H. F.) Ontario onomatopoey and British biography. (Ont. Hist. Soc., Pap. and Proc., Toronto, 1905, VI, 37-47.) Treats of "old country stories suggested by Canadian place-names."

Gerend (A.) Potsherds from Lake Michigan shore sites in Wisconsin. (Wisc. Archeol., Madison, 1904, IV, 1-19, 6 pl.) Treats briefly of 57 pottery fragments from Sand Ridge, Ozaukee, New Amsterdam, Sheboygan, Two Rivers, Brown co. The pottery is usually fabric-marked. From some sites were obtained "a small number of miniature rounded vessels, evidently moulded on the thumb," and probably toys. The Sheboygan pottery varies distinctly in character and ornamentation from that of the other sites.

— and Brown (C. E.) Additions to the list of Wisconsin aboriginal pottery. (Ibid., 19-21.) Brief notes on specimens 18-24, the first of these being "the largest known example of Wisconsin aboriginal earthenware." No. 20 seems to represent a turtle.

Goddard (P. E.) Life and culture of the Hupa. (Univ. of Calif. Publ., Amer. Arch. & Ethn., Berkeley, 1904, I, 1-88, 30 pl., map.) This valuable monograph adds abundantly to and corrects the data in Powers and Ray-Mason. The topics treated are: Environment, history, villages, houses, dress, food, occupations of men, occupations of women, measures, social customs, social organization, amusements, war, diseases and their cures, burial customs, religion. The Hupa have no migration myth and believe their ancestors originated *in loco*. They have "an undercurrent of deep religious feeling."

— Hupa texts. (Ibid., 89-368.) This valuable collection, "offered primarily as a basis for the study of the Hupa language," gives Indian text, interlinear translation and free English version of 14 myths and tales, and 27 stories relating to dances and feasts, "medicine" formulae, etc. These texts contain im-

- portant folk-lore, sociological and philological material about a people of the Athapaskan stock, who differ notably in many points from their congeners. See *American Anthropologist*, 1904, N. S., VI, 712-16.
- James (C. C.)** The origin of "Napanee." (Ont. Hist. Soc., Pap. & Rec., Toronto, 1905, VI, 47-9.) Author argues that the town-name *Napanee* is derived not from the Mississauga word for "flour" (*naw-pdw-nay*, as often written) but from the earlier river-name *Apanee* afterward applied to the settlement. The difference in accent does not exist, however, as *Napanee* really represents French *la farine*.
- Kilroy (Margaret C.)** Local historical places in Essex county. (Ibid., 54-65.) Contains some notes on the Jesuit missions among the Hurons.
- Kolonie (Die)** San Bernardino in Paraguay. (Mitt. d. k. k. Geogr. Ges. in Wien, 1905, XLVIII, 107-9.) Brief account, reproduced from the *Hamburger Nachrichten*, of the flourishing German colony of S. Bernardino, founded 20 years ago on Lake Ipacarni in Paraguay. The town council has representatives of several races. The Germans are in the majority, but the *jefe politico* is a Paraguayan.
- Kroeber (A. L.)** Basketry designs of the Indians of northwestern California. (Univ. of Calif. Publ., Amer. Arch. and Ethn., Berkeley, 1905, II, 105-64, 7 pl., 225 figs.) Treats of the specially developed canistral art of the linguistically distinct but culturally related Yurok, Karok, and Hupa, giving the results of the author's extensive investigations in 1900-02. The native names of the designs are recorded,—and "many of the words are not names of animals or objects, but geometrical or descriptive terms not translatable by the Indians." Only slight tribal differences are noted,—the Karok, *e. g.*, favor more red, vertical outlines, etc. The Yurok work is perhaps finest. The so-called "artistic poverty" of the Pomo can apply only to design names. Dr K. finds that there "is no deep or inherent relationship between the designs of California basketry and their names"; and symbolism is non-existent. The design names are "free from attempts at picture writing or the expression of religious ideas." The designs are primarily decorative.
- Latcham (R. E.)** Notes on the physical characters of the Araucanos. (J. Anthr. Inst., Lond., 1904, XXXIV, 170-80, 1 pl., 2 figs.) Gives measurements of 31 skulls (6 female) studied by author, compared with 20 by Guevara and 7 by Medina. The average index is Guevara 78.9, Medina 78.5, Latcham male 79.6, female 80.1—the race being sub-brachycephalic (range 70-88). Artificial deformation seems unknown. During exertion these Indians have a marked, disagreeable skin-odor. Physically they are inferior to Europeans and half-breeds. Stature (200 individuals) averages for males 1630-1635, and for females 1420-1440 mm. (great difference due to early marriage and hard work). Large families are rare.
- Lehmann-Nitsche (R.)** Altpatagonische, angeblich syphilitische Knochen aus dem Museum zu La Plata. (Z. f. Ethn., Berlin, 1904, XXXVI, 854-62, 4 figs.) Discusses the osseous material suggestive of syphilitic disease in the La Plata Museum, examined by L.-N. and by Stegmann—skulls, long bones, etc. The case for syphilis is not proved, according to the author. If syphilis is of American origin the locus is Central America, not Patagonia.
- Sammlung Boggiani von Indianer-typen aus dem zentralen Südamerika. (Ibid., 882-5.) Brief account of the Boggiani collection of photographs of Indian types.
- Lissauer (A.)** Schädel eines Schokläng aus Santa Catharina, Brasilien. (Ibid., 844-7, 5 figs.) Describes a male skull (40-60 years) of dolichocephalic type.
- Schädel eines Bugre aus Blumenau, Santa Catharina, Brasilien. (Ibid., 848-52.) Describes a skull of a Bugre killed in 1852,—now in the museum of the society. The chief measurements are given in comparison with those of the Schokläng skull. The cephalic indices are respectively 77.3 and 73.3.
- Luco (L. O.)** Chile contemporaneo. (An. de la Univ., Santiago, 1904, CXIV, 19-96, 257-338, 483-552.) Contains brief sections on the Araucanian Indians, the Peruvian (Incaic) conquest, the ethnic elements of the population, the Spanish conquest, etc.
- Marques (A.)** Sobre os primitivos estabelecimentos na Guyana Inglesa. (Bol. Soc. de Geogr. de Lisboa, 1904, 258-

- 64.) Notes, translated from English, on the early history of European settlement in Guiana, the El Dorado myth, etc.
- Martin (C. W.)** The first Indian land grant in Malden. (Ont. Hist. Soc., Pap. and Rec., Toronto, 1905, vi, 11-14.) Describes document signed in 1783 by the Ottawa chiefs Kenitchene, Necanigo, Negig, Rognash, Chemenintona, Assogawso, and Okilhavanan.
- Meerwarth (H.)** Eine zoologische Forschungsreise nach dem Rio Acará im Staate Pará, Brasilien. (Globus, Brunschwig., 1904, LXXXVI, 289-96, 309-15, 12 figs., map.) Describes journey made in 1899, with notes on the Turyuára Indians, their boats, huts, etc. The Turyuára are nominally Catholic and monogamous. They cultivate manioc, cotton, and a few fruits. The women make fine hammocks. Many of the names of animals are onomatopoeic. At pages 294-5 is given a brief list of personal names of men and women. Shooting fish with the bow and arrow is in vogue and much skill shown.
- de Mortillet (A.)** Grottes à peintures de l'Amérique du Sud. (R. d. l'Éc. d'Anthr. de Paris, 1905, xv, 31-35, 9 figs.) Résumés the article of Ambrosetti, published in 1895, on *Las grutas pintadas y los petroglifos de la provincia de Salta*, treating the *Gruta pintada* and other caves with paintings in the Argentinean province of Salta and the same author's *Cuatro pictografías de la región Catichagui* (1903).
- von Nordenskiöld (E. Freih.)** Ueber die Sitte der heutigen Aymara und Quichua Indianer, den Toten Beigaben in die Gräber zu legen. (Globus, Brunschwig., 1905, LXXXVII, 27-28.) Describes the offering of gifts to the dead by the Aymara and Quichua (who are much more conservative than the Tacana tribes) of the Bolivian-Peruvian border, and retain, even under Christian influence, many old customs in relation to burial, etc. Precolumbian graves are opened and European articles put in sometimes. One way of presenting things to the dead is to gather together the articles used by him and burn them on a nearby spot. The Indians excavate *chulpas* to get the skulls to "make weather" with.
- Olivier (S.)** The white man's burden at home. (Intern. Quart., N. Y., 1905, xi, 6-23.) Discusses the negro question in Jamaica. The negro "is now indisputably the equal of the white in categories in which 100 years ago he would have appeared naturally his inferior." Negrophobia (instinctive race prejudice) is a source of danger. In the British West Indies "assaults by black or colored men on white women or children are practically unknown." The author was long in the colonial service.
- Pelzer (L.)** The negro and slavery in early Iowa. (Iowa J. Hist. and Pol., Iowa City, 1904, ii, 471-84.) Historical sketch; not anthropological.
- Thompson (E. H.)** Archeological researches in Yucatan. (Mem. Peab. Mus., Cambridge, 1904, iii, 1-20, 9 pl., 11 figs.) Describes caves of Oxkutzkab (results of exploration same as previously at Loltun), ruins of Xul (some "monkey-like" figures, a usual type of pottery), Tzulá (traces of paintings on walls), Chacmultun (five buildings still standing) where vandalism has been rife—*ka-tunes*, or mills for grinding corn, are made from the casing of the walls. Mr. T. thinks that "these great structures afford the evidence of evolution from the native thatched hut similar to the *na* of to-day." The colored paintings are quite remarkable.
- Vignaud (H.)** La maison d'Albe et les archives colombiennes. (J. Soc. d. Améric. d. Paris, 1904, N. S., i, 273-287.) Discusses the fate of the papers of Columbus in the possession of the house of Alba,—three collections were published by the Duchess of Berwick and Alba in 1891-1902. Other valuable documents may be in the possession of her descendants. In an appendix V. considers the rôle of Ferdinand Columbus in the production of the documents attributed to Toscanelli.
- Virchow (H.)** Sechs Photos von Westgrönländern. (Z. f. Ethn., Berlin, 1904, XXXVI, 862.) Note on photos of West Greenland mixed-bloods from Ivigtut—young women prefer to have children by Europeans.
- Wake (C. S.)** Legends of the American Indians. (Am. Antiq., Chicago, 1904, xxvi, 23-28.) Author considers the real value of these stories to lie in the fact that, "making due allowance for modern changes, they will probably give us a true notion of the present native inhabitants of North America, possibly several thousands of years ago." As

showing this the facts as to domestic and social life, food, clothing, social relations, activities, government, character, beliefs, etc., are briefly considered. Mr W. thinks "it is possible that the Indians of North America and the buffalo appeared on this continent together."

— American origins. (Ibid., 105-115.) Discusses the Mexican "merchant's staff," trade-deities, astronomic ideas, pillar-stones, etc., use of copper, Votan and Quetzalcoatl, etc., as proving Asiatic origin of American Indian culture. Mr Wake concludes that "early American culture was derived from the Asiatic stock to which the early Babylonians, who probably originated in central Asia, belonged, or from the Phenicians, who appear to have been intermediaries between Asia and the Western World."

— Nihancan, the white man. (Ibid., 225-231.) Treats of Nihancan (creator, death-giver, deceiver, sensual being, fool, ingrate, etc.), a chief figure in the Arapaho traditions as recorded by Dr Kroeber. The term white man (Nihancan has now this meaning) may have reference to the complexion of the new-

comers. In certain elements of Arapaho mythology Mr W. sees evidence of "a culture area which included the greater part of Asia as well as North America."

Ward (D. J. H.) The problem of the mounds. (Iowa J. Hist. and Pol., Iowa City, 1905, III, 20-40.) Discusses history of problem and investigation, kinds of prehistoric works (earthworks, refuse heaps, house sites, hut rings, stone works — cairns, enclosures, box-shaped graves, cliff houses — excavations, canals and ditches, pits, garden beds, fire-hearths, trails, mines), material of the mounds, current investigations elsewhere, number, size and contents of mounds (Illinois has 5,000 within a radius of 50 miles of the mouth of the Illinois river); When did the mound-builders live? what the mounds intimate, need of legislative action, methods of investigation. Dr W. argues that "if the mounds were built by Indians, that is, by the ancestors of the present existing tribes, they must have degenerated before the Europeans arrived." And he wonders "if the cave men are young as compared with the mound builder in America."

ANTHROPOLOGIC MISCELLANEA

The American Anthropological Association will meet in San Francisco, California, August 29th to 31st, 1905.

Members of the Association and all others interested in anthropology are cordially invited to be present at this meeting. Papers relating to ethnology, archeology, prehistoric man, physical anthropology, linguistics, and general anthropology will be read. Members and prospective members are invited to present titles of communications.

The meeting will be followed by an excursion of the Association to the Lewis and Clark Centennial Exposition at Portland. Arrangements will be made for the members of the Association while in San Francisco to visit the great educational institutions of the Pacific coast, the University of California and Leland Stanford Junior University, and for excursions to other points of interest. The Museum of the Department of Anthropology of the University of California at the Affiliated Colleges in San Francisco, which has recently been installed but which is not yet open to the public, will be the headquarters of the Association and will be made fully accessible to those in attendance.

This will be the first meeting of the American Anthropological Association to be held west of the Missouri river, and the first meeting devoted to anthropology, archeology, or ethnology ever held on the Pacific coast by any body of national organization. It is unlikely that another anthropological meeting of similar scope can be held on the western side of the continent for a number of years to come, so that by the selection of San Francisco as the place of meeting an unusual opportunity is presented to anthropologists and to those interested in anthropology not only on the Pacific coast of America but in all countries adjacent to the Pacific ocean. The special rates given by the transcontinental railroads to Portland via San Francisco afford an exceptional opportunity for the archeologists and ethnologists of the eastern parts of the country to visit the Pacific coast. From points east of Chicago, St Louis, and New Orleans, the railroad rate will be a little more than one fare for the round trip. Tickets will be sold on July 5, 6, 7, 9, 10, 11, 12, 24, 25, 26, August 5 to 16 inclusive and 28, 29, 30, 31, and will have a final return limit of 90 days, but in no case later than November 30 of this year. These tickets will be good going and returning via same route east

of the above-named cities; but west of them, tickets will be good going via any regular direct route, and returning via same or any other regular direct route (the Canadian Pacific being included in choice of routes). Stop-over privileges are allowed in the East at Philadelphia, Baltimore, Washington, and Niagara Falls; in the West, at Yellowstone Park, at Cheyenne, Denver, Colorado Springs, and Pueblo, and any point west thereof. For rates from points west of the Mississippi, and for further particulars, members are requested to communicate with their nearest station agent.

All communications relating to the meeting, including titles of papers and applications for membership, and in regard to hotels, should be addressed to Dr A. L. Kroeber, Affiliated Colleges, San Francisco.

The Association committee on program and arrangements are: President F. W. Putnam, chairman; A. L. Kroeber, secretary; George Grant MacCurdy, Franz Boas, E. J. Molera, George H. Pepper, F. W. Hodge.

Several amendments to the Constitution of the Association, proposed and approved at the Philadelphia session of 1904, are to be voted on at the meeting. These are as follows:

ARTICLE V, Section 1, second and third lines: Change *a number of councilors to be determined annually to twenty-four councilors*.

Section 2, third and fourth lines: Change *a number of councilors to be determined by the council to six councilors*.

Section 3: Add to the end of the section: *Five shall constitute a quorum*.

Section 7: Strike out at the end of the section: *of whom not more than one shall be a member of the council*.

ARTICLE VII, Section 1: Strike out entirely.

Section 2: Omit from first sentence: *whose chairmen shall be members of the executive committee*.

Fifteenth International Congress of Americanists.—Pursuant to the action taken at the Fourteenth International Congress of Americanists, held at Stuttgart in August, 1904, the Committee of Organization announce that the sessions of the Fifteenth Congress will be held at Quebec, Canada, from Monday, September 10, to Saturday, September 15, 1906. The Committee urge that all persons interested in the work of the Congress (the scope of which includes everything pertaining to the history, ethnology, and archeology of the New World) become affiliated as members or associates of the Fifteenth Session at the earliest practicable

date, and that titles of papers to be presented in person or otherwise be sent to the General Secretary as soon as possible.

The fee for Members is three dollars (\$3.00). Members have the privilege of voting, of taking part in the deliberations of the Congress, and of receiving its publications.

The fee for Associates is one dollar (\$1.00). Associates may attend the meetings, but they do not have the right of participating in the discussions nor of receiving the publications gratuitously.

The sessions of the Congress will be held in the halls of the majestic Parliament Buildings, and ample facilities will be provided should it be deemed necessary to hold sectional meetings. Plans are already in preparation for excursions following the meetings, and there is no doubt that, with such a wealth of historical association as Quebec possesses, those who attend the Congress will derive great pleasure and profit.

The Committee of Organization consists of the following: *President*: Dr Robert Bell, Director of the Geological Survey of Canada, Ottawa. *Vice-president*: Mgr J.-C. K. Laflamme, Dean of the Faculty of Arts, Laval University, Quebec; The Honorable R. A. Pine, Minister of Education for Ontario; Dr David Boyle, of the Department of Education, Toronto. *General Secretary*: Dr N. E. Dionne, Librarian of the Legislative Assembly, Quebec. *Treasurer*: M Alp. Gagnon, of the Department of Public Works, Quebec.

The Patron of the Congress is His Excellency Lord Grey, G. C. M. G., Governor General of Canada; the Honorary President is His Honor Sir L.-A. Jetté, Lieutenant-Governor of Quebec.

Congrès Préhistorique de France.—The first session of the Congrès Préhistorique de France, under the presidency of M. Émile Rivière, assistant director of the laboratory of the Collège de France, will be held at Périgueux (Dordogne), from September 26 to October 1, inclusive. The first three days of the session will be devoted to the presentation of communications and scientific discussion, and to visits to museums, monuments, etc.; on the other three days excursions will be made to archeological sites, notably Eyzies, Madaleine, Liveyre, and Moustier. There are two classes of members—original and associate. The former, whose dues are twelve francs, are entitled to all the privileges of the Congress and will receive the reports; the associate members subscribe six francs and participate only in the receptions, visits, and excursions. Americans interested in the subject are invited to become original members. The secretary is M. Marcel Baudouin, rue Linne, 21, Paris; the treasurer, M. Giraux, avenue Victor-Hugo, 9 bis, à Saint-Mandé (Seine), France.

The Congrès International d'Expansion Économique Mondiale will be held at Mons, Belgium, toward the close of September, under the patronage of His Majesty the King of Belgium. Among the questions to come before the Congress that will prove of interest to anthropologists is the following, which forms a section of an announcement sent out by Dr Cyr van Everbergh, directeur général de l'enseignement supérieur (8, rue de la Loi, Brussels) :

"What are, in new countries, the best methods of making ethnologic and sociologic observations with the view of obtaining scientific knowledge of the social status and of the manners and customs of the natives, and of raising them to a higher civilization?"

It is hoped that our American anthropologists whose lines of research have been such as to enable them to render valuable information on this question, so far as it pertains to the American Indians and to the aborigines of some of our insular possessions, may give the Congress the benefit of their views.

The Jews of Mزاب.—In the February number of the *Zeitschrift für Demographie und Statistik der Juden*, which is issued by the Bureau für die Statistik der Juden under the editorship of Dr Arthur Rupp in Berlin, is found an interesting notice on the Jews of Mزاب, of whom the French anthropologist, M. Huguet, made during 1897-99 a study and gave an account in the *Bulletins et Mémoires de la Société d'Anthropologie de Paris* (V série, tome III, 1902).

Mزاب is an oasis, situated in southern Algiers, about latitude 33° N., longitude 4° E., on the edge of the Sahara. It is inhabited by a Berber tribe of about 30,000 souls and since 1850 has been under French supremacy. By the census of 1896 there were 841 Jews living in Ghardaia, the capital of the oasis, and 34 in the city of Guerrara. Tradition places the immigration of Jews to the oasis in the 14th century. The Jews live in separate streets, but are not distinguished in their attire from the natives, excepting for the frontlocks (*peoth*). The women are pretty, strong, and marked by a certain grace, while the men are of a less prepossessing type.

They marry very early; not infrequently children are betrothed at the age of 4 to 5 years and married when they reach 13 or 14 years. Owing, no doubt, largely to these premature marriages, the mortality among children is enormous. Some marriages are blessed with 15 to 25 children, but only a third or a fourth of them survive to maturity.

Of the ceremonies attending a wedding it may be mentioned that on the wedding day the head of the bride is wrapped in a cloth into the

folds of which candles are inserted and lighted. She is then carried, with bare feet (girls are not allowed to wear foot-gear before marriage), upon the skin of a wild sheep (*mouflon*) to the house of the bridegroom. The marriage is consummated at once, while the guests are feasting in the house, and if the bride is not found chaste she may be divorced. The usual amount of dowry set by the groom on the bride is from 25 to 500 francs (\$5 to \$100). Divorce is easily and frequently obtained. It is not rare that men marry four or five times. All this, as also the fact that the women are rarely possessed even of the most elementary education, in contrast to the zeal for knowledge and learning of the men, would point to a low condition of women among these Jews.

When a woman approaches childbirth she is transferred from the house of the husband to that of her parents, where a hole is dug in a corner and filled with hot ashes, over which a sheet is spread. On this cinereal couch the woman is placed to await the birth, the ashes being renewed as often as they grow cold. Usually the mother is able after one week to return to her household duties. The infant is nourished by the mother from two to two and a half years. In case of twins of different sex being born, the boy is nourished by the mother, while the girl is reared on goat milk.

Of religious observances peculiar to the Jews of Mزاب it should be mentioned that, besides the rite of *bar-mitswah* which, as elsewhere, takes place at the close of the thirteenth year of a boy, at the age of three years he is "introduced into religion" — whatever that may mean — by a special ceremony, called *el Kestab*, and is then an *ousir*, while at the age of four years another ceremony raises him to the dignity of a *soltan*. The Feast of Weeks (*Shabuoth*) is celebrated by them three days instead of two: the third in commemoration of the "conquest of Ghardaia by the Jews." Otherwise they do not differ in their beliefs and rituals from other Jews in the East.

I. M. CASANOWICZ.

Columbia University Courses in Anthropology. — The following courses in Anthropology for 1905-06 have been announced by Columbia University. Those numbered from 101-200 inclusive are for graduates and specially prepared undergraduates. Courses above 200 are for graduate students. All the courses except 107-108 are open to women; and all the courses are open to auditors, who must secure the written consent of the instructor.

101-102 — Anthropology, general introductory course — Lectures, essays, and discussions. Professor Livingston Farrand. Two hours weekly. In the first half of this course a description of human races and of

their distribution is given. The physical characters of the earliest human remains and their relations to present forms are discussed, and the types of languages and their geographical distribution are described. In the second half of the year there is a discussion of the mental development of primitive man, which is followed by a description of types of primitive culture, and an inquiry into the origin and development of particular phases of culture. Open to Juniors.

103-104 — Prehistoric archeology — Lectures, essays, and discussions. Professor Marshall H. Saville and Dr Berkey. Two hours weekly. In the first part of this course the geological basis of prehistoric archeology is discussed, while in the second part the questions of prehistoric archeology are taken up in detail. The collections of the Geological Department and of the American Museum of Natural History are utilized for illustrating this course. Open to Juniors.

105-106 — General ethnography — Lectures, essays, and discussions. Dr Clark Wissler. Two hours weekly. In this course the ethnology of primitive tribes is described, in geographical order, a summary of the cultural types of America, Asia, Australia, the Pacific islands, and of Africa being given. The collections in the American Museum of Natural History will be utilized for illustrating this course. Open to Juniors.

107-108 — Ethnology — Primitive culture — Lectures, papers, and discussions. Professor Farrand. Two hours weekly. This course consists of a more detailed treatment of the questions involved in primitive culture, such as the origin and development of mythology, morality and religion, education, art, social customs, etc. Students are expected to have taken Anthropology 101-102 or 105-106, or to give satisfactory evidence of previous work before being admitted to this course.

109-110 — Ethnography of America and Siberia — Lectures and discussions. Professor Franz Boas. Two hours weekly. This course consists of a detailed description of the questions involved in the distribution of tribes, types languages, and customs of America and Siberia. The collections in the American Museum of Natural History will be utilized for illustrating this course. Prerequisite, 101-102 or 105-106, or equivalent reading.

[111-112 — Ethnography of Africa, Australia, and the islands of the Pacific ocean. Dr Wissler. *Not given in 1905-06.*]

113-114 — Ethnography of China — Language, literature, government, and social customs of China. Professor Hirth.

115-116 — Mexican archeology — Lectures, essays, and discussions. Professor Saville. In this course the archeology of Mexico and the ad-

joining regions to the south will be discussed. The collections in the American Museum of Natural History will be utilized for illustrating this course. Prerequisite, 101-102, 103-104, or 105-106, or equivalent reading.

117-118 — American languages — Lectures and discussions. Professor Boas. Two hours weekly. Selected languages representing different types will be discussed. Indian myths will be translated in connection with grammatical interpretation. The course extends over two years, allowing time for the consideration of representative types of North American languages.

119-120 — Morphology with special reference to physical anthropology. Professor Huntington.

121 — The statistical study of variation, introductory course — Lectures, essays, and discussions. Dr Wissler. Two hours weekly and three hours' laboratory work; first half year. This course is intended as an introduction to the study of variation for students of anthropology, psychology, and biology. The characteristic features of variability and the methods of treatment are discussed. This course is open to Seniors.

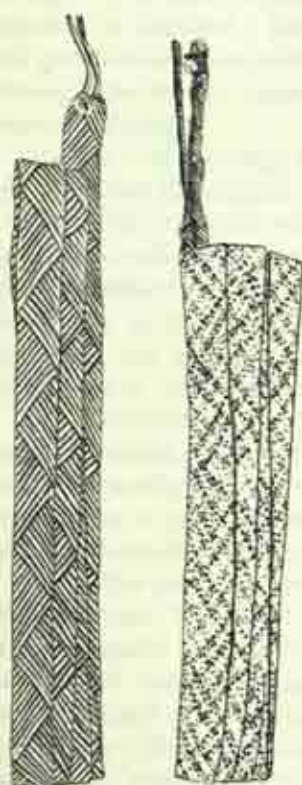
122 — The statistical study of variation, advanced course — Lectures, essays, discussions, and laboratory work. Professor Boas and Dr Wissler. Two hours weekly and three hours' laboratory work; second half-year. Continuation of course 121 for students who wish to prepare for research work in the statistical study of variation.

123 — The statistical treatment of anatomical and physiological data. Professor Boas. Two hours weekly; first half-year. This course is intended primarily for medical students. The methods of treating vital statistics and anatomical, physiological, and pathological statistics form the main subject of the course.

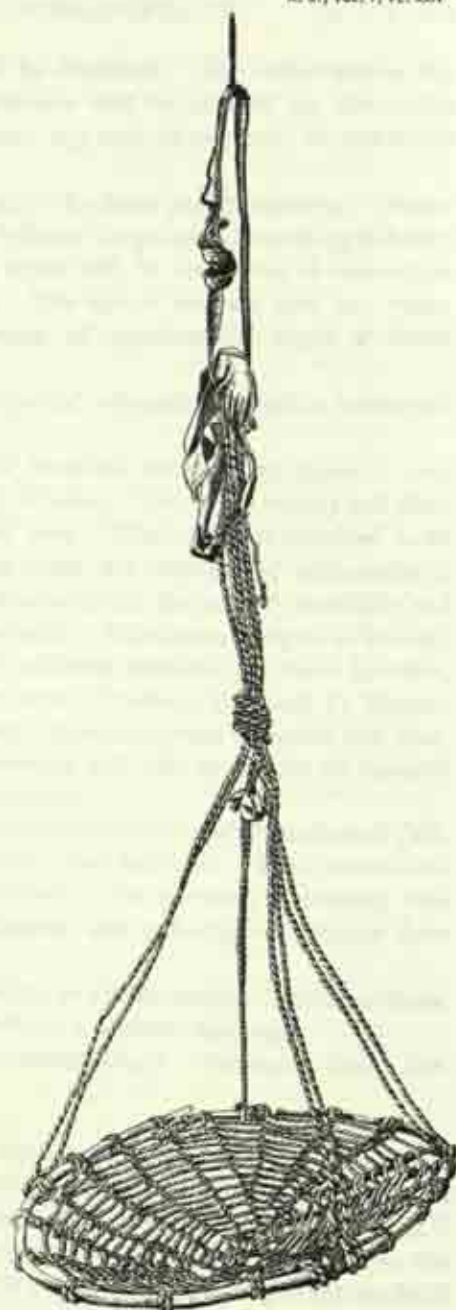
201-202 — Seminar in ethnology, two hours weekly. Professor Boas. Prerequisite, 105-106 and 107-108, or equivalent reading.

203-204 — Research work in anthropology. Professors Boas, Farrand, and Saville. Daily.

Head Deformation Among the Klamath. — The Klamath Indians, together with a number of other tribes of the Columbia river region, still practise artificial head deformation of the variety known as "flat head," consisting of the flattening of the frontal region of the infant while on the cradle-board. The desired effect is produced by applying to the forehead of the child continuous pressure by means of a pad, or of a small padded plank. Rev. J. Kirk, an educated Klamath, who himself exhibited this



1. Baby-board bands: last remnants of old Maricopa weaving. (N-12679 and N-12680, Am. Mus. Nat. Hist.)



2. Cora net cradle (Cat. no. 653068, Am. Mus. Nat. Hist.)

MARICOPA WEAVING AND CORA CRADLE

variety of head deformation, recently visited the National Museum, where he was measured and photographed. From him it was learned that the Klamath regard a long head *i. e.*, a non-deformed head, with derision. They say it is slave-like, that their slaves had such, and that a man with such a head is not fit to be a great man in the tribe. Deformed heads are called "good heads." The flattening, which is practised to this day, is produced chiefly by means of a bag of seeds, usually of the water-lily, tied over the forehead of the infant, the ends of the bandage that hold the bag in place being fastened to the baby-board. Water-lily seeds are among the principal native foods of the tribe. Sometimes other seeds are used, but they are always of some edible variety. So far as known, the process of deforming the head of the child has no deleterious effect.

A. HRDLICKA.

Maricopa Weaving.—While visiting the Maricopa Indians of southern Arizona in 1902, and again in 1905, the writer was fortunate enough to see and collect two rare examples of Maricopa native weaving. These specimens, which now form part of the Hyde collection in the American Museum of Natural History, New York, consist of long, narrow bands that were used to fasten the baby on its cradle-board. They are made from cotton or wool yarn purchased from the dealers, are mostly white, grayish, bluish, or red in color, and are woven in simple geometric patterns. Both the women and the men formerly wove these bands, but the practice is now nearly abandoned. According to information obtained from an old Maricopa, about forty years ago the people of his tribe still planted native cotton, with which the men wove large decorated blankets. The informant made several of these himself in his youth, but he is now the only survivor of those acquainted with the art. The specimens obtained are illustrated in plate XXIV, 1.

A. HRDLICKA.

A Cora Cradle.—Among the Cora tribe of the territory of Tepic, Mexico, an interesting form of swinging cradle is used. This region is infested with scorpions, the sting of which is dangerous to infants, and on this account the Cora make a shallow net of vegetal fiber which is stretched on an oval frame and suspended, usually by four cords, from a reata of ixtle, or maguey fiber, fastened to a rafter of the dwelling.

The accompanying illustration (plate XXIV, 2) shows one of these cradles, collected by the writer for the Hyde Expedition in 1902, and now in the American Museum of Natural History, New York. Several deer hoofs, that serve as rattles, dangle from the apex of the cords that sustain the cradle.

Similar nets, but more rounded and smaller, suspended from pegs in the walls or from the roof, are used by the Cora as convenient receptacles for various articles, particularly food. A. HRDLICKA.

Jacob Vradenberg Brower, well known through his researches in early history and archeology, especially of Minnesota and Kansas, died at St Cloud, Minnesota, June 1. Mr Brower was born on a farm at York, Michigan, January 21, 1844, moving to Long Prairie, Todd county, Minnesota, when only thirteen years of age. He received a common school education, enlisted in the volunteer cavalry in 1862, and entered the United States volunteer navy two years later. He was honored with several federal and state appointments, among the latter that of Itasca State Park Commissioner from 1891 to 1895. For this office Mr Brower was especially well fitted by reason of an intimate knowledge of the country gained by his exploration, in 1889, of the sources of the Mississippi. While engaged in his Itasca work, Mr Brower, in 1894-95, discovered an ancient village site and several mounds at the lake. In 1896 he traced the source of Missouri river, and in 1897-98 conducted archeological explorations in central and eastern Kansas that resulted in the important rediscovery of the ancient province of Quivira, visited by Francisco Vasquez Coronado in 1541. In 1900 he located 1,125 aboriginal mounds at Mille Lac, Minnesota, and was engaged in gathering material in the western part of the state, with the view of preparing a volume on the early history of the Sioux in Minnesota, when stricken with paralysis on May 26, near Fergus Falls. Mr Brower was an indefatigable worker, as his voluminous productions attest; and he was undaunted in the face of what to most men would prove a source of discouragement, as a serious fire which utterly destroyed the results of years of research but which spurred him to renewed vigor would indicate. In later years he became a firm believer in the immediate publication of results, so that from 1893 scarcely a year passed without the production of a beautiful volume, issued chiefly at the expense of his private means. He was for years chairman of the museum committee of the Minnesota Historical Society, and during a decade contributed to its collections more than 100,000 specimens. The most important of his published writings are: *The Mississippi River and its Source* (1893), *Prehistoric Man at the Headwaters of the Mississippi River* (1895), *The Missouri River and its Utmost Source* (1896), *Quivira* (1898), *Harahey* (1899), *Mille Lac* (1900), *Kathio* (1901), *Minnesota: Discovery and its Area—1541-1665* (1903), *Kansas: Monumental Perpetuation of its Earliest History, 1541-1896* (1903), *Itasca State Park, an Illustrated History*

(1905). Mr Brower was one of the organizers of the Quivira Historical Society and had been its president from the beginning.

Minnesota Historical Society. — The general interest in American archeology, especially among our historical societies, is nowhere better exemplified than at St Paul, where the Minnesota Historical Society, established in 1849, in the year that Minnesota became a territory, has for some years been accumulating a collection of archeological objects. This society, whose excellent work is wisely appreciated by the State at large, which annually appropriates \$15,000 toward its expenses, maintains a museum, an important part of which is its department of archeology, containing a collection the extent of which is probably not known by many archeologists beyond the limits of the State. The late J. V. Brower, chairman of the Museum Committee of the Society, has alone added to its collections more than 100,000 specimens of stone implements and weapons, flakes from their manufacture, bone and copper ornaments, pottery, etc., partly from the Indians and partly from their ancient mounds throughout Minnesota and a large part of the territory westward to the Rocky mountains and southward to Kansas. The announcement has recently been made by Mr Warren Upham, secretary and librarian of the society, that Rev. Edward C. Mitchell, of St Paul, has expressed his intention of depositing in the museum the greater part of his collection, including many thousands of specimens of aboriginal implements, weapons, ornaments, and pottery. Within the last few months the society has moved into new quarters that are provided for it in the splendid capitol now practically completed, where it will suitably display its archeological collections and arrange its library as pecuniary means are afforded. The importance of the work that the Minnesota Historical Society is doing should be fully encouraged by granting the funds necessary for enabling it to become more and more a part of the educational system of the state.

M. JULIEN GIRARD DE RIALLE, minister plenipotentiary from France to Chile, died recently at Santander, Chile, aged sixty-four years. M. Rialle was well known in France for his anthropologic studies. He was at one time charged with a mission to Syria; in 1870 he was sent to Germany, and after serving as prefect of the Basses-Alpes in 1871-73, entered the ministry of foreign affairs as sub-director of archives in 1880 and as director in 1882.

ÉMILE VOUGA, known through his excavations in the bed of the Zihl that resulted in the discovery of four pile-dwellings connected with

the banks by a bridge, died at Champ Bougin, near Neuchâtel, Switzerland, September 11, 1904, aged 67 years. The results of Vouga's interesting researches are described in his work *Les Helvètes à la Tène*.

IN RECOGNITION of his services to science generally and to the cause of ethnology in particular, the Emperor of Russia has appointed Mr Morris K. Jesup, president of the American Museum of Natural History and patron of the Jesup North Pacific Expedition, a Knight of the Imperial Order of St Stanislaus of the first class.

ADRIEN ARCELIN, who recently died at Saint-Sorlin, near Mâcon, France, in his sixty-sixth year, was well known to European archeologists through his discovery and exploration of the beds of Solutr  and the discovery in 1869 of the first flint chips known in Egypt, a find that was at first discredited by Egyptologists.

ANDR  LEF VRE, professor in the  cole d'Anthropologie de Paris, died recently, aged 71 years. In 1880 Dr Lef vre became assistant professor in the school, and in 1890 succeeded Hovelacque as professor of ethnography and linguistics. He served as president of the Soci t  d'Anthropologie in 1896.

DR FRANZ BOAS has resigned the curatorship of the Department of Anthropology of the American Museum of Natural History, but will continue the publication of the results of the researches that he has undertaken for the Museum.

DR ALBERT ERNEST JENKS, Director of the Ethnological Survey for the Philippine Islands, has been compelled, owing to ill health, to relinquish his duties temporarily, and will spend several months in the United States.

DR ALES HRDLICKA, of the United States National Museum, has been elected a corresponding member of the Soci t  d'Anthropologie de Paris and of the Royal Bohemian Association of Sciences of Prague.

THE DEGREE of Doctor of Science has been conferred by Columbia University on William T. Brigham, Director of the Bishop Museum of Polynesian Ethnology and Natural History at Honolulu.

M. L ON LEJEAL, of the Coll ge de France, opened in December last his course on Mexican antiquities, established through the generosity of the Duc de Loubat.

DR GEORGE A. DORSEY, of the Field Columbian Museum, has been elected a corresponding member of the Soci t  d'Anthropologie de Paris.

MR DAVID I. BUSHNELL, JR, whose article on Mexican atlatls appears in this issue, has been elected a correspondent of the Società Italiana d'Antropologia.

ERNEST D'ACY, who was the first to demonstrate the unity of the Acheulian and Chelleian finds in France, died at Paris, January 1, aged 78 years.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

Meeting of December 13, 1904

The 367th meeting was held at the Cosmos Club, December 1, 1904, the President, Dr D. S. Lamb, in the chair, and 75 members and guests present.

Dr B. ROSALIE SLAUGHTER addressed the Society on *The Buried Cities of Ceylon*, illustrating with lantern slides some of the more striking finds of recent explorations, sketching the architectural features of several great topes, and closing with an account of the Singhalese migration and conquest.

Mr J. N. B. HEWITT, in continuation of the postponed symposium, *What is a Clan?* (*American Anthropologist*, vi, No. 5, 1904), discussed *The Iroquois Clan*. Mr Hewitt showed that among these people the social and political structure is based on actual and theoretical blood relationship; that consanguinity constitutes citizenship in the tribe, and that citizenship confers certain essential social, religious, and political rights, at the same time imposing certain duties and obligations. Theoretical consanguinity is that produced by the institution of adoption, which by a fiction of law transforms the blood of an alien into that of an Iroquois. The clan of the Iroquois is constituted of one or more consanguineous groups of offspring tracing descent through a female ancestor and through females only; these groups are called *Ohwachiras* by the Iroquois. Where there are several *Ohwachiras* constituting a clan, they regard one another as sisters. Hence it is evident that the clan is constituted of groups of persons regarded as actually or theoretically consanguineous. From a survey of its essential characteristics and the nature of the constitutive elements, Mr Hewitt stated that he would define an Iroquois clan as a permanent body of kindred, actually and theoretically consanguineous and socially and politically organized, who trace descent through the female line only.

Dr I. M. CASANOWICZ discussed *The Clan Among the Semites*, stating that fragmentary relics of the primitive system may be traced among the advanced Semites of Syria, Mesopotamia, Canaan, and Phenicia. The phrase "tribes of Israel" is familiar from the English Bible. The tribe (*shebet* or *matteh*, properly 'rod,' 'staff,' *i. e.*, a group led or ruled over

by a chief with a staff or scepter) was a confederation of septs or clans (*mishpahah*, rendered in the English Bible by "family"), and there were again aggregations of households or homesteads (*beth-ab*, properly, 'father's house'). Members of one and the same *mishpahah* or clan are designated as brothers or as being of the same "bone and flesh," which would indicate that the bond of union was mainly blood-kinship. It would also seem that a common worship was from time to time the rallying point for the members of a tribe (I Samuel, xx, 6). It may in general be assumed that the primitive social system of the Hebrews and the other Semitic people was in its principles and purposes essentially similar to that of the nomadic Arabs who retained the tribal constitution longer than the other Semitic races. As late as the time of Mohammed, Arabian society was composed of a multitude of local groups, held together within themselves by a traditional sentiment of unity and by the recognition and exercise of certain mutual obligations and social duties and rights. These groups formed the social and political units of society. Larger combinations of several groups were not unknown, but they were comparatively unstable and tended to resolve themselves again into their elements. The chief duties of the members of such a group were to act together in war and blood-feuds, and to protect one another by blood-revenge. A kindred group was marked off from any other by the fact that within it there was no blood-feud. The unifying force was blood-kinship on the father's side, and the Arabian genealogists consider these groups as the result of the expansion and branching out of the patriarchal family, formed by subdivision of an original stock, on the system of kinship through male descent. But there are numerous indications that the fundamental doctrine of unity of blood as the principle that binds men into a permanent social unity, must have sprung up in groups that were not patriarchal families but were formed under the system of mother-kinship. Thus, for instance, down to the time of Mohammed, bars to marriage among the Arabs were constituted by female kinship only. In fact, fatherhood did not necessarily imply procreation. However that may be, the key to all the primitive divisions and aggregations among the Arabs and their Semitic kindred lies in the action and reaction of two principles: that a union of an absolute and permanent kind can be based only on the bond of blood, and that the purpose of such a union is to unite men for offense and defense. There was no hard and fast line of demarkation between clans and tribes among the Semites. They were fluid organizations, subject to integration and disintegration by combination and subdivision, by accession and secession.

Meeting of January 3, 1905

The 368th meeting was held January 3d, 1905. This being the annual meeting the reports of the General Secretary, Treasurer, and Curator were read. Owing to the continued ill-health of the Treasurer, Mr P. B. Pierce, he presented his resignation. The Society, after thanking Mr Pierce for his long, faithful, and efficient service, elected as Treasurer Mr George C. Maynard. An amendment to the By-laws, changing the date of the annual meeting to the last meeting in May, was adopted.

Meeting of January 17, 1905

The 369th meeting was held at the Cosmos Club, January 17th, 1905, the President, Dr D. S. Lamb, in the chair, and 22 members and guests present. Dr Walter Hough described *Recent Field Work in Arizona and New Mexico*, conducted by him for the U. S. National Museum. The region visited lies in western New Mexico and eastern Arizona, on the northern affluents of Gila river. Excavations were made in rectangular stone pueblos near Luna, New Mexico, and in cliff-houses and ceremonial caves of the region, yielding a collection and a body of data regarding the distribution of Pueblo tribes.

DR MITCHELL CARROLL addressed the Society on *The Archaic Sculptures in the Acropolis Museum at Athens*. Many lantern views of these sculptures were presented, accompanied with a discussion of the features showing development from the ruder attempts to the finished productions of the great classic schools.

Meeting of January 31, 1905

The 370th meeting was held at the Cosmos Club, January 31st, 1905, the President, Dr D. S. Lamb, in the chair, and 31 members and guests present.

A paper by DR GEORGE BIRD GRINNELL on *Some Cheyenne Plant Medicines* was read. This paper is published in the *American Anthropologist*, vol. VII, pp. 37-43, 1905.

In his *Official Report of a Journey Across the Island of Mindanao*, COL J. G. HARBORD, U. S. A., modestly recounted what was an important exploration in a region which had never before been traveled by a white man, and seldom by men of any race. Though the journey across Mindanao occupied only fifteen days, it was attended with privations and sickness. The expedition left Baganga on the east coast, traversed difficult mountains to Compostela and down Agusan river in dugouts to Butan

on the west coast. The people encountered were mixed Visayans on the coast and the Mandayas and Manobos of the interior, who live in the basin of the Agusan. The paper was read by Dr E. A. Mearns, U. S. A., who accompanied Colonel Harbord on this journey.

Dr J. B. NICHOLS presented a paper on *The Sex Composition of Human Families*. The article appears in the *American Anthropologist*, vol. VII, pp. 24-36, 1905.

Meeting of February 14, 1905

The 371st meeting was held at the Cosmos Club, February 14, 1905, the President, Dr D. S. Lamb, in the chair, and 60 members and guests present. In opening the meeting the President stated that on this day the Society had completed its twenty-sixth year.

Dr I. H. LAMB presented a paper on *The Origin of St Valentine's Day*. This day, the speaker remarked, seems to be associated with the name of a Christian martyr in the reign of the Emperor Claudius, about 270 A.D. His name occurs in church literature, and his feast day, February 14, was substituted for the day of the feast of the Lupercal, February 15, in the evolution of the early church from heathen to Christian forms and ceremonies. From the Lupercal is probably derived the custom of making gifts and of presenting favors and especially love tokens on St Valentine's Day. Many early writers describe the various observances of St Valentine's as resembling a game of forfeits, the "forfeit" being paid to relieve the obligation which the chance of being drawn placed upon the one drawn. Pepys' Diary gives illustrations of this custom. The chance seemed binding unless relieved by a gift or forfeit. The literature concerning the Saint's day shows that it was popularly supposed that even the birds on that day selected their mates.

Prof EDGAR L. HEWETT presented a communication on *The Archeology of Pajarito Park, New Mexico*, illustrated with lantern slides. Professor Hewett's paper is published in vol. VI, pp. 629-659, of the *American Anthropologist*.

Meeting of February 28, 1905

The 372d meeting was held February 28, 1905, the President, Dr D. S. Lamb, in the chair. The evening was devoted to a symposium on the *Origin of Aboriginal Floridian Culture*.

Mr JAMES MOONEY discussed the *Ethnography of Florida*, stating that the name Florida, as originally applied by the Spaniards, included the whole coast and hinterland from Chesapeake bay about to Panuco river

in Mexico. The state received its present limitation, embracing an area of nearly 60,000 square miles, on coming into possession of the United States in 1821. For a period of more than three centuries, with the exception of the twenty years from 1763 to 1783, it was a Spanish colony, and as a consequence most of its history must be gathered from Spanish sources. The Indian history may be divided into two periods, viz., the ancient and the modern, the separating event being the destruction of the missions and the invasion of the northern tribes about the year 1700. Before this invasion the area of the present state was occupied by some fifteen tribes. It had been hastily assumed on insufficient evidence that all of these belonged either to the Muskhogean stock along the northern border or to the Timuquanan stock in the west of the peninsula. The fact is, that we have as yet no linguistic authority for extending the Timuquanan boundary beyond the middle of the peninsula, and the rest of the area must for the present remain uncolored upon the linguistic map. There is, however, strong probability that the language of the Caloosa, the most important of these southern tribes, may yet be recovered from the Spanish mission archives. The most interesting point in this connection is the fact, brought out by the paper, of the existence of an Arawakan colony from Cuba somewhere upon the southwestern coast of Florida, within the territory of the Caloosa. Their ancestors had landed in Florida in search of the same mythic fountain of youth of which Ponce de Leon heard from the islanders and had been forcibly detained by the Caloosa chief, who colonized them in a settlement, where for a long time afterward they still preserved their separate identity. The chain of Arawakan extension is thus established from the Paraguay river of southern South America, up through Brazil, Guiana, and the Antilles to the mainland of North America. It was also shown that a regular communication existed between the tribes of Florida and those of the Antilles during the early Indian period, and that the so-called "Caribbean influence" discussed by archeologists was more properly Arawakan.

DR CYRUS THOMAS discussed *Foreign Influence in Prehistoric Florida*, giving a critical review of the account of expeditions previous to 1513 in search of a mythical "River Jordan," which may have introduced Antillean natives (Carib and Arawak) to the peninsula. The conclusion reached by Dr Thomas is that the weight of evidence is against the reference of historical accounts of Antillean migration to periods before the discovery.

MR W. H. HOLMES discussed *Traces of Exotic Influences on the Art of Florida*, reaching the conclusion that archeological evidences

show that, leaving the question of peoples aside, there is proof in the artifacts that Antillean culture was transplanted to the mainland to a slight extent.

MR J. D. MCGUIRE gave a synopsis of *The Explorations of Mr Clarence B. Moore in Florida*, presenting the results of these important investigations which show traces of Antillean influence.

Meeting of March 14, 1905

The 373d meeting was held March 14, 1905, President Lamb in the chair and 29 members present.

REV. DR JAMES S. LEMON addressed the Society on *The Samaritan Passover of 1904*, sketching the location, village, history, and customs of this rapidly waning people, now numbering only 160. Dr Lemon, who was present at the Passover celebration of 1904, described minutely the ceremonies on Mount Gerazim, which are held every year on the 14th day of the month Nisan.

MR A. E. SHELDON's paper on *Ancient Indian Fire-places in South Dakota Bad-lands* was read by Mr J. D. McGuire. This paper is printed in the *American Anthropologist*, vol. VII, No. 1, 1905.

Meeting of March 28, 1905

The 374th meeting was held on the above date, President Lamb in the chair and 53 members and guests present.

The General Secretary called attention to primitive textiles of feathers, buffalo hair, and basketry recently received at the U. S. National Museum from Cañon de Chelly, Arizona.

MR H. W. HENSHAW spoke of *Popular Fallacies Respecting the North American Indians*, reviewing the erroneous ideas prevailing regarding this race. The paper is printed in full in the *American Anthropologist*, vol. VII, No. 1, 1905.

DR I. M. CASANOWICZ exhibited an original Græco-Roman portrait of the 1st century B.C. to the 3d century A.D., from the collection of Theodor Graf of Vienna, found in a Ptolemaic cemetery in Egypt. This portrait is now exhibited in the U. S. National Museum.

MISS NATALIE CURTIS gave a pleasing and instructive rendering of songs from various Indian tribes.

MR W. E. SAFFORD presented a paper on *Fruits and Vegetables of the Ancient Peruvians as Represented in the Pottery from their Graves*, illustrated by specimens. Vessels in the form of ears of maize, potatoes, peanuts, etc., were shown, and the absence of the banana from such representations was commented on.

Meeting of April 11, 1905

The 375th meeting was held at the Cosmos Club, President Lamb in the chair and 48 members and guests present.

DR GEORGE A. CURRIDEN spoke on *Indian Beadwork*, exhibiting specimens of bead embroidery and weaving from various Indian tribes.

DR SWAN M. BURNETT addressed the Society on *Emerson's Place in Modern Thought and Opinion*. This paper, which is of high literary quality, embodied the opinion that the influence of Emerson is still potent.

DR JAMES S. LEMON, owing to the limited time remaining, gave merely an abstract of his paper on *The Instinctive Idea of Immortality*, stating that the idea exists with all peoples and is the real basis of friendship. In the discussion Mr J. N. B. Hewitt stated that American Indians entertain this idea, and Mr Mooney said that among the Indians growth is regarded as normal and death as abnormal, and that the latter is brought about by a malevolent spirit or an enemy. The Indian draws no distinction between animate and inanimate objects, believing all to possess life.

Meeting of April 25, 1905

At the 376th meeting President Lamb was in the chair and 29 members and guests were present.

DR ALES HRDLICKA gave an account of his *Recent Expedition to the Southwest*. The tribes visited on this expedition were the Apache of San Carlos reservation, the Pima, and the Mescaleros. The object of the expedition, which was financed by the Bureau of American Ethnology, was to supplement the speaker's anthropological studies made on five previous trips for the Hyde Expedition under the auspices of the American Museum of Natural History. The Apache possess but few remnants of their native organization; they still recognize numerous bands, and a few of these have still a recognized chief; but tribal coherence is lost. Of all the Indians in the Southwest, the various Apache branches, including the Mescaleros, are among the most common-sense people, and all are rapidly advancing in civilization. Dr Hrdlicka described also the archeologic remains in San Carlos valley, an account of which will appear in the next number of the *Anthropologist*.

The principal attention on the expedition was directed toward the physical and physiological study of Indian children, of whom about 1,400 were examined. An additional inquiry was also made into the pathology and medicine of the people, and numerous medicinal and food plants were

collected. It was found that in all the tribes visited there are two classes of individuals who treat the sick: one consists of elder people, principally old women, who administer medicines, mainly vegetal, in much the same manner as is done by old women among the whites; the other class consists of medicine men, and a few medicine women, who in their treatment employ prayers and incantations chiefly. Most of these also use some form of deception and must be classed as charlatans. Among the Mescaleros alone it was found that ordinary medication has reached the stage in which several remedies are combined into a single decoction or application. Among all the Indians visited, scarification is in use; the Pima and Maricopa use actual cautery, the Maricopa employ massage, the Mescaleros peculiar sweat-baths for the cure of rheumatism, etc. Details are reserved for future communication.

MR FRANCIS LA FLESCHÉ read a paper on *The Medicine Man*. Mr La Flesché said that it is not generally credited by the white race that the tribes of this continent did not differ from the other peoples of the earth in their efforts to understand the meaning of life in all its variety of forms and the relation of these forms to the great mysterious power that animates all life. It is true, however, that the natives of this land had given these themes much thought and had formulated their ideas concerning them long before the European set foot upon this soil. The lack of intelligence as to this fact has been due in part to the absence of a written literature among the tribes within the area of the United States, while such records as did exist have suffered grave misapprehension and mistreatment on the part of observers. Most of the missionaries who have labored among the Indians did not stop to inquire if the people had any idea of a power that made and controlled all things. They seem to have taken for granted that savages were not capable, by their own effort, of conceiving the thought of such a power. It was not possible therefore for the white people to gain, through the medium of these teachers, any definite knowledge of the real thoughts of the Indian concerning the Supreme Being. The Indian has not fared much better at the hands of those who have undertaken to study him as an object of ethnological interest. The myths, the rituals, and the legends of the race have frequently been recorded in such manner as to obscure their true meaning and to make them to appear childish or as foolish. This in large measure has been due to linguistic difficulties.

The Indians who lived within the borders of this country knew no written literature: the record of their religious conceptions was kept by means of rites, ceremonies, and symbols. Among many of the tribes (as,

for example, the Omaha), these symbols were embodied in the organization of the tribe itself and in the ceremonies connected with the avocations of the people. The burden of memorizing and transmitting with accuracy, from one generation to another, the rites and ceremonies common to the tribe, was divided among men selected from each of the clans. This responsibility was not placed on these men without a careful consideration of each man's qualifications and fitness to be so entrusted, for the reason that the recognition of the Great Spirit as a ruler, and the observation of the prescribed manner of worshipping him, was believed to be essential to the continued existence of the people as an organized body, that is, as a tribe.

Four requisites were demanded of the one who was to deal with the mysteries enshrined in the rites and ceremonies of the tribe: (1) The most important of these was their cognition of the sanctity of human life. The man who was to mediate between the people and *Wa-kon-da* must stand before his tribesmen and the Great Spirit with hands unstained with the blood of his fellow man. (2) He must be a man whose words never deviate from the path of truth, for the Great Spirit manifests the value placed upon truth, in the regular and orderly movements of the heavenly bodies, and in the ever-recurring day and night, summer and winter. (3) He must be slow to anger, for the patience of the Great Spirit is shown in his forbearance with man's waywardness. (4) He must be deliberate and prudent of speech, lest by haste he should profane his trust through thoughtless utterance. These were the prophets and priests—the men who are termed in the Indian languages as “men of mystery” and by Europeans as “medicine men.” The entire life of the medicine man, both public and private, was devoted to his calling: his solitary fasts were frequent and his mind was apt to be occupied in contemplating the supernatural; his public duties were many and often onerous; his services were needed when children were dedicated to the Great Spirit; he must conduct the installation of chiefs; when dangers threatened, he must call these leaders to the council of war; and he was the one to confer military honors on the warrior; the appointment of officers to enforce order during the tribal buffalo hunt was his duty; and he it was who must designate the time for the planting of the maize.

There was another kind of medicine man, very different in character. He held no office of public trust, for he lacked one of the essential qualifications for such responsibility, and that was truthfulness: he continually wandered in thought, word, and deed from the straight path of truth. He was shrewd, crafty, and devoid of scruple. The intelligent classes

within the tribe held him in contempt, while the ignorant of the community feared him. His bold pretensions enabled him to carry on successfully his profession of deception upon the simple-minded. These tricksters were much in evidence in the tribes, and they never failed to impress the stranger who traveled and wrote books.

The tribal religious rites were invariably observed either annually or at the beginning of a season. To go through the forms at any other time would be a sacrilege, so the medicine man who officiated on these occasions never had the opportunity to become known to the stranger, as had the sorcerer, who could go through his incantations whenever and wherever inducement might offer. It can therefore be readily understood how this character became prominent in the literature of the white race, and how his clever inventions were believed to represent the religious beliefs of the Indians.

DR ROBERT STEIN addressed the Society on *The Proposed International Phonetic Conference*, sketching the history of the movement and stating that the need of reform is shown by the fact that there are seven different dictionaries with as many keys to pronunciation. It is felt, Dr Stein stated, that the reform must progress slowly and that the logical first step is to teach phonetic spelling to children. Dr Stein believes that the proposed conference may create an alphabet that dictionaries will recognize.

Meeting of May 9, 1905

The annual address of the President, Dr D. S. Lamb, was given under the auspices of the Washington Academy of Sciences at the Cosmos Club on the above date. The subject was *The Story of the Anthropological Society of Washington*. After a patient search among the records Dr Lamb was able to bring together much interesting historical and statistical data showing the creditable work the Anthropological Society has accomplished in the 26 years of its existence. The address will be published later.

Meeting of May 23, 1905

The 377th meeting was held at the Cosmos Club, and in the absence of President Lamb, Vice-president W. H. Holmes took the chair. The Society proceeded to the election of officers for the ensuing year, with the following result:

President, Dr George M. Kober; *Vice-presidents*: (A. Somatology) Dr A. Hrdlicka, (B. Psychology) Dr Frank Baker, (C. Esthetology) Prof W. H. Holmes, (D. Technology) Dr J. Walter Fewkes, (E. Sociology) Mr James Mooney, (F. Philology) Mr J. N. B. Hewitt, (G.

Sophiology) Dr Lester F. Ward; *General Secretary*, Dr Walter Hough; *Secretary to the Board of Managers*, Mr J. D. McGuire; *Treasurer*, Mr George C. Maynard; *Curator*, Mrs Marianna P. Seaman; *Councilors*: Weston Flint, F. W. Hodge, John R. Swanton, I. M. Casanowicz, Paul E. Beckwith, C. Hart Merriam.

WALTER HOUGH,
General Secretary.

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SUPPLEMENT

ESSAY ON THE GRAMMAR OF THE YUKAGHIR LANGUAGE¹

By WALDEMAR JOCHELSON

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PREFACE

I took up the study of the two dialects of the Yukaghir language in 1895-97 during my participation in the Yakut Expedition, fitted out by the Russian Imperial Geographical Society, and continued it on the North Pacific Expedition (from 1900 to 1902), provided for by Mr. Morris K. Jesup, President of the American Museum of Natural History in New York. My work on the Jesup North Pacific Expedition was part of a general systematic investigation of the tribes inhabiting the coast of the North Pacific Ocean. The full results of these studies will be published later in the Memoirs of the American Museum of Natural History.

¹ Reprinted from the Annals of the New York Academy of Sciences and herein published by the American Ethnological Society.

All that was previously known of the Yukaghir language consisted of records of a few hundred words and sentences collected incidentally by various travelers and Russian officials, particularly by Baron v. Maydell (1870), and worked up by the late Professor A. Schiefner in three articles which appeared in the publications of the Imperial Academy of Sciences in St. Petersburg.¹

Owing to the meagreness of the linguistic material, the conclusions of Professor Schiefner could not be very far reaching. Besides, incorrect records and inexact translations of phrases collected by incidental explorers led to wrong conclusions.

However, it can be inferred, even from these articles, that the Yukaghir language stands isolated from the Siberian languages of the so-called Ural-Altaic group; and for that reason it has attracted the attention of linguists.

Since the time of Baron v. Maydell's travels (1868-70), the Yukaghir language has been considered extinct, for the only reason that Baron v. Maydell collected his "Sprachproben" records among the Russianized Yukaghir, on the Anadyr River, from an old woman who still remembered her own language to a certain extent.

But my own investigations have shown that there are still two independent Yukaghir dialects spoken by nearly seven hundred people. But the days of the Yukaghir language are really counted, owing to the gradual dying-out of the people who speak it. Even in the short interval between the two expeditions in which I participated, some Yukaghir families, on the middle course and on the mouth of the Omolon river, who conserved their language became extinct.

The two dialects of the Yukaghir language may be called,—one, the Kolyma; the other, the Tundra dialect. The former

¹ "Über die Sprache der Jukagiren" (*Bull. Hist. Phil.*, XVI, 1859, pp. 241-253; *Mit. asiat.*, III, pp. 595-612). "Beiträge zur Kenntniss der jukagirischen Sprache" (*Bull.*, XVI, 1871, pp. 373-399; *Mit. asiat.*, VI, pp. 409-446). "Über Baron v. Maydell's jukagirische Sprachproben" (*Bull.*, XVII, 1871, pp. 86-103; *Mit. asiat.*, VI, pp. 600-626). These articles served the philologist Fr. Müller as a basis for an outline of the Yukaghir language in his work "Grundriss der Sprachwissenschaft," Bd. II, Abth. I, pp. 124-133, Wien, 1882.

was in vogue in the region of the Kolyma River and in the valleys along its tributaries; the latter on the northern tundra, between the lower parts of the Kolyma and Lena Rivers. At the present time the Kolyma dialect is confined to the region along the Yassachna and Korkodon Rivers; and the Tundra dialect to the tundra between the Large Chukchee and the Alaseya Rivers.¹

Besides, the Chuvantzy language, which is now completely extinct, and which was spoken in former time to the east of the Kolyma River, also used to be, according to all collected data, a dialect of the Yukaghir language.

The territory where the two former dialects are spoken is indicated upon the accompanying map.

I mastered the Yukaghir language sufficiently to obtain full command of their grammatical forms, and not only to take accurate records of the texts, but also to converse freely in it.

The linguistic material on the Yukaghir dialects collected by me is composed of a hundred and fifty texts, a dictionary containing nine thousand words, in which many words from the texts have not yet been entered, and vast phraseological material for a complete grammatical outline of the two dialects.²

The present article is an abridged grammatical sketch of the Yukaghir language. The space at my disposal does not allow me to introduce the peculiarities of the Tundra dialect, and the article is thus mainly a brief sketch of the Kolyma dialect. It may be noted that the phonetical and morphological peculiarities of the Tundra dialect are rather insignificant, but that it has ab-

¹ A considerable part of the Yukaghir who used to speak this language has died out; a part, at the mouth of the Omolon River, on the lower course of the Kolyma and on the banks of both the Large Anui and the Dry Anui Rivers has become Russianized; another part, on the tundra between the Indigirka and Yana Rivers, has been assimilated by the Tungus; and still another, on the tundra between the Yana and Lena Rivers, has adopted the Yakut language. (See linguistic map.)

² Up to the present time a hundred texts have been published by the Imperial Academy of Sciences at St. Petersburg, under the title, "Materials for the Study of the Yukaghir Language and Folk-Lore, collected in the Kolyma District, Part I, St. Petersburg, 1900"; and an article containing a grammatical analysis of one text, in the *Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg*, 1898, Septembre, T. IX, No. 2.

sorbed a considerable quantity of Tungus stems, which in their further development have been, however, subjected to the laws of the Yukaghir grammar.

PHONOLOGY

Following is a description of the phonetic elements of the Yukaghir language:

a, e, i, o, u, have their continental sounds (short).

ā, ē, ī, ō, ū, are long vowels.

To avoid the introduction of unnecessary marks, I do not annotate here the obscure vowels separately. It may be said only, that all short vowels are obscure when preceding a spirant or *n*, or following a spirant.

The series of diphthongs is as follows:

ai, ei, oi, ui

iē, iū, uo, eo

au, eu, ou

Their pronunciation is as in German.

Triphthongs are not frequent.

y as in year.

l as in German.

ʃ as in English all.

ʃ' has a spirant added.

r as in French.

m as in English.

n as in English.

ŋ is pronounced at the end of the word as *ng* in *being*, and in the middle as *ng* in the German word *Engel*.

m' palatized *m* (similar to *my*).

n' palatized *n* (similar to *ny*).

b and *p* are pronounced with aspiration, owing to which these consonants are intermediate between *b* and *v*, and *p* and *f*. There is no *v* or *f* in the Yukaghir language. The Tundra dialect, however, has a sound that corresponds to the English *w*. When placed between two vowels, *b* approaches very nearly the sound of *v*.

d, t as in English.

d' like *dr*.

g like *g* in good.

h as in English.

k as in English.

t', k' have a spirant added. They are placed at the end of a word, if the following word does not commence with a vowel. The same applies to *l'*.

l-t before *l* is pronounced soft, by pressing the tip of the tongue to the front part of the palate. *t* and *l* blend into one sound.

tn are blended into one nasal sound.

g velar *g*.

ε like the English *sh*.

ε is equal to *ty*; but old men pronounce it so that it sounds more like *ch* in chance, while with women and children it sounds closer to *ε* in the German word *Ceder*. This seems to be a trace of the difference between the pronunciation of men and women, just as it exists in the Chukchee language. At the end of the word, *ε* is pronounced by women almost like *s*.

j is *dy*; but old men pronounce it more like *j* in the word joy, while women and children pronounce it like *ds*. If it occurs between two vowels, one of which has a long sound, *j* is pronounced like the French *j* in *jour*.

x like *ch* in the German *Bach*.

x' like *ch* in the German *ich*, at the end of the word.

The language bears but faint traces of an original harmony of sounds, which is little observed at present. It may be described as follows: *o* in the stem does not tolerate *ε* or *a* in the suffix. In the former case, *ε* of the suffix is changed into *o*; in the latter, *o* of the stem changes into *a*. For example:

| Stem | Suffix | |
|--|--------|--|
| <i>coro'mo-</i> (man) <i>go</i> (locative) at present | | also used <i>coro'moge</i> } S. §§ |
| <i>coro'mo-</i> <i>lox'</i> (Def. Nominative) at present | | also used <i>coro'mo-lek'</i> } 12 |
| <i>mo'igo-</i> (middle) <i>dogo</i> (locative accompanied at present by a possessive element.) | | also used <i>mo'igo-doge</i> } and 32. |

mo' do to sit.

mada' to begin the act of sitting, sit down, instead of *mo' doā*, in which case *o* and *a* combine into one long *a* (see § 92).

o is a weak vowel, and *g* and *k*, when preceding or following it, change respectively into the corresponding sounds *g̃* and *x*, as may be seen from the examples. *e* and *a* are strong vowels.

Not all consonants can begin words. The Yukaghir avoid:

1. Clusters of two consonants at the beginning of a word. When pronouncing Russian words beginning with two consonants, the Yukaghir will either drop the first (for example, Russian word *staru' xa*, "old woman," is pronounced by the Yukaghir *teri' ke*), or they will precede the word by the vowel *i* (for example, the Russian word *sta' riy*, "old," is transformed into *i' čteri*).

2. *r* at the beginning of a word.

3. The occurrence of *b*, *g*, *g̃*, *j*, and *d*, either at the beginning or the end of a word. In such cases, these letters change into the corresponding surds *p*, *k*, *č*, and *t*.

The first syllable is usually accented in the Yukaghir language. This is an almost invariable rule with dissyllables. There are very few exceptions to this rule; for example, *ajū'* ("word"), *eme' i* ("mother"), *lebie'* ("earth"), and some postpositions, like *yola'* ("after"), *iji' e* ("self"), *alā'* ("near").

Trisyllables are usually accented on the second syllable; but so far I have been unable to establish a rule. This would require a comparative study of a large number of words, which will be made in the elaboration of the dictionary.

Tetrasyllables or polysyllables are mostly accented on the first syllable; but many of them acquire an additional accent, which is usually put on the possessive element of the suffix. I have marked the additional accent by means of a grave accent (`).

Very few words are accented on the third syllable, as, for instance, *pojerxo'* ("day"); but I heard some people pronounce *po'jerxo*.

In adding suffixes to dissyllables, the accent passes to the second syllable: *nu' mo* ("house"), *numo' ge* (c. loc.), but also

nu' moñin (c. dat.). Trisyllables, when accented on the second syllable, usually retain the accent on the same syllable, *coro' mo* ("man"), *coro' mogi* (poss. suf.); but in some cases the accent is transferred to the first syllable, *kude' de* ("to kill"), *ku' dedelle* ("having killed").

The verbal prefixes always take the principal accent: *ne'-kudede* ("kill each other"), *o't-kudede* ("would kill").

THE PARTS OF SPEECH

THE NOUN

§ 1. *Case-Suffixes*.—Relations between objects are expressed by means of suffixes *only*. I distinguish between case-suffixes and other post-positions (see § 123) also serving to indicate relations between objects, for the reason that the case-suffixes have already lost their distinct sense, and, with the exception of the casus comitativus suffix (see § 123), they cannot constitute a basis for other word formations.

§ 2. Case-suffixes are joined to the following classes of nouns:

§ 3. (1) To nouns proper, that is, to such words as indicate only objects.

§ 4. (2) To verbal nouns. As will be seen below, a considerable part of verbal, that is, predicative, forms, may be used as nouns (see §§ 80, 82, 112, 113), and form any element of the sentence. Only when used as a modifier does the verbal noun remain unchanged (see § 80). In all other cases the case-suffixes are joined to it just as to nouns proper.

§ 5. (3) To personal pronouns, absolute possessive pronouns, and other pronouns used as substantives (see §§ 54, 55, 56, 57). Sometimes case-suffixes are joined to pronouns used as adjectives (see § 56).

§ 6. (4) Most post-positions that are joined to nouns as case-suffixes and substitute prepositions (see § 124).

§ 7. *Possessive Suffixes*.—The possessive suffixes found in the Ural-Altaic as well as in the Eskimo dialects (in which the same possessive suffixes are joined to noun and verbal bases) are in the Yukaghir language altogether absent in verbs and in

nouns for the purpose of indicating the first and second persons. Only to express ownership of a third person is a possessive suffix joined to nouns.

§ 8. The following comparative table illustrates the use of the possessive suffixes in nouns in the Yakut (one of the Ural-Altaic languages) and the Yukaghir languages.

| Yakut. | | | Yukaghir. | | | |
|----------------------|----------------|--------------------|-----------------------------------|----------------|--------------------|--------------------------------|
| Possessive Pronouns. | Father (Base). | Possessive Suffix. | Possessive Pronouns. ¹ | Father (Base). | Possessive Suffix. | |
| <i>Min</i> | <i>aha'</i> | <i>m</i> | <i>Met</i> | <i>eč'e</i> | — | My father |
| <i>Bisig'</i> | <i>aha-</i> | <i>b'i't</i> | <i>Mit</i> | <i>eč'e</i> | — | Our father |
| <i>En</i> | <i>aha'</i> | <i>n̄</i> | <i>Tet</i> | <i>eč'e</i> | — | Thy father |
| <i>Esig'</i> | <i>aha-</i> | <i>h'i't</i> | <i>Tit</i> | <i>eč'e</i> | — | Your father |
| <i>Kini'</i> | <i>aha-</i> | <i>ta'</i> | <i>Tu'del</i> | <i>eč'e-</i> | <i>gi</i> | His father |
| <i>Kinil'e'r</i> | <i>aha-</i> | <i>la'r</i> | <i>Ti'tel</i> | <i>eč'e-</i> | <i>pegi</i> | Their father and their fathers |

§ 9. Instead of the possessive suffix *-gi*, another form may be used for the expression of the idea of the relation of ownership between objects. For instance :

- | | |
|------------------------------|----------------------------|
| 1. <i>Met eč'e numo'-gi</i> | my father house his, or |
| 2. <i>Met eč'e-nu'ma</i> | my father's house. |
| 1. <i>Met eč'e-d-ä'le-gi</i> | my father reindeer his, or |
| 2. <i>Met eč'e-d-ä'le</i> | my father's reindeer. |

The second form is similar to the Saxon form of the genitive case in the English language (my father's house, my father's reindeer); but it is not the suffix of the genitive case that we meet with here. Only for the sake of euphony is *d* (or *n*) put between the final vowel of the first word and that of the initial in the second word.

§ 10. The possessive suffix is used after the third person of a personal pronoun,

¹ See §§ 54, 55

tu'del' numo'-gi he house his (see § 8), = his house
ti'tel' numo'-gi they house their = their house,

but not after a possessive pronoun in the third person,

Tu'de (see § 55) *nu'mo* his house.
ti'te (see § 55) *nu'mo* their house.

§ 11. In oblique cases the inflexion expressing the possessive element for the third person is introduced between the base and the case-suffix (see § 12).

§ 12. The following table of case-suffixes may be thus compiled :

| Suffixes. | | | |
|----------------|----------------------------|---|---|
| Case. | Indefinite. | Definite. | With the Possessive Element for the Third Person. |
| Nominative | Base | <i>k, x, lek, lox</i> or <i>k', x', lek', lox'</i> | <i>gi</i> <i>dehin</i> |
| Dative | <i>nin</i> | — | — |
| Locative | <i>ge</i> or <i>go</i> | — | <i>dege</i> or <i>dogo</i> |
| Vialis | <i>gen</i> or <i>gon</i> | — | <i>degen</i> or <i>dogon</i> |
| Ablative | <i>get'</i> or <i>got'</i> | — | <i>deget'</i> or <i>dogot'</i> |
| Accusative | <i>e, le, lo</i> | <i>k, x, lek, lox</i> or <i>k', x', lek', lox'</i> | <i>gi</i> or <i>gele, golo, degele</i> |
| Instrumental | <i>le</i> or <i>lo</i> | — | <i>dele</i> or <i>dolo</i> |
| Comitative | <i>n'e</i> | — | <i>den'e</i> |
| Comparative I | <i>gete, goto</i> | — | <i>degete</i> or <i>dogoto</i> |
| Comparative II | <i>tite</i> | — | — |
| Temporal | <i>me</i> | — | — |

§ 13. The definite suffixes of the nominative and accusative, though performing the function of the definite article of European languages, do not exactly correspond to them in sense. They are used as a reply to the questions Who or what? Whom or what? if the question relates to the object, and not to the action. The abbreviated form *k* and *x* is used when the noun has a modifier; for instance:

Ki'ntek' kelul'? Who came?
Coro'mo-lok' ke' lul' The or a man came.
Omo'te coro'mo-x' ke' lul' The or a good man came.

§ 14. It seems to me that the inflection *le* or *lo* is nothing but the case of the verb to be (*le*).

Coro'mo-lok' ke'lul' The or a man is (who) came.

See §§ 82, 83 with regard to the form *kelul'*.

§ 15. Suffix *nin* of the dative indicates:

1. A movement in some direction, and is used in reply to the question Whither? or To whom?

Nu'mo-nin xonk' To the house or home go.
Tu'del' unu'-nin ko'be' He to the river went.
Met' ke'nme-nin xo'nje I to a friend went.

2. An aim, and is used after the question What for?

Met' o'je-nin kob'iteye I for water shall go.

3. Limit.

Tu'del' li'gemuñin¹ o'mo' mo'doi He until his old age well lived.

§ 16. Suffix *ge* or *go* of the locative is used after the questions Where? At whose house? On whom? On what?

Met' numo'-ge mod'ye I at home sit.
Met' eil'e Iva'n-ge mo'doi My father at Ivan's lives.

In some cases the locative answers also the question Whither? and expresses motion *into* an object, while the dative mostly indicates motion *toward* an object.

Met' nu'moñin kie'le I to the house came.
Met' numo'-ge co'nye I into the house went.

§ 17. The vialis *gen*² or *gon* has apparently been formed from the locative *ge*. This case indicates motion *on the surface*,

¹ *li'gemuñin* = *li'gel* (old age) + *de* (possessive element) + *nin* (suf. of the dative case). Often *i-de* changes into *mu*.

² In the grammatical analysis of the text in my article in the *Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg* (1898, Septembre, T. IX, No. 2, p. 173), I considered this case suffix as an instrumental case; but my further study of the language in the Jesup Expedition has convinced me that I was wrong in my former definition of this case. To avoid misunderstanding, I consider it necessary to point it out here.

across, or through an object, and also ways and means of getting something.

1. *Met' d'ji-gen kie'ze* I on water came (on a boat or raft).
2. *Tu'del' ti'bi-d-añi'l-gen yu'odei* He through the smoke opening (chimney) was looking.
3. *Tu'del' nu'mejigele yu'o-gen moru'cem.* He his axe under belt put.
4. *Met' te'tul O'nmun-žo'bil-gen ka'udet'* I you over the Kolyma tundra shall drive.
5. *Met' zu'go-dëgen kobe'iteye* I along his road shall go.
6. *Met' ir'kin d'ž'ex d'ime-gen min'me* I one reindeer in exchange took.

§ 18. Suffix *get* or *got* of the ablative indicates motion *from* or *out of* an object, and has apparently been derived from the locative by the addition of *t*.

- Tu'del num'get u'kož* He out of the house went.
Met' eč'e-get kie'ze I from the father came.

The ablative is also used for the purpose of expressing the degrees of comparison of adjectives (see § 41).

§ 19. The definite form of the accusative is the same as the definite nominative (see §§ 13, 14). This form remains unchanged after all the three persons. If used as a direct object, it is put between the subject and the transitive verb, in which case the latter is conjugated in the definite conjugation (see § 82).

1. *Met' eč'e cor'd mo'lok yu'omle* My father a man saw.
2. *Met' eč'e omo'ze cor'd max yu'omle* My father a good man saw.

§ 20. The indefinite form of the accusative, serving as a direct object when the subject is in the first or second person, is equal to the indefinite nominative; that is, the base of the noun. It is only when the subject is in the third person that a special *e*, *le*, or *lo* is joined to the direct object following it.

- Met' cor'd mo yu'o* I a man saw.
Tet' d'ze yu'omik' Thou a reindeer sawest.
Tu'del' cor'd mo-lo yu'om He a man saw.
Met' eč'e d'ze-le yu'om My father a reindeer saw.

§ 21. It is to be observed that the third person, as a rule, plays a peculiar part in this language. To point out one of these peculiarities: the transitive verb *to give* is expressed by one word (*kei*, "to give") when the indirect object is in the first or second person, and by an entirely different word (*ta'di*, "to give") if the object is in the third person; for instance:

- | | |
|--------------------------------------|-----------------------|
| 1. <i>Met' té'tin é'ye kei</i> | I thee a bow gave. |
| 2. <i>Tet' mé'tin é'ye ké'imik'</i> | Thou me a bow gavest. |
| 3. <i>Éli'e mé'tin é'yéle ké'im</i> | Father me a bow gave. |
| 4. <i>Tu'del' té'tin é'yéle keim</i> | He you a bow gave. |

and

- | | |
|---|------------------------------------|
| 1. <i>Met' tu'din é'ye ta'di</i> | I him a bow gave. |
| 2. <i>Tet' tu'din é'ye tadi'mik'</i> | Thou him a bow gavest. |
| 3. <i>Tudel' tu'din é'yéle ta'dim</i> | He him a bow gave. |
| 4. <i>Mit ani'je met éli'eñin é'yéle ta'dim</i> | Our chief to my father a bow gave. |

§ 22. In the same manner, it is only to express ownership of a third person that the object has a possessive element, which is expressed by *gi* in the nominative; *gi*, *ge*, or *dege* in the accusative; and *de* in all other oblique cases. The possessive element is placed between the base and the case-suffix (see § 12).

- | | | | |
|------------------|---------------|--------------------|---------------|
| <i>nu'mo-ñin</i> | To the house; | <i>nu'mo-deñin</i> | To his house. |
| <i>numo'-ge</i> | In the house; | <i>nu'mo-dege</i> | In his house. |

§ 23. It is very likely that *de* is an abbreviation of the possessive pronoun *tu'de* (see § 55) "his."

§ 24. The element *de* indicates that an object in the oblique case belongs either to the subject if it is in the third person, to the direct object if it is in the third person, or to some third person; for instance:

- | | |
|---|--|
| 1. <i>Met éli'e nu'mo-dé-get u'koè</i> | My father of his house came out. |
| 2. <i>Tet' mit ani'je nu'mo-dége mé'tu' nugtémik'</i> | Thou our chief in his house me wilt find, i. e., thou wilt find me in our chief's house. |

§ 29. The suffix of the comparative I case *gete*, signifies "as compared with"; for instance:

Met el'i'e-gete tu'del' to'moi With my father compared he is big (*i. e.*, bigger).

§ 30. The suffix of the comparative II case, *ti'te*, means *like*; for example:

Tu'del' met el'i'e-ti'te d'rle cor'o'mox' He like my father is a poor man.

§ 31. Temporalis *me* or *mo* changes a noun into an adverb of time:

| | | | |
|-----------------|------------|--------------------|-----------------|
| <i>Pojerxo'</i> | day; | <i>pojerxo'-mo</i> | in the daytime. |
| <i>Ogo'ye</i> | to-morrow; | <i>o'goyel-me</i> | in the morning. |
| <i>Yu'ole</i> | evening; | <i>yu'ole-me</i> | in the evening. |

§ 32. COMPLETE TABLE OF DECLENSION OF A NOUN

| Case. | Indefinite Suffixes. | Definite Suffixes. | With a Possessive Element. |
|----------------|----------------------|-------------------------|---|
| Nominative | <i>Eme'i-mother</i> | <i>Emeik'; Emeilek'</i> | <i>Eme'igi</i> |
| Dative | <i>Eme'ihin</i> | — | <i>Eme'idehin</i> |
| Locative | <i>Eme'ige</i> | — | <i>Eme'idege</i> |
| Vialis | <i>Eme'igen</i> | — | <i>Eme'idegen</i> |
| Ablative | <i>Eme'iget'</i> | — | <i>Eme'ideget'</i> |
| Accusative | <i>Eme'ile</i> | <i>Emeik'; Emeilek'</i> | <i>Eme'igi; Eme'ideule</i> <i>gele; Eme'idegele</i> (= <i>Eme'idegele</i>) |
| Instrumental | <i>Eme'ile</i> | — | <i>Eme'idele</i> |
| Comitative | <i>Eme'in'e</i> | — | <i>Eme'iden'e</i> |
| Comparative I | <i>Eme'igete</i> | — | <i>Eme'idegete</i> |
| Comparative II | <i>Eme'i-ti'te</i> | — | — |
| Temporalis | — | — | — |

§ 33. *Plural Number.*—The plural is formed by the addition of *pe* or *pu'*. It is very difficult to define by a general rule when one of these forms should be used. Most nouns receive the addition, now of one, now of the other, of these two forms. For instance, *cor'o'mo* (man) may be *cor'o'mo-pe* and *cor'o'mo-pu'* in the plural. Generally *pe* is preferred after a consonant and

a long vowel, — *polu't-pe* (old men), — and *pul* after a short vowel, — *e'mje-pul* (younger brothers or sisters, or both).

§ 34. The plain suffix *pe*, or the double one *pepul*, is joined to the following words in plural:

| | Singular. | Plural. |
|---------------|------------------------|--|
| <i>koi</i> | boy, fellow, young man | <i>k'oipe</i> and <i>k'oipepul</i> ¹ |
| <i>pai</i> | young woman | <i>pa'iipe</i> and <i>pa'iipepul</i> ¹ |
| <i>ke'ume</i> | friend | <i>kenné'pe</i> ¹ and <i>kenné'pepul</i> ¹ |
| <i>u'o</i> | child | <i>uo'rpe</i> ² and <i>uo'rpepul</i> ¹ |

K'oipe and *pa'iipe* are used as if they were in the singular. They say, for instance, *i'ркиn pai* and *i'ркиn pa'iipe*, one young woman.

§ 35. It is quite likely that *pe* is a suffix of the now extinct dual number. For example, *eci'e-pe* (fathers) means either father and mother together (*i. e.*, parents) or the father and his elder brother;³ while *eci'e-pul* means many fathers. I have not found any more traces to confirm my supposition. With regard to the above-mentioned double suffixes for the expression of plurality, I have noticed that, when these words are preceded by a numeral which does not exceed 5, one suffix is joined to them, and, if it exceeds 5, a double suffix is added; for instance:

| | |
|--|------------------------|
| <i>yan pa'i-pe</i> | three young women, and |
| <i>ma'lgıyan pa'i-pepul</i> ¹ | six young women. |

§ 36. The element expressing plurality is placed in the nominative and all oblique cases, between the base and the other suffixes. *A'če-pul-nin*, to the reindeer (plural), and *āče-pul-de-nin*, to his reindeer (plural). We have thus the following order: Base + element of plurality + possessive element + case-suffix.

§ 37. Very often the element *pe*, when preceding another suffix, drops the *e*; for instance, *a'če-p-ki* (his reindeer), instead of *a'če-pe-gi*, *g* changing into *k* when preceded by *p*.

¹ *m* followed by *p* changes into *n*.

² *r* is put between the diphthong and *p* for euphony.

³ The elder brother of the father is called *čomō'čie*, that is, the big father.

§ 38. The Yukaghir language has no grammatical distinction of gender. With reference to people, if there are no special names to indicate sex — as, for instance, *eč'i'e* (father) and *eme'i* (mother), *po'lut* (old man, husband), *teri'ke* (old woman, wife) — the words *koi*, *koyo'je*, or *a'dil'* (fellow, man), or *pai*, *payo'je*, or *ma'rxil'* (woman, girl) are prefixed for that purpose.

| | | |
|---|-----------------|-------------------------|
| <i>Koyo'je-d-e'mje</i> | younger brother | (<i>emje</i> = younger |
| <i>Payoie-d-e'mje</i> | younger sister | brother, or sister) |
| <i>A'duo</i> (instead of <i>A'dil-u'o</i>) | son | (<i>u'o</i> = child) |
| <i>Ma'rxil-d-uo</i> | daughter | |

To indicate the sex of animals, nouns are preceded by *o'nčeñoje*¹ for the male, and *mo'iñoje*² for the female.

O'nčeñoje-caxa'le male fox; *mo'iñoje-caxa'le* female fox

The male of the wild reindeer is called simply *o'nče*, or *o'nčie*, and that of the elk, *pie'je*. The female of the wild reindeer is *i'rogoje*, and that of the elk, *u'oye*.

§ 39. The suffix for the augmentative form of nouns is *te'ge*, and for the diminutive, *d'i'e*. *Nu'mo-tēge* (large house), *nu'modie* (small house).

THE ADJECTIVE

§ 40. The adjective has no special form. Instead of it, participles and other verbal forms (see §§ 80, 84) are used. All forms taking the place of adjectives are used as modifiers, put before the modified word, and do not undergo any changes.

| | |
|--------------------------------------|-------------|
| <i>Omd'ze cord'max</i> | good man. |
| <i>i'tneye-d-ige'yē</i> ³ | long thong. |

§ 41. Degrees of comparison.

1. The comparative degree is formed by means of the ablative of one of the nouns compared and a verbal form in the third person; for instance:

¹ Generator or provider.

² Keeper.

³ *d* is inserted for euphony.

Met eč'e-geť tu'del' l'gei, my father from he is old; that
is, he is older than my father.

2. The superlative is formed by means of the ablative of one of the nouns compared preceded by the pronoun *ču'mut'* (all).

Ču'mut odu'peget'¹ tu'del' l'gei, all the Yukaghir from he is
old; that is the oldest.

NUMERALS

§ 42. The following are the principal cardinal numbers:

| Independent. | Used as Modifiers. | |
|---|------------------------|----------------------------|
| 1. <i>Irk'i'ei</i> | <i>I'rk'in</i> | <i>coro'mox</i> (one man). |
| 2. <i>A'taxloi</i> | <i>A'taxun</i> | " two men. |
| 3. <i>Ya'loi</i> | <i>Yan</i> | " three " |
| 4. <i>Ya'loxloi</i> (three and one) | <i>Ye'lokun</i> | " four " |
| 5. <i>I'n'gan'boi</i> | <i>I'n'gan'boje</i> | " five " |
| 6. <i>Ma'lgiyaloi'</i> (two times three) | <i>Ma'lgiyan</i> | " six " |
| 7. <i>Purki'oi</i> (one above, one more) | <i>Purki'yin</i> | " seven " |
| 8. <i>Ma'lgiyeloxloi'</i> (two times four) | <i>Ma'lgiyelokun</i> | " eight " |
| 9. <i>Kuni'rkilejeoi</i> (ten, one missing) | <i>Kuni'rkilejeoje</i> | " nine " |
| 10. <i>Ku'nel'</i> | <i>Kuni'yin</i> | " ten " |

§ 43. Judging from the above list of numerals, one might draw the conclusion that the Yukaghir system of numeration is not quinary, as it is with the Chukchee, Eskimo, and most of the Indians, but tertiary. But it should be pointed out, on the other hand, that *in'gan'boi* (five), as it seems to me, contains the word *xa'n'bo* (palm, wrist, i. e., five fingers) since *x* preceded by *n* changes into its corresponding consonant *g*; *in*

¹ Instead of *odu'peget'*, from *odut'*, Yukaghir.

² *Ma'lgi* or *Malgil'* means joint. *N'e'malgil'* (all the joints together) means a year. *Ma'lgiyaloi*, *malgiyeloxloi*, mean joint-three, joint-four, i. e., each one contains three or four.

equals *ni* or *ne* (together). And if this be so, the Yukaghir system of numeration has two bases. Unfortunately, I have been unable so far to discover the meaning of the word *ku'nel'* (10).

§ 44. All the rest of the tens are composed by multiplying 10 (*ku'nel'*) by the number of tens which precede the ten. Thus, twenty = *a'taxun-ku'nel'* (two tens), sixty = *ma'lgiyan-ku'nel'* (six tens), etc.

Units are put after the tens with the addition of the post-position *budi'* (on top, over and above); for instance :

11. *Kun'rkibudi'* = *ku'nel'-irkin-budi'* (ten, one over).

34. *Ya'nkunelyelokunbudi'* (three tens, four over).

76. *Purki'zinku'nelmalgiya'nbudi'* (seven tens and six on top).

§ 45. The independent cardinals are verbal forms in the third person, positive form, singular, present-preterite tense, indefinite conjugation of intransitive verbs (see § 75). They may be inflected like verbs, but not like nouns. For instance, to the question, "How many?" you reply, "*Yaloi* ("three"); but to the question, "How many men?" the answer is, "*Yan cord-mox'*" ("three men").

The plural¹ number, present-preterite tense, will be :

| | |
|---------------------------------------|--------------------------|
| <i>Mit ya'loyeili</i> we three are, | or we three have been. |
| <i>tit ya'loyemet'</i> you three are, | or you three have been. |
| <i>ti'tel ya'loni</i> they three are | |
| (three of them), | or they three have been. |

The future tense, plural :

| | |
|--------------------------|---------------------|
| <i>Mit ya'loteili</i> | we three shall be. |
| <i>tit ya'loteyemet'</i> | you three will be. |
| <i>ti'tel ya'lonitei</i> | they three will be. |

§ 46. Cardinal modifiers used as adjectives remain unchanged, only the words modified by them undergo case-inflections.

§ 47. There are no Yukaghir words for numbers above a hundred. They used to say *ku'nel'-ku'nel'* (ten tens) for hundred :

¹ It is plain that there can be no singular.

but now they say *ičto'x* (the Russian *sto*). The Russian word for thousand (*tř'syača*) has also been adopted by them; but they pronounce it *tř'čče*.

§ 48. ORDINAL NUMBERS

| | Independent. | As Modifiers or Attributive. | |
|---------|------------------------------|------------------------------|------------------------|
| The 1st | <i>a'ñnume</i> ³ | <i>a'ñnume-le</i> | <i>coro'mox'</i> (man) |
| " 2d | <i>a'taxlečki</i> | <i>a'taxlecte</i> | " " |
| " 3d | <i>ya'lmečki</i> | <i>ya'lmecte</i> | " " |
| " 4th | <i>ya'laxlečki</i> | <i>ya'laxlecte</i> | " " |
| " 5th | <i>i'n'ganbečki</i> | <i>i'n'gan'becte</i> | " " |
| " 6th | <i>ma'lgiyälmečki</i> | <i>ma'lgiyälmecte</i> | " " |
| " 7th | <i>purki'yeki</i> | <i>purki'yecte</i> | " " |
| " 8th | <i>ma'lgiyälexlečki</i> | <i>ma'lgiyälexlecte</i> | " " |
| " 9th | <i>kuni'rkileječki</i> | <i>kuni'rkilejeocte</i> | " " |
| " 10th | <i>kun'lečki</i> | <i>kun'lecte</i> | " " |
| " 11th | <i>kuni'rkibudčki</i> | <i>kuni'rkibudcte</i> | " " |
| " 20th | <i>a'taxun-kunëlečki</i> | <i>a'taxunkunëlecte</i> | " " |
| " 22d | <i>ku'nel-ätaxulbudlečki</i> | <i>ku'nelätaxulbudcte</i> | " " |
| etc. | | etc. | |

§ 49. Ordinal numbers are derived from the cardinals partly by means of verbal suffixes. *C* is the suffix which changes a transitive verb into a causative (see § 97); *ki* (instead of *gi*, since *g* preceded by *c* changes into *k*) is the possessive suffix of the nominative case (see § 9); and *te* (in place of *de*, *d* changing into *t* after *c*) is the suffix of the conditional mode (see § 87).

§ 50. Distributive numerals:

a'taxlonut' by two

i'n'gan'bonut' by five, etc.

Nu is the suffix of the iterative form of the verb (see § 103,) *t* is the suffix of the verbal adverb (see § 115).

§ 51. Iterative numerals:

Irki'je once

ataxli'je twice

yäli'je thrice, etc.

§ 52. Fractions. One-half = *Eimunde*. The rest are com-

³ *añnume* means "at first, in the beginning"; *añnumele*, "initial, first." This is the only ordinal number that is not formed from a cardinal.

posed of the attributive ordinals with the addition of the possessive suffix *gi*; for instance :

$$Yalmectegi = \frac{1}{3}.$$

§ 53. Collective numerals :

ataxlot' two together *yaloť* three together *yalexlot'* four together, etc.

PRONOUNS

§ 54. Personal pronouns : *met'*, I ; *teť*, thou ; *tu'del'*, he ; *mit'*, we ; *tiť*, you ; *ti'tel'*, they. The gender is not indicated in the third person. The compound personal pronouns are formed by annexing the post-position *ej'i'e* (self) to the personal pronouns : *Met-ej'i'e* (myself), *teť-ej'i'e* *tud-ej'i'e*, etc.

§ 55. Possessive modifying pronouns for the first and second persons are the same as the personal, for instance, *Met eč'i'e* (my father); while the third is *tu'de* in the singular and *ti'te* in the plural. The possessive modifying pronouns do not change. The following are the absolute possessive pronouns :

| | | |
|--------------------|---------------------|--------------------------|
| <i>me'lie</i> mine | <i>te'lie</i> thine | <i>Tu'dele</i> his, hers |
| <i>mi'lie</i> ours | <i>ti'lie</i> yours | <i>ti'tele</i> theirs |

Absolute possessive pronouns assume case-suffixes.

§ 56. Demonstrative pronouns : *Tiñ*, this ; and *tañ*, that. These two pronouns are used only as modifiers before nouns, and remain unchanged in most cases. After verbal nouns ending in *l'* (see § 84) *tañ* is joined as a post-position, and the case-suffixes are joined to it, while the verbal noun remains unchanged. For instance, *yu'ol-tañ*, that one who saw ; *i'gel-tañ*, that old one. *Tañ* rather corresponds here to the relative pronouns which, who.

Tu'bon (this) and *Ta'bun* (that) are mostly independent pronouns, like the German *derjenige*, and assume case-affixes. But in some cases they are used as modifiers, and are declined nevertheless (see the text).

§ 57. Interrogative pronouns :

kin who, *le'me* what, *xa'mun* how many (much) and *nu'mun* which. *Kin* and *le'me* are declined.

§ 58. Indefinite pronouns :

| | | | |
|---------------------------------|---------------|-------------------------|-------|
| <i>yeŋ, ye' nlek', ye' nbon</i> | another | <i>ču' mu, ču' mut'</i> | all |
| <i>i' lle</i> | some, certain | <i>o' nmun</i> | every |

Of these pronouns, *ye' nbon* and *i' lle* (if not used as modifiers) are declined.

o' nmun is used as a post-position; *coro' mo-o' nmun*, man every.

§ 59. There are no relative pronouns. Verbal nouns ending in *bon* (see § 112) are used instead of them (see also § 56).

§ 60. The table on following page illustrates the declension of personal and other pronouns.

§ 61. With the exception of a few phonetic peculiarities, the case-suffixes of pronouns are the same as those of nouns.

Me' tin is used instead of *me' tñin*, since *ñ* cannot follow *t*.

Me' in'e, in place of *me' tn'e*, since *t* and *n* blend into one nasal sound, *in*.

Tubo' dek', instead of *Tubo' nlek'*, etc.

Special attention should be called to the accusative indefinite of the personal pronouns, first and second persons, singular as well as plural number. The accusative indefinite of these pronouns has a special suffix for the direct object following a subject in the first and second person. In nouns, this form is identical with the nominative indefinite (see § 20). For example :

| | |
|-------------------------------------|------------------------|
| <i>Me' t' tu' kud' det'</i> | I thee shall kill. |
| <i>Tet' me' tul' ka' udetmik' ?</i> | thou me wilt conduct ? |

but

| | |
|------------------------------------|------------------|
| <i>Tu' del' me' tkele ka' udem</i> | he me conducted. |
|------------------------------------|------------------|

§ 62. The possessive absolute pronouns, *Me' tle*, etc., assume the suffix of plurality, *pul'*, which in oblique cases is put between the case-suffix and the base :

| | | | |
|--------------------|------|-------------------------|----------|
| <i>Mi' llepul'</i> | ours | <i>Mi' tle-pul'-ñin</i> | to ours. |
|--------------------|------|-------------------------|----------|

§ 63. *Tu' bon*, *Ta' bun*, *Tañ*, *kin*, *le' me*, *ye' nbon*, *n' ilgi*, *xo' dimei'*, assume the suffix *pe* or *pul'* for the plural :

TABLE OF DECLENSION OF PRONOUNS (to § 60)

| Cases | I | thou | he | this | who | what | mine |
|--------------|---|---|--|---------------------------------------|----------------------------------|-----------------------------|---------------------------------------|
| Nom. indef. | <i>me't</i> ¹ | <i>te't</i> ¹ | <i>tu'de't</i> ¹ | <i>tu'bon</i> ¹ | <i>kin</i> | <i>te'me</i> ¹ | <i>me'tle</i> ¹ |
| " def. | <i>me'tek</i> ¹ | <i>te'tek</i> ¹ | <i>tu'de't</i> ¹ | <i>tubod'ek</i> ¹ | <i>ki'ntek</i> ¹ | <i>te'mdik</i> ¹ | — |
| Dative | <i>me'tin</i> | <i>te'tin</i> | <i>tu'din</i> | <i>tubod'in</i> | <i>ki'nin</i> | <i>te'mnin</i> | <i>me'tlehin</i> |
| Locative | <i>me'tke</i> | <i>te'tke</i> | <i>tu'dege</i> | <i>tubod'ge</i> | <i>ki'nge</i> | <i>te'mge</i> | <i>me'tlege</i> |
| Vialis | <i>me'tken</i> | <i>te'tken</i> | <i>tu'degen</i> | <i>tubod'ngen</i> | <i>ki'ngen</i> | <i>te'mgen</i> | <i>me'tlegen</i> |
| Ablative | <i>me'tken</i> | <i>te'tket</i> ¹ | <i>tu'degen</i> | <i>tubod'ngen</i> | <i>ki'ngen</i> | <i>te'mgen</i> | <i>me'tlegen</i> |
| Accusative | <i>me'tu't</i> ¹ or <i>me'tkele</i> | <i>te'tu't</i> ¹ or <i>te'tkele</i> | <i>tu'de't</i> ¹ or <i>tu'degele</i> | <i>tu'bon</i> or <i>tubod'gele</i> | <i>kin</i> or <i>ki'ngele</i> | <i>te'me</i> | <i>me'tle</i> or <i>me'tlegele</i> |
| Indefinite | | | | | | | |
| Accus. def. | <i>me'tek</i> ¹ | <i>te'tek</i> ¹ | <i>tu'de't</i> ¹ | <i>tubod'ek</i> ¹ | <i>ki'ntek</i> ¹ | <i>te'megele</i> | — |
| Instrumental | — | — | — | <i>tubod'nye</i> | — | <i>te'mdik</i> ¹ | — |
| Comitative | <i>me'tin-e</i> | <i>te'tin-e</i> | <i>tud'e'n-e</i> | <i>tubod'nn-e</i> | <i>ki'nn-e</i> | <i>te'me</i> | <i>me'tlen-e</i> |
| Compar. I | <i>me'tkete</i> | <i>te'tkete</i> | <i>tu'degete</i> | <i>tubod'ngete</i> | <i>ki'ngete</i> | <i>te'men-e</i> | — |
| " II | <i>me't-eite</i> | <i>te't-eite</i> | <i>tu'de't-eite</i> | <i>tu'bon-t'eite</i> | <i>ki'n-tite</i> | <i>te'me-t'eite</i> | — |

¹ *Mit*¹ is declined like *Me't*; *Tu't*, like *Te't*; *Tu'te*, like *Tud'e't*; *Tu'bon* and *Yenbon* like *Tubon*; *Te'tle* (thine), *Tud'e'tle* (his), *Me'tle* (ours), *He'tle* (yours), and *Tu'tle* (theirs), like *Me'tle*. *Tin*, *tan*, *ni'ge*, *xo'dime*, are declined like *Tu'bon*.

| | |
|-------------------------------|--|
| <i>Tabu'n-pe ke'ñi</i> | Those came. |
| <i>Ki'n-pe-ge' kel'met' ?</i> | From whom (you) came? |
| <i>Ke'lul-tāñ-pe ti le'ñi</i> | Arrived those here are, or those that arrived are here. |

Tañ is one of the forms that are used as substitutes for relative pronouns (see § 56).

THE VERB

§ 64. While almost all the noun-bases are derivatives of verbal forms, the bases of verbs are in most cases disyllabic or monosyllabic roots, frequently consisting of one vowel. For instance, *a* expresses the conception of "doing"; *ñ*, that of being born; *o*, to draw, to get from the bottom. But nouns can, in their turn, become verbs again by means of the suffixes *te* (for transitive verbs) and *de* (for intransitive verbs). For example: *o'ji* (from *o*, to drawn, and *o'je*, to drink), water; *o'ji'te*, to supply some one with water; *nu'mo*, a house; *numo'-de*, to be with a house.

§ 65. While the nominative indefinite always constitutes the base of a noun, that of verbs does not always coincide with one and the same form. The first person, singular, present-preterite, indefinite conjugation, is the base of transitive verbs, while that of the intransitive coincides with the third person, singular, of the negative form, present-preterite, indefinite conjugation (see § 75, table of conjugations).

§ 66. Verbs have only two tenses, the present-preterite or perfect and the future or imperfect. The action may be either completed or yet to be completed. The performance of an action consists of a continual succession of moments, every one of which appears in a given moment with reference to the acting person, either as past or future.¹

| | |
|-----------------------|----------------------------|
| <i>Met' kudé de</i> | I have killed, and I kill. |
| <i>Met' kudé det'</i> | I shall kill. |

¹ The present-preterite is also to be found in the Gilyak language (L. J. Sternberg, Material for the Study of the Gilyak Language and Folk-Lore [Bull. of the Imp. Academy of Sciences, Vol. VIII, No. 4, p. 422, November 1900, St. Petersburg]).

MODE

§ 67. The following modes may be enumerated: imperative indicative, optative, conjunctive, conditional, supine, perfective, potential, evidential, inchoative.

§ 68. The Yukaghir language has no infinitive mode. It is replaced by the supine. But when naming an action for illustration, I translate the English infinitive by giving the base of the Yukaghir verb (see § 65).

§ 69. Before proceeding to explain the formation of voices and other derivative forms, which are so numerous in the Yukaghir language, and which are called "aspects" in the Slav languages, or as the well-known Russian philologist, Nekrassoff, calls them "degrees of action," I shall point out how the verbal bases are being inflected according to modes, since all verb bases, no matter of what voice or degree of action, are inflected in the same manner with reference to mode.

§ 70. Every verb has two forms of conjugation, the definite and the indefinite.

§ 71. The indefinite has three forms in the indicative mode, a positive, a negative, and an interrogative.

§ 72. The imperative mode has two forms, a positive and a negative.

§ 73. The forms of the imperative mode are the same for transitive and for intransitive verbs.

§ 74. The indicative mode has different forms for transitive and for intransitive verbs.

§ 75. The following tables illustrate the indefinite conjunction of transitive and intransitive verbs.

INDEFINITE CONJUGATION OF VERBS.

| Transitive. | | | | Intransitive. | | |
|---------------------------------|------------------------|------------------------|---------------------------|-------------------------|-------------------------------|-----------------------|
| Base. | <i>It</i> (to have). | <i>min'</i> (to take). | <i>kudé de</i> (to kill). | <i>le</i> (to be). | <i>xon</i> (to go somewhere). | <i>u'i</i> (to work). |
| Imperative Mode, Present Tense. | | | | | | |
| Positive Form. | 1. <i>mei'</i> | <i>li-k'</i> | <i>min-k'</i> | <i>kudé de-k'</i> | <i>lek'</i> | <i>u-i-k'</i> |
| | 2. <i>lei'</i> | <i>li'-gen</i> | <i>mi'n'-gen</i> | <i>kudé de-gen</i> | <i>le'-gen</i> | <i>u'i-gen</i> |
| | 3. <i>kudel'</i> | <i>li'-nik'</i> | <i>mi'n'-nik'</i> | <i>kudé de-nik'</i> | <i>le'-nik'</i> | <i>u'i-nik'</i> |
| Plural. Singular. | 1. <i>mi'</i> | <i>li'-nik'</i> | <i>mi'n'-nik'</i> | <i>kudé de-nik'</i> | <i>le'-nik'</i> | <i>u'i-nik'</i> |
| | 2. <i>ti'</i> | <i>li'-nigen</i> | <i>mi'n'-nigen</i> | <i>kudé de-nigen</i> | <i>le'-nigen</i> | <i>u'i-nigen</i> |
| | 3. <i>titel'</i> | | | | | |
| Negative Form. | 1. <i>el-li'-lek'</i> | <i>el-mi'n'-lek'</i> | <i>el-mi'n'-lek'</i> | <i>el kudé de-lek'</i> | <i>el le'-lek'</i> | <i>el u'i'-lek'</i> |
| | 2. <i>el-li'-gen</i> | <i>el-mi'n'-gen</i> | <i>el-mi'n'-gen</i> | <i>el kudé de-gen</i> | <i>el le'-gen</i> | <i>el u'-i-gen</i> |
| | 3. <i>el-li'-nik'</i> | <i>el-mi'n'-nik'</i> | <i>el-mi'n'-nik'</i> | <i>el kudé de-nik'</i> | <i>el le'-nik'</i> | <i>el u'i'-nik'</i> |
| Plural. Singular. | 1. <i>el-li'-nik'</i> | <i>el-mi'n'-nik'</i> | <i>el-mi'n'-nik'</i> | <i>el kudé de-nik'</i> | <i>el le'-nik'</i> | <i>el u'i'-nik'</i> |
| | 2. <i>el-li'-nigen</i> | <i>el-mi'n'-nigen</i> | <i>el-mi'n'-nigen</i> | <i>el kudé de-nigen</i> | <i>el le'-nigen</i> | <i>el u'i'-nigen</i> |
| | 3. <i>el-li'-nigen</i> | | | | | |
| Future Tense. | | | | | | |
| Positive Form. | 1. <i>li'-gek'</i> | <i>mi'n'-gek'</i> | <i>mi'n'-gek'</i> | <i>kudé de-gek'</i> | <i>le'-gek'</i> | <i>u'i'-gek'</i> |
| | 2. <i>li'-ge</i> | <i>mi'n'-ge</i> | <i>mi'n'-ge</i> | <i>kudé de-ge</i> | <i>le'-ge</i> | <i>u'i'-ge</i> |
| | 3. <i>li'-ge</i> | | | | | |
| Plural. Singular. | 1. <i>li'-gek'</i> | <i>mi'n'-gek'</i> | <i>mi'n'-gek'</i> | <i>kudé de-gek'</i> | <i>le'-gek'</i> | <i>u'i'-gek'</i> |
| | 2. <i>li'-ge</i> | <i>mi'n'-ge</i> | <i>mi'n'-ge</i> | <i>kudé de-ge</i> | <i>le'-ge</i> | <i>u'i'-ge</i> |
| | 3. <i>li'-ge</i> | | | | | |

Indicative. Modt.—Present-Preterite

| Transitive. | | | Intransitive. | | |
|--|---|---|---|---|--|
| Positive Form. | Plural. Singular. | | | | |
| 1. <i>li</i> 2. <i>li'-mik'</i> 3. <i>li-m</i> | <i>min'</i> <i>mi'n'-mik'</i> <i>mi'j-um</i> | <i>kudé de</i> <i>kudé de-mik'</i> <i>kudé de-m</i> | <i>le'-ye</i> <i>le'-yek'</i> <i>le-i</i> | <i>xo'n-je</i> <i>xo'n-jek'</i> <i>xo'n-ni</i> | <i>u'i-de</i> <i>u'i-žek'</i> <i>u'i-č</i> |
| 1. <i>li'-i</i> 2. <i>li'-met'</i> 3. <i>li'-nam</i> | <i>mi'j-i</i> <i>mi'n'-met'</i> <i>mi'n'-nam</i> | <i>kudé de-i</i> <i>kudé de-met'</i> <i>kudé de-nam</i> | <i>le'-ili</i> <i>le'-yemet'</i> <i>le'-ni</i> | <i>xon-je'ili</i> <i>xo'n-jemet'</i> <i>xo'n-ni</i> | <i>u'i-želi</i> <i>u'i-žemet'</i> <i>u'i-ni</i> |
| 1. <i>el-li'-ye</i> 2. <i>el-li'-yek'</i> 3. <i>el-li'-i</i> | <i>el-mi'n'-je</i> <i>el-mi'n'-jek'</i> <i>el-mi'n'-i</i> | <i>el-kudé de-ye</i> <i>el-kudé de-yek'</i> <i>el-kudé de-i</i> | <i>o'i-le-ye</i> <i>o'i-le-yek'</i> <i>o'i-le</i> | <i>el-xo'n-je</i> <i>el-xo'n-jek'</i> <i>el-xon</i> | <i>el-u'i-že</i> <i>el-u'i-žek'</i> <i>el-i-ai</i> |
| 1. <i>el-li'-yeili</i> 2. <i>el-li'-yemet'</i> 3. <i>el-li'-ni</i> | <i>el-mi'n'-jeili</i> <i>el-mi'n'-jemet'</i> <i>el-mi'n'-ni</i> | <i>el-kudé de-yeili</i> <i>el-kudé de-yemet'</i> <i>el-kudé de-ni</i> | <i>o'i-le-ili</i> <i>o'i-le-yemet'</i> <i>o'i-le-ni</i> | <i>el-xon-je'ili</i> <i>el-xo'n-jemet'</i> <i>el-xo'n-ni</i> | <i>el-u'i-želi</i> <i>el-u'i-žemet'</i> <i>el-u'i-ni</i> |
| 1. <i>li-m</i> 2. <i>li'-mik'</i> 3. <i>li-m</i> | <i>mi'j-um</i> <i>mi'n'-mik'</i> <i>mi'j-um</i> | <i>kudé de-m</i> <i>kudé de-mik'</i> <i>kudé de-m</i> | <i>le-m</i> <i>lek' or le-yek'</i> <i>le</i> | <i>xo'n-om</i> <i>xonk' or xo'njek'</i> <i>xon</i> | <i>u'-im</i> <i>ui-k' or u'i-žek'</i> <i>ui</i> |
| 1. <i>li'-luok'</i> 2. <i>li'-met'</i> 3. <i>li'-nam</i> | <i>mi'ji-luok'</i> <i>mi'n'-met'</i> <i>mi'n'-nam</i> | <i>kudé de-luok'</i> <i>kudé de-met'</i> <i>kudé de-nam</i> | <i>le-luok'</i> <i>le-yemet'</i> <i>le-ni</i> | <i>xo'n-uok' or xo'nu-luok'</i> <i>xo'n-jemet'</i> <i>xo'n-ni</i> | <i>u'i-luok'</i> <i>u'i-žemet'</i> <i>u'i-ni</i> |

Indicative Mode.—Future

| Transitive. | | | Intransitive. | | |
|---------------------------------------|--|---|--|---|---|
| 1. <i>li-ti</i> ⁴ | <i>mī'j-ut'</i> ⁴ | <i>kudé de-t'</i> ⁴ | <i>le-té</i> | <i>xo' n-teye</i> | <i>u'i-teye</i> |
| 2. <i>li-témik'</i> ⁴ | <i>mī' n'-temik'</i> ⁴ | <i>kudé de-t'mik'</i> ⁴ | <i>le-ték'</i> | <i>xo' n-teyek'</i> ⁴ | <i>u'i-teyek'</i> ⁴ |
| 3. <i>li-tem</i> | <i>mī' n'-tem</i> | <i>kudé de-tem</i> | <i>le-ti</i> | <i>xo' n-tei</i> | <i>u'i-tei</i> |
| 1. <i>li-téi</i> | <i>mī' n'-tei</i> | <i>kudé de-tei</i> | <i>le-té'ili</i> | <i>xon-té'ili</i> | <i>ui-té'ili</i> |
| 2. <i>li-temet'</i> ⁴ | <i>mī' n'-temet'</i> ⁴ | <i>kudé de-t'met'</i> ⁴ | <i>le-temet'</i> ⁴ | <i>xo' n-teyemet'</i> ⁴ | <i>u'i-teyemet'</i> ⁴ |
| 3. <i>li-nilem</i> | <i>mī' n'-nilem</i> | <i>kudé de-nilem</i> | <i>le-nilei</i> | <i>xo' n-nilei</i> | <i>u'i-nilei</i> |
| 1. <i>el-li-teye</i> | <i>el-mī' n'-teye</i> | <i>el-kudé de-teye</i> or <i>el-kudé de-te</i> | <i>el-le-té</i> or <i>o' le-té</i> | <i>el-xo' n-teye</i> | <i>el-u'i-teye</i> |
| 2. <i>el-li-teyek'</i> ⁴ | <i>el-mī' n'-teyek'</i> ⁴ | <i>el-kudé de-teyek'</i> or <i>el-kudé de-ték'</i> | <i>el-le-ték'</i> or <i>o' le-ték'</i> | <i>el-xo' n-teyek'</i> ⁴ | <i>el-u'i-teyek'</i> ⁴ |
| 3. <i>el-li-tei</i> | <i>el-mī' n'-tei</i> | <i>el-kudé de-ti</i> or <i>el-kudé detei</i> | <i>el-le-t'</i> | <i>el-xo' n-ut'</i> | <i>el-u'i-t'</i> |
| 1. <i>el-li-teili</i> | <i>el-mī' n'-teili</i> | <i>el-kudé de-teili</i> or <i>el-kudé de-téili</i> | <i>el-le-té'ili</i> | <i>el-xon-té'ili</i> | <i>el-ui-té'ili</i> |
| 2. <i>el-li-teyemet'</i> ⁴ | <i>el-mī' n'-teyemet'</i> ⁴ | <i>el-kudé de-teyemet'</i> ⁴ or <i>el-kudé de-temet'</i> ⁴ | <i>el-le-temet'</i> ⁴ | <i>el-xo' n-teyemet'</i> ⁴ | <i>el-u'i-teyemet'</i> ⁴ |
| 3. <i>el-li-nilei</i> | <i>el-mī' n'-nilei</i> | <i>el-kudé-nilei</i> | <i>el-le-nilei</i> | <i>el-xo' n-nilei</i> ⁴ | <i>el-u'i-nilei</i> |
| 1. <i>li-tem</i> | <i>mī' n'-tem</i> | <i>kudé de-tem</i> | <i>le-tum</i> | <i>xo' n-tem</i> | <i>u'i-tem</i> |
| 2. <i>li-témik'</i> ⁴ | <i>mī' n'-témik'</i> ⁴ | <i>kudé de-témik'</i> ⁴ | <i>le-ték'</i> | <i>xo' n-teyek'</i> ⁴ | <i>u'i-teyek'</i> ⁴ |
| 3. <i>li-tem</i> | <i>mī' n'-tem</i> | <i>kudé de-tem</i> | <i>le-t'</i> | <i>xo' n-ut'</i> | <i>u'i-t'</i> |
| 1. <i>li-tu'ok'</i> ⁴ | <i>mī' n'-tu'ok'</i> ⁴ | <i>kudé de-tu'ok'</i> ⁴ | <i>le-tu'ok'</i> | <i>xon-tu'ok'</i> | <i>ui-tu'ok'</i> |
| 2. <i>li-temet'</i> ⁴ | <i>mī' n'-temet'</i> ⁴ | <i>kudé de-temet'</i> ⁴ | <i>le-temet'</i> ⁴ or <i>le-tmet'</i> ⁴ | <i>xo' n-teyemet'</i> ⁴ or <i>xon-temet'</i> ⁴ | <i>u'i-teyemet'</i> ⁴ or <i>u'i-temet'</i> ⁴ |
| 3. <i>li-nilem</i> | <i>mī' n'-nilem</i> | <i>kudé de-nilem</i> | <i>le-nilei</i> | <i>xon-nilei</i> | <i>u'i-nilei</i> |

Interrogative Form.

§ 76. The following remarks should be added to the above tables.

§ 77. The Yukaghir language has the transitive verb *li* (to have), which is absent in the Ural-Altaic languages.

§ 78. Intransitive verbs whose base ends with a short vowel assume the suffixes *je*, *jek'*, etc., in the present-preterite, and *če*, *ček'*, etc., in the future tense; with a long vowel or a diphthong they assume the suffixes *če*, *ček'*, etc., in the present-preterite, and *teye*, *teyek'*, etc., in the future; while those ending in a consonant have the suffixes *je*, *jek'*, etc., or *če*, *ček'*, etc., for the former, and *teye*, *teyek'*, etc., for the latter tense.

§ 79. The negative conjugation of transitive verbs corresponds to the positive conjugation (with the exception of the negative prefix *el*) of intransitive verbs.

§ 80. All forms of the indefinite conjugation are actual predicate forms. It is only the first person, singular number, present preterite, of intransitive verbs that may be used as a modifier when put before a noun. It thus takes the place of adjective forms, which are absent in the Yukaghir language (see § 40). For instance:

| | |
|---------------------------|-----------------------|
| 1. <i>Met' lé ye</i> | I am, or I live. |
| 2. <i>Lé ye čor' mox'</i> | Living, existing man. |
| 1. <i>Met ebi' beye</i> | I am black. |
| 2. <i>Ebi' beye xar</i> | A black skin. |

§ 81. The interrogative form is used only when it does not refer to the verb itself. For instance:

| | |
|--------------------------|---------------------|
| <i>Mit é ye á' tei ?</i> | Will we make a bow? |
|--------------------------|---------------------|

atei is the positive form, but in the expressions,

| | |
|--------------------------------------|-----------------------------|
| <i>Mit' xan' n é ye atu' ok' ?</i> | When will we make a bow? |
| <i>Mit' xa' mlol é ye atu' ok' ?</i> | How many bows will we make? |

the verb is used in the interrogative form.

§ 82. DEFINITE CONJUGATION

| Transitive. | | Intransitive. | |
|--------------------|---|--------------------|---------------------|
| Present-Preterite. | | Present-Preterite. | |
| Singular. | 1. <i>kudé de-me</i> | Singular. | 1. <i>ló do-l'</i> |
| | 2. " <i>-me</i> | | 2. " <i>-l'</i> |
| | 3. " <i>-mele</i> or <i>kudé de-mle</i> | | 3. " <i>-l'</i> |
| Plural. | 1. " <i>-l'</i> | Plural. | 1. " <i>-l'</i> |
| | 2. " <i>-met'</i> | | 2. " <i>-l'</i> |
| | 3. " <i>-ñimele</i> | | 3. " <i>-ñil'</i> |
| Future. | | Future. | |
| Singular. | 1. <i>kudé de-tme</i> | Singular. | 1. <i>lodo-tel'</i> |
| | 2. " <i>-tme</i> | | 2. " <i>-tel'</i> |
| | 3. " <i>-tmele</i> | | 3. " <i>-tel'</i> |
| Plural. | 1. " <i>-tul'</i> | Plural. | 1. " <i>-tel'</i> |
| | 2. " <i>-temet'</i> | | 2. " <i>-tel'</i> |
| | 3. " <i>-ñitemle</i> | | 3. " <i>-ñitel'</i> |

§ 83. In the definite conjugation, the predicate is used when the subject is in the definite nominative case, or the direct object in the definite accusative. For instance :

1. *Met' lodo'-ye* and 2. *Me'tek' ló do!'* I played.
 1. *Met' lodo'-teye* and 2. *Me'tek' lodo'tel'* I shall play.

or

1. *Tet' kudé demik'* and 2. *Té'tek' kudé de-me* Thou hast killed.
 1. *Tet' kudé detmik'* and 2. *Té'tek' kudé det-me* Thou wilt kill.
 3. *Met' á'ze kudé de* and 4. *Met' á'zelek' kudé-*
deme I killed a reindeer.

The examples (1) may be used to answer the question, Who *did*, or *will do*, a certain thing? while (2) are used in reply to the question, *Who* did or will do a certain thing? (3) answers the question, What I *did*? and (4) answers the question, *What* I killed?

§ 84. When the form of the first person, singular number, present-preterite, definite conjugation, precedes a noun, it assumes the meaning of a participle.

kudé deme coró'mox'

The man that has been killing.

lodoł adī'lek'

The youth that has been playing.

§ 85. The optative mode expresses, by means of the suffixes *u'ol* or *m'ebi*, a desire to do a certain thing. Both transitive and intransitive verbs may have this mode. It is conjugated in all forms and in both tenses. The suffixes *u'ol* and *m'ebi* are put either between the base and the other verbal suffixes, or between the latter and the first person, present-preterite, of the definite conjugation (see § 82).

āl-u'ol' (trans. v.)to desire to do (the base is *ā*).*mo'd-uol'* (intrans. v.)to desire to sit (the base is *mo'do* but *o* is dropped).*met ā'luol'*

I desire to do.

met' mo'duol'je

I wish to sit.

met el-ā'luol'je

I don't wish to sit.

met āl'uolit'

I shall wish to do.

met' mo'duolteye

I shall wish to sit.

u'ol expresses only the *desire*, but not the *possibility* of doing; while *m'ebi* expresses both ideas. For instance:

1. *met' leñd-uol'je*

I desire to eat, I am hungry.

2. *met' leñde-miebi-je*

I wish to eat (having food).

§ 86. The conjunctive mood is expressed by means of the prefix *ot*:

Met a'nīl ai ol'leu

I (once) more fish would eat.

Tet la'lañin ol'-xo'njek

thou to the elder brother shouldst go.

§ 87. The conditional mood has several forms. The following are all the forms of the verb *ā* (to do):

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------|--------|---------|----------|------------|-----------------------------|---|
| <i>met</i> | -ā'-de | ā'-ñide | ā'-lelde | ā'-lelñide | ā'-gene or ā'-lelgene | |
| <i>tet</i> | - " | " | " | " | ā'-gene | |
| <i>tudel</i> | - " | " | " | " | ā'-deune or ā'-leldeune | |
| <i>mit</i> | - " | " | " | " | ā'-lukene or ā'-lelukkene | |
| <i>tit</i> | - " | " | " | " | " | " |
| <i>titel</i> | - " | " | " | " | ā'-ñideune or ā'-lelñideune | |

Forms 1-4 are used when the principal and subordinate clauses have one and the same person as subject, while 5, 6, are used when different person are subjects of the two clauses. Besides, forms 3, 4, and 6 require that the verb in the principal clause shall also be in the conjunctive mood. For instance:

- | | |
|--|---------------------------------|
| 1. <i>Met ā-de keit'</i> | I, if make, shall give. |
| 2. <i>Met ā-ñide keit'</i> | " |
| 3. <i>Met ā-lelde met o'tkei</i> | I, if made, would give. |
| 4. <i>Met ā-leñide met o'tkei</i> | " |
| 5. <i>Met ālgene, tet mink'</i> | I, if make, thou take. |
| 6. <i>Mit ā-lelukene, o'mni o'- mi'n-ñam</i> | we, if made, people would take. |

Forms 5 and 6 are also used with the suffix *tel'* of the future tense. For instance:

- | | | |
|-----------------------------------|---------------------------------------|-------------------|
| " <i>Metul el-ilē-tel-gēne,</i> | <i>el-ko'ude-tel-gēne,</i> | <i>met uo'rpe</i> |
| me not if wilt scold | not if wilt beat | my children |
| <i>met'-ti'te yo'ulellelgene,</i> | <i>tē tin kē lteye."</i> ¹ | |
| me like if wilt love | to thee will go. | |

"If thou wilt not scold me, wilt not beat me, my children, like me, wilt love, to thee I will go."

It should be noted in this example that the verbs *ilē* "scold" and *ko'ude* "beat" are in form 5, and *yo'ulelle* "love," in form 6, but without the element of the future tense. The verb *kēlteye* (base, *kēl'*) (I will go) is in the future tense, indicative mode, and not in the conjunctive *o't-kēlteye*, thus corresponding to the first two forms.

§ 88. The supine is formed by means of the suffix *din*.

- | | |
|----------------------------|---------------------------------|
| <i>Met lo'do-din kie'e</i> | I (in order to) play have come. |
|----------------------------|---------------------------------|

This suffix is apparently the dative of nouns. Very often *deñin*, the suffix of the dative case, together with the possessive element, are abbreviated into *din*. For instance, *eme'i-deñin* (to his mother) may be shortened into *eme'i-din*. On the other

¹ Jochelson, Yukaghir Materials, etc., text No. 69, pp. 170, 171, lines 46, 47. Thus a widow replied to a man that was courting her.

hand, the dative of verbal nouns is used instead of the above form of supine. Instead of saying as in the above example, the following expression might be used, *Met lo' dol-nin kie' ce*. In this way, the form which corresponds to the Latin supine is rather a substantive than a verbal form.

§ 89. Perfective I called the mode which expresses an absolute certainty that the action will take place. It is formed by means of the suffix *moñ'*, which is put between the verbal suffix and the base.

Transitive.

1. *Met ā'-moñ'*
2. *Titel ā'-moñ'-ñam*

1. I am able to do, or shall do, without fail.
2. They are able to do, or will do, without fail.

3. I can go away, I shall certainly go away.

4. They can go away, they will certainly go away.

Intransitive.

3. *Met' kobe'i-moñ'-ye*
4. *Titel' kobe'i-moñ'-ñi*

§ 90. The potential mood is formed by means of the prefix *mo'li*, and expresses hope or fear that a certain action will take place. For instance :

Met' mo'li-ło'u

I may cut off, and lest I cut off.

Met' mo'li-el-ło'uye

I nearly cut off.

§ 91. The evidential mood is formed by means of the suffix *leł'*, which is a verbal noun (see § 83) from the verb *le* (to be, exist, live). The evidential mode is used when something is told, not from the experience of the narrator, but (1) from hearsay, (2) as a supposition, (3) as a conclusion drawn from certain traces that the action had taken place, (4) as a dream, and (5) as reminiscences of events which had occurred in the early childhood of the narrator, and of which he had learned subse-

Transitive.

- Met -ā'-leł'*
Tet -ā'-leł'-mik'
*Tudel-ā'-leł'-um*¹

Intransitive.

- ū'-leł'-je*
ū'-leł'-jek'
ū'-leł'-i

¹ The third person, indicative mode is *ā-m'*, but in this case *u* is introduced after the consonant *l*.

quently. Transitive, as well as intransitive, verbs have this mode. Let us take the verbs *a* (do) and *a* (be born).

| | |
|---|---|
| <i>Mit -a'-lel-i</i> | <i>a'-lel-jili</i> |
| <i>Tit -a'-lel-met'</i> | <i>a'-lel-jeyemet'</i> |
| <i>Tytel -a'-lel-nam</i> | <i>a'-lel-ni</i> |
| <i>Met eli'e tiñ nu'mole am</i> | My father this house made (the narrator saw). |
| <i>Met eli'e tiñ nu'mole a'lelum</i> | My father this house made (it is apparent). |
| <i>Met eli'e tiñ nu'mole a'lelum, mō nñi</i> | My father this house made, they say. |
| <i>Met yendō'je, met eli'e tiñ numole a'lelum</i> | I dreamed that my father this house built. |
| <i>Tolo'u medi'n pog'i-lel-i</i> | A wild reindeer just now ran by (would be said, should fresh traces of reindeer-hoofs be examined on the ground). |

"I was born" would be translated, *met a'lelje* (and not *a'je*), since no one can be a witness of his own birth.

§ 92. The inchoative mood is formed by means of the auxiliary verb *a* (to do), which is put between the base and the suffix. Of course the end vowel of the base is frequently dropped in this case. *a* changes into *e* after *i*.

| | |
|----------------------------------|--|
| <i>pa'nde</i> to cook | <i>pandā'</i> to start cooking. |
| <i>ō'je</i> to drink | <i>ojā'</i> to begin to drink. |
| <i>mō'do</i> to sit | <i>madā'</i> to sit down (begin to sit). |
| <i>ō'rpo</i> to hang | <i>ā'rpā'</i> to begin to hang. |
| <i>pō'gi</i> to run (of animals) | <i>pō'giā'</i> to start running. |

See pp. 101, 102 with reference to *o* changing into *a* in the verbs *mō'do* and *ō'rpo*.

Tudel' pa'ndā-i (intrans.), he began cooking. *Tudel' ō'jile ō'jā-m* (trans.), he water started to drink.

§ 93. By adding the suffix *yei* to the stem of the verb, an action is expressed for the completion of which it is required to go somewhere. *Yei*, used separately, is a verb whose meaning is to "rush one's self" "to throw one's self."

lō' dō-yei to go somewhere, to start off somewhere to play.
kudē' de-yei to go somewhere to kill.

It follows the general rules of conjugation of transitive and intransitive verbs.

§ 94. The supine, by means of the auxiliary verb *le* (to be), expresses the readiness, or the intention to do something, and corresponds to the Latin *conjugatio periphrastica*.

keḷḷin-le to be getting ready to come, to be ready, to intend to come.
Ty'tel an' le leu' din-leñi they fish are getting ready to eat.

VOICES

The following voices are formed from transitive and intransitive verbs.

§ 95. The reflexive voice is formed from a transitive verb by means of the personal pronoun *met*, which is prefixed to the verb. In the Slav languages the reflexive voice is formed in the same manner; but the pronoun "self" is used by the latter as a suffix. For instance:

| | |
|-------------------------------|---|
| <i>Met' me't-kudē' deye</i> | I myself kill. |
| <i>Tet' me't-kudē' deyek'</i> | Thou thyself killest. |
| <i>Tudel' me't-kudē' dei</i> | He himself kills, ¹ or killed. |

These verbs are conjugated like intransitive verbs.

§ 96. The passive voice is formed from transitive verbs by means of the suffix *o*, which is usually blended, together with the final vowel of the base, into a long *ō*. For instance:

Kudē' dō instead of *kudē' de-o*.

Verbs in the passive voice are conjugated like intransitive verbs. For instance:

| | |
|--|---------------------------|
| <i>Tu' del' kere' ken'e kudē' dō-i</i> | He is killed by a Koryak. |
|--|---------------------------|

¹ It is interesting to note that, in the Tundra dialect, the prefix-pronoun of the reflexive changes by persons, as in the Romano-Germanic languages:

| | |
|--------------------------|-------------------------------|
| <i>Met' me't-bunje</i> | I kill myself. |
| <i>tet' tet-bun-jek'</i> | Thou killest thyself. |
| <i>tudel' tur-bun-i</i> | He kills, or killed, himself. |

§ 97. The causative voice is formed, by means of the suffix *c*, from transitive as well as intransitive verbs; but the latter are, in such cases, changed into transitive verbs:

| | |
|------------------|-------------------|
| <i>kude'de-c</i> | to cause to kill. |
| <i>mó'do-c</i> | to make to sit. |

There is another suffix for the formation of the causative voice; namely, *ctile*; but the difference between the two is not quite clear to me as yet. I hope that closer study of the texts will make the difference clear.

§ 98. The reciprocal voice is formed by means of the prefix *n'e* (in nouns, it constitutes the suffix of the comitative case). This voice follows the rules of conjugation of intransitive verbs. For instance:

| | |
|----------------------------|-------------------------|
| <i>T'itel n'e kudedeñi</i> | They killed each other. |
|----------------------------|-------------------------|

§ 99. The coöperative voice is formed by means of the suffix *je* or *jü*. For instance:

| | |
|-----------------|-------------------|
| <i>kude' je</i> | To kill together. |
|-----------------|-------------------|

kudeje is equivalent to *kudedeje*. The second syllable *de* is blended together with *je* into one syllable.

ASPECTS OR DEGREES OF ACTION

§ 100. Derivative verbs indicating degrees of action are formed by means of suffixes, except those in § 107.

§ 101. The suffix *i* indicates singleness of action, that a certain action was performed only once and within a short period of time:

| | |
|-----------------------|------------------------------|
| <i>pa'nde</i> to cook | <i>pa'ndei</i> to cook once. |
|-----------------------|------------------------------|

§ 102. The suffix *ti* expresses an action in diminutive form, limits the volume of it:

| | |
|------------------|-------------------|
| <i>pa'nde-ti</i> | to cook a little. |
|------------------|-------------------|

§ 103. The suffix *nu* expresses the iterative form of the action:

| | |
|-------------------|------------------------|
| <i>pa'ndä'-nu</i> | to cook several times. |
|-------------------|------------------------|

In this case, the final vowel of the base turns into a long sound.

§ 104. The suffix *nunu* (a reduplication of *nu*) expresses the iterative form in an intense degree :

panda-nunu to be always cooking (with interruptions).

§ 105. The suffix *yi* expresses the durative form, indicating continuity of action, or its reiteration within certain periods of time :

panda'-yi to cook long.

Met á'le ku'de'ci I killed many reindeer one after another.

ku'de'ci is equivalent to *kude'de-yi*. The *e* is dropped in *de*, and *dy* is *j* (see phonology), *j* changes into *č*(*ty*).

§ 106. Any two of the enumerated suffixes for the expression of degrees of action may be combined, thus forming the following :

1. *inu* the repetition of a single action.
2. *inunu* " " " "
3. *činu* the repetition of a diminutive form, diminutive-iterative.
4. *činunu* " " " " " "
5. *yinu* durative-iterative.
6. *yinunu* " "

§ 107. The prefix *me* expresses an action not quite completed but in the process of completion, or recently completed, or about to be completed :

Met á'le me'-kude'de I have just been killing, or I am killing a reindeer.

Met me'-lodo'teye I am going to play, I will play, right now (soon).

§ 108. The order in which the suffixes expressing the different derivative conceptions are arranged after the verb-base is as follows : base + voice + degree of action + mode + verbal suffix of person and tense :

Tu'del ác-nu'-le'um He apparently caused to do . . . several times.

§ 109. Before proceeding to describe the participial forms, I wish to draw attention to the ease with which nouns become verbs, outside of the cases mentioned above (see § 64).

§ 110. Every noun in the comitative forms, by dropping *e* of its suffix *n'e*, a base of an intransitive verb expressing the ownership of something. For instance:

| | |
|-------------------------|---------------------------------|
| <i>āle-n'e</i> | with reindeer. |
| <i>ā'čēn'</i> | to have reindeer. |
| <i>Met ālēn'-je</i> | I have reindeer, or a reindeer. |
| <i>met uo' rpen'-je</i> | I have children. |
| <i>Tu'del eč'i en'i</i> | he has a father. |

§ 111. Every base of a noun may be turned into an intransitive verb by adding to the particle *no* (be) as a suffix, which has no meaning when it stands alone. For instance:

| | |
|---------------------------|--------------------------------------|
| <i>Eč'i'e-no</i> | be a father. |
| <i>Met eč'i'e-no-je</i> | I am a father, I have been a father. |
| <i>Met eč'i'e-no-teye</i> | I shall be a father. |

VERBAL NOUNS

§ 112. The particle *bon*, being suffixed to various verbal forms, composes verbal nouns, which are used sometimes as the name of the subject (like our participles), or as a name of an action; but if the verb is transitive, the verbal noun may also signify the object which receives the action expressed by the verb. From the base *oje* (to drink), we may derive the following verbal nouns:

Present-Preterite.

| | | | |
|------------------|------------------|--------------------|-----------------|
| <i>ō'jeyebon</i> | <i>ō'jemebon</i> | <i>ō'jemelebon</i> | <i>ō'jelbon</i> |
|------------------|------------------|--------------------|-----------------|

Future.

| | | | |
|--------------------|-------------------|---------------------|--------------------|
| <i>ō'jeteyebon</i> | <i>ō'jetmebon</i> | <i>ō'jetmelebon</i> | <i>ō'jetelbon.</i> |
|--------------------|-------------------|---------------------|--------------------|

Bon combines also with the form *lel'* of the evidential mode.

Examples.

1. *Tu'del i bičile ō'jemelebonōdek'* He the milk who drank, or it is just the one that drank the milk.

ǝ'jemelebòdek' is the definite nominative case of *ǝ'jemelebon*—One who drank.

2. *Met ǝ'jelbon ǝ'jik'* my (by me) drunk water, the water
(that I am drinking) drunk
by me.
3. *Met ǝ'jelbon* my beverage, or the beverage that
Met ǝ'jeyebon used to be mine.
Met ǝ'jemebon
4. *Ǟ'ǝ-nu-melebòngele* (accus.) That which is used to drink (he)
nex'anin el mǝ'ji has never taken.
5. *Metek ǝ'jeteyebòdek'* I am the one that will drink.

The suffix *bon* is used as an independent word, *pon* (a word cannot begin with *b*). In olden times this word used to indicate the name of a deity embracing all nature, the universe. *Pon* indicates *something that is unknown*. All household goods taken as a whole are spoken of as *pò'npe*.

§ 113. The suffix *uo* or *uol'* (from *uo*, "child"), when joined to verbal forms, expresses the result of an action. For instance :

- xo'n-uo* or *xo'n-uol'* (from *xon*, "walk"), walking, a trace from
walking, also a trail.
- ǝ'je-l-uol'* (*l* is introduced between the two vowels; *ǝ'je* is the basis of the verb "drink") the process of drinking,
also the trace left from
drinking, *e. g.*, the
water left in the glass
after drinking.

§ 114. With regard to verbal forms serving as adjective modifiers, see §§ 80, 84, 110.

THE GERUND OR VERBAL ADVERB

§ 115. The suffix *t*, together with the verbal base, forms the verbal adverb, which expresses an action taking place simultaneously with that indicated by the predicate :

- Met' mǝ'do-t a'yi* I while sitting was shooting.
Met' anil legu-t' cori'e I while eating fish was writing.

It seems to me that the suffix *l* is that of the ablative without the local element *ge* (§ 12):

Mō do-l' sitting, or from sitting.

§ 116. The suffix *lle* with the verbal base expresses an action preceding the one expressed by the predicate. *lle* is apparently nothing but the instrumentative case *le* (see § 12); but I always heard a sound of double *l* in verbal adverbs. This form is in most cases combined with the possessive element *de* or *do* (see § 12):

Met' ye ā-delle nu'mo-yekli'n I, a bow having made, went hunt-
xo'nje ing.

Met' modā-delle mō'go i'gdā I, having sat down, a cap began to
sew.

§ 117. If the verbal adverb expresses an action of another person (not of the subject), but taking place simultaneously with the action of the subject, it is then derived from the forms of the definite conjugation (see § 82) together with locative suffixes. The suffix *ge* is used for the first and second person, singular number; *dege*, for the third person, both numbers; and *luke*, for the first and second person, plural number. For instance:

| | |
|---|--|
| <i>Met yu'ol-ge</i> | while I looked. |
| <i>Tet yu'ol-ge</i> | while thou looked. |
| <i>Tu'del yu'o-dege</i> | while he looked. |
| <i>Mit yu'oluke</i> | while we looked. |
| <i>Tit yu'oluke</i> | while you looked. |
| <i>Tŷtel yu'ōhi-dege</i> | while they looked. |
| <i>Mit yu'oluke tu'del ani'le i'gdem</i> | while we looked (in our looking), he was fishing. |
| <i>Tŷtel ai yō'ndōhīde'ge mit ānil</i> <i>t'dgei</i> | while they were still asleep we were catching fish. |

THE ADVERB

§ 118. The following are some of the adverbs of time:

| | |
|---------------------------|---------------------|
| <i>xanŷn</i> when. | <i>tŷne</i> lately. |
| <i>xanŷnde</i> sometimes. | <i>žugo'n</i> soon. |

| | |
|--|---|
| <i>ajōn'</i> early. | <i>tāt</i> , <i>tā'zile</i> afterwards, later on. |
| <i>tudā'</i> long ago. | <i>ne'gajiye</i> yesterday. |
| <i>iē</i> long. | <i>ogō'ie</i> to-morrow. |
| <i>xō'nfume</i> , <i>xō'llume</i> immediately. | <i>ta'ānugi</i> then. |
| <i>n'e'xanin</i> never. | <i>i'ji</i> now. |
| <i>xa'diē</i> already. | <i>ai</i> again, once more, anew. |
| <i>a'ānume</i> at first. | <i>Tā'bun-ni'ān-giēlge</i> meanwhile, in the mean time. |
| <i>ke'yot'</i> at first. | <i>n'i'nelije</i> many times. |
| <i>key'e'n</i> previously. | <i>xa'mlije</i> several times. |
| <i>drug'</i> (suddenly, the Russian word <i>vdrug</i>). | |

§ 119. Adverbs of place :

| | |
|-------------------------------------|-----------------------------------|
| <i>tā</i> there, thither. | <i>i'ner</i> elsewhere. |
| <i>ti</i> here. | <i>migā'de</i> hither. |
| <i>xon</i> where, whither. | <i>ti'niide</i> this way. |
| <i>xot</i> where from, whence. | <i>ca'rude</i> sideways. |
| <i>xo'dibonget'</i> whence. | <i>pude</i> outside. |
| <i>xo'nde</i> everywhere, anywhere. | <i>n'a'cin</i> against, opposite. |
| <i>tā'</i> thence. | <i>tāt'</i> hence, from here. |

§ 120. Adverbs of manner :

| | |
|-------------------------------|----------------------------------|
| <i>o'moē</i> well. | <i>ki'juon'</i> easily, lightly. |
| <i>čomo'n</i> very. | <i>nigē'yot</i> heavily. |
| <i>n'a'dude</i> enough, only. | <i>i'rkin</i> only. |
| <i>tā'āndaga</i> enough. | |

§ 121. All adverbs directly precede the verb, and may be regarded as prefixes. Not all adverbs to be found in the language have been enumerated here. Some adverbs are simply roots, for instance, *tā*, *ti*. Others are derived from these roots, for instance, *tā'* *ti'* ("thence," "hence"), which are the ablative of *tā* and *ti*. Others are formed from nouns and adverbs, as, for instance, *n'a'cin* ("opposite"), an abbreviation of *n'a'ceñin* (dative of *n'a'če*, "face"); *i'rkin* ("only") is merely the numeral one; *čomo'n* ("very"), from *čomo*, which is the basis of the intransitive verb *to be large*.

§ 122. The temporal case of nouns, mentioned under nouns, is also to be added to the adverbs of time (§§ 12, 31).

POST-POSITIONS

§ 123. All post-positions, which take the place of prepositions, might just as well be called "case-post-positions," like the suffixes enumerated in connection with the declension of nouns (see § 1). Post-positions differ from the latter in that they are not used in connection with a possessive element, and that most of them may take on case-suffixes. The latter circumstance is not so characteristic, however, since *ne*, comitative case, is used as a separate word, *n'á'ga* ("together"), and the case-suffixes *get*, *gen*, *gete*, are derivatives from the locative *ge*. As may be seen from examples, post-positions are sometimes put after oblique cases of nouns.

§ 124. The following are the post-positions.

| | |
|-------------------------------------|--|
| <i>yołá'</i> , <i>yołá'n</i> after, | |
| behind. | <i>Met-yołá'</i> after, behind me. |
| <i>budí'e</i> on top, upon, | } <i>Tí' del' nū'me-budí'emo'doi</i> he sits on the house. |
| on. | |
| <i>budí'en</i> on, over the | |
| surface. | |
| <i>budí'et'</i> from under | } <i>met-ál</i> under me. |
| the surface. | |
| <i>ál</i> under. | |
| <i>át</i> from under. | |
| <i>alā'</i> near. | <i>lebié'-n-át u'koč</i> came out from under the ground. |
| <i>ca'ide</i> across. | <i>nū'mo-d-alā'</i> near the house. |
| | <i>unū'ñge-ca'ide</i> across the river. <i>u'nuñ</i> (river) |
| | <i>ge</i> is in the locative case. |
| <i>yeklí'e</i> behind. | <i>nū'mon-yeklí'e</i> behind the house. |
| <i>meklí'e</i> in front. | <i>u'nuñ-meklí'e</i> at this side of the river. |

let for the sake, is a verbal adverb of the verb *le* ("be"), and is put after the dative.

| | |
|-------------------------------------|---|
| <i>met eč'ēñin-let' kole'če</i> | I for the sake of father came. |
| <i>ele-čū'on</i> without. | <i>E'le</i> (the adverb of the denial <i>no</i>) |
| | is put before the noun. |
| <i>Tí'tel e'le-met-čū'on xó'nñi</i> | They without me went away. |

§ 125. The Yukaghir language has no conjunctions; but some pronouns in oblique cases are used instead. For instance,

Tabu'nget (ablative of *ta'bun*, "that") replaces the illative conjunction *therefore*.

Ta'tmedeu'ne ("and for this reason") is the subjunctive mode of the intransitive verb *tatme* ("to be such").

The adverb *ai* ("again") is sometimes used instead of our conjunction *and*:

Titel ya'xteñi ai lo'ñdoñi

They sang and danced.

CONCLUDING REMARKS

The morphological peculiarities of the language may be summed up in the following main propositions.

Word-formation is accomplished mainly by means of suffixes; but prefixes are also used (almost exclusively in connection with verbal forms). In this respect the language differs from those of the Ural-Altaic group, which use suffixes only, and approaches the American languages.

The possessive suffixes of nouns is but little developed (except in the third person); the language thus differing from the Ural-Altaic, as well as from the Eskimo dialects.

Sound harmony of vowels (*a* and *o* should not occur in the same word), is little developed, and in this respect the language resembles some of the Indian dialects, but differs absolutely from the Ural-Altaic languages with their intricate system of vowel-harmony. For instance, an important feature of the vowel-harmony of the latter group of languages consists of the adaptation of the suffix vowels to the vowel of the root, which never changes. The vowel of the first syllable thus governs all the rest of the vowels, no matter what their number may be. In the harmony of the Yukaghir language, the root-vowel frequently adapts itself to the vowel of the suffix (see § 92). Besides, in the plural forms of personal pronouns (*met'*, *mit'*; *tet'*, *tit'*; *tudel'*, *titel'*) an attempt may be noticed in the language to derive new forms by means of changes of vowels within the root (the method of Semitic languages) without any additions from outside, a feature of which traces may be found in two other so-called "isolated" Siberian languages, — that of the Kott and the Ostyak from Yenisei.

The difference in the conjugation of transitive and intransitive verbs which we have in the Yukaghir language is a feature common to almost all American languages. The same may be said of the capacity of bases of transitive verbs to change into intransitive by means of suffixes and *vice versa*.

Suffixes of purely verbal forms are different from case-suffixes, and they cannot be brought in connection with personal pronouns.

A necessary element of plurality is constituted by the sound *p*; while that of futurity by *t*. In the Chukchee and Eskimo languages *t* constitutes the element of plurality, and in the Koryak language it forms the element of the dual number.

Adjectives, being verbal forms, do not undergo any inflections.

There is no difference between animate and inanimate objects, as is the case in some Indian dialects.

The feature known as "polysynthesis" in American dialects, and which consists of a combination of two or more uninflected bases in one word, in which one of the bases expresses the principal idea, and is put at the end of the word, while the other bases figure as secondary definitive ideas, is also to be met with in the Yukaghir language. For instance:

| | | | | |
|------------|----------------------------|------------|------------------|-----------------------------|
| <i>Met</i> | <i>tu'de-eji'e-mo'dot'</i> | <i>koi</i> | <i>-cu'oleji</i> | <i>pundut'</i> ¹ |
| I | he self sitting | boy | tale | shall tell. |

That is, I shall tell a tale of a boy who was sitting (living) all alone.

In the expression:

tu'de-eji'e-mo'dot'-koi-cu'oleji

we have an actual synthesis. Without being inflected, all secondary bases are combined into one conception with the principal base *cu'oleji-tale*

Or: *Ye'lokun- no'ineye- bon -ku'de'ciye eor'd-mo-nōt' kud'e'ye'*
 Four with legs something killing man-being have become.

¹ See Yukaghir Materials, etc., Tale 12, p. 25.

² Ibid., Tale 25, p. 169.

That is, (I) have become a man that kills four-legged things (animals).

Other examples may be cited in which the bases combining into one word drop one or more syllables. For instance: *Čo'māni* (*Coregonus leucichtys*) is actually derived from *Čomō'je-d-a'nil* ("big fish"); or *Čomō'čie* (elder brother of the father, uncle) is really *Čomō'je-d-eč'i'e* (big father).

It is true that there is no actual incorporation to be found in the language; neither pronouns nor nouns, when direct or indirect objects, are incorporated in the predicate; but the nature of the syntactical construction of the Yukaghir language is akin to incorporation. The verb plays the main part in the sentence. It is always placed at the end of the sentence, being preceded, first by the subject with all its modifiers, then by the direct and indirect objects with their modifiers, then by the adverbs. If the subject is not accompanied by any modifiers, and it is known from the sense of the story who the acting person is, then it is usually dropped (see below, the text). The subject very often does not assume the element of plurality, though there are many acting persons, as long as the sense of plurality is expressed by the verb (see the text).

APPENDIX

A TALE OF WHAT THE ANCIENT YUKAGHIR DID WITH THEIR DEAD SHAMANS

| | | | | | |
|--|-------------------------------------|-------------------------------------|-----------------------------------|---|-------------------------------------|
| 1 Ču' oŕe-d-o' mni, Ancient people | 2 a' lmaŕe, the shaman's, | 3 a' mdegene, when (he) died, | 4 ču' de flesh | | |
| 5 lo' ndomieblde, to separate wishing | 6 ca' rxun-molo' jek gloves | 7 mo' roñimele, put on | 8 n' a' le-n-abu' tek masks | | |
| 9 mo' roñimele put on | 10 ļu' dud-ā' nik' iron hooks | 11 mi' n-ñimele. took. | 12 Tabu' de, Therewith | 13 ču' deule flesh his | |
| 14 n' e' laxadāideŕle, having caught | 15 ti' te-lāñi to them | 16 āč' ryñam. drew. | 17 Tať' Thus | 18 č' iñjit having drawn | |
| 19 č' o' ñmuñam. cut. | 20 Nugo' ne With hands | 21 e' le-me' inuñi. not took. | 22 N' e' lhetñam, Tore off | 23 tať' thus | 24 n' um' jit whole |
| 25 ke' nbunit' entire width | 26 řondoñam. separated. | 27 O' rponjirax Hangers | 28 ā' ñimele, made | 29 pu' de outside | 30 ā' ñam, made |
| 31 tā there | 32 orpu' reñam; hanged | 33 pu' de, outside | 34 yeloŕeñin in the sun | 35 kie' lecñam. dried. | 36 Kie' lectelle Having dried |
| 37 cord mon' ulpegi relatives his | 38 le' ñitei, if will be | 39 ta' ñde that | 40 ču' lgele flesh | 41 xa' rteñitem. will divide. | |
| 42 O' nmedie-nu' mok Of thin larch a house | 43 ā' ñimele. made. | 44 Tř' te Their | 45 pa' ilgele shares | 46 a' nmedie-nu' mo of thin larch house | |

| | | | | | |
|---|--|--|---|--|---|
| 47 <i>mo'lgodo'go</i> middle | 48 <i>caxa'lecñam</i> put (every one) | 49 <i>n'ñer.</i> separately. | 50 <i>Coro'mon-ulpegi</i> Relatives his | 51 <i>tobo'kołok'</i> dogs | |
| 52 <i>ku'dečiñimele,</i> killed | 53 <i>er'ze</i> bad | 54 <i>tobo'kogełe</i> dogs | 55 <i>e'le-ku'dečiñi,</i> not killed | 56 <i>omo'ze</i> good | 57 <i>tobo'kox'</i> dogs |
| 58 <i>ku'dečiñimele.</i> killed. | 59 <i>Tabu'ngele</i> Those (dogs) | 60 <i>ti'te</i> to their | 61 <i>pai'lge</i> shares | 62 <i>poni'yiñam.</i> put. | |
| 63 <i>Tabu'de</i> Those | 64 <i>ke'nmetelle,</i> having added | 65 <i>po'niñam.</i> left. | 66 <i>A'mundeule</i> Bones his | 67 <i>ta'bun-yòla'n</i> thereafter | |
| 68 <i>xa'rtāñam.</i> to divide commenced. | 69 <i>Tabu'dek</i> Those | 70 <i>amu'ngi</i> bones his | 71 <i>kie'lectelle</i> having dried | | |
| 72 <i>tami'eñam.</i> clothed. | 73 <i>Tabu'de</i> That | 74 <i>yò'd-amu'ngele</i> his skull | 75 <i>xo'ideñi.</i> worshipped. | 76 <i>Tabu'ngele</i> For that | |
| 77 <i>cālek'</i> (of) wood | 78 <i>coro'mo-ti'te</i> manlike | 79 <i>āñam,</i> made | 80 <i>coromodeule</i> trunk his | 81 <i>coromo-titelu'o</i> manlike | 82 <i>añam.</i> made. |
| 83 <i>Yò-d-amu'ndeule</i> His skull | 84 <i>tā</i> thence | 85 <i>nuc'lecñam.</i> set on. | 86 <i>Tabu'ngele</i> For that | 87 <i>ma'gideule</i> jacket his | |
| 88 <i>u'yāñam,</i> made | 89 <i>mo'gopedeule</i> caps his | 90 <i>āñam.</i> made. | 91 <i>Tāñde</i> That | 92 <i>n'e'rgele</i> garb his | 93 <i>ceu'reñam,</i> embroidered, |
| 94 <i>e'le-kie'-zu'on</i> all over | 95 <i>ceu'reñam.</i> embroidered. | 96 <i>Tyñde</i> For this | 97 <i>n'a'dedeule</i> for his face | 98 <i>n'e'rek</i> clothes | |
| 99 <i>u'yāñimele,</i> made | 100 <i>ā'ñjeduol'-pon-xobodek</i> for eyes | 101 <i>openings</i> | 102 <i>ā'ñimele,</i> made | 103 <i>ā'ñadeule</i> mouth his | 104 <i>ai</i> also |

| | | | | |
|---|--|---|--|--|
| 105 <i>a'ñam.</i> made. | 106 <i>Ti'ne</i> Former | 107 <i>coril'en-ul'</i> embroidered | 108 <i>ma'gideuŕe</i> jacket his | 109 <i>pu'dedegen</i> on it |
| | 110 <i>yero'ye-xar-mag'le</i> of skins of one year old reindeer jacket | 111 <i>moru'ceñam.</i> put on. | 112 <i>Ta'bun</i> That | |
| 113 <i>pu'dedegen</i> upon (of it) | 114 <i>no'ii'ere</i> (with) blanket of soft reindeer-skin | 115 <i>yodu'taiñam.</i> wrapped. | | |
| 116 <i>Ta'zile</i> Thereafter | 117 <i>modo'toñam,</i> set (also placed) | 118 <i>ŕrje</i> in the front corner | 119 <i>modo'toñam.</i> placed. | |
| 120 <i>Omo'lebon</i> Good something | 121 <i>le'nñide,</i> if eat | 122 <i>loč'i'lge</i> in fire | 123 <i>pe'deteñam,</i> burn | 124 <i>pu'dedegen</i> over it (fire) |
| 125 <i>tabu'ngele</i> that | 126 <i>tä</i> there | 127 <i>mo'inunuñam :</i> keep : | 128 <i>Ta'ñde</i> That | 129 <i>me'-legiteñam,</i> so fed |
| | | | 130 <i>ka'nei</i> at every | |
| 131 <i>le'ndelge</i> meal | 132 <i>tät</i> thus | 133 <i>a'ñam.</i> did. | 134 <i>Tabu'de</i> That (one) | 135 <i>xo'in'eñi.</i> worshipped. |

Told by the old Yukaghir Nicholas Samsonoff in the village on the Korkodon River, October, 1896.

FREE TRANSLATION OF THE TEXT

Our ancient people, when a shaman died, used to separate the flesh of the corpse from the bones. For that purpose they put on gloves and masks. Then they took iron hooks, and, having caught the flesh of the corpse, drew it to them and cut it off. It was considered a sin to touch the corpse with bare hands, or to look at it with uncovered face. Thus they separated the flesh from the skeleton on its entire length. Then they made drying-frames and hung the flesh on them outside, in the sun to dry. After the flesh was dried, the relatives of the dead

shaman divided it among themselves. Then they made a tent of thin larch-trees, and each of them put his share in the middle of the larch-tent separately. Then the relatives of the shaman killed dogs as offerings. They did not kill bad dogs; they killed only good ones. Then they added the killed dogs to their portions of dried flesh. After that they left the tent with the shaman's flesh and the dog-offerings.

Then they divided the bones of the corpse, and, after having dried them, they clothed them. They worshipped the skull of the shaman. They made a trunk of wood, and set on it the skull. Then they made for it (for the idol) a jacket and caps (two caps, — a winter and a summer one). They embroidered the coat all over. For its face they made a mask, with openings for eyes and mouth. Over the embroidered coat they put a coat of fawn-skins; and over that, a blanket of soft reindeer-skin.

Then they placed the figure in the front corner of the house. Whenever they were going to eat something good, they first threw a piece of it into the fire, and held the figure over the smoke. This they did at every meal; and thus they fed the figure, which they worshipped like a god.

GRAMMATICAL ANALYSIS OF THE TEXT

1. *Ču'ole-d-o'mni*. *Ču'o*, adverb of time (*long ago*); *ču'ole* (old times); *o'mni*, a collective conception (people, men). It was apparently formed from *o'mo* (tribe, clan, kin) and the suffix comitative *n'i* (instead of *n'e*) (with the kin, with the entire clan). *Ču'ole-d-o'mni* (people of times ancient). See § 9.

2. *A'maŕe*. The base is *a'ma* (shaman); *ŕe* is the suffix, accusative indefinite. See §§ 12, 20.

3. *A'mde-gene*. *Amde*, base of intransitive verb (*die*); *gene* is the suffix of the conditional mode. See § 87.

4. *Čude* is used instead of *čugi*. The base is *čuŕ* (meat, flesh); *gi* is the possessive suffix (see §§ 8, 9); *ŕ* before *gi* is usually dropped. The use of *de* instead of *gi* is apparently an old form. It occurs in ancient tales and shaman's songs, but not in ordinary conversation.

5. *Lo'ndo-miebi'-de*. *Lo'ndo*, base of transitive verb (separate); *miebi*, optative mode (see § 85); *de*, suffix of the conditional mode (see § 87). This verb has formally two direct objects — *alma-le* and *ču'gi* — instead of *a'ima-ču'gi* (the shaman's flesh).

6. *Ca'rxun-molo'jek* (gloves), from *ca'rxun* (fingers) and *molo'je* (mittens, mittens with fingers), *k*, suffix of accusative definite case. See §§ 12, 20.

7. *Mo'roñimele*. *Mo'ro*, base of transitive verb (put on); *ñimele*, suffix of the third person, plural number, present preterite, definite conjugation (see § 82). *Ca'rxun-molo'jek* is in the singular number, since in the Yukaghir language it is sufficient if the idea of plurality is expressed in the predicate only.

8. *N'a'če-n-abu'tek'* (mask), from *n'a'če* (face), *a'but'* (cover); *k*, suffix of the accusative definite (§ 12); *n* is inserted between the two vowels. See § 9.

9. See 7.

10. *Lu'du-d-u'-nik'* (iron hook). *Ludul'* (iron), *l'* is dropped; and *u'ni* (hook); *k*, suffix of the accusative definite; *d*, see § 9.

11. *Mi'n-ñimele* (took). *Min'*, base of transitive verb (take); *ñimele* (see 7).

12. *Tabu'de* (therewith, with that; that is, with the hooks). The base is *Ta'bun* (that). *Tabu'de* (inst. of *tabu'nle*), instrumental case (see § 60).

13. *Ču'deu'le* (flesh his; that is, the shaman's). The base is *čul'* (flesh), *l'* is dropped before *d*; *deule* = *degele*, accusative definite with the possessive element (see § 26).

14. *N'a'čexadaidelle* (having caught). *Na'cexada* (catch), transitive verb; *i*, the element indicating singleness of action (see § 101); *delle*, suffix of the verbal adverb, past tense (see § 116).

15. *Ti'te-lañi*, to them, *Ti'te*, instead of *titel'* (they), *l'* being dropped; and *lañi*, a post-position indicating direction toward something.

16. *Äi'ɣiñam*, from *a'či* (to draw), base of transitive verb; *ɣi* durative (see § 105); *ñam*, third person, plural number, present preterite, transitive verb, indefinite conjugation (see § 75).

17. *Tat* (thus, after, or thence) is formed from *tā* (there). See § 119.

18. *Cī'ñit* (having drawn, pulled). *Cīñ* (pull, draw), base of transitive verb, it has apparently the same root as *d'ci* (16); *ñi*, suffix co-operative (see § 99); *t*, suffix of present participle (see § 115).

19. *Čo'ñnuñam* = *čō'unuñam*, from *čō'u*, (cut) base of transitive verb; *nu*, suffix of the iterative form (see § 103); *ñam* (see 16).

20. *Nugo'ne*. *Nu'gon* (hand), base; *e*, instead of *le*, suffix of the instrumental case. *l* is dropped after the final *n*; in some cases, the final *n* is changed into *d*, f. c. *nugo'de* inst. of *nugo'ne*.

21. *Ele-mei'nuñi* = *ele moinuñi*. *Moi* (to hold), base of transitive verb; *nu*, suffix of the iterative form (see § 103); *ele* (or *el*) . . . *ñi*, prefix and suffix of the negative conjugation (see §§ 75, 79).

22. *Ne'ľbetñam*. *Ne'ľbet* (to tear off, to skin, to pull off the skin), base of transitive verb; *ñam* (see 16).

23. *Tat*. See 17.

24. *N-u'mjit* (whole, entirely), *gerund* (see § 115), from *nu'mde* or *nu'mje* (be whole); *nu'mjeye n'e'molgil'*, a whole year (see § 80).

25. *Ke'nbunit* (entire width), *gerund* (see § 115), from *ke'nbun*, (be wide); *ke'nbuneye-d-u'nuñ*, wide river.

26. *Lo'ndoñam*. *Lo'ndo* (separate, untie), base of transitive verb; *ñam* (see 16).

27. *Orpo'ñjirax* (hangers). *X*, suffix of accusative definite (see §§ 12, 20). This word is formed from the base of the intransitive verb, *o'rpo* (hang); *n* is inserted *ñi*, suffix co-operative (see § 99) and *cal* (tree), *l* having been dropped, and *e* changed into *r*.

28. *Āñimele*. *Ā* (do), base of transitive verb; *ñimele* (see 7) is in agreement with the definite case (see 27). See §§ 82, 83.

29. *Pu'de* (outside), adverb.

30. *Ā-ñam*. *Ā*, see 28; *ñam*, see 16.

31. *Ta* (there), adverb (see § 119).

32. *Orpu're-ñam*. *Orpu're* (hang), base of transitive verb; *ñam*, see 16.

33. *Pu'de*. See 29.

34. *Yelo'je-nin*. *Yelo'je* (sun), base; *nin* (to the sun), suffix dative (see § 15).

35. *Kie'lec-nam*. *Kie'le* (be dry), base of intransitive verb; *c*, suffix of the causative voice (see § 97), *kielec* (make dry, force to be dry); *nam*, see 16.

36. *Kie'lec-telle*. *Kie'lec*, see 35, *telle* = *delle* (*d* after *c* changes into *t*), see 14.

37. *Coro'mon-ul-pe-gi*. *Coro'mon-ul'* relative; *pe*, element of plurality (see § 33); *gi*, possessive suffix (see §§ 7, 12).

38. *Le'-nitei*. *Le* (be), base of intransitive verb; *nitei*, suffix of the third person, plural number, future tense, indefinite conjugation of intransitive verbs (see § 75). The future tense is sometimes used instead of the conditional mode.

39. *Tañ-de*, instead of *tañ-le*. *Tañ*, demonstrative pronoun; *de*, suffix of accusative indefinite (see § 60).

40. *Ču'ł-gele*. *Ču'ł* is the base; *gele*, suffix of the accusative with the possessive element (see §§ 12, 25).

41. *Xa'rte-nitem*. *Xa'rte* (divide), base of transitive verb; *nitem* suffix of the third person, plural number, future tense, indefinite conjugation of transitive verbs (see § 75).

42. *O'nmedie-nu'mok* (a house made of young larch-trees; that is, a conical tent made of larch-tree rods). *O'nmedie* is formed from *on*, a root expressing the conception of larch. Larch-tree is called *o'nra* or *onda*; that is, *on* (larch) and *cał* (tree), see 27; *dīe* is the suffix of a diminutive noun (see § 39); the meaning of the particle *me* is unknown to me. It is, at any rate, hardly possible that we should have to do here with the word *o'ume* (mind, memory, or opinion). *Nu'mo* (house); *k* suffix of the accusative definite (see § 12).

43. *Ā'-nimele*. *Ā* (to do); *nimele*, see 7.

44. *Tī'te*, possessive pronoun (see § 55).

45. *Pa'il-gele*. *Pail* is from the Russian word *pai* (share); *l* has apparently been added either to form a Yukaghir verbal noun out of the Russian base, or in order to distinguish it from the Yukaghir word *pai* (young woman); *gele* (see 40).

46. *O'nmedie-nu'mo*. See 42.

47. *Mo'lgo-dogo* (in its middle). *Mo'lgo*, adverb of place, also used as a post-position; *dogo* = *dege*, suffix of the locative with the possessive element (see § 12).

48. *Caxa'lec-ñam*. *Caxa'lec* (assemble, gather, rally, collect), base of transitive verb; *ñam*. See 16.

49. *Niñer* (every, separately), from *i'ñer* (separately) and *n'e* (together). See §§ 119, 123.

50. *Cord mon'ulpegi*. See 37.

51. *Tobo'ko-łok'*. *Tobo'ko*, from the Russian *soba'ka* (dog). Since there is no sound of *s* in the Yukaghir language, *s* is changed into *t*, and both vowels *a* changed into *o*, according to the rules of harmony (see Phonology). The ancient word for dog, *pu'bel'* is not used any more. The Tundra dialect still retains two words for dog, — *lamen* (this word seems to be borrowed from the Tungus) and *xapn'en*; *łok'* = *lek'*, suffix of the accusative definite (see § 12).

52. *Ku'de-či-ñimele* is formed from the base *kude'de* (to kill); *yi*, suffix of the durative form; *de* + *yi* = *či* (see § 105); *ñimele*, see 7.

53. *E'rče* (bad, poor), first person, singular number, present-preterite (base *e'ru* = be bad), used as an adjective before a noun (see §§ 37, 80).

54. *Tobo'ko*. See 51; *gele*, see 40.

55. *E'le-ku'deči-ñi*. *Ku'deči*, see 52; *e'le . . . ñi*, form of the third person, plural number, present preterite, negative conjugation of transitive verbs (see §§ 75, 79).

56. *Omo'če*, from *o'mo* (be good), the base of the transitive verb; *če*, see 53.

57. *tobo'ko*, see 51; *x'*, suffix of the incomplete indefinite form of the accusative (see § 12).

58. *Ku'dečiñimele*. See 52.

59. *Tabu'ngēle*. *Ta'bun* (that), see §§ 56, 60; *ge'le*, see 40.

60. *Tēte*. See 44.

61. *Pail*. See 45; *ge*, suffix of the locative (see §§ 12, 16).

62. *Poni'-yi-ñam*. *Po'ni* (put), base of the transitive verb; *yi*, see 16 and 52; *ñam* (see 16).

63. *Tabu'de*, instead of *ta'bun* (the base of the demonstrative

pronoun that), and *le*, suffix of the accusative definite (see § 60).

64. *Ke'nmete-lle*. *Ke'nme* (friend) changes, by means of the suffix *te*, into a transitive verb, — *to provide someone with a friend, a companion, or fellow-traveler* (see § 64); *lle*, suffix of the verbal adverb, past tense (see § 116, and compare with the element *de* in 14).

65. *Po'ni-nam*. See 62.

66. *A'mun* (the base, means bone); *dëule*. See 13.

67. *Ta'bun*. See 63; *yola'u* (after, behind), post-position see § 123).

68. *Xa'rtānam* = *xa'rte* (see 41) + *a*, inchoative mood (see § 92); *nam*. See 16.

69. *Tabu'dek'*, instead of *tabunlek'* (see 63, the accusative definite (see § 60).

70. *A'mun*. See 66; *gi*, possessive suffix of the accusative.

71. *Kie'lectelle*. See 36.

72. *Tami'te* (to dress, dress up), base of transitive verb; *nam*. See 16.

73. *Tabu'de*. See 63.

74. *Yö-d-amu'ngele* (the head-bone; that is, skull); *yö* (head); *d* is inserted for euphony (see § 9); *a'mun*. See 66; *gele*. See 40.

75. *Xo'ide-ni*. *Xo'ide* or *xo'in'e* is the base of the intransitive verb *to have a god* or *to be with a god*, from *xoil'* (god) and the suffix *de* (see § 64) or *n'e* (see § 110); *ni* is the suffix of the intransitive verb (see § 75). It should be noted, that with the intransitive verb *xo'ide* a direct object in the accusative has been used. It might have been the instrumentalis, *tabu'de yö-d-amu'ngele*; that is, with this skull (see § 60) they were as with a god (see 134, 135).

76. *Tabu'ngele*. See 59, in the sense of "for that"; that is, for the skull.

77. *Ca'l-ek'*. *Ca'l* (tree); *ek'*, instead of *lek'* (*l* having been run into one with the *l* of the base), suffix of the accusative definite (see § 12).

78. *Coro'mo* (man); *ti'te*, suffix of the comparative II (see § 12).

79. *Ä'-nam*. See 30. It should be pointed out that the

word *a'-ñam* has two objects in the accusative. One (76) is in the definite; the other (77), the indefinite form.

80. *Coro'mo* (man and trunk, body), in this case it means trunk; *deule* = *degele*. See 13.

81. *Coro'mo-titelu'o*. See 78. *Coro'mo-tite-l-uo* figures here as the suffix of the verbal noun, indicating the result of an action (see § 113).

82. *Ā'-ñam*. See 79.

83. *Yō'-d-amun-deule*. See 66 and 74.

84. *Tā*. See 31.

85. *Nuce'lec-ñam*. *Nuce'lec* (set on); *ñam*. See 16.

86. *Tabu'ngele*. See 59.

87. *Ma'gi-deule*, from *ma'gil'* (coat, jacket), *l'* being dropped, and *deule* = *degele*. See 13.

88. *Uyā'ñam* = *u'i* (work); *a*, inchoative mood (see 68); *ñam*. See 16.

89. *Mō'go* (cap); *pe*, element of plurality. Two caps used to be made, — one for the summer, made of soft reindeer leather and embroidered; the other one, made of fur, was put on top. *ñam*. See 16.

90. *Ā'-ñam*. See 30.

91. *Ta'ñ-de* = *ta'ñ-le*, the accusative indefinite (see § 60).

92. *N'er* (garb, things); *gele*. See 74.

93. *Ceu're* (to embroider); *ñam*. See 16.

94. *E'le-kie'-ču'on* = *e'le* . . . *ču'on* (without), see § 124, and *kī'čil'* (end). *čil'* is dropped, and *i* is lengthened into a diphthong. Without end; that is, entirely, all over, nothing was left unembroidered on the garment.

95. *Ceu'reñam*. See 93.

96. *Ti'ñ-de* = *ti'ñ-le* (this), the accusative indefinite (see § 60).

97. *N'a'če* (face), see 8; *deule*, see 13.

98. *N'er-ek*. *N'er*, see 92; *ek*, suffix of the accusative, instead of *k*, *e* being inserted after the final consonant of the base. It seems to me that the accusative in 97, in its relation to *n'er-ek*, is used in the sense of the Saxon form of the genitive case in the English language.

99. *Uyā'*, see 88; *ñimele*, see 7.

100. *A'ñje-d-u' ol'* = *a'ñje* (eye); *d*, the connecting particle; *uol'*, the suffix of a verbal noun expressing the result or trace of an action (see § 113). *A'ñje-d-u' ol'* = place for eyes.

101. *Po'n'xo-bodek*, instead of *po'n'xo-bonlek* (see § 112), *Po'n'xo* (to be bright, transparent), the base of the verb; *bon*, suffix of the verbal noun (see § 112); *bodek*, the accusative definite (see § 112). *Po'n'xo-bon* (something bright, transparent). *Añje-d-uol-por'xo-bon* = eye-place, transparent = opening for the eyes.

102. *Ā'ñimele* (see 28).

103. *A'ña* (mouth); *deule* (see 13).

104. *Āi* (also). See § 118.

105. *Ā-ñam*. See 79.

106. *Ti'ne*, adverb of time (see § 118).

107. *Cori'len'* (to be embroidered), base of the intransitive verb; *ul'*, suffix of the verbal noun, used as modifier (see §§ 82, 84).

108. *Ma'gideule*. See 87.

109. *Pu'de* (in the yard, outside, or above, over, upon); see 29; *degen*, the vialis with the possessive element (see § 17).

110. *Yero'ye* (one-year-old reindeer fawn); *xar* (skin); *ma'gü* (jacket); *e*, suffix of the accusative.

111. *Moruc'e* (dress, put on); *ñam* (see 16).

112. *Ta'bun* (see 12).

113. *Pu'dedegen*. See 109.

114. *No'ji-n'er-e* = *no'ji* (soft reindeer leather); *n'er* (clothes); *e*, suffix of the accusative indefinite (see § 12).

115. *Yodu'tai* (wrap); *ñam* (see 16).

116. *Ta'čile* (afterwards), adverb of time (see § 118).

117. *Modo'to-ñam*. *Mo'do* (to sit), intransitive verb; *to* = *te*, suffix turning intransitive verbs into transitive; *modo'-to* (to seat, to place); *ñam*. See 16.

118. *O'rje* (in the middle), adverb of place (see § 119). They call thus the place of honor in their house; that is, the side facing the entrance.

119. *Modo'toñam*. See 117.

120. *Omo'če-bon* (something good), verbal noun (see § 112, *Omo'če* see 56).

121. *Le'nñide*, from *le'u* (to eat), base of the transitive verb; and *nide*, conditional mode (see § 87).

122. *Ločil'* (fire); *ge*, the locative (see § 12).

123. *Pe'de-te-ñam*. *Pe'de* (to burn), base of the intransitive verb; *te* changes the verb into a transitive verb (to sing), see 117; *ñam*. See 16.

124. *Pu'dedegen*. See 109. It is equivalent to "over it" (the fire).

125. *Tabu'ugele* (it; that is, the idol). See 59.

126. *Ta*. See 84.

127. *Mo'i-nunu-ñam*. *Moi* (hold, keep), base of the transitive verb; *nunu*, suffix of the intensive-iterative (see § 104); *ñam*. See 16.

128. *Ta'nñde*. See 39.

129. *Me-legi'te-ñam*. *Me*, see § 107; *legi'te* (to feed), from the transitive verb *le'u* (to eat); *ñam*, see 16.

130. *Ka'cnei* (every), from the Russian *ka'shdy*. To use the Yukaghir expression, it should be *le'nñde-o'nmun* (see § 57), instead of *ka'cnei le'nñdelge*.

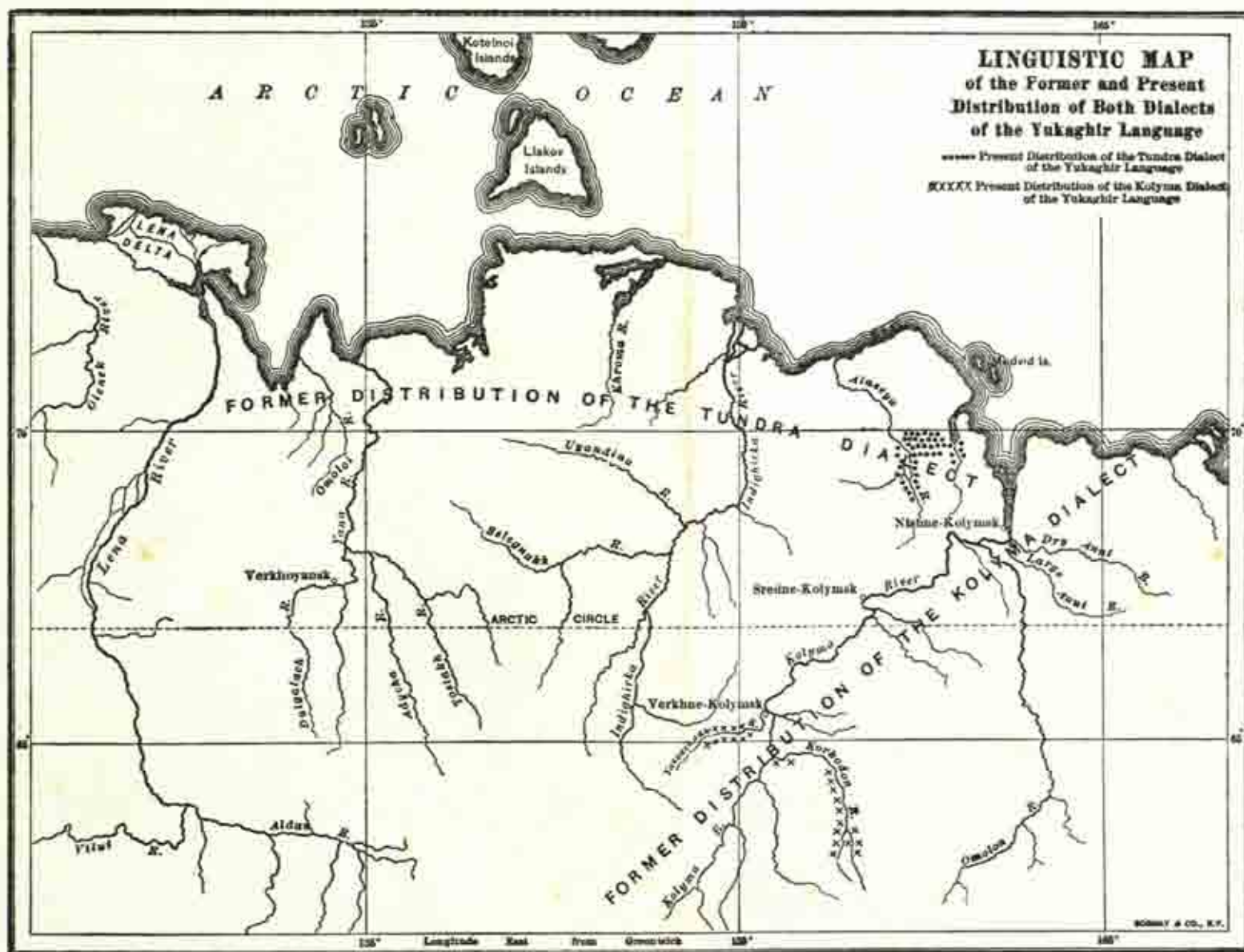
131. *Le'nñdel-ge*. *Le'nñde* (to eat, in general), intransitive verb, formed from the transitive verb *le'u* (eat) by means of the suffix *de* (see § 8); *l'* is the suffix of the verbal noun (see §§ 82, 83); *ge*, the locative (see § 12).

132. *Tat*. See 23.

133. *Ā-ñam*. See 79.

134. *Tabu'de*. See 73 and 75.

135. *Xo'ineñi*. See 75.



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THE EOLITHIC PROBLEM — EVIDENCES OF A RUDE INDUSTRY ANTEDATING THE PALEOLITHIC

BY GEORGE GRANT MACCURDY

INTRODUCTION

Nature's processes may be likened to photography. She furnishes the sensitized film, and the finger of Time manipulates the camera. It remains for man to develop and interpret the exposures. The geological record is a film cartridge exposed and sealed again, bound up with which are the beginnings of man's own record on the earth. The process of development begins with the most recent exposure and works backward.

For a long time we had a picture of man's neolithic record only. In the early part of the last century, Boucher de Perthes, with the help of Sir Joseph Prestwich and others, clipped off another section of the film, which when developed revealed the long chapter of our paleolithic history. It took a good while for some of us to accept the interpretation put upon that picture. When finally and generally accepted, there was in many quarters a feeling of relief that we had at last reached the end, or rather the beginning, of the series of Father Time's snapshots at our primitive ancestors. Nevertheless, to some persistent investigators it seemed worth while to take another pull at this enigmatical film. They appear to have been rewarded by a bona fide negative; but, to say the least, there is a certain superficial indistinctness about it that has rendered the print rather unsatisfactory to some minds. Recently the negative has been so strengthened that we are now practically assured of a picture worthy of a frame, and a place on the walls of our prehistoric gallery.

In the order, then, of their taking, these three views may be labeled: (1) Eolithic, (2) Paleolithic, and (3) Neolithic. Sir John Lubbock, now Lord Avebury, furnished the names for the second and third. The first was christened as late as 1892 by another Englishman, Mr J. Allen Brown,¹ fellow of the Geological Society, and an enthusiastic student of the prehistoric. Two years later de Mortillet made use of the term "eolithic" for the first time by him, in his *Classification palethnologique*,² but did not refer to J. Allen Brown's article. The latter, in discussing the rude specimens found on the North Downs by Mr Benjamin Harrison, suggested that the term "eolithic" be applied to the "roughly hewn pebbles and nodules and naturally broken stones showing work, with thick, ochreous patina, found on the plateaux of chalk and other districts in beds unconnected with the present valley drainage." The de Mortillet classification was republished in 1900.³ Leaving the paleolithic to represent the early Quaternary, he applied the term eolithic to all that has to do with the Tertiary. Dr Rutot of Brussels, to whom we are indebted more than to any one else for our knowledge of the eolithic period, and whose work will be discussed at length in this paper, does not limit it chronologically to the Tertiary. In his classification,⁴ the early phases of the Quaternary, those connected with the first grand extension of the glaciers, are also eolithic, the well-known hache type (Chellean) of implement not appearing until the second advance of the ice.

When Thomsen published his relative chronology for prehistoric times in 1836, the only stone age known was that which is now called the neolithic period. Boucher de Perthes's first discovery of paleoliths came just two years later; but they were not accepted until after (Sir) Joseph Prestwich's visit to Abbeville in 1859. Eoliths have had a still longer and harder struggle for recognition. When first reported in 1867, they at once attracted considerable attention. After a lively discussion that lasted for

¹ On the continuity of the paleolithic and neolithic periods; *Jour. Anthr. Inst.*, March 8, 1892; XXII, pp. 93-94. Brown died Sept. 24, 1903.

² *Bull. Soc. d'anthr. de Paris*, 1894, p. 616.

³ *Le préhistorique*, 3^e éd.

⁴ L'état actuel de la question de l'antiquité de l'homme; *Bull. Soc. belge de géol., de paléont. et d'hydrol.*, Bruxelles, 1903, XVII, p. 425.

five or six years, the subject was relegated to the background. It might have passed into oblivion had it not been for the researches of Sir Joseph Prestwich in England, begun about fifteen years ago, and for the more recent work of Rutot in Belgium. Some of the details in its eventful history are worthy of record here.

EARLY DISCOVERIES

The discovery in Pliocene deposits of incised bones first served to awaken an interest in the question of Tertiary man, and led more or less directly to the later discovery of flints thought to have been chipped intentionally. In fact, Sir Charles Lyell would not formulate an opinion as to the nature of the incisions on bone found by Desnoyers¹ in the sand and gravel-pit of Saint-Prest, near Chartres, because the deposits had yielded no stone implements. But not long after (1867), the Abbé Bourgeois found in the same deposits what he considered to be stone implements. These were obtained at various depths in the high-level gravels (Pliocene) at Saint-Prest and did not include the amygdaloid (Chellean) type generally supposed at that time to represent the earliest industry in stone. The associated fauna consisted of: *Elephas meridionalis*, *Rhinoceros etruscus* (Falconer), *Hippopotamus major* (?), *Equus arvensis*, *Trogontherium cuvieri*, three species of *Cervus* and one of *Bos*.

The Abbé Bourgeois's researches were soon extended to the Miocene at Thenay, and formed the subject of important communications to the International Anthropological Congresses of 1867 and 1872. At the latter, held in Brussels, a committee of fifteen was appointed to report on the chipped flints from Thenay, submitted by Bourgeois. Nine of the Committee — de Quatrefages, d'Omalus, Cartailhac, Capellini, Worsaae, Valdémair Schmidt, de Vibraye, Franks, and Engelhardt — pronounced in favor of certain specimens; five — Steenstrup, Virchow, Neyrinckx, Fraas, and Desor — found no evidence of intentional shaping; and one — Van Beneden — was unable to decide. De Mortillet remained to the last a champion of the Thenay specimens, some of which are preserved in the Musée des Antiquités Nationales at Saint-Germain. On the

¹ Note sur des indices matériels de la coexistence de l'homme avec l'*Elephas meridionalis*, etc.; *C.-R. Acad. des sciences*, Paris, 1863, p. 1073.

other hand, researches made by Professors Capitan and Mahoudeau in 1901 have led them to combat the existence of artifacts in the deposit at Thenay. Rutot withholds judgment until further evidence is forthcoming. At the Brussels Congress (1872), Carlos Ribeiro presented a paper on chipped flints from the Upper Miocene and the Pliocene deposits near Lisbon, Portugal. Later, one of his compatriots, Delgado, discovered similar specimens in the Upper Miocene at Otta. But the consensus of opinion is that the pieces from the valley of the Tagus and from Otta are not artifacts.

A better fate has been reserved for the discovery by J. B. Rames, in 1877, of chipped flints in the Tertiary at Puy-Courny¹ near Aurillac (Cantal). The beds resting on Miocene basalt are alluvial, and belong to the Upper Miocene. They contain the following fossils, as determined by Gaudry: *Dinotherium giganteum*, *Mastodon* (*angustidens* or *longi-nostis*), *Rhinoceros schleiermacheri*, *Hipparion gracile*, *Tragoceros*, and *Gazella deperdita*. All the flints possess a brilliant black or dark yellow patina. The retouches and marks of utilization are most convincing. After a careful study of the pieces, de Mortillet, Cartailhac, Chantre, and Capellini declared that if these flints had been found in Quaternary deposits, no one would hesitate to regard them as having been chipped intentionally. De Quatrefages was of the same opinion, fresh confirmation of which is being received through the recent researches of Capitan, Rutot, Courty, and others. Until the question of the Thenay specimens is settled, those from Puy-Courny may be regarded as the oldest known artifacts, geologists being agreed as to the age (Upper Miocene) of the deposit, and archeologists as to the genuineness of the industry.

THE CHALK PLATEAU

A tradesman of Ightham, Kent, Mr Benjamin Harrison, an enthusiastic naturalist who had been collecting paleoliths from the River drift of the neighborhood for years, extended his field of search in 1885 to include the summit of that portion of the Chalk plateau which lies between the valley of the Darent on the west and

¹ Two other stations in the neighborhood of Puy-Courny, but of less importance, are Belbeix and Puy-Boudien.

that of the Medway on the east. Here, at heights of from 400 to 600 feet above the sea, he discovered flints supposed to have been fashioned by the hand of man.

In the next six years Harrison brought together a collection numbering more than 1,000 specimens. In the meantime (1888) his researches attracted the attention of Sir Joseph Prestwich, whose country-seat was at Shoreham in the Darent valley near by. Thirty years earlier, Prestwich had confirmed the accuracy of Boucher de Perthes's discoveries in the valley of the Somme. He had now found a second Boucher de Perthes nearer home. Harrison's discoveries, however, did not have to do with paleoliths, but with the industry of a much earlier date. Here the geological conditions are entirely different. Harrison left the paleoliths and the Quaternary behind when he ascended to the North Downs. The specimens he found there are uniformly and deeply stained to a warm, ochereous brown color, precisely as are the natural flint fragments associated with them, the coloring matter being the red clay in which they are imbedded, and which is found in patches capping the summits of the Chalk plateau. Associated with this red clay is a southern drift, carried there from the still higher elevations to the south, at a time when the chalk bridged the present fertile valleys of the Weald (woodland), connecting the North Downs of Kent with the South Downs of Sussex.

According to Prof. Rupert Jones, the implements are always accompanied with chert and ragstone from the outcrop of Lower Greensand on the side of the old Wealden range that once rose 2,000 to 3,000 feet over what are now Crowborough and other Sussex hills. The red clay with flints, that stained the implements, is, on the contrary, of local origin and occurs over other areas as well as those reached by the southern drift containing the rude implements.

The southern drift on the summit of the plateau is older, then, than the great chalk escarpment or the valleys of the Darent and Medway, which drain the Wealden district and, on their way northward to the Thames, cut the Chalk plateau into three sections. The escarpment and the broad valleys of the present drainage system are older than the gravel terraces occurring at various

levels in the valleys. But, according to Prestwich, all these terraces up to a height of about 340 feet above sea-level are of post-glacial age and contain flint implements of the paleolithic type. The paleoliths associated with bones of the Mammoth and woolly rhinoceros found in the gravel-pits at Aylesford,¹ only a few feet above the present bed of the Medway, are later than those found in the high-level valley terraces; these in turn are subsequent to the great denudation that swept away the chalk bridge spanning the Weald and uniting the North and South Downs; and finally, from the very nature of things, this enormous denudation must have taken place subsequent to the time when the southern drift was carried northward and deposited with the red clay on the summit of the North Downs, where patches of it still exist.

Other evidence conclusive of the great antiquity of the plateau drift, as well as of the successive river drifts of the Thames valley, may be furnished by a section (figure 15) extending from the Lower Greensand hills, near Ightham, northward to the Thames at Milton Street. Such a section would pass through the summit level of Swanscombe hill, capped by Tertiary strata and forming an outlier of the older drift. This hill with its spread of southern drift, though not much more than 300 feet high, corresponds with the gradient of the plateau if extended southward and upward till it reaches West Yoke and Ash, where Harrison found some of his first specimens. At Milton Street, north of Swanscombe hill, and near the village of Swanscombe, the high-level river drift is met with at an elevation 200 feet lower than the plateau drift on the summit of Swanscombe hill. The Milton Street river drift is 100 feet above the Thames, and contains flint implements of the well-known amygdaloid (Chellean) type; while at a still lower level are brick-earths and gravel in which, associated with Quaternary mammalian remains, are found flint implements of a type later than those at Milton Street. Hence, there are at least three distinct and successive steps from Ash down to the Thames: plateau drift with coliths, high-level river drift with paleoliths, and low-level river drift with paleoliths of a more perfected type. These epochs do not include

¹ I found remains of both Mammoth and Rhinoceros in the pits at Aylesford. I also obtained from one of the workmen a flint implement of the Acheulian type.

the neolithic culture of the region, evidence of which may be found on the surface at all levels.

The section described does not cut the Chalk plateau through its highest elevation, which, at Titsey hill, west of the Darent valley, is 864 feet above the sea. Even here, De Barri Crawshay found a patch of red clay and southern drift, with implements of the plateau type. This drift was transported across the chalk escarpment and the chalk plain into the Thames valley along lines independent of the present drainage; the patches that now cap the highest points marking what were then the valleys.

Prestwich thinks the southern drift may be of later date than the locally derived red clay with which it is so intimately associated. Both are older than the northern drift or boulder-clay and newer than the outcrop of Tertiary strata that caps the chalk at Swanscombe hill. Prestwich calls them simply pre-glacial, Rutot places them in the Middle Pliocene. The geological age of the plateau drift could be determined still more definitely were it not for two missing links in the chain of evidence. In the first place, the Tertiary series of deposits are not all present. The second difficulty arises from the absence of organic remains, the property of the infiltrating waters being such as to dissolve all calcareous elements as completely as if they were lumps of sugar. As soon, however, as the high-level river terraces are reached, the older type of paleoliths are found in association with a fauna in part now extinct,



FIG. 15. — Section from the Thames to Oldbury Hill near Ighiteam, Kent (after Prestwich). 1, Tertiary. 2, Chalk. 3, Upper Greensand and Gault. 4, Lower Greensand. a, Red clay with flints — eoliths. b, Upper valley-gravel — paleoliths. c, Low-level valley-gravels — paleoliths.

The Shelly gravel-pit at Swanscombe is a good example. I am indebted to Mrs Stopes, wife of the late Henry Stopes, for some excellent examples of early paleoliths from this pit which has furnished remains of *Elephas antiquus*, *Elephas primigenius*, *Corbicula fluminalis*, and many other species, living as well as extinct.

There is no doubt as to the great age (pre-glacial) of the plateau deposit of red clay with flints and southern drift, even though the fauna has not been preserved. There remain, however, two other questions to be disposed of, namely: (1) Do the specimens found by Harrison bear marks of use by man or of design in form? — and (2) Are they as old as the patches of clay and drift on the summit of the plateau? Prestwich answers both these questions in the affirmative.

Before formulating answers of my own or even accepting those of another, I determined to study the problems involved at closer range. Photographic reproductions and drawings of specimens shaped into definite patterns may give one absolutely true impressions of the originals. They are, on the other hand, far from satisfactory in the case of the rudely-shaped eoliths. Therefore, I spent a part of the summer of 1903 in Kent with Harrison himself and with Mr Percival A. B. Martin of Chipstead, Sevenoaks, a trained collector and disciple of Harrison. Before going to the field, I made a careful study of the important series collected by both these investigators, who placed themselves as well as their collections unreservedly at my disposal. Mr Martin gave additional facilities in the use of his automobile during my week's stay, thus rendering it possible to accomplish much in a comparatively short time. We made the ascent by the Vigo to the Chalk plateau, and visited many of the best-known stations on the summit. Collections were made at several of these places, especially at Fairseat and in Terry's Lodge pit, opened the previous year by Messrs Harrison and Benton (of Malling) and at their joint expense.

My excursions in Kent were supplemented by visits to the collections of the British Museum at Bloomsbury and South Kensington, as well as to the private collection of Mr W. J. Lewis Abbott at St Leonard's-on-Sea. The eoliths in the British Museum, Bloomsbury, were collected on the North Downs by Harrison.

The larger and more characteristic collection at South Kensington is the gift of Sir Joseph and Lady Prestwich, and includes the specimens figured in Prestwich's "Collected Papers on some Controverted Questions of Geology." These also for the greater part were collected by Harrison.

Mr Abbott, of St Leonard's-on-Sea, was for many years a resident of Sevenoaks and is perhaps as well acquainted with prehistoric Kent as anyone. His collection is one of the most important, and his technical knowledge of the problems involved in the art of chipping flint is of the first order. I spent two days with him, including a visit to the local Museum at Hastings in which he is much interested and where a part of his collection has already been installed. To him and to Messrs Harrison and Martin I am indebted for a number of valuable specimens as well as for information and guidance in the field.

Returning now to the questions already propounded in the light of what I saw in Kent, Sussex, and London, I feel impelled to accept the conclusions of Prestwich, namely, that many of these plateau flints bear the impress of man's handiwork. The marks are often the result of use alone and not of design. This is due partly to the fact that the people of that time did not know how to obtain the raw materials from the chalk, but depended entirely on picking up from the drift natural flakes of approximately the shape and size needed. A sharp edge was utilized once, twice, or until it became dulled, and was then cast aside. The signs of use, though slight, are unmistakable. If an angular piece did not admit of being comfortably grasped in the hand, the troublesome corners were removed. Some pieces were used simply as hammer- or trimming-stones. Perhaps a majority of the specimens show no special design in their shape. Many, however, may be grouped according to more or less definite patterns. Prestwich recognizes three such groups. The first is rather numerous, including thin, flat fragments of flint or natural flakes with chippings and notches along the margins, producing at times rude points; split flint pebbles of Tertiary age with edges chipped to serve as scrapers; and flints that, with a little trimming, could be easily grasped in the hand and used as hammer-stones. The second group is the largest of all and is characterized

by various types of scrapers. Two of these deserve special mention, viz., the small crescent-shaped scrapers comparable to the spoke-shave, and the double scrapers with an intervening point separating the two scraping edges. The third group is small and is represented by various fling-stones and drill-shaped implements.

In every case the eolith does not represent so much a preconceived form of implement as a resultant of a given natural form modified by certain marks of utilization, of adaptation, or by series of retouches. The shape of a chosen flake was not wholly determined by the uses for which it was intended, but was limited largely by the variety in Nature's supply of the raw material. The discovery that knives and forks were the best substitutes for teeth and fingers was not made in a single generation. It is safe, therefore, to assume that it took the combined effort of generations of eolithic experimenters to arrive at the idea of correlating a given form of tool with a given use or series of uses. As long as any flake served the purpose of the workman, Nature's supply sufficed. As soon as it was learned that a certain form of implement served him better in certain instances than any other form, he discovered that it would not do to depend on the chance finding of specimens suited to his growing needs. This led him of necessity to supplement the natural supply, a lesson which was not learned until the beginning of paleolithic times, as we shall soon see.

How very different are the valley implements! Their makers no longer depended on pebbles and angular fragments, but knew how to extract the raw material direct from the chalk. With the use of large, fresh, flint nodules, the art of chipping developed rapidly. The establishment of local workshops followed as a logical consequence. Some of these workshops have been left undisturbed so as to make it possible to reconstruct large flint nodules and cores from the numerous chips and implements strewn over a paleolithic floor. Mr F. C. J. Spurrell¹ found such a workshop at Crayford, Kent. The series he obtained there forms an interesting exhibit at the Museum of Natural History, South Kensington. Similar discoveries have been made by Mr J. Allen Brown at Acton, and by Mr Worthington G. Smith at Stoke Newington

¹ *Quar. Jour. Geol. Soc.*, 1880, XXXVI, 544.

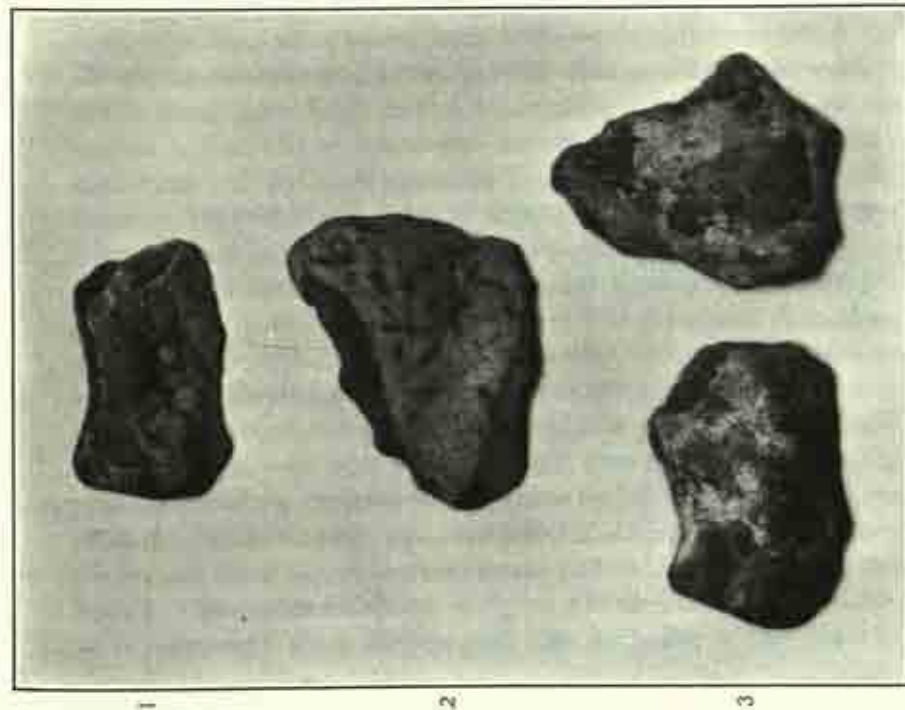
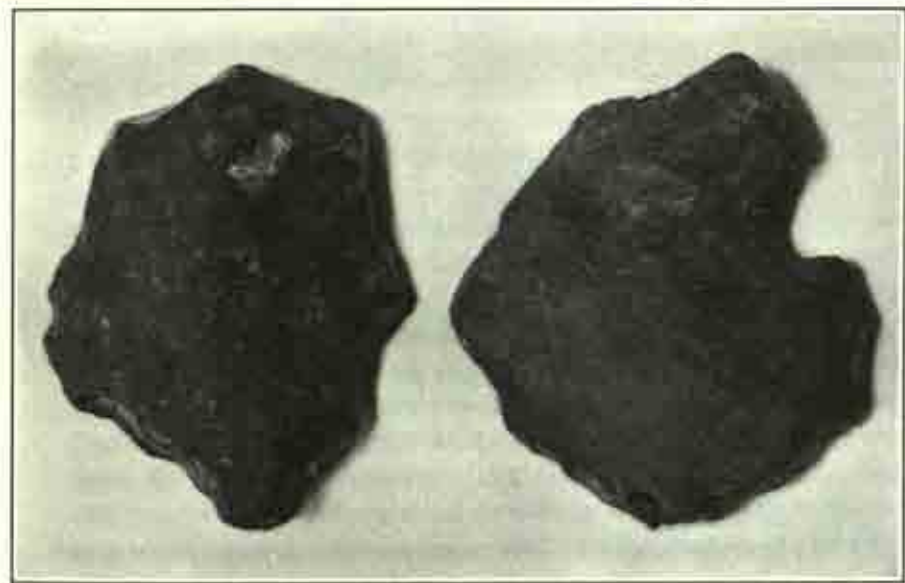


Photo by G. G. MacC.

A. 1, Farnham, Surrey (p. 435). 2, Farnham, Surrey (p. 435). 3, Terry's Lodge pit, Chalk Plateau, Kent (p. 436). 4, Terry's Lodge pit, Chalk Plateau, Kent (p. 436).



B. 1, Fawkham, Kent (p. 437). 2, Parsonage Farm, Stanstead, Kent (p. 436).

COLLITHS FROM SURREY AND KENT, ENGLAND (ABOUT THREE-FIFTHS NATURAL SIZE)

and Caddington. During the summer of 1900 it was my good fortune to visit several of the clay pits about Caddington in company with Mr Smith and to see in one of the pits a typical paleolithic floor.

Are the plateau implements as old as the drift with which they are associated? Might they not have been dropped on the surface of the Downs in paleolithic or even in recent times? Unpolished neolithic implements may be met with on the surface at any level; but they differ in both form and condition from the specimens in question. Their edges are often dulled, but never water-worn. The originally dark surfaces have taken on a whitish luster and are more or less plough-stained. The eoliths, on the contrary, are uniformly stained on the natural as well as on the worked surfaces, to a deep, ochreous brown color, and usually bear marks of drift action.

The neoliths are confined to the surface, but are not limited geographically. The eoliths are limited geographically, but, as we shall see later, are not confined to surface finds. They are co-extensive with the old drift. But this drift is found in patches only, much of it long since having been removed from the summit of the Downs by denudation. If the patches that are left yield eoliths, others must have been carried away along with the drift to the valleys below, where one would expect to find them as derived specimens. A few such examples have been obtained after careful search. Figures 1 and 2, plate xxv, A, belong to this category. I found them in a middle terrace gravel-pit near Farnham, Surrey. I also obtained two paleoliths of the usual type from the same pit. The derived implement shown in figure 1 is a natural flint flake, 4.5 cm. in length. The slightly convex surface of fracture is stained bluish white, and the rusty white crust is retained intact over the outer surface. The chipping, which is confined to a single lateral margin, was done with so much care that an overhanging prominence of the external crust, which would be supposed to receive the first ill-directed blow, was left untouched. The prominence might well have served both as a rest and as a protection for the thumb. The specimen shown in figure 2 is likewise a natural flake. It is weathered more deeply than the preceding. The piece is

triangular in shape. The chipping is confined to the longest margin, the blows being given from one direction and in the same plane. Nowhere else is there evidence of even accidental blows.

Harrison's first plateau discoveries were made on the surface, in shallow plough furrows or in trenches and roadside cuttings. Their deep staining, however, led Prestwich to believe that the specimens had been imbedded in a deposit beneath the surface. An implement from a post-hole at Kingsdown, one from a hole dug two feet deep for tree-planting at Parsonage farm, a third from two or more feet beneath the surface in a bank of red clay at the side of a pond, and a fourth at an equal depth in red clay at the Vigo gap, served to strengthen Prestwich's view.

In 1894 the British Association for the Advancement of Science appointed a committee "to investigate the nature and probable age of the high-level flint-drift in the face of the Chalk escarpment near Ightham, which appears to be productive of flakes and other forms of flint probably wrought by the hand of man." A grant was placed at the disposal of this committee, which consisted of Sir John Evans (chairman), Professor Prestwich, Prof H. G. Seeley, and Mr Benjamin Harrison (secretary). Mr Pink, the owner of Parsonage farm, Stanstead, had previously sunk a pit in the drift, and had found plateau implements at a depth of six or seven feet. Adjoining this, the committee's first pit was sunk through two and a half feet of "humus and drifted material, white flints, pebbles, and many ochreous flints worn and worked";¹ three and a half feet of "grey loam, with scattered small pebbles, and a few small, worked, ochreous flints throughout"; and one foot of compact gravel with many worked flints. A second pit was sunk near by and revealed "precisely similar conditions." The latter was sunk to a depth of twenty-six feet, most of the way through Lower Tertiary pebbles without reaching the Chalk. No implements were found below a depth of eight feet.

Through the courtesy of Mr W. J. Lewis Abbott, the Yale University Museum possesses an colith (plate xxv, B, fig. 2) that was found *in situ* in the first pit sunk on Parsonage farm, Stanstead, the year before work was begun by the British Association. It is a large

¹ *British Association Report*, 1895, p. 349.

natural flake, the greatest diameter being 9.7 cm. The outer surface retains the crust of the original nodule, the inner is stained yellowish brown. In shape it resembles the feline foot, trimmed in the region of the toes, the heel left untouched, and a deep notch near the heel carefully worked. It might have been used as a hammer or trimming-stone, and the crescent-shaped notch near the heel could well serve as a spoke-shave. The specimen represented in figure 1 of the same plate, also the gift of Mr Abbott, is from Fawkhams, some distance to the north of Stanstead. It is a natural flake from the old flint drift, and is much more deeply weathered than the one from the Stanstead pit. Eoliths of this general type may have been used as strigils as illustrated by the Apoxyomenos statue in the Vatican, or after the manner of the natives of Tierra del Fuego, who will not easily part with their much-prized body-stones. In this connection it should be mentioned that the illustrations accompanying this paper are of specimens from the collections made by me during the summer of 1903. Some I found myself, others were obtained from local collectors. All are now the property of the Yale University Museum.

The eoliths figured in plate xxvi, A, were found at South Ash by Mr Benjamin Harrison. Figure 2 is one of the largest eoliths in the Yale collection, its greatest diagonal dimensions being 12 cm. The inner, flat surface is stained to a deep, warm brown color which spreads also over the trimmed edges, where it is only slightly less pronounced in tone. The flake was, therefore, evidently not fresh when first utilized. The working was all done in one direction, the blows being aimed toward the outer crust. Chance chipping would have reduced the somewhat prominent heel which, though angular, serves admirably as a handhold. Figure 1 is a double scraper, with an intervening point between the two scraping edges. The base has been retouched enough to make it fit the hand more comfortably. The worked surfaces are covered with a mottled stain of bluish gray and buff, while the flat surface of fracture has taken on a warmer hue.

Mention has already been made of Terry's Lodge pit opened in 1902 by Messrs Harrison and Benton. On the occasion of our visit to this pit, which is sunk to a depth of about five feet, very near the

face of the chalk escarpment at a point 700 feet above sea-level, we were successful in finding, after an hour's digging, two specimens¹ *in situ* that were evidently worked. Two worked pieces were also picked up from the heap of clay and gravel thrown out when the pit was first opened. These are both illustrated in plate xxv, A, figs. 3 and 4. They are natural flakes stained to a rich, reddish brown color. The specimen represented by figure 3 is a crescent-shaped scraper of the spoke-shave type, and may be classed with Prestwich's second group referred to on page 434. Figure 4 is an example of the first group. It is roughly triangular in shape; the two margins which meet at the apex are both worked, but on opposite sides. In other words, after chipping one of the margins, instead of rotating the specimen until the adjacent margin was brought into play, it was reversed. Pieces that show reversed chipping would seem to possess special claim to consideration as artifacts. One loves to think of Chance as being unhampered in her actions. It would tend to upset one's habitual regard for her strict impartiality to find her, for instance, not only bunching her blows along a single margin of a flint flake, but also administering them in a given plane and from a given direction. To go further and demand that she should reverse the flake before beginning on an adjacent margin would be to ignore all the rules of probability.

My experiences in the field, as may be inferred, served at every point to strengthen my belief in Prestwich's conclusions; namely, that the plateau specimens bear marks of man's handiwork, and that they sustain the same relation to the old southern drift as the valley specimens do to the gravel terraces in which they are found. Prestwich's views are shared by practically all the many archeologists who have made personal investigations in the field.

Kent is not the only county in which the eoliths occur. Mr O. A. Shrubsole, of Reading, found them in Berkshire soon after Harrison's first discoveries on the North Downs. They have also been found under similar conditions by Martin on the South Downs

¹ The best one of these, together with other plateau specimens, was used to illustrate a paper read before Section H at the St Louis Meeting of the A. A. A. S., 1903-04. As it disappeared, mysteriously, on that occasion, I conclude that it must have been convincing to at least one member of the audience.

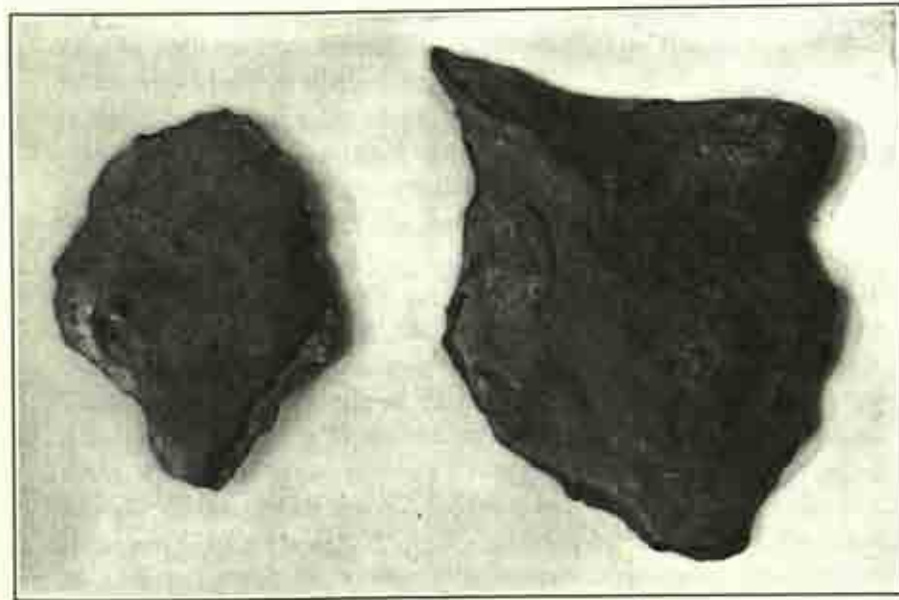
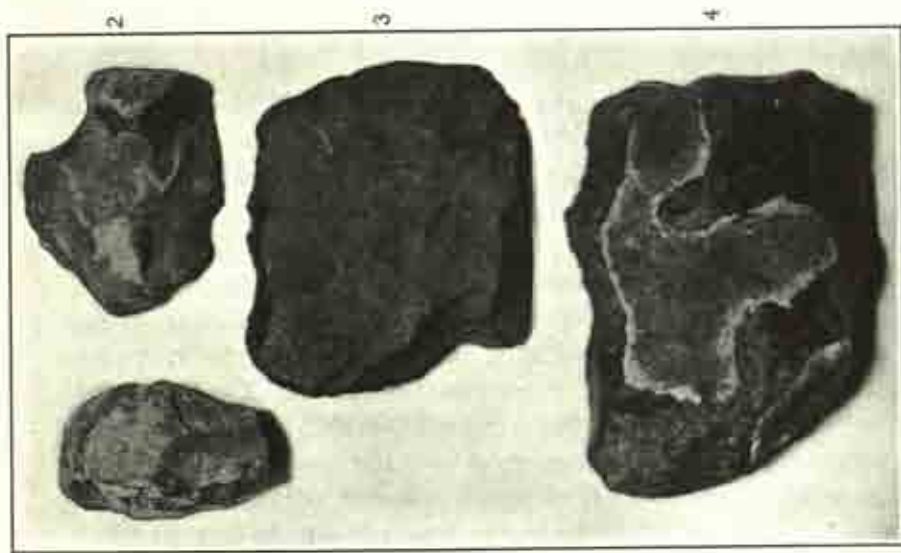


Photo by G. G. Mead.

A. 1, South Ash, Kent (p. 437). 2, South Ash, Kent (p. 437).



B. 1, Harmignies, Belgium (p. 461). 2, Harmignies, Belgium (p. 461). 3, Bois d'Épinou, Belgium (p. 461). 4, Harmignies, Belgium (p. 461).

EOLITHS FROM ENGLAND AND BELGIUM (ABOUT THREE-FIFTHS NATURAL SIZE)

at Beachy Head, near Eastbourne, Sussex ; by Blackmore, Bullen, and others near Salisbury, Wilts ; and in Dorset ; also in Surrey, Hampshire, the southern part of Essex, and Norfolk. For details of the various discoveries, the reader is referred to the bibliography accompanying this paper.

The deposits investigated by Shrubsole consist of pre-glacial gravel beds, from five to ten feet in thickness, that cover "the summit of an elongated plateau stretching from Easthampstead, Berks, to Ash Common, near Aldershot." They are composed of the same southern drift that has furnished the implements found on the North Downs, and had their origin in the heights that once rose over what is now the Wealden district to the south and southwest.

The gravel-capped plateau rises to an average level of about 400 feet above the sea, and "forms the highest ground between the rivers Wey and Blackwater." The specimens described came chiefly from Finchampstead, Easthampstead, and from near Bagshot. They present precisely the same general aspect as do those from the North Downs. Shrubsole believes them to be as old as or older than the gravel beds. His opinion is based on their mineral condition, and on the fact that he, himself, took them "from the gravel freshly fallen from the face of the pits, or from the heaps of screened gravel in the pits." It is pointed out that no artificial flakes and no implements of the amygdaloid type have been found in these gravels — a bit of negative evidence that gathers much weight when correlated with evidence of the same nature from other parts of the country.

The gravels rest upon what Shrubsole calls the Upper Bagshot. But, according to Geikie,¹ there is no marked separation between the Upper and the Middle Bagshot series in the London basin. They may be, therefore, of either Middle or Upper Eocene age. The gravels capping them are newer ; probably Upper Pliocene, since Prestwich was disposed to regard them as corresponding broadly in time with the Chillesford and Forest-bed groups, and these are Upper Pliocene.² If fluvial, they "would be the work of a stream which for a long time has ceased to exist, since its bed

¹ *Textbook of Geology*, 4th ed., 1903, p. 1233.

² *Ibid.*, p. 1281.

now occupies the summit of a hill-range, and on the sites of the former hills are now river valleys."

Dr H. P. Blackmore's discovery at Dewlish, Dorset, of coliths associated with the remains of *Elephas meridionalis* was announced to the Victoria Institute in 1900, through a letter to the Rev. R. Ashington Bullen. The Blackmore Museum in Salisbury is of special interest to Americans because it contains the famous Squier and Davis collection of antiquities from the Mississippi valley, purchased by Blackmore before its value was appreciated in this country. The same museum now possesses an important collection of coliths. Many of these were found by Dr Blackmore in the Alderbury gravels near Salisbury, he having taken them out of the gravels at all levels, to a depth of fourteen feet, with his own hands. These Alderbury gravels were classed as Southern Drift by Prestwich. Like the deposits on the Kent plateau, they are not fossiliferous. They rest upon the Bagshot sands, and "are at a much higher level than the river drift, which furnishes both flint paleolithic implements and a very good list of Pleistocene mammals and shells."

The Alderbury gravels are exploited largely for road-metalling; and for twenty years, at least, the pits have been searched in vain for implements of the well-known paleolithic type. On the other hand, specimens of this type are fairly plentiful in the river-drift terraces of the neighborhood.

In his effort to establish the age of the coliths by means of paleontological evidence, Dr Blackmore had recourse to a patch of gravel in Dorset, where his grandfather had found a molar of *Elephas meridionalis*, as long ago as 1813; and where he, himself, was present at the discovery, in 1887, of the remains of *Elephas meridionalis* now in the Dorchester Museum.

Dr Blackmore, in describing his search for coliths, writes:

"Being very anxious to fix the Pliocene age of these coliths [meaning those from near Salisbury], rather more than a year ago I went down to Dewlish, in Dorset, with the express purpose of carefully examining the gravel which had furnished the remains of *Elephas meridionalis*, as this was the one spot in the South of England which was regarded as a patch of Pliocene gravel.

"The farmer, Mr. Kent, on whose land the elephant remains were

found, was fortunately known to me, and he furnished me with two labourers. A trench was opened through the deposit of gravel, and there was no difficulty in finding eoliths, stained like the gravel, at the same level and associated with the elephant bones. This was to me most satisfactory and conclusive."

A recent letter to me from Mr Percival A. B. Martin describes a new locality for eoliths about six miles west of Eastbourne, as follows:

"The plateau drift caps a hill that is about 600 feet above sea level, and evidently belongs to the same spread of drift as that at Beachy Head, which also was the bottom of a very ancient valley, the vestiges of which are now preserved only on the very highest points of the district."

The Chalk cliffs at Beachy Head are familiar to every Channel voyager. The Chalk suddenly disappears at Eastbourne and does not reappear until one is opposite Dover, a distance of more than 50 miles. It is not generally known that the cliffs at Beachy Head and Dover are the bases of a great anticlinal fold whose axis passes from Dungeness in a westerly direction through Hampshire. The crest of the fold, including not only the Chalk beds but also the underlying strata of Upper Greensand, Gault, Lower Greensand, and Weald, has disappeared. If, before it disappeared, the old drift and eoliths were transported northward and left on the North Downs, the same old drift with eoliths must have been carried southward and deposited on the South Downs. A line drawn from Ash to Beachy Head would cut the axis of the fold at right angles. Martin thought he ought to find the old drift with eoliths at Beachy Head, and we have just seen how his search has been rewarded.

Both plateaus are but slender tongues from the great Chalk plain of Dorset, Wiltshire, and Hampshire, the tip of one being at Dover, that of the other at Beachy Head. Each will be explored eventually throughout its extent. The Chalk plain itself may be relied on for localities other than those already discovered. The Chalk is also continuous all the way from Dorset and Salisbury Plain in a northeasterly direction to Cromer on the Norfolk coast. At the southwestern extremity of this Chalk belt Dr Blackmore found eoliths associated with the remains of *Elephas meridionalis*; at its northeastern extremity, Abbott found a like association in

deposits of the same age. The results of the researches of Worthington G. Smith at Caddington, near Dunstable, about midway between Dewlish and Cromer, are an indication of the possibilities of the entire Chalk belt.

Mr W. J. Lewis Abbott's discovery, mentioned above, was made while searching the *Elephas* deposits of the Cromer Forest bed, to the west of East Runton. In the same level with *Elephas meridionalis*, Abbott found several worked flints, two *in situ*; others, because of their peculiar staining, evidently from the same bed. I saw these specimens, and with Abbott believe in their artificial character. Rutot, of Brussels, to whom Abbott sent the specimens for examination, is of the same opinion. An added interest attaches to the Forest bed implements in view of the recent researches by Laville and Rutot in the Upper Pliocene deposits at Saint-Prest, near Chartres, the station that came into prominence nearly forty years ago through the discoveries of the Abbé Bourgeois.

BELGIUM

Reference has already been made to early discoveries bearing on a pre-paleolithic industry in France and Portugal. In recent years the theater of interest and action has centered in Belgium, owing largely to the researches of Dr A. Rutot, of the Royal Museum of Natural History, Brussels. Admirably fitted by special training in engineering and geology, Rutot early took up the study of the Belgian Quaternary. This work led naturally to the subject of prehistoric anthropology (Quaternary and Pliocene), and to the work of such men as Gabriel de Mortillet. But Rutot did not believe in the new faith preached by de Mortillet, and in laying deep and broad plans to compass its destruction, he was led gradually to the conclusion that some at least of its tenets were true in the main. The chief difficulty was that, being in advance of his time, de Mortillet's work lacked the benefit of that constructive criticism without which a founder's work is apt to prove faulty when the time comes to add the superstructure. Rutot has endeavored to retain the sound construction and to eliminate the faulty. The foundations have been enlarged, and there has arisen a superstructure embodying as nearly as possible the ideas that are likely

to survive. The chief cornerstones of the Rutot edifice are stratigraphy and paleontology.

It must not be inferred that Belgium had contributed nothing toward a solution of the eolithic problem before Rutot's time. The name of Gustave Neyrinckx has already been mentioned in connection with the committee appointed by the International Congress of Anthropology and Prehistoric Archeology (held at Brussels in 1872), to pass judgment on the Thenay specimens presented by the Abbé Bourgeois. To Neyrinckx belongs the honor of being the first discoverer of eoliths in Belgium; but he did not live to see the fruits of his discovery mature. The value of his pioneer work is now recognized, and the specimens he found in the newly-made railway cut at Mesvin, between Mons and Harmignies, in 1868, are now a highly-prized possession of the Royal Museum of Natural History, Brussels. M. Émile Delvaux next took up the work at Mesvin, where he succeeded in determining stratigraphically a pre-chellean industry to which he gave the name Mesvinian — an epoch that Rutot later embodied in his system of prehistoric chronology.

But the pre-chellean industry at Mesvin is Quaternary and not Tertiary. This fact is of prime importance for several reasons. The industry-bearing deposits of Puy-Courny are accepted as Upper Miocene. Those of the Chalk plateau are Middle Pliocene, according to Rutot; and those of Saint-Prest, the Cromer beds, and Dewlish, are Upper Pliocene — all of Tertiary age. Further, according to the de Mortillet chronology which appeared in 1894, and again in 1900, all pre-chellean implements were classed as Tertiary. The amygdaloid implement was supposed to date back as far as the beginning of the Quaternary; to be, in fact, the only type of early Quaternary artifact — a supposition without foundation, as has been abundantly proved by Rutot and his colleagues in Belgium. The error arose from taking the river drift of Chelles as a type station, and from lack of a systematic study of undisturbed Quaternary deposits. In his exhaustive studies of scores of Belgian stations, Rutot has supplied this deficiency. A correlation of the data thus gathered has not only thrown a flood of light on the work of earlier investigators, but has also illumined hitherto

untrodden fields, and points the way to a future full of promise to the student of the prehistoric.

Turning from the Tertiary coliths of France and England, let us consider the Quaternary coliths of Belgium. Rutot's search for coliths was much simplified by his early recognition of the two conditions essential to their occurrence, viz.: (1) The presence in abundance of utilizable raw material on the surface of the soil, either in the outcropping of Cretaceous flint-bearing rocks, and the clays due to the decomposition and dissolution of the chalk; or in the valley drift; and (2) Proximity to a water course. These conditions obtained at the very beginning of the Quaternary in most of the river valleys of Belgium.

These valleys are often marked by three terraces: the upper terrace, about 90 meters above the present water-level, of Pliocene age; the middle terrace at an elevation of from 25 to 65 meters, and the lower terrace a little above flood water-level, both of Quaternary age. One would expect to find the first Quaternary industry in the stony deposit (*cailloutis*) that forms the base of the middle terrace in regions not covered (and the regions in question were not) by the Continental ice-sheet. This deposit marks the very close of the Pliocene, but the flints contained in it were utilized at the beginning of the Quaternary and before the superimposed beds were formed.

The accompanying section (figure 16) of the valley of the Lys south of Ypres shows the three terraces and the disposition of the various Pliocene, Quaternary, and recent deposits. Coliths were found in deposit G. To the industry occurring in deposits of this age, Rutot has given the name Reutelian, from the hamlet of Reutel, to the east of Ypres, where a typical station on a large scale is to be found. Morphologically, these earliest Quaternary implements resemble in every respect the more ancient Tertiary coliths. The name Reutelian, therefore, is to be understood as having a stratigraphical significance only.

The Reutelian industry varies lithologically according to the varying character of the material utilized. In West Flanders, for example, nodules of grayish black flint coming from the Cretaceous outcrops on the height of Artois were used exclusively. These

nodules were easily transformed into anvil- and hammer-stones, while natural flakes served as scrapers. There is no evidence that nodules were purposely broken up to obtain artificial flakes, the supply of natural ones being quite plentiful at first.

Reutelian implements have been found not only in stratigraphic section, but also on the surface of the soil where denudation has left the deposits in question exposed; and this is especially true of gently sloping hillsides facing the southwest, from which direction

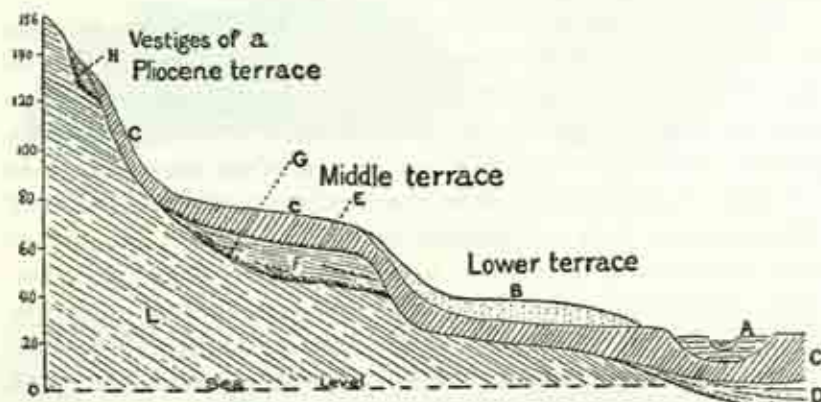


FIG. 16. — Section of the valley of the Lys to the south of Ypres, showing the three terraces and the disposition of the Pliocene, Quaternary, and recent deposits (after Rutot). *A*, Recent alluvium (sand, clay, peat). *B*, Marine sands of Flandrian age (Upper Quaternary). *C*, Stratified Hesbayan clays (Middle Quaternary). *D*, Campinian alluvium; argillaceous sand and gravel with fauna of the Mammoth (Middle Quaternary). *E*, Flinty layer at the top of the Mosean with mélange of Mesvinian and Chellean industries. *F*, Mosean alluvium (Lower Quaternary). *G*, Flinty layer forming the base of the middle terrace (Reutelian industry). *H*, Vestiges of a Pliocene terrace. *L*, Marine deposits (Eocene).

come the prevailing winds and rain. So thoroughly has Rutot mastered the problems at issue that it has been possible for him to foretell the locality where a certain industry may be found, simply by consulting his geological maps.

The geographic distribution of the Reutelian industry includes: the valley of the Lys, particularly in West Flanders; the region about Harmignies, east of Mons; both banks of the Haine and its tributaries, from the French frontier to Morlanwelz; the valley of the Sambre, 25 meters and upward above the river bed, especially

in the neighborhood of Landelies, also at Tamines, Floreffe, and finally at Salzinnes, near the confluence of the Sambre and the Meuse; the valley of the Meuse to the south (at Wépion) and east of Namur; sparsely in Limburg, but over a large area; and in the extreme east, near Spa. The same industry has already been found in France at Guise, valley of the Oise; Bicêtre, near Paris; and Saint-Prest near Chartres, valley of the Eure. Dr Hahne's recent discoveries at Schönebeck, in the valley of the Elbe, seems to prove the presence of Reutelian implements in Germany.

Industrial remains have also been found in the stony deposits that form the base of the lower terrace in non-glaciated regions—deposits synchronous with the retreat of the first Quaternary glacier, while the Reutelian epoch corresponds with the advance of the same glacier. The implements found at the base of the lower terrace do not differ technologically from the Reutelian coliths. The only difference is in their stratigraphic relations. A good example of their occurrence is to be found in the quarries of Maffle, near Ath, valley of the Dendre (figure 17); hence the name Mafflean suggested by Rutot for this epoch. It has also been styled Reutelo-mesvinian, a name suggested by its transitional position between the epoch which precedes, and the one which follows, called the Mesvinian.

The geographic distribution of the Mafflean or Reutelo-mesvinian industry is not nearly so extended as that of the Reutelian. It is confined to the lower valley terraces, and only to those that contain utilizable material. The principal Reutelo-mesvinian stations of Belgium are: Maffle, valley of the Dendre; the environs of Binche, valley of the Haine; Quiévrain, Baisieux, Audregnies, etc., valley of the Hogueau; the environs of Charleroi, Aiseau, Tamines, etc., valley of the Sambre; Wommersom, valley of the Grande-Geete, and Saint-Symphorien, Spiennes, etc., valley of the Trouille.

The specimens figured in plate XXVII, A, are natural flakes of phthanite, each provided with a sharp margin at right angles to the opposite, tapering end, or natural handle. In both cases, the once sharp margin has been dulled by use as a scraper. They are from the base of the Mosean (Lower Quaternary) in the Exploitation Hardenpont, at Saint-Symphorien, east of Mons, where the industry is unmixed with that of any other epoch.

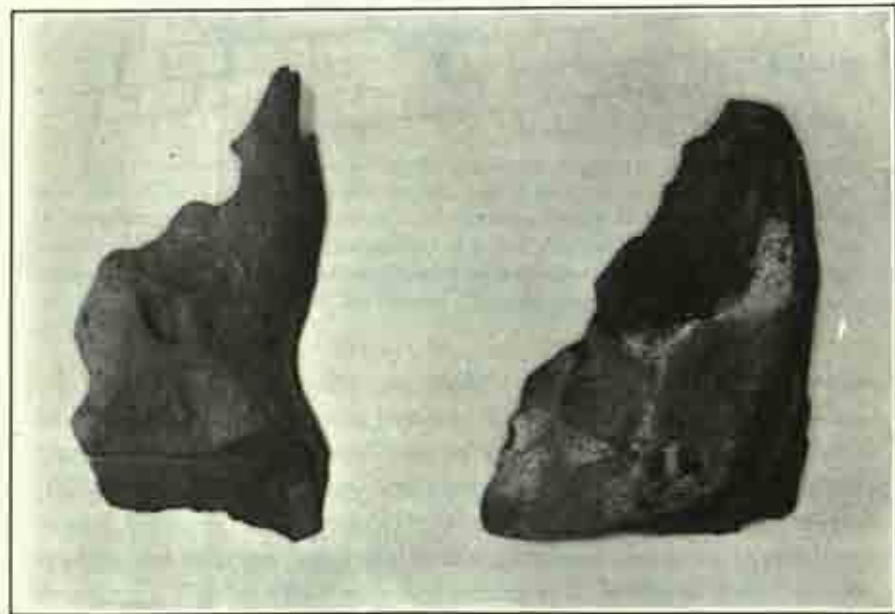


Photo by G. G. Merc.

A. Saint-Symphorien, near Mons (p. 446)



B. Exploitation Heilm, near Spicennes (p. 454)

EOLITHS FROM BELGIUM (ABOUT THREE-FIFTHS NATURAL SIZE)

It is interesting to note that M. Cels was the first to call attention to the existence of chipped flints at the base of a lower terrace, viz : the works between Spiennes and Saint-Symphorien, known as the Exploitation Helin, to which station we shall have occasion to refer at length. This was in 1888, when the knowledge of Quaternary geology, as well as of eoliths, was scarcely more than a blank ; hence Cels' observations¹ attracted little attention save opposition from the geologists.

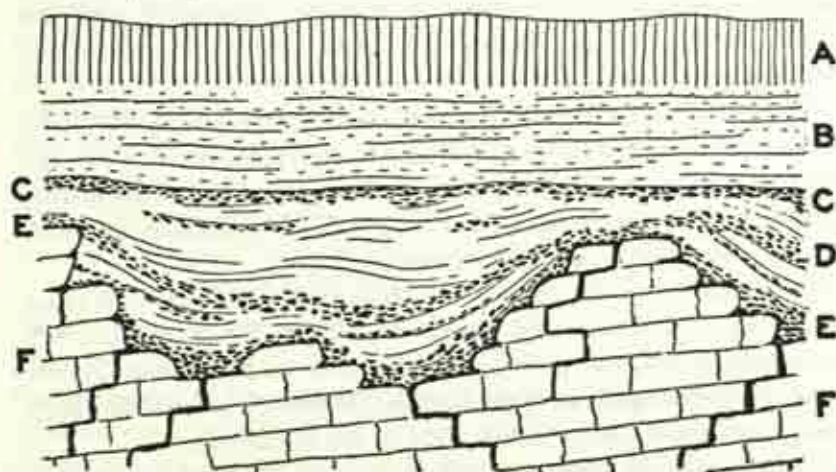


FIG. 17. — Section of the lower-terrace Quaternary deposits in the quarries at Maffle, near Ath, valley of the Dendre (after Rutot). *A*, Brick-earth, summit of the Flandrian. *B*, Stratified, sandy clay, the so-called *ergeron* of the Flandrian. *C*, Flinty layer at the summit of the Mosean, with many utilized pieces of flint and phthanite (Mesvinian industry). *D*, Mosean fluvial sands with stony layers (utilized pieces of flint and phthanite). *E*, Flinty layer, base of the Mosean (Reutelo-mesvinian or Mafflean industry). *F*, Carboniferous limestone.

The Reutelo-mesvinian, as might be expected, is found at the base of the lower terraces in France. La Fère, valley of the Oise, is a typical station. The gravel pits in the lower terraces about Paris (Billancourt, Chelles, Cergy, etc.) have yielded specimens of this class, mixed, however, with those of the succeeding Mesvinian and Chellean epochs, the mixture being due to the disturbed character of the drift deposits. The Mafflean industry occurs in its purity at Erith, valley of the Thames. Here the immediately overlying stratified sands con-

¹ *Bull. Soc. d'anthr. de Bruxelles*, VI, 156.

tain remains of *Elephas antiquus* and freshwater- and land-shells, including *Corbicula fluminalis*. Two stations in Germany also deserve mention — one in the valley of the Elbe, the other at Taubach, near Weimer.

In Belgium there is no trace of glacial action properly so called — no moraines, no boulder clay. All the Quaternary deposits of Belgium, then, are either marine or fresh-water with the exception of a single bed of probably eolian origin. Belgian Quaternary may be easily divided into five series of deposits. Beginning with the oldest, these are: (1) Mosean, (2) Campinian, (3) Hesbayan, (4) Brabantian, (5) Flandrian.

The Mosean consists of a marine and a continental facies. The fauna of the lower marine deposits closely resembles the present marine fauna of the Belgium coast. The upper layers of the marine facies have furnished remains of the *Bison*, *Cervus*, *Elephas antiquus*, *Rhinoceros merckii*, and *Hippopotamus major*.

The Campinian deposits are fluvial gravels and sands with cross stratification, localized in the bottom of valleys. They are often rich in remains of *Elphas primigenius*, *Rhinoceros tichorhinus*, *Equus caballus*, *Ursus spelæus*, *Felis spelæa*, *Megaceros hibernicus*, *Bison europæus*, etc. — the so-called fauna of the Mammoth.

The Hesbayan stratified clays, 20 to 30 meters thick, and covering the greater part of Belgium, are never ossiferous. The only fossils are: *Helix hispida*, *Succinea oblonga*, and *Pupa muscorum*, none of which is characteristic of the Hesbayan.

Brabantian is a name new to geology, employed for the first time by Rutot, and dating from the year 1900. The term represents the period of desiccation following the deposition of the enormous Hesbayan beds. It designates the pulverized, non-stratified clays, eolian in character, and derived from the Hesbayan clay mantle. These are found notably in Brabant, and are never fossiliferous.

The Flandrian, the last division, like the Mosean, has both a marine and a continental facies. The fauna of the marine facies is analogous to that now living on the coast of Belgium. Of the two continental layers, the lower consists of stratified sands and clays (ergeron), and the upper is composed of brick-earth. The fauna of the continental deposits is confined to the lower layer (ergeron), and

consists solely of the shells already mentioned under the Hesbayan, viz.: *Helix hispida*, *Succinea oblonga*, and *Pupa muscorum*.

All these Quaternary deposits have been carefully examined by Rutot in a search for industrial remains. The Mosean beds are divided into four layers: (1) Lower gravels, (2) Stratified sands and gravels, (3) Loam, and (4) Upper gravels. The lower Mosean gravels occur at the base of the middle terrace and also in the lower terrace. In the middle terrace they contain the Reutelian industry; and in the lower terrace, the Reutelo-mesvinian. The industry of the second layer, stratified sands and gravels, when present, is Reutelo-mesvinian. The loam is generally destitute of implements, while those of the upper Mosean gravels, by reason of their stratigraphic position, are placed in a class by themselves, to which is given the name Mesvinian — a term first employed by M. Émile Delvaux to describe the rude implements found in the railway cut at Mesvin, between Mons and Harmignies.

The Mesvinian industry, then, occurs in deposits that cover the Mosean loam of the middle and lower terraces of valleys in non-glaciated regions, and, according to Rutot, is synchronous with the beginning of the first phase of the second Quaternary glacier. This industry is still of the purely eolithic type, the only novel feature being a notable increase in the percentage of flakes obtained by artificial means — an increase due to the scarcity of natural flakes in these particular deposits.

The geographic distribution of the Mesvinian is quite extensive. In addition to the well-known stations at Mesvin, near Mons, and the Exploitation Helin, at Spiennes, also near Mons, it occurs in the middle terrace of the valley of the Lys and the lower terrace of the valley of the Dendre. Many stations have been uncovered in the valley of the Haine and its tributaries, at Quiévrain, Saint-Symphorien, and Haine-Saint-Pierre, through recent activity in the production of phosphate of lime. Two other localities worthy of mention are in the valley of the Sambre — at Aiseau in the lower terrace and at Salzinnes les-Namur in the upper terrace.

At least two Mesvinian stations are known in England — at Erith, valley of the Thames, and at Chacely, near Tewkesbury, valley of the Severn — each in a lower terrace. In France, the

same industry is to be found in the upper terrace at Saint-Prest and Amiens; also at Chelles and Cergy. To these may be added Germany's contribution from Rixdorff and from Britz and Rudesdorff, near Berlin. Rutot places also in this category the chipped flints recently discovered by Dr G. Schweinfurth at Thebes.

The present valleys were begun during the Middle Pliocene. They were cut deeper during the Upper Pliocene. With the Lower Quaternary or Mosean, the cutting was localized between the upper and middle terraces. The maximum erosion was reached with the Campinian, or first phase of the Middle Quaternary. The valleys were subsequently filled to the extent of 15 to 30 meters in some instances. It is near the base of the Campinian that Rutot has found what he considers to be the transition from the Mesvinian to the Chellean—in other words, the transition from the eolithic to the paleolithic period. This transition epoch, called by Rutot the Mesvino-chellean, is important from the point of view both of stratigraphy and technology, and represents the turn in the tide of the affairs of primitive man. It means that the eolithic period did not close with the Tertiary, as de Mortillet believed, but that it continued on through the Lower into the Middle Quaternary, as Rutot has proved.

A good example of the character of the evidence on which Rutot's classification rests is to be had in the Exploitation Helin, at Spiennes, near Mons. The industry-bearing Campinian beds hitherto studied had been fused into one, in which were found a mélange of flint chips resembling eoliths, of flint nodules only slightly shaped into rude amygdaloid forms, rude Chellean implements with base formed by reserving the nodular crust, as well as the classical Chellean and Acheulian types. Were these all various manifestations of one and the same industrial epoch; or did they represent the successive steps in a gradual industrial evolution? The answer to this question depended on finding the layers separated stratigraphically, a condition that was known to exist at the old Exploitation Helin, phosphate works at present owned by the Société de Saint-Gobain.

By permission of the proprietors and authorization of the director of the Royal Natural History Museum, Brussels, a thorough

investigation of the complete section was made in October, 1902, under the personal direction of Dr Rutot. Beginning at the bottom, the section (figure 18) shows the following:

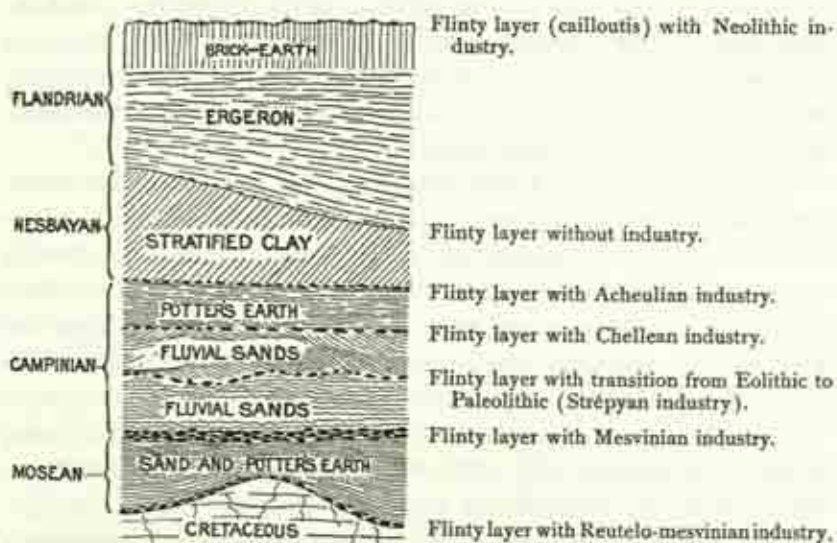


FIG. 18. — Section of the Exploitation Helin, near Spiennes, showing the superposition of the Quaternary deposits; lower terrace of the valley of the Trouille (after Rutot).

1. Stony deposit at the base of the Mosean resting on the Chalk and containing a pure Reutelo-mesvinian industry (the Exploitation Helin is in the lower terrace of the Trouille valley).

2. Fluvial clays and sands, without industry.

3. Stony layer at the summit of the Mosean, with pure Mesvinian industry.

4. Stratified fluvial sands that in neighboring pits have furnished remains of the mammoth.

5. A thin, irregular, flinty layer with the transition industry, Mesvino-chellean.

6. Fluvial sands irregularly and obliquely stratified.

7. A horizontal flinty layer, with the well-known Chellean type of implement.

8. Regularly stratified loam, with traces of vegetable earth at the top.

9. A very thin flinty layer, with typical Acheulian industry.

10. Hesbayan clays.

11. Thin flinty layer, without industry.
12. Stratified sands and clays (ergeron).
13. Brick earth.

It will be seen that all five divisions of the Quaternary, with the exception of the Brabantian which is above the eolithic zone, are represented in section at the Exploitation Helin. All of the Quaternary eolithic epochs are likewise represented here with the exception of the oldest, the Reutelian.

But Rutot's attention was centered on the three separated industry-bearing Campinian layers. Would they each furnish one of the several elements composing the industry already found elsewhere in disturbed Campinian deposits? They did. The lowest of the three (layer no. 5) contained not only eoliths of the Mesvinian type, but also rude implements roughly amygdaloid in shape, selected flint nodules only slightly chipped to a semblance of the *hache* type, or the *poniard*. It thus answers all the requirements of an industry of transition between that of the Mesvinian level (no. 3) and that of layer number 7, where Rutot found the classical "*coup de poing*." In the uppermost of these three layers (no. 9) were specimens of the amygdaloid and *hache* types, carefully chipped on both sides until the margins presented almost a straight line as opposed to the zigzag margin of the Chellean implement — in other words the so-called Acheulian industry of M. d'Ault du Mesnil and the French school.

These Campinian bands consist almost exclusively of blocks of flint and artificial flint chips. They form what is known in England as paleolithic floors. These floors had been so little disturbed that both Rutot and M. É. de Munck were able to replace numerous flakes on their respective cores, building up in this manner the original flint nodules once more. All the edges of the flakes were as sharp as they would be had the chipping been done only yesterday.

The importance of the discovery of a transition industry between the eolithic period representing a low plane of mentality reflecting practically no industrial development, and the paleolithic period, signalized by a gradual evolution both mechanical and mental, cannot well be overestimated. The data gathered at the Exploitation Helin might not of themselves suffice to establish the existence

of a transition stage ; but when supplemented by the rich finds along the right bank of the Haine between Estinnes and Cronfestu, notably at Strépy, Maurage, Trivières, and Saint-Vaast, the cumulative evidence is irresistible. The industry, in fact, is so abundant and characteristic at Strépy as to justify Rutot's proposal of the name Strépyan for the transition epoch, in place of the longer term Mesvino-chellean.

The Exploitation Hêlin, with its separated, industry-bearing, Campinian layers, is the key to the passage from the eolithic to the paleolithic period. It furnishes the solution of the problem of the mixed industries occurring at various localities along the northern shore of the Haine, particularly at Strépy. These localities, on the other hand, have furnished the transition industry in far greater quantities and variety of form. The gently sloping valley facing the southwest being exposed to the prevailing winds and rain-storms, the beds of clay have disappeared. The result is that two of the flinty layers are fused into one. The probability of a mixture of industries was suggested by the fact that two kinds of flint were utilized : (1) small nodules of a green-coated brown flint, and (2) flakes artificially removed from large nodules of beautiful black flint. By placing in one group the artifacts of brown flint, and in another those of black flint, Rutot discovered that he had by that act separated two industries as perfectly as they had been separated in the section at the Exploitation Hêlin. There were, for example, no carefully fashioned implements of the Acheulian type among the brown flints, and no rude Chellean implements among the black flints.

The almost incredibly rich finds made at Strépy and neighboring localities have served to shed new light on the uses to which the artifacts were put. The first unmistakable weapons are placed by Rutot in the Strépyan (transition from the eolithic to the paleolithic). The coliths are tools and not weapons, with the possible exception of the small fling-stones, and these were evidently not weapons of defense, being used only in the chase.

The transition industry includes hammer-stones, scrapers, and punches, all of which retain eolithic facies while undergoing a gradual evolution in form. To these may be added an entirely new

series of implements more or less amygdaloid in shape, i. e., the primitive Chellian "*coup de poing*."

Rutot's ingenious theory as to the origin of the amygdaloid type of implement is given here, because of its plausibility and because I had arrived, independently, at the same conclusion after a careful study of the transition series belonging to the Yale Museum. The primitive stage is the rather flat flint nodule, with more or less rounded contours, such as would attract one in search of a hammer-stone. With use, small chips would be detached from a section of the contour. Some would be removed from one face, and some from the other, as the aim veered to the right or to the left as the case might be. This would result in an irregular, zigzag edge for which uses might easily arise. By bringing an adjacent section of the contour into play as a hammer-stone, the zigzag edge could be extended indefinitely. The specimens show that, in practice, it was wise to reserve the original handhold.

An excellent example to illustrate the hammer-stone origin of the almond-shaped palcolithic may be seen in figure 2 of plate xxviii, a. The implement, which comes from Bray, valley of the Haine, is a flint nodule with smooth exterior. About one-half has been reserved for the handle. The borders of the other half are chipped and battered by hammer-like blows. The flakes removed being blunt, the thickness of the nodule toward the center is not reduced, and the worked edges are, in consequence, quite blunt. From the accidental chipping of a hammer-stone in use to further intentional chipping and retouching, with a view of rendering the original nodule flatter and its edges straighter and sharper, is but a step, and that step was taken as soon as its utility became evident.

The amygdaloid implement serves equally well as a hatchet or a poniard, and is, therefore, an excellent all-round weapon. In the meantime, a veritable poniard was in process of development. It was evolved from the sub-cylindrical flint nodule. A few well-directed blows at one extremity, and the poniard was ready for service. Its greater length, better handhold, and sharper point rendered it more effective for thrusting purposes than was the composite amygdaloid implement. Of the two hundred or more rude, flint poniards in the Brussels collection, some have very serviceable,

natural guards, the maker having selected a nodule with an enlargement at the proper place — a further step in the differentiation between the hilt and blade.

Perhaps no better intermediate form between the amygdaloid type and that of the poniard could be found than the two specimens illustrated in plate XXIX, A. They are enough alike to have been made by the same workman. Figure 1 is from Milton Street, about 100 feet above the Thames and near the base of Swanscombe hill (figure 15). Figure 2 is from the Shelly gravel-pit at Swanscombe, which is very near Milton Street and at approximately the same level above the Thames. Both were given to me by Mrs Stopes, whose husband, the late Henry Stopes, found them in 1900. Each is simply a sub-cylindrical nodule, chipped at one end to a blade-like, rather sharp, edge. The patina of the chipped surfaces is especially rich and glossy. The specimen from Milton Street is provided with a natural hilt that fits the hand perfectly and is more suggestive of the poniard than of the strictly Chellean type.

The implement from the Shelly gravel-pit at Swanscombe has no differentiated hilt, but the blade near the point is chipped so thin as to make it admirably adapted for use as an instrument of thrust. It was associated with a comparatively rich fauna, including *Elephas antiquus*, *Elephas primigenius* and *Corbicula fluminalis*.

The mixed character of the fauna, as well as of the industry, leads me to believe that the industry of the Shelly gravel-pit at Swanscombe represents both the eolithic and the palcolithic.

The section of the pit that has yielded so many fossils and stone implements is described by Mr Stopes as "stratified sands and gravels, capped by a thin layer of tough clay." The Shelly bed is 10 feet thick, and rests upon the Chalk at a level of 78 feet above the sea. In it were found the implements also; but whether at a single level or at various levels is not stated.

I have compared a list of the Shelly gravel-pit¹ fauna with those furnished by Rutot for the deposits at Erith and Menche-court, each in a lower terrace; and that by Laville for Cergy, also in a lower terrace, only 7 meters above the mean water-level of the Oise. The results are as follows:

¹ Mrs Stopes in *Report Brit. Assoc. for the Adv. of Science*, Southport, 1903.

MAMMALIA.

| | |
|---------------------------------|--|
| <i>Cervus elephas</i> , | Swanscombe, Erith, Menchecourt. |
| <i>Elephas antiquus</i> , | Swanscombe, Erith, Menchecourt, Cergy. |
| <i>Elephas primigenius</i> , | Swanscombe, Erith, Menchecourt, Cergy. |
| <i>Equus caballus</i> , | Swanscombe, Menchecourt, |
| <i>Rhinoceros leptorhinus</i> , | Swanscombe, Cergy. ¹ |
| <i>Sus scrofa</i> | Swanscombe. Menchecourt, Cergy. |

MOLLUSCA.

| | |
|-------------------------------|--|
| <i>Carychium minimum</i> , | Swanscombe, Cergy. |
| <i>Helix nemoralis</i> , | Swanscombe, Cergy. |
| <i>Limnæa auricularia</i> , | Swanscombe, Cergy. |
| <i>Limnæa peregra</i> , | Swanscombe, Erith, |
| <i>Limnæa palustris</i> , | Swanscombe, Erith, |
| <i>Planorbis spirorbis</i> , | Swanscombe, Erith, Cergy. |
| <i>Bithinia tentaculata</i> , | Swanscombe, Erith, Menchecourt, Cergy. |
| <i>Valvata piscinalis</i> , | Swanscombe, Erith, Cergy. |
| <i>Valvata cristata</i> , | Swanscombe, Erith, |
| <i>Unio littoralis</i> , | Swanscombe, Erith, |
| <i>Corbicula fluminalis</i> , | Swanscombe, Erith, Cergy. |
| <i>Sphæricum corneum</i> , | Swanscombe, Erith, |
| <i>Pisidium amnicum</i> , | Swanscombe, Erith, Cergy. |

Out of 19 selected species from the Shelly gravel-pit at Swanscombe, 13 are found at Erith, 6 at Menchecourt, and 12 at Cergy. The species common to all four stations are: *Elephas antiquus*, *Elephas primigenius*, and *Bithinia tentaculata*; while those common to Swanscombe, Erith, and Cergy, would increase this list by *Planorbis spirorbis*, *Valvata piscinalis*, *Corbicula fluminalis*, and *Pisidium amnicum*.

The fauna of *Elephas antiquus* is characteristic of eolithic horizons; that of *Elephas primigenius* is preëminently paleolithic in its associations. *Bithinia tentaculata* and *Corbicula fluminalis* have a wider range in point of time.

As regards the industrial remains, Mrs Stopes mentions implements of the Acheulian and Chellean types; also discs, fling-stones, scrapers, spoke-shaves, punches, etc., many of them with eolithic facies.

Among the weapons of this transition epoch may be mentioned

¹ Probably the same species.

the *casse-têtes* formed of flint nodules, the natural shapes of which lent themselves readily to such uses. The specimen from Bray illustrated in plate xxix, B, is an example of this class. The only breaks in the crust of the club-like flint nodule are the two on the side and extremity of the club-end, respectively. At both these places blunt edges have been produced by approximately direct blows. The implement was held like a club to produce the chipping at the side; and like a pestle to produce that at the extremity.

It was my good fortune to spend eleven days with Rutot during the latter part of July, 1903. Our time was divided equally between Rutot's collections in the Royal Museum of Natural History and the field. The collection, numbering thousands of specimens, was not yet on exhibition, the handsome and commodious new wing of the Museum where it was to be placed not being finished. The installation, however, in M. Rutot's office was such as to render possible a thorough examination, not only of each piece but also of large groups, for comparative study of the various geological horizons.

The careful coördination of museum- and field-work was everywhere evident. Both had been truthfully reflected in Rutot's numerous publications. The latter were already familiar to me, and my object in visiting Belgium was not so much for verification of a master's work as for guidance by that master. My host's first words were: "*Il faut être guidé*," and my experiences for the next ten days proved the truth of his assertion.

We first visited Binche, the headquarters of that veteran collector, M. N. Dethise, and in the course of the day walked as far north as Leval. In the railway cut at Ressaix-Trieu there is an instructive section showing Lower Eocene sands with superimposed Mosean, Hesbayan, and Flandrian deposits. The flinty layer at the base of the Mosean yielded Reutelian implements, and that at its summit both Mesvinian and Chellean implements. As may be seen in the section (figure 19), these two implementiferous layers merge into one where the Mosean fails, thus causing a *mélange* of industries.

Near the railway station at Leval, the surface of the fields sloping toward the southwest are covered with flints left exposed

through denudation. Here we found an industry representing the transition from the colithic to the paleolithic. It is one of those gently sloping surfaces facing the southwest, and thus receiving the full benefit of the prevailing winds and rains. The intercalating beds of clay having been washed away, the surface of the field is covered with what has been aptly called *tapis de silex*, resting on an outcrop of Chalk. Here was found the rude poniard figured in plate XXVIII, B, fig. 1. It is a simple nodule of parti-colored flint, with a white crust. One extremity was roughly chipped to a point. Two or three prominences had been removed from the opposite end so as to make it fit the hand comfortably. A single stroke served not only to remove a projection near the base, but also to reduce the circumference at this point, thus tending to

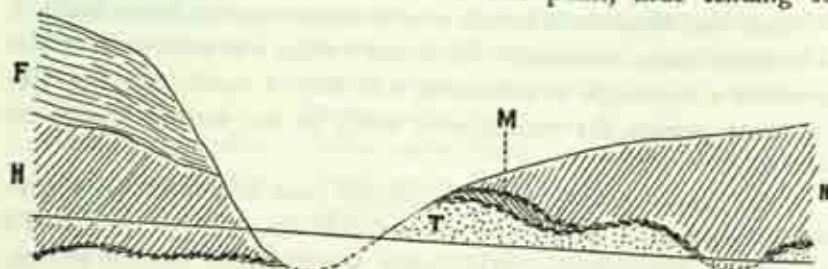


FIG. 19. — Section in the railway cut at Ressaix-Trieu (from a sketch made in the field). *F*, Flandrian (Upper Quaternary). *H*, Hesbayan (Middle Quaternary). *M*, Mosean (Lower Quaternary), with Reutelian implements at its base and Mesvinian and Chellean implements at its summit. *T*, Lower Eocene.

produce a guard. A sharp edge left by the removal of the flake in question was reduced by means of many slight blows or retouches so as not to cut the hand.

We spent another day at Écaussines-Carières, largely for the purpose of becoming familiarized with the various Quaternary deposits. Perhaps the best section exposed was that in the Thiar-mont quarry (figure 20). It shows how the pockets in the old eroded surface of the Carboniferous limestone are filled with Wealden deposits, over which is spread the Mosean. Above the Mosean come, in turn, the Hesbayan (Loess), the Brabantian, Flandrian, and brick-earth. This section shows the contact of the Brabantian clays on the one hand with the underlying Hesbayan mantle, and on the other, with the superimposed Flandrian deposits. Rutot

believes that the Brabantian (eolian) was not an epoch favorable to human existence, and yet there is some evidence tending to show that the Eburnean races penetrated Belgium at that time.

The most interesting excursion of the series was the one to Harmignies, Spiennes, and the Exploitation Helin, near Spiennes, which were reached by way of Mons. There are interesting sections in two railway cuts between Mons and Harmignies. The one nearest Mons, the Mesvin cut, furnished the first eoliths to be found

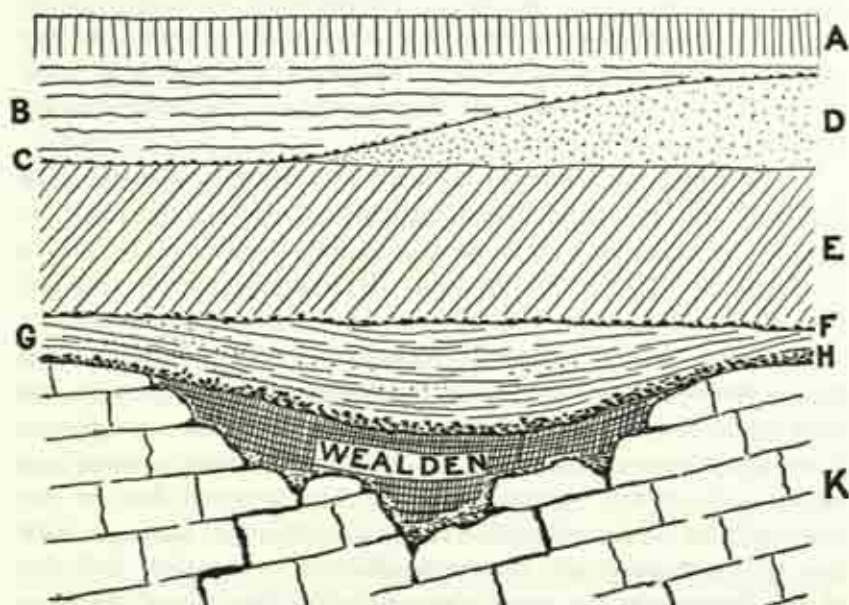


FIG. 20.*—Section of Thiarmont quarry at Écaussines-Carrières, forming the lower terrace of the Sennette valley (from a sketch made in the field). *A*, Brick-earth. *B*, Stratified sandy clay ("ergeron"), Flandrian. *C*, Thin flinty layer. *D*, Pulverulent, non-stratified clays of eolian origin, Brabantian. *E*, Stratified clay, Heshayan. *F*, Stony layer. *G*, Fluvial sands, obliquely stratified, with intercalated seams of gravel, Mosean. *H*, Stony layer with fragments of phthanite. *K*, Carboniferous limestone.

in Belgium, and gave its name to the Mesvinian epoch of the eolithic period. In the other may still be seen the pits sunk in neolithic times to obtain the fresh flint used in the manufacture of chipped and polished implements.

From Harmignies we returned on foot along the railway, by special permission. Leaving the railway at the crossing of the

highway which leads in a northwesterly direction to Mons, we soon reached the level of a middle terrace, 25 and more meters above the bed of the Trouille river. It was here that M. É. de Munck discovered recently a spread of eoliths belonging to the Reutelian epoch.

As the surface slopes gently toward the southwest, the upper layers of the terrace have disappeared, leaving the flinty layer at its base exposed. This layer rests on the Chalk, the surface of which was eroded during Mosean times. Between the sand-filled gullies in the Chalk is found the spread of flints, many of them showing unmistakable traces of utilization. The locality is especially noted for polyhedral fling-stones and hammer-stones, the latter bearing evidence of having seen much service.

After being told where to look, my search was rewarded. The first find was a typical Reutelian hammer-stone (plate xxvi, B, fig. 4), characteristic also of that particular locality, since it bore marks of having been much used. It is a flint nodule that had been but slightly altered by chance flaking before being utilized. Only one of the old surfaces of fracture has been preserved. The rest of the exterior either retains the original nodular crust or has been modified by artificial chipping. One end and one margin are thoroughly battered by use. The crest of the battered margin is zigzag in its course, showing how the chips came off, first on one side and then on the other, due to the uncertainty of landing a blow true with a stone whose transverse diameter is less than half that of the diameter in the same plane with the direction of the blow that is dealt. The other end and margin show no evidence of having given or received perpendicular blows. They were adapted to the hand simply by the removal of a few flakes.

I found several other Reutelian implements before we left the terrace above Harmignies. Only two of these are figured (plate xxvi, B, figs. 1 and 2). Figure 2 is a very interesting specimen. It is a natural flake with a little crust left on the outer surface. The inner surface is weathered white and is in rather sharp contrast with the fresher appearing worked margins. The heel and the greater part of one margin are left untouched. The other margin and the point are carefully retouched. For a part of the way the

worked margin is chipped on both sides. Near the base, or heel, a notch has been carefully retouched, on one side only, to form a scraper of the spoke-shave type. Figure 1 is one of the polyhedral fling-stones, which, like the oft-used hammer-stones, are characteristic of the locality in question. It may be recalled that similar stones were found on the Chalk plateau. A Reutelian scraper (fig. 3) from Bois d'Epinois, valley of the Haine, near Binche, the gift of Dr Rutot, is grouped with the Harmignies specimens for convenience. It is a natural flake of flint, quadrangular in shape, the only sharp margin of which, after being dulled by use, has been retouched with a view to further utilization. The Yale Museum is also indebted to Dr Rutot for a valuable series representing the various eolithic horizons as well as the transition to the paleolithic.

Leaving the Reutelian station above Harmignies, we traversed the famous Champs à cayoux and picked up a number of neolithic implements, including nuclei and flakes. These are from the ancient workshops that once covered an area of more than 120 acres. The locality first came into notice in 1840 through the researches of M. Albert Tolliez. Twenty years later Tolliez discovered that the fresh flint nodules, utilized in the manufacture of implements, came from galleries in the Chalk, reached by means of pits sunk through the Quaternary deposits and Tertiary sands. The discovery was confirmed in 1867, when the new railway from Mons to Charleroi, via Harmignies, was cut through the Champs à cayoux, laying bare no fewer than twenty-five of these pits.

Finished implements, as well as those in the rough, nuclei and flakes, have found their way from the sites of these ancient workshops to museums in almost every land. The Yale Museum being an exception, and the supply being not yet exhausted, our collecting bags grew perceptibly heavier before we reached the village of Spiennes and turned northward on our way across fields to the Exploitation Helin, in the direction of Saint-Symphorien.

The section at the Exploitation Helin has been already described (figure 18). Having become somewhat familiar with the aspect of the Belgian series of Quaternary deposits by a study of sections in various localities, notably at Ressaix and in the Thiarmon quarry

at Écaussines-carrières, I was able to recognize the superimposed beds in the pits of Helin without much assistance from Dr Rutot.

Of the specimens illustrated in plates xxvii, B, and xxviii, A, some were found by Dr Rutot and some by myself. All are from the flinty layer at the top of the Mosean. The specimens in plate xxvii, B, have been retouched, are slightly weathered, and show marks of wear, in part, no doubt, from use, and in part, it may be, from natural causes. Figure 1 of this plate shows a rather flat, artificial flake with the original greenish crust intact over the outer surface. The margins are carefully worked on both sides of the blunt, beak-like apex. Figure 2 is likewise an artificial flake with prominent bulb of percussion. The two margins that lead to the sharp projection are retouched, but on opposite sides. This reverse working produces a point that might well have been used as a reamer. Figure 3 represents a type of implement common to the eolithic period, but very rare in the paleolithic. It was used to retouch the dulled edges of flint flakes; hence the name *retouchoir* given to it by Rutot. The piece in question is a prismoid flint flake, the thinnest margin of which has been reduced in certain places by use. Figure 4 is an artificial flake that has retained the outer crust. The approximately straight edge is retouched from one side only and along its entire length.

The specimens figured in plate xxviii, A, are all non-utilized pieces. The surfaces of fracture are perfectly fresh, and the edges and corners are neither retouched nor worn. Figures 1-2 are artificial flakes, and figure 3 is a core from which several flakes have been artificially removed.

It is fitting to close with the Exploitation Helin for two reasons: (1) It contains in undisturbed section all the Belgian Quaternary deposits except one, and that one, the Brabantian, is above the eolithic zone; (2) In its superimposed beds have been found implements representing every eolithic epoch with the exception of the Reutelian, at the bottom of the Belgian series. It is, therefore, of itself the best résumé of the eolithic problem, being, as it is, an epitome of the stratigraphic evidence on which the solution of the question depends so largely. To complete the stratigraphic evidence one has only to turn to the lowest beds of the middle ter-

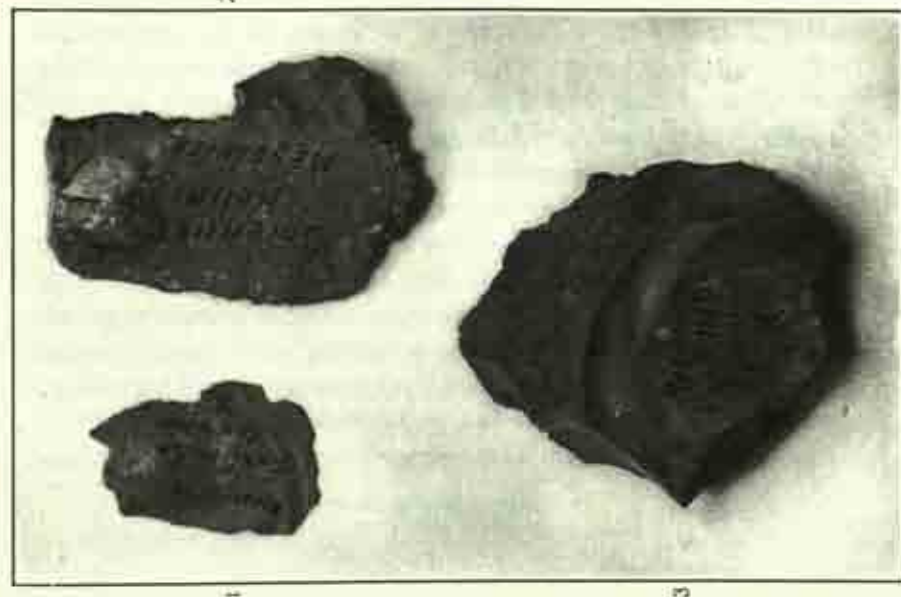
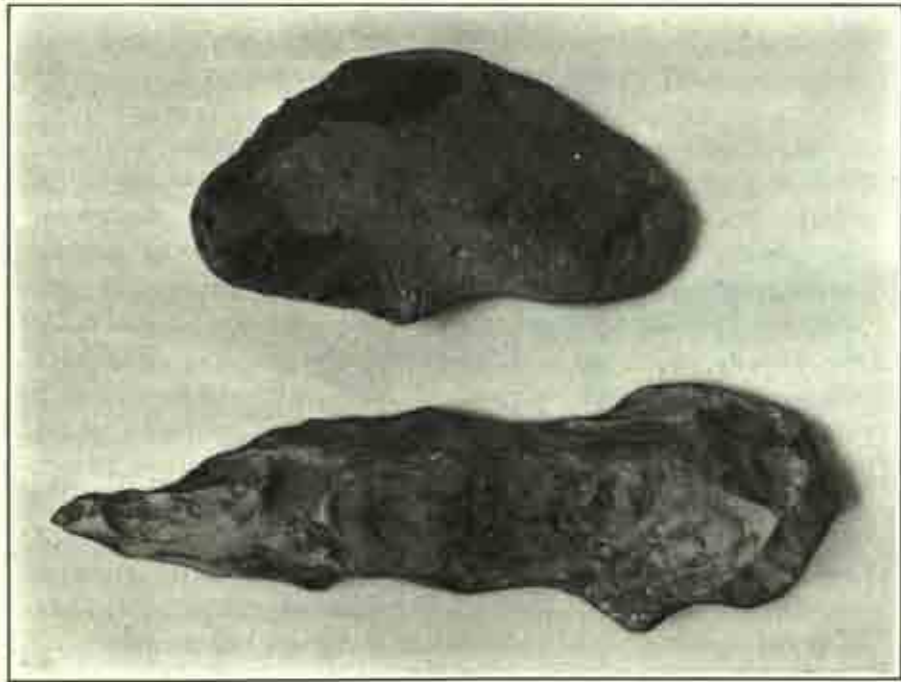


Photo by D. G. MacC.

A. Exploitation Hellin, near Spiennes (p. 469).



B. 1, Leval (p. 458), 2, Bray, valley of the Haine (p. 454).

EOLITHS FROM BELGIUM (ABOUT THREE-FIFTHS NATURAL SIZE)

rices in such sections as that near Ypres, valley of the Lys, or at Salzinnes les-Namur, valley of the Sambre.

But stratigraphy alone is of no avail unless the specimens themselves are recognized as artifacts. The arguments in favor of their acceptance as such have been given at length in discussing the plateau specimens from England. If further evidence along this line be required, the reader is referred to Rutot's papers entitled, "Les actions naturelles possibles sont inaptes à produire des effets semblables à la retouche intentionnelle,"¹ and "Sur la cause de l'éclatement naturel du silex."² Lack of space renders it impossible to enter here into the details of Rutot's experiments and arguments, proving the inadequacy of the possible, natural, and accidental causes that might be invoked as apt to produce the effect of intentional working. The natural causes are: (1) Change of temperature, (2) torrential action, (3) action of the waves of the sea, and (4) the settling or sinking of the beds in question.

Prestwich had also given this subject much attention. His chief reasons for believing that the plateau specimens could not have been shaped by natural causes were: (1) That they admit of arrangement into definite groups based on form; (2) the parallelism of the flakes struck off is the result of intention and not of accident; (3) many of the forms are suggestive of definite uses as tools and implements; (4) the character of the work is the same for those of which the uses appear obscure. But the advocates of the artificial nature of these specimens are not called on to find a use for every type of implement. We are reminded by Abbott that if the only boomerangs in existence were fossil boomerangs, it would take an expert guesser to hit upon the use to which we happen to know they are put. So certain was Prestwich in his exclusion of natural-cause theories, particularly the effects of wave-action, that he offered the two volumes of his *Geology* for half a dozen shore flints (not derived) of any of the plateau types figured in plates v to ix, of his "Collected Papers on some Controverted Questions of Geology."

Mr W. J. Lewis Abbott, himself an expert judge of precious and semi-precious stones, has experimented much in the working of

¹ *Bull. et mèm. Soc. d'anthr. de Bruxelles*, 1902, xx.

² *Ibid.*, 1904, xxiii.

flint, and knows, as well as any one, the limitations imposed on the range of effects produced by natural or accidental causes. One of the implements he found in the *Elephas* deposits of the Cromer beds showed "a well marked *éraillure*." He has made "thousands of experiments of fixing flints and pitching round pebbles at them, and thus removing flakes." He adds: "By special suspension arrangements, I was able to administer any number of blows at any particular spot with various degrees of force; but I was never able to produce this scar (*éraillure*) in any way in which it may be conceived Nature worked." Another set of experiments included the placing of flints, fixed and otherwise, at the bottom of a long, inclined trough and letting stones slide down upon them; but "always with a negative result." On the other hand, when he has "tried to make a clean chop off a mineral," he was always "annoyed by a characteristic kick, giving rise to the *éraillure*." Abbott explains that when one wishes to deal a blow in a definite direction and in a given spot, the concentration of muscular power to land the blow on "that particular spot, and even to keep the hammer there," occasions a secondary blow, produced by the voluntary muscular opposition to the rebound. The same phenomenon results when one attempts to drive a nail in an awkward place by a series of deliberate blows, each of which will be followed by a second, involuntary tap. It is this tap that removes the small flake from the bulb of percussion and produces the well-known *éraillure*. This, Abbott considers of more importance than the bulb of percussion itself, and indubitable proof of an intentionally directed blow. The bulb of percussion on one of the non-utilized artificial flakes (plate XXVIII, A, fig. 2) from the Mesvinian level in the Exploitation Helin is marked by a characteristic *éraillure*.

The recognition of eoliths as artifacts, and the determination of the geological horizons where they are found *in situ*, pave the way to the development of systems of relative chronology and a special terminology. I have referred already to the de Mortillet system (page 426) which provided for an eolithic period. But I have endeavored to show that priority in the use of that term belongs to Mr J. Allen Brown—a fact in the history of the science worthy of emphasis, especially since the credit is generally given to de Mortillet.

Rutot, for example, says:¹ "Le mot servant à caractériser l'idée, si importante, de l'existence de toute une longue série d'industries primitives antérieures au Paléolithique est trouvé depuis longtemps, et c'est G. de Mortillet qui, croyons-nous, l'a proposé le premier, c'est le mot éolithique." Another author has made the same mistake in an important work that appeared only this year. M. A. Doigneau, whose book² I reviewed for the *American Anthropologist*,³ says: "On accepta définitivement le nom de Éolithique (aurore de la pierre) déjà précédemment proposé par G. de Mortillet, pour désigner l'époque qui précéda celle de Chelles et pendant laquelle naquit l'industrie de la pierre." My statement (on page 426) of J. Allen Brown's claims to priority was written before the two works of Rutot and Doigneau, respectively, were published; which is my reason for emphasizing it here.

De Mortillet's provisions for an eolithic period were so meager and uncertain that little except an historical significance attaches to them now. It could hardly have been otherwise. The wonder is that he built so well, working almost wholly in the dark and against the dominant views of his time.

Rutot profited both by the successes and the failures of his fore-runner. His system, which covers all the periods of the stone age, is reproduced in extenso. Attention is directed particularly to the part dealing with the eolithic period, which is preëminently his own and which was built up gradually in the light of long and pains-taking investigations. I have added the Dewlish industry to his classification, associating it with that of the Cromer Forest-bed and Saint-Prest. Archibald Geikie⁴ is my authority for placing the Dewlish gravels with the Cromer Forest-bed group. Both are referred to the same horizon in the Upper Pliocene, and both are estuarine and fresh-water deposits. Thus the synchronism between the industrial remains found by Abbott near East Runton, Norfolk, and those taken by Dr Blackmore from the Dewlish gravels, in Dorset, is established.

¹ Le préhistorique dans l'Europe centrale. Extrait du C.-R. du Congr. d'archéol. et d'hist., Dinant, 1903, p. 244.

² *Nos ancêtres primitifs*, Paris, 1905, p. 36.

³ Vol. VII, 1905, p. 120.

⁴ *Text-book of Geology*, 4th ed., 1903, p. 1281.

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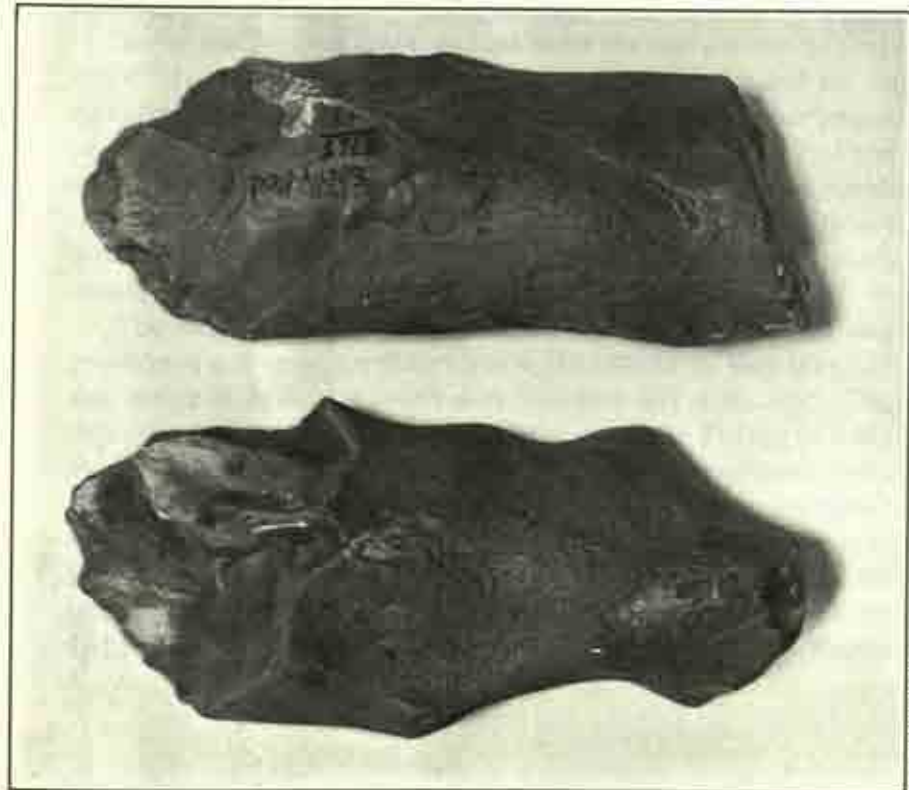
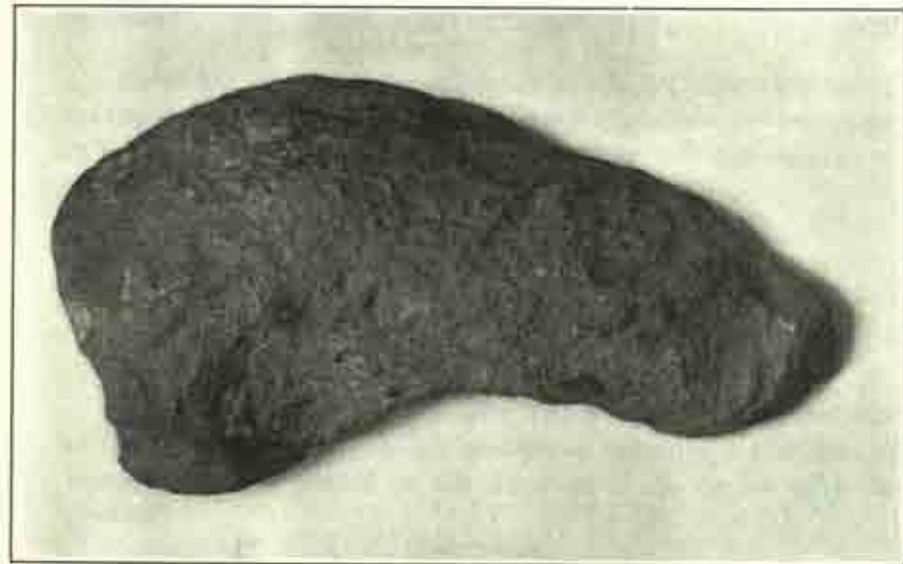


Photo by H. G. Wood

A. A. Milton Street, Kent (p. 453). 2. Shelly gravel pit, Swanscombe Kent (p. 453).



B. Bray, valley of the Haine, Belgium (p. 457)

COLLITHS FROM ENGLAND AND BELGIUM (ABOUT THREE-FIFTHS NATURAL SIZE)

Rutot has more recently attempted to adapt a time-scale, based on the measure of the advance and retreat of glaciers, to his system of epochs. The values of that portion dealing with the divisions of the eolithic period are as follows :

| | |
|---------------------------|---------------|
| Reutelien epoch | 25,000 years. |
| Mafflean " | 12,500 " |
| Mesvinian " | 12,500 " |
| Strépyan " (transition) | 5,000 " |
| Paleolithic period | 84,000 " |

The above estimate would give 139,000 years as the duration of the Quaternary, a figure not considered excessive in the light of various estimates placed on the duration of the earlier geologic periods.

CONCLUSIONS

A study of the Rutot classification renders needless anything more than the briefest summary. We have endeavored to give the problem a setting such as would bring into relief its nature and import. While in reality the first of the stone-age periods, the eolithic is the last to receive recognition.

To be readily acceptable, an idea must not run counter to prejudice. It must be stated with clearness and authority and at the right time. The right time does not mean after there is no longer prejudice. It means rather the moment that the originator of the idea is able to find one, or, better, several advocates who can speak with an authority equal to his own. In Law the truth is not established by the mouth of one witness only. Similar safeguards should protect a growing science.

The idea of a primitive industry antedating the Chellean was proclaimed not only at a time when it ran counter to prejudice, but also before it could be stated with clearness and authority. The importance of the Abbé Bourgeois's discoveries at Thenay in 1867 are still open to question ; but the measure of his prophetic vision finds abundant expression in present-day fulfilment. Bourgeois supposed that he had found artifacts in the Oligocene. He may have been mistaken. It did not matter much, so long as his attempt inspired further effort. Rames came along later and did find artifacts in the Upper Miocene at Puy-Cournay. Before Rames

made known his discovery, Harrison had begun to find worked flints on the North Downs of Kent; so that the time to speak the word of authority was to come with Rutot's lucid presentation of the combined evidence, based on stratigraphy, paleontology, and technology.

The importance, then, of verification cannot be too strongly emphasized. But there are two kinds of verification: that which is done by a third party and that which one does himself. Personal verification is, naturally, the most convincing. To make this supreme test before passing judgment on so important a question, I spent considerable time both in Belgium and in the South of England.

The question does not admit of profitable study in any other way. My opinion, based on personal experience, is given simply as such. It is that the existence of a primitive industry, antedating what is commonly accepted as paleolithic, has been established. This industry occurs as far back as the Upper Miocene and continues on through the Upper Tertiary into, and including, the Lower Quaternary. The distinguishing characters of the industry remain but little changed throughout the entire period, the subdivision of the period into epochs being based on stratigraphy and not on industrial characters. The requirements in the way of tools being very simple and the supply of material in the way of natural flakes and fragments of flint being very plentiful, the inventive powers of the population remained dormant for ages. Hammer and knife were the original tools. Both were picked up ready-made. A sharp-edged, natural flake served for one, and a nodule or fragment served for the other. When the edge of the flake became dulled by use, the piece was either thrown away or the edge was retouched for further use. If hammer or flake did not admit of being held comfortably in the hand, the troublesome points or edges were removed or reduced by chipping. The stock of tools increased slowly with the slowly growing needs. As these multiplied, and the natural supply of raw material diminished, the latter was supplemented by the manufacture of artificial flakes. When the lesson of associating definite forms of implements with definite uses was learned, special types arose, notably the amygdaloid implement and

the poniard. Then came the transition from the eolithic to the paleolithic, a stage that has been so thoroughly investigated by Rutot.

Finally, in the preparation of this paper, I was enabled to settle a question of priority by discovering that it was J. Allen Brown, and not Gabriel de Mortillet, who first proposed the name "eolithic."

The appended bibliography is far more complete than any other that has been prepared on this subject, the number of listed papers and references reaching a total of 154. The only other serious attempt at a bibliography was made by the Rev. R. Ashington Bullen in 1903, and includes 51 titles.

Argument, evidence, demonstration, are mental stimuli, the potency of which varies with the individual. That which serves to convince one, may not have the slightest effect on another. If the credulous are over-sensitive, the incredulous are certainly the opposite. In neither case is the argument necessarily at fault.

To the minds incredulous on the subject of the reality of an eolithic industry, my advice is: Do as Capitan, Klaatsch, Schweinfurth, and others, including myself, have done. Examine the Rutot series in Brussels, methodically collected and classified. Listen to Rutot's own story supplemented by demonstration with specimens; then go with him to the field. No one could be more patient, more obliging, more helpful. But you would probably lose sight of these traits, momentarily at least, through the pervasive enthusiasm of their possessor and the force and logic of the demonstration. One day in the field may suffice. It may require several. If not convinced finally, you will be the first exception to the rule.

The subject, however, is not so simple as might be supposed. Even exhaustive series of specimens, systematically arranged and carefully labeled, are cold, dry, and lifeless until a living soul breathes into them the breath of life. Rutot sent a very instructive series to the Louisiana Purchase Exposition at St. Louis.¹ Unfortunately he was not there to interpret them. What impression they made, even on those accustomed to study stone artifacts, remains to be seen. It is a pleasure to be able to record that, at the

¹ A grand prize has been awarded to the Brussels Museum of Natural History for the Rutot series. (See *Amer. Anthropologist*, 1905, VII, 161, "Classified Relics.")

close of the Exposition, the collection was sent as a gift to Prof. F. W. Putnam of the Peabody Museum, Harvard University.

Only the other day a professor of anthropology in one of our leading eastern universities asked me if I was acquainted with Rutot's publications on the colithic question. When answered in the affirmative, he further inquired, "Can you make anything out of them? I can't." I had to confess that they puzzled me also at first; but that having found the key, every difficulty had suddenly disappeared. "And the key?" "The key is Rutot himself and his environment," was my answer. "Know him, cover with him some, at least, of the ground that he has covered, and the language he speaks will no longer sound strange and unfamiliar."

It is well and even natural that archeologists should become absorbed in local problems. That is, in fact, why Rutot has succeeded in accomplishing so much. It is also well that workers in one part of the world should know and appreciate what is being done in other parts. It takes more than weavers to make a garment. There are also cutters and fitters. A like division of labor obtains among the prehistoric archeologists who should know the figure that must be clothed before they attempt to cut a garment that will fit.

If in the writing of this paper even one of several results is accomplished, I shall feel justified in the attempt, and well repaid for the labor expended. While introducing to Americans certain European authorities, it may also serve the rôle of interpreter, and lead to a better understanding and appreciation of what is being done on the other side of the Atlantic. Again, it may incite some to follow the advice given above and to investigate for themselves a problem the correct solution of which cannot fail to add materially to our knowledge of humankind.

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NOTES ON THE SAN CARLOS APACHE

By ALEŠ HRDLIČKA

INTRODUCTION

During my visit to the San Carlos Apache in 1900,¹ and especially while conducting researches into the physical anthropology of this people during the earlier part of 1905,² I embraced the opportunity of making some collateral observations of an ethnologic and archeologic nature. As the San Carlos people and the country occupied by them are but little known to ethnologists, these notes may prove of interest.

The San Carlos Apache occupy largely the rugged country extending southwestward from the White mountains in Arizona, between that part of Salt river known as Black river, and the Gila. This section forms a part of the great White Mountain Apache reservation. The principal settlements are in the valley of the Gila, from the abandoned Fort Thomas to a few miles beyond San Carlos agency, and in the valley of San Carlos creek or river. The people are officially represented as consisting of the San Carlos, Coyotero, and Tonto Apache, and in 1904 numbered 1,718 individuals. They subsist by agriculture or by working for the whites on the railroad, and at mines, the agency, and the schools, while the older members receive rations from the Indian Department. The people in general are peaceable and are advancing toward civilization; they are common-sense and clever, and are less hampered in their progress by aboriginal traditions, beliefs, and observances than other southwestern Indians, notably the Pueblos. The Apache are also industrious, but are still as improvident as Indians generally. Their morals suffer by the proximity of the railroad and mining towns, and especially by lack of restraint on the manufacture among them of *tulipi* (*tesvino*, *tiswin*). This

¹ Under the auspices of the Hyde Expedition for the American Museum of Natural History, New York.

² Expedition of the Bureau of American Ethnology.

liquor, made by fermenting corn in a peculiar way,¹ is rendered more intoxicating by the addition of roots, and sometimes by the admixture of the vile whisky sold surreptitiously by the whites. Abuse in the use of this drink is the cause of practically all disorder, violence, and degradation in the tribe.

The San Carlos Apache know not whence they came. Fifty years ago many of them lived on upper Salt river; some claim the land they had there to this day, and would like to return. One of the men said he heard from the elders that they formerly lived in what is now the vicinity of Flagstaff, at the base of the San Francisco mountains, whence they went eastward, and finally came to the Salt and Gila rivers.

Only traces of their tribal organization remain. Of the divisions of the tribe known to whites as Coyoteros, Tontos, etc., the Indians have little knowledge. No clans exist. The people were divided into numerous small bands, known by some geographic peculiarity of the sections claimed by them as their chief seats, and each under a chief. Some of the chiefs were selected by reason of their prowess in war. A number of the bands and chiefs are still nominally recognized; their names and location are as follows:

Bands among the San Carlos and nearest related Apache

1. *Ce-čš-kí-dn, Tce-ce-čš-kí-dn*,² "projection of a mountain," "promontory"; live about Talklai; chief, Čil-čú-a-ní.
2. *Til-se-ke-čed-lan*, "two mountains (together)"; live about a mile below Talklai; chief, Antonio.
3. *S-čš-čé-ne*, "rocky hill"; live about Geronimo (a part of the so-called Coyoteros); no chief.
4. *Ce-yí-n, Ce-yín*, "cañon hollowed in rock"; live about Geronimo (a part of the Coyoteros); chief not known.
5. *Tčš-čih*, "red paint" (red vegetal dye, used in facial painting and basketry); live in Cibicu valley; chief, Norman Cassido.
6. *Tí-dn-a-ye*, "bend over from a hill into a valley"; live near San Carlos; no chief.
7. *Kaš-na-ho-tí-lín*, "valley of willows"; live between Talklai and San Carlos; mixed; no chief known.

¹ See Hrdlička, Method of Preparing Tessino among the White River Apaches; *American Anthropologist*, VI, 1904, pp. 190-1.

² For key to pronunciation see *American Anthropologist*, V, 1903, p. 419.

8. *Na-tah-na-di-ti-in*, "cross the river with mescal"; some live at White Mountain; chief, —.

9. *Ha-gu3-ti-le*, "head of the valley"; live above Talklai; chief, Talklai.

10. *Ka-i-dn-zin*, "rows of trees"; live in the upper part of San Carlos valley; chief not known.

12. *Ce-bi-na3-ti-e*, "surrounded by rocks"; live 4 miles above San Carlos, in San Carlos valley; no chief.

12. *Kai-ha-te-in*, "growing-up trees" (trees of a certain variety, along the river); nothing definite is now known about this band.

13. *Thle-dil-go-in*, "junction of two valleys" (where a "wash" joins the river); nothing definite known about it.

Of several of these bands only a few individuals survive, and these are scattered or have joined other bands.

DWELLINGS

The usual dwelling of the San Carlos Apache is known as a *khúva*, but it is also called by the borrowed term *tipi*. It is made, by the women, of slender, freshly-cut poles and green branches or brush. In ground-plan the *khúva* is slightly oval, measuring 10 to 12 feet in the longer and 8 to 9 feet in the shorter diameter. The structure is 9 to 10 feet high, and hemispherical to bluntly conical in form. Occasionally at the entrance there is a small, straight or curving extension which serves as a windbreak. The poles forming the framework of the *khúva* are generally of green willow from which the bark has been peeled; these are stuck in the ground, 2 or 2½ feet apart, and the tops bent over and tied together with anything handy. There are no forked supports and no regular cross-ribs, but occasionally some of the sticks are bent and intertwined with or laid obliquely upon the others. A slight opening is generally left between the saplings at the top for the escape of the smoke.

The erection of the dwelling, the women say, is easy enough; it takes but a single day. It is regarded as women's work, and that is why they, and not the men, build it. When the superstructure is finished, the interior is excavated to the depth of 12 to 18 inches, and most of the earth piled against the base of the structure, making it solid and keeping out water during rains. In winter the *khúva* is made smaller, in order that it may be warmer; in summer



1. School girls playing at house-building.



2. Recently occupied brush *kharra*, and a house of brush and stone.



3. Ruins of a recent Pueblo-like stone dwelling

they build it larger, so as to give more shade and ventilation. In rainy weather it is covered as much as possible with sheets of canvas. No symbolism is connected with any part of the house, and no ceremony attends the entering into a new dwelling; in one family, however, it was said that they always make a prayer when going into a new *khúva*, and in one of the dwellings I saw two eagle feathers, undoubtedly a fetish, tied to one of the upright poles.

These simple Apache dwellings, except during heavy rain, are comfortable and cheerful, and owing to the cottonwood and willow branches with which they are covered, are pleasantly fragrant. The light is subdued, but may be easily increased by spreading the branches. The doorways are always low, enabling ready closure and insuring warmth, particularly at night. The doors usually face the west, because the prevailing winds in this region are from the east.

Although the *khúva* is a light structure, it is sometimes occupied for a considerable period. If an accident befalls it, as sometimes happens through fire or flood, or if it becomes necessary to burn it and its contents on account of the death of an occupant, or to abandon it by reason of the removal of the family to another locality, the loss is inconsiderable.

The dwellings are built generally in groups of three to six, forming camps, which, according to the Indians, are occupied by "friends," i. e., related families. In a number of instances a family lives in a *khúva* near a plank house built by the Government, which it prefers to use for storage purposes.

The San Carlos Apache have also a few quadrilateral dwellings with nearly flat roofs, but these were most probably introduced by the Yuma or the Mohave. There are likewise in San Carlos valley the ruins of several recent stone dwellings, standing singly but built much like the houses of the Pueblos. A similar structure, built partly of stone and partly of brush, is still inhabited (plate xxx, 2).

According to chief Čil-ču-a-ni, his people, in his childhood (about 50 years ago), built the same kind of *khúvas* as they do to-day. They did not construct dwellings of stone or adobe until after coming into more intimate contact with the whites.

The *khúva* is also the customary dwelling of the White Moun-

tain Apache of Arizona. It is less common, especially in winter, among the Mescaleros in New Mexico, many of whom live in tents; and it is never built by the Lipan, who formerly lived, they say, only in tipis of buffalo hide. The Jicarillas, who also dwell chiefly in tents, sometimes erect brush houses somewhat similar to the *khúva*, but of different shape.

MANUFACTURED OBJECTS

In old objects of their own manufacture the San Carlos Apache are very poor. All that could be found or learned of were a few of the characteristic hemispherical caps, a few violins and flutes, and some nicely decorated saddle-bags. Their utensils are almost entirely those made by the whites, or are modifications of them. An exception occasionally seen is a nicely made gourd ladle, or spoon, the handle and border of which bear an incised decoration in simple geometrical figures.

Basketry.—The women make a limited number of baskets of several varieties. They weave a conical, household carry-all basket, called *tha-tca*, 2 to 2½ feet high, decorated with one to four bands 1 to 1½ inch broad, of simple geometric figures in black, brown, reddish, or blue, parallel with the border. The coiled border is strengthened by the inclusion of a stout stick or, in more recent time, of a heavy wire hoop. A buckskin fringe and border are occasionally added as a further decoration. This basket is carried on the back, a strap or string that is attached to one side passing over the forehead, and is used chiefly for carrying wood. Sometimes, in event of the death of its maker, it is placed on her grave.

Another and more common type of basket is a nicely decorated, more or less concave plaque, made almost entirely for sale. The decoration is in black (catsclaw), sometimes in black and brown (catsclaw and yucca), and the figure, as among other Apache, is usually some modification of a star-like motive. The workmanship in some of these flat baskets is excellent.

The third variety is the olla- or jar-shaped basket, with a decoration of simple geometric pattern in black (catsclaw) and, rarely, in brown (yucca). Some of these are of large size and

command a high price; one, 38 inches in height and very well made, was sold during my last visit, by the woman who made it, for fifty dollars. The plaque and olla are both of coil-work, the carry-all is twined weaving.

The osiers used in the basketry are principally of the willow (*ka-jih*) and the cottonwood (*tes*). The shoots are cut in winter and made into bunches of 15 to 20 by the women; these bunches are eventually bent into broad rings, placed in a pot, and slightly boiled in order that they may be easily peeled with the fingers, occasionally aided by the teeth. They are then split with the teeth, and the flat outer splints, placed in bunches of 30 or 40, are washed thoroughly in cold water, dried in the sun, and stored for future use. The brownish red yucca root, called *bi-ka-ah-te*, is used only occasionally in basketry. The catsclaw (*ce-gol-sha-ha*) osiers are not boiled, but after having been softened in water are split in the same way as the willow sticks, and are likewise tied in small bundles until needed.

The designs on the baskets, both those used and those kept for sale, have no symbolic meaning; they are intended merely for decorative effect. A few of the basketry designs are identical with those seen among the Pima. The red coloring is produced with the *ñi* plant; the rarer blue with the ordinary washing blue; the yellow, restricted to the buckskin fringes, with a vegetal dye or an aniline color.

Basket-making is taught to a girl by her grandmother or mother from the time she is five or six years of age. She is first given young plants of the *e-ka-ic co-še*, a yucca (the spiny points of which are chewed off in order that they may not hurt her), the leaves of which she learns to interweave. The first style of basket that a young girl learns to make is the *tha-tca*. Coiled basketry, intended for sale, she does not learn to weave until quite grown.

The White Mountain Apache make basketry similar to that of the San Carlos people; among the Mescaleros and Jicarillas, however, while the decorative figures are related, the materials and workmanship of the baskets are wholly different.

The old San Carlos women say they always made some decorated baskets for use in the household; but the fine work with

human or animal figures, as well as several of the shapes, originated with the demands of trade.

Two of the coiled plaques collected for the National Museum were made, one in the writer's presence, by an old woman totally blind. Both are well woven, are of pleasing shape, and are decorated in simple geometric designs with martynia.

Baby-board. — The baby-board among the San Carlos Apache, called *pi-tca*, or *pi-tcal*, consists of an elliptical willow frame (*me-tca*), within which are fastened, close together, transverse ribs (*ka-pa-ne*), whittled from a soft wood that grows along the streams. The hood of the cradle (*pi-tha-na-na*, or *pi-tca-na-na*) is made usually by bending a number of reeds, placing them side by side, and fastening them together in several rows with sinew. Occasionally the hood is woven from fresh reeds or branches in much the same manner as among the Walapai. The hood may be painted red with *či* or left uncolored.

The baby-board is generally finished the first or second day after the birth of the child. In most instances it is entirely new, but sometimes the frame of an old cradle is utilized. The first cradle-board is approximately the size of the baby, but when the child outgrows it the mother makes a larger one. Before the baby is placed on the board the base is covered with fine cedar bark, or grass, or pieces of old cloth, or even excelsior, over which are placed several layers of old calico. Under the head of the child are generally laid several folded pieces of calico, and to the hood is attached a screen of muslin for the protection of the infant's face. Being now placed on the cradle-board, the body and feet of the child are covered with two or more layers of old but clean calico, and then it is laced to the board. To facilitate the lacing there is usually attached to the sides of the cradle-frame a strip of canvas or, rarely, buckskin, with holes along the free border. These flaps extend partly over the covering of the child, and being laced together, serve to hold it securely. The lacing is usually tight enough to prevent free movement of the body. The child is laid prone on its back, with its arms along the sides, thus leaving only the head free. In this position the infant is constantly kept, except during the three to five times that it requires attention in its wak-

ing hours of the day, when it is unlaced, cleansed, and allowed freedom for a while. As the child grows older and strong enough to be held in a sitting position on the mother's lap, its intervals out of the cradle become longer, and they increase again, except at night, when the child is able to sit alone. The time for entirely discarding the cradle approaches when the child begins to stand and walk; only exceptionally will a child of 15 to 18 months still be put in the cradle a part of the day or night.

While laced on the cradle-board the child sleeps a large part of the time; if the lacing be loosened, it usually becomes restless until laced up again. For this reason the infant is kept on the cradle-board at night, for otherwise, the women say, it would disturb the mother's sleep. While the child is sleeping, the cradle-board is laid upon the ground and the front lap of the hood is dropped to protect the face from flies and the light.

The pressure of the back of the head on the calico folds results, in time, in cranial deformation known as occipital compression, which is central or lateral according to whether the child habitually rested its head at the back or on one side. It is remarkable that among the older Apache, who were reared during the restless times when the people were compelled to move frequently from place to place, carrying the children with them, occipital deformation is much less common and less pronounced than among the younger generation.

Pottery.—The San Carlos Apache made ordinary pottery until about twenty years ago, since which time the industry has gradually ceased. This consisted of undecorated cylindrical cooking jars of medium size, with convex to nearly conical bases. The material used in the manufacture of this pottery was river mud, to which was added a decoction of *Sphaeralcea emoryi*, called by them *i-sá-pith-az-ne-he*, or *i-zé-pith-az-ne-he*, which signifies "medicine-mix-in-making-jar." This plant was collected on the mesas, ground up, roots and all, and boiled with a little water. The liquid was mixed with the clayey mass, and also rubbed on the vessel, inside and out, before burning; this was supposed to make the ware tougher and less pervious.

Musical Instruments.—The musical instruments of the San

Carlos Apache are a flageolet and a peculiar one-string violin. The former, made of cane, is usually 15 to 20 in. (38 to 50 cm.) long, and decorated with geometric designs cut in the surface and colored, chiefly in blue and red. Plate xxxi illustrates a good example of these instruments, obtained from one of the Talklai policemen, who knew well how to play it.

According to Mr E. H. Hawley, specialist in musical instruments in the National Museum, this instrument is a primitive flageolet. It is made of a straight piece of cane between five joints. The two distal septa in each half (first and second, fourth and fifth) have been removed, while the third, situated near the middle, remains. The openings, each 5 mm. in diameter, are made in one side, one above the other, immediately below and above the middle partition, across which they are connected by a groove 4 mm. wide and deep. A band of tanned deer-skin, 1.7 cm. broad, from which a number of tassels hang as a decoration, is fitted about the body of the flute, at the middle, and can be slid up and down within certain limits. This band, which is essential to the production of the sound of the instrument, is so placed by the player that it covers the opening above the middle septum and also the groove, leaving the lower aperture to act as a sound hole; it thus forms a whistle of the tube, according to Mr Hawley. In the lower third of the instrument, and in line with the central openings, are four finger-holes, each 5 mm. in diameter, the centers of which are situated 9.7, 13.5, 16.4, and 18.3 cm. below the lower lip of the sound hole. The most distal aperture is closed with a wooden plug. All the openings, as well as the central groove, were pierced with a red-hot iron. Of the decorations the most prominent is the maltese cross, the symbol of a star. This flute is 48 cm. long and 2 cm. in average diameter.

The one-string violin is made of a piece of light, hollow wood, preferably a stalk of the agave. The body is usually a cylinder, 5 to 6.5 cm. in diameter and 30 to 35 cm. long, both ends of which are stopped with wooden disks. The string is of horse-hair, tightened over a small wooden bridge. The bow consists of a small arched reed, or stick, with a few strands of horse-hair. When played, the violin is held in the left hand, which is kept semiflexed.



FLUTE OF THE SAN CARLOS APACHE

The tunes produced with this instrument by a good player are characteristic and quite complex.

Besides the flageolet and single-string violin, a few of the Apache also have a small violin like that of whites, and closely resembling an instrument used among several of the Indian tribes in Mexico. The Apache themselves regard this instrument as of Mexican origin. The school girls and young women are fond of the jews'-harp.

HABITS AND CUSTOMS

The San Carlos Apache, especially the younger element, preserve but few of their ancient habits and customs. They have no distinctive ceremonies or dances, not even such as are still observed by their White Mountain relatives. The writer heard of a few medicine-men and one medicine-woman who still have recourse to incantations and fetishes, and are feared by the people at large. Witchcraft and the efficacy of fetishes are believed in, but scarcely more than among the lower classes of whites. A belief in spirits, especially bad spirits, or *éin-dis*, exists, and number four, and to a lesser extent eight, have more or less mystic significance. Of folklore there are tales about the coyote, owl, badger, etc. The owl is said to "talk good Apache." One that had been killed was tied on a line near a settlement, possibly as a protection against something. Two badgers that had been killed by the Apache were hung by their tails in the brush along a road.

Numerous observations, of physiological or medical interest, on the food and mode of life of this people are reserved for a more comprehensive account, but a few brief statements on various customs will here be presented.

Hair Dressing.—The hair of the San Carlos women is trimmed to the level of the shoulders. The girls and younger women comb the front hair over the forehead and cut it in line with the eyebrows, in the form of a "bang," while the remainder is allowed to fall naturally at the sides and back.

Old women simply brush or comb the hair backward. The hair of the men is always trimmed and permitted to hang at the sides and back without "banging." Bandana handkerchiefs are used as head-bands by some of the men.

Tattooing. — The custom of tattooing did not exist among the old San Carlos people, but it is now very common among the young, especially the school girls. The people say the habit was learned from the Mohave settled near San Carlos. The tattooing is done on the glabella, forehead, middle of the cheek, chin, and back of the hand. The girls either tattoo themselves or one another, the materials employed being a needle or a cactus spine, and ink or charcoal. The figures are good copies of those seen among the Mohave, but their meaning is not known. If the figure somewhat resembles a letter of the alphabet, the children will say that it represents that character. They also tattoo, particularly on their hands, actual letters, and even names of sweethearts and relatives.

Record-keeping. — In one family a record of the age of the last child was kept by the father, by marking on a paper the number of "moons" since the birth of the child. Each moon was indicated by a cross, and a large dot was made for each tenth moon.

Mother-in-law Taboo. — The taboo concerning the mother-in-law seems to be reciprocal. Should a young man persist in speaking to his mother-in-law, the latter, with her family, might send him away as "no good," saying they "don't want such a son-in-law."

If she is to live with her married daughter, the mother builds her hut near-by, but in such a way that the door faces another direction, thus enabling the son-in-law, on coming out of his dwelling, to avoid catching sight of her.

Puberty Feast. — Among most of the Apache a feast is celebrated when a girl reaches puberty, but among the San Carlos people the custom has apparently been abandoned.

Play of Children. — While visiting the dwellings of the people, and the schools, the writer often observed groups of children at play, but no highly specialized native children's games were seen. The girls play more than the boys, and, except about the schools, playmates are restricted to children of the same family or to relatives. The oldest child has charge of the group. Play of all kinds is greatly enjoyed, though quarrels sometimes occur. On the whole the manifestations of the Indian child at play differ little from those of the white child, unless it be in the exercise by the former of greater patience and perseverance.

The boys play with bow and arrow, marbles, and ball, and at running. Girls play hide and seek, and with pebbles, cans, and dolls; they also make dolls, cradles, and houses, and when a supply of good mud is available, model tiny effigies of women, men, dolls, horses with their riders, other animals, and various implements and utensils. In these much ingenuity, deftness, and attention to detail are exhibited.

If, while running about in the brush, a stranger approaches, the girls, of whatever age, become quiet in an instant, and each drops flat behind a bush or other object, hiding quietly and motionless until the intruder has passed. If they find that he has seen them, they scatter with all rapidity; if one tries to catch them, they cry out angrily; and if actually caught, will fight with all their means and strength.

The principal play of the girls is the building and furnishing of miniature houses; with sticks, leaves, grass, and twigs they construct *khúvas* and shelters, often with remarkable faithfulness of detail, placing in the former miniature furniture and finally domiciling therein a doll-baby. About the schools (plate xxx, 1) where more girls congregate, entire villages, striking in their picturesqueness, are built daily.

Dolls are made by tying tufts of certain plants near the top, or from rags. With pebbles the girls play "jacks," much as white children do.

With slight modification these details concerning the play of children apply to all the Apache as well as to other southwestern Indians.

Training of Children.—A boy among the San Carlos Apache is taught by his father and grandfather the various things he is supposed to know or to be able to do. This instruction begins as soon as the boy can talk. The first thing he learns is to count. When "big enough" (without reference to his having reached puberty), the boy goes out with his father, who teaches him to run on flat ground, and then up and down hill. He is encouraged to break branches from trees, so as to become strong; to jump into cold water, that he may lose fear and learn to swim; and is taken out early in the morning and taught to race. The boy also

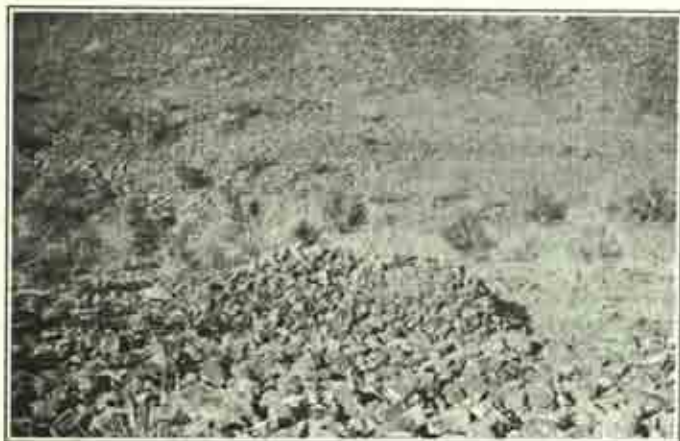
learns to cut wood, to farm, and to do many other things a knowledge of which he will find necessary later in life; but the prime object of his training, which differs according to circumstances, is to make him able, strong, and fearless.

The girl is trained by her mother, and especially by her grandmother. As with the boy, the training begins very early, practically as soon as the child can understand and control its movements; but it is never systematic nor severe. The little one is made to rise early in the morning and fetch water, and gradually she is taught to aid in the household duties—in cooking and in the care of the younger children. As before mentioned, when she is five or six years of age she receives her first lesson in simple basketry; but the manufacture of decorated baskets and saddle-bags, and of bead-work and clothing, she is not taught until womanhood approaches.

Burials.—The burials of the San Carlos Apache are never found very near the habitations, and sometimes they are four or five miles distant. The dead are placed in natural rock shelters in the cliffs, in convenient rock crevices, on a rocky mountain side, in the earth or talus at the base of a hill, or in nooks of small, unfrequented cañons.

Two of the cañons near Talklai contain together more than eighty burials. Graves of men, women, and children occur in the same locality, though they are seldom close together, and some are entirely isolated. When a burial is to be made on a hillside, the talus and earth are removed until a platform large enough to receive the body is formed. On this the remains are placed, and over them is constructed a rude frame of rafters and brush, which is covered with rocks, forming a heap 4 to 10 feet broad, 6 to 15 feet long, and $2\frac{1}{2}$ to 4 feet high (plate xxxii, 1). Earthen graves usually are constructed in a similar manner, and are also partly covered with stones. In a few years the framework of the grave becomes decayed and falls in.

The body is taken to the place of burial by men on horses, or in a wagon, usually early in the morning following the day or night of death. No coffin is used, and nothing is placed beneath the body, which is clothed as at the time of death. If the remains be those of a man, they are also wrapped in a Navaho blanket and in



1. Stone grave of an adult.



2. Grave of an infant.



3. Infant's grave, with cradle-board and shovel deposited thereon.

one or two woolen blankets or a quilt, and over all is placed a covering of canvas or heavy cotton. A woman is also buried in the garments with which she was clothed at the time of death, accompanied with her beads, and the body is likewise wrapped with blankets or cloth; but there are not so many of these articles as in the case of a man. When a child dies it is dressed in numerous spare articles of its clothing and is abundantly covered. On the grave of a man is usually found the shovel with which the grave was dug, occasionally also an ax; on a woman's grave, an ax and sometimes a carrying basket; on the grave of a little child, a cradle-board; and on or in the grave of a larger child several tin cups and pans. No further attention is given to the grave or to the remains. Tree burial, which occurs among the White Mountain Apache, is not practised by the San Carlos people, and cremation is unknown.

ANTIQUITIES

With the exception of the portion that lies within San Carlos valley, the San Carlos reservation is poor in antiquities, the country not having been adapted to extensive sedentary settlement. No petroglyphs were observed within the reservation, nor indeed in much of the adjacent region of the White mountains.

In San Carlos valley and the neighboring flats of the Gila, archeologic remains, consisting of ruined habitations and burial mounds, are more numerous. The habitations were in small clusters and larger villages. At least two villages of considerable size once existed in San Carlos valley, the ruins of one of them being still traceable within the grounds of the Indian school near Talklai.

The ruins of these habitations are marked on the surface by single or double rows of stones and by low mounds of moderate extent. The settlement near Talklai consisted of perhaps 200 houses. No regularity is observable in the ground-plan of the village; often two or three dwellings are connected, but each such group faced in a different direction. All the dwellings were apparently of one story. The rooms were quadrilateral, some nearly square, and averaged 8 by 10 feet in size. The walls were massive, reaching a maximum of two feet in thickness. The masonry consisted of slabs of unworked stone of varying size, laid vertically in adobe mortar. The stones were obtained from the nearby river.

These dwellings, the floors of which are now 2 to 2½ feet beneath the surface, are completely filled with soil and debris. The mounds represent clusters of such dwellings.

When dug into, the rooms of the houses were found generally to contain a simple corner fireplace, near which potsherds were usually unearthened. In some of the few cases in which excavation was conducted, sherds of pottery were the only reward. In one room, however, there was found on the floor about half of the skeleton, in a poor state of preservation, of a person of small stature. At some distance from these bones and about a foot above the level at which they were encountered, there was embedded in the clay, in a vertical and apparently undisturbed position, a small jar of coiled ware filled with earth and covered with a small slab of stone. Another room yielded, in addition to a few potsherds, a polished double-bladed ax.

Slight excavation conducted in the slope of one of the mounds exposed several rooms, each of which contained pottery vessels and one or more metates and manos. The pottery is chiefly mediocre, and in some instances quite crude; but there were also pieces of better quality, neatly decorated in white, black, and several shades of red. In two of the rooms a large jar was found partly filled with calcined human bones; both jars were covered, one with a smaller jar, the other with a fragment of a bowl.

Several rooms in the Talklai ruin had previously been excavated by teachers in the Indian school. In some of them were found entire pieces of pottery, and in at least one room a jar containing burned human bones. On the surface of the ruin, and in the piles of stones that had been carted there from part of it that had been converted into an orchard, the writer found several stone axes ranging from crude to finely polished, a number of stone pestles of similar workmanship, many grinders varying in shape and size, and other stone objects, all of which are now in the National Museum. A number of large, deep, broken mortars were found in the debris. A striking feature of the excavations was the great rarity of stone chips and the total absence of arrow and spear points and knives, apparently indicating that the energies of the people in implement making were directed largely toward those

employed in domestic life. Some arrowpoints have been found on the neighboring mesas by the teachers and children, but their origin is uncertain.

From what was seen of the other ruins, they are identical in character with those here described. Some have been dug into and pottery containing burned human bones were found. At San Carlos, on the Gila, a large jar of coiled ware, containing cremated human bones and covered with a bowl, was found in digging by school children, and at the time of my visit was in possession of Dr S. B. Weeks, superintendent of the school.¹ It may here be remarked that a somewhat similar burial was unearthed early in the present year at Sacaton, on the Gila, three days' journey southwestward from San Carlos. These call to mind burials of a kindred nature found by Mr F. H. Cushing in Salt river and Gila valleys for the Hemenway Expedition, by Dr J. Walter Fewkes in the vicinity of Solomonsville on the Gila for the Bureau of American Ethnology, and a recent single find near Fort Apache. It points to a former widespread custom, among the ancient inhabitants of this section, of cremating their dead and burying the remains in jars, while at the same time some non-cremated dead were buried in the rooms.

When questioned about the ruined habitations and the people who abandoned them, the Apache profess total ignorance. They say that when they first came into the country the ruins were just as they are today. Their name for the old people is *Na-ilh-ki-de*, which means "ancient ones." The fact should not be overlooked, however, that their traditions are meager. Many of the men who would have preserved their lore were killed during their almost incessant warfare, and the younger element know little beyond personal recollection.

U. S. NATIONAL MUSEUM,
WASHINGTON, D. C.

¹ Several similar burials have since been discovered in this locality, and some of the calcined bones and potsherds obtained have just been received from Dr Weeks by the National Museum.

A PAWNEE PERSONAL MEDICINE SHRINE

By GEORGE A. DORSEY

The following narration by Shooter, one of the oldest of the Kitkehaki tribe of Pawnee, is interesting from several points of view, especially on account of the light it throws on the use of personal "medicine" shrines among the Pawnee.

"My father was born a poor boy while our people lived at the bend of the Republican river. As he grew up he wandered about trying to find some way to become prominent among the people. He wandered away from the village until he came to a high bluff. On the south side of the bluff was a deep ravine, with many cedars. Now, he wandered about there until he came to a place in the middle of the cedars, and there he saw a stone man, and about the man there were many presents. My father filled his pipe and smoked to the stone and asked help of him. He also placed some presents in front of the stone man, then prayed to him for success. He went off, and in a few days found a camp of the enemy. He captured many ponies and took them home.

"A few days afterward he started out on the war path, taking several young men with him. On the way he told them that they must be poor in heart and must pray for success. When they came to the ravine he told the others to stay behind, and he went on by himself. He came to the place where the stone man was and offered presents and smoked to him. After he had talked to him he returned to the other young men. They continued their journey and found the tipis of some enemies, which they attacked. They killed many and took some scalps. They also captured many ponies. They returned to their village victorious.

"The people wondered why my father had such success in capturing ponies and killing enemies. One of his brothers begged him to tell the secret of his success. He consented and told his brother to come with him. They started to the ravine and soon came to the place where the stone man was. About him they saw many

presents of moccasins, leggings, and many other things. They made presents to the stone man and gave him smoke from their pipe. When they talked to the stone man they said: 'We wish to touch you. Do not be angry with us.' They touched the stone man and found him to be made of iron-stone of a greenish color. They believed that the stone man was a god, that he had come from one of the stars in the heavens. They kept the secret for a long time. The brother went off and came to a camp of some other people, and in the night they captured many ponies and took them home.

"There was one man in the tribe who did not seem to have luck in anything that he undertook to do. When he joined a war party, that party failed to capture any ponies. Everybody disliked him. Finally he was rejected by war parties. At last he gave up and was looked upon as a poor man. One day this poor man determined to beg my father to tell him why he was so successful in capturing so many ponies. One night he went to my father's lodge. As he entered, my father greeted him with '*Nawa!*' and pointed to a mat for him to sit upon. The poor man placed his hands upon my father's head, passed them down to his arms, and said: 'My brother, I am poor. Take pity on me. Tell me what it is that makes you so successful in capturing ponies.' My father said: 'I am glad to hear you say this. Go to your home. Have your people make moccasins for you. This night you and I shall start on a long journey, and I will show you the thing that makes me successful.' The poor man thanked my father and went to his lodge. He made preparations, then went to my father's lodge, where he found my father smoking his pipe and waiting for him. They started. For many days they walked toward the west, and at last came to the ravine. My father said: 'Now, my brother, you are the third man who will know my secret. Where we are going there rests an iron-stone man. Be sure to be poor in heart. Talk to the stone and let all your wishes be known. Say that you are poor, and keep nothing back.'

"When they came to the place where the stone man had always stood, they saw that he was gone; there was only a burnt place where the stone had stood. My father said: 'My brother, the thing is gone, but it is a god. Fill your pipe and place some of the

tobacco upon the ground where he stood and speak to him. He is a god; he will hear your words.' The poor man, instead of filling his pipe, went to the place and knelt down. He bowed his head to the ground, then stood up, and said: 'Heavens, why could you not let this god remain until I should come? He is gone, but where? I shall pray to this place where he once stood. His power must remain upon the ground.' He knelt down to the ground and said: 'My Father, the big Meteor-star, I ask you to take pity on me. I am poor. My people do not like me. They call me 'the poor man.' Now I call upon you to take away this poor spirit of mine and put a new spirit in me. Make it for me so that I can capture many ponies. Make me brave so that I can kill the enemy, and once in a while let me take a scalp so that I may offer it to the gods. Let me become a brave, then a chief.' The poor man arose, filled his pipe, gave a few whiffs toward the heavens, then a few whiffs to where the iron-stone man had sat. As he blew the whiffs, he said: 'Grant my wishes.' Then he emptied the ashes from his pipe upon the ground, where the iron-stone man had sat. My father made his offering, and they started off. After a few days' journey they came to a village. The two men captured several ponies, then they went home.

"The poor man became a great warrior. When the village was attacked by the enemy he killed many of the enemy and counted coup. Finally he was recognized as a brave man. He was one of a delegation of chiefs selected to go to Washington to make the first treaty, and when the delegation returned from Washington he wore upon his breast a medal of one of the presidents. When he saw my father, he took the medal from his breast and placed it upon him, saying: 'You shall be a chief, and I shall be only an errand man for you,'—so grateful was he to my father because he had helped him when he was in trouble."

FIELD COLUMBIAN MUSEUM,
CHICAGO, ILLINOIS.

DRESS AND ORNAMENTS OF THE NEW ENGLAND INDIANS

By CHARLES C. WILLOUGHBY

HAIRDRESSING

The hair of the New England Indians was dressed in various ways, the styles being determined in a measure by the age and station of the individual. At the age of puberty the boys were permitted to wear it long; previous to that period it was cut in various ways. Some of them wore a long foretop, a long lock on the crown, and one on each side of the head, the rest of the hair being cut even with the scalp.¹ Among the Omaha the boys belonging to different gentes had their hair cut in forms symbolic of their particular gens.² It seems probable that a similar practice was prevalent in New England. The men sometimes wore their hair in a loose, disheveled manner,³ although generally, and especially among the better class, much care was observed in oiling and dressing it. The young men and soldiers frequently wore it long on one side, that of the opposite side being cut short.⁴ The long hair upon the left side was bound into a knot.⁵

Another method which seems to have been quite general was to gather and tie the hair into a long round knot at the back of the head, like "a horse's tail bound with a fillet."⁶ In this knot or twist feathers of the eagle or turkey were fastened.⁷ The front hair was cut short or was shaved far up on the head, the long hair remaining being combed and twisted in various ways and intertwined with

¹ Wood, *New England's Prospect*, p. 72.

² Alice C. Fletcher, *A Study of the Omaha Tribe*, Smithsonian Report, 1897, p. 382, pl. 11.

³ John Ogilby, *America: Being an Accurate Description of the New World*, p. 151.

⁴ Wood, *op. cit.*, p. 72.

⁵ Morrill, *Poem on New England*, Mass. Hist. Coll., 1st series, vol. 1, p. 131, repr. 1859.

⁶ Wood, *op. cit.*, p. 71.

⁷ *Gookin's Hist. Collections*, Mass. Hist. Coll., 1st series, vol. 1, p. 153.

feathers,¹ as already noted. Higgeson mentions one lock being longer than the rest;² he probably refers to the scalp-lock. The hair of the Mount Hope warriors was trimmed "comb fashion,"³ that is like a cockscorn, both sides of the head being shaved, leaving a ridge of comparatively short, upright hair extending across the head from front to back. The hair was sometimes gathered and tied in two locks or rolls,⁴ the common method among most modern Indians who wear it long.

The beard was rarely allowed to grow,⁵ but was removed as it appeared. This custom was not universal, however, for Brereton⁶ noticed several Indians with black, thin beards in the party who met Gosnold.

There is little information as to the methods of dressing women's hair. Verrazano⁷ says they adorned their heads with divers ornaments made of their own hair which hung down before on each side of their breasts. Champlain⁸ saw a girl with her hair very neatly dressed with a skin colored red and bordered on the upper part with little shell beads. A portion of it hung down behind, the rest being braided in various ways. Both sexes sometimes powdered their hair.⁹

TATTOOING

Tattooing seems to have been confined principally to the cheeks, upon which totemic figures were made. Wood¹⁰ writes that many of the better class bore "upon their cheeks certain pourtratures of beasts, as bears, deares, mooses, wolves, etc., some of fowls, as of eagles, hawkes, etc., which be not a superficial painting but a certain incision or else a raising of their skin by a small, sharp instrument under which they convey a certain kind of black unchangeable ink which makes the desired form apparent and permanent."

¹ Champlain, *Voyages*, vol. II, p. 63 (Prince Society).

² Higgeson, *New England Plantation*, Mass. Hist. Coll., 1st series, vol. I, p. 123.

³ Drake, *History of Philip's War*, p. 23.

⁴ *Ibid.*, p. 116.

⁵ Champlain, *op. cit.*, p. 85.

⁶ Brereton, *Account of Gosnold's Voyage*, Mass. Hist. Coll., 3d series, vol. VIII.

⁷ Hakluyt, *Divers Voyages*, Hakluyt Society's reprint, p. 65.

⁸ *Op. cit.*, p. 85.

⁹ Gookin, *op. cit.*, p. 153. S. G. Drake, *Tragedies of the Wilderness*, p. 52.

¹⁰ *Op. cit.*, p. 74.

Johnson¹ notes a blue cross tattooed ("dyed very deep") over the cheek-bones of the women.

FACE PAINTING

Face painting was common with both sexes, and among the men more especially when on war raids. Soot was commonly used for black, and red earth or the powdered bark of the pine tree for red.² These were the more common colors. White, yellow, and blue were also used. Waymouth³ saw men with their bodies painted black and their faces black or red, some having stripes of excellent blue over their upper lip, nose, and chin. The eyebrows were sometimes painted white.

The women painted their faces with various colors and in time of mourning with black.⁴ They "painted their faces in the hollow of their eyes and nose with a shining black, out of which the tip of their nose appears very deformed, and their cheek bones being of a lighter swart black on which they have a blue cross dyed very deep."⁵

CLOTHING

The breech-clout was worn by both sexes. It was made of the skin of various animals, dressed with or without the hair. Champlain saw the skin of the doe and seal used for this purpose. Archer⁶ speaks of seal skin, Waymouth⁷ of beaver skin, and Brereton⁸ of black tanned skin. Later a strip of European cloth a yard and a half long was used in place of the skin of an animal. A girdle of snake skin⁹ or other material (Samoset's girdle was fringed) served to support the breech-clout, which passed between the legs of the wearer, its ends being joined to the belt or carried up before and behind between the body and the girdle, over which

¹ Edward Johnson, *A History of New England*, London, 1654, p. 116.

² Roger Williams, *Key into the Language of America*, Coll. R. I. Hist. Soc., vol. 1, pp. 154, 160.

³ Waymouth, *Voyage to the Coast of Maine*, Mass. Hist. Coll., 3d series, vol. VIII, pp. 136, 146.

⁴ Gookin, op. cit., p. 153.

⁵ Johnson, op. cit., p. 116.

⁶ Archer, *Account of Gessner's Voyages*, Mass. Hist. Coll., 3d series, vol. VIII, p. 73.

⁷ Op. cit., p. 136.

⁸ Op. cit., p. 88.

⁹ Ogilby, op. cit., p. 152.

they hung like an apron, "a flap before and a tail behind." It is probable that the apron mentioned by Williams, Brereton, and other writers was the broad end of the breech-clout hanging before. As a rule the boys wore no breech-clout until ten or twelve years of age, but the girls wore a "little apron" from their birth.¹ The woman's breech-clout hung down a little longer behind than the man's.²

Usually neither sex wore any other garment indoors,³ and it was not uncommon in earlier days for both sexes to appear out of doors in this scanty dress. In Wood's time the women usually wore an additional short garment of skins or of European cloth wrapped like a blanket about their loins, reaching down to their knees, which they never put off in the company of Europeans.

In addition to the breech-clout it was customary for the men, and sometimes for the boys, to wear close-fitting leggings of tanned deer skin.⁴ These were worn for warmth in cold weather, on dress occasions, and by hunters as a protection from brush and briars. Their lower ends were fastened within the moccasins⁵ and their upper extremities were secured by straps to the girdle, which was sometimes ornamented with pendants or "set with forms of birds or beasts." The leggings were ornamented with designs in yellow, blue, and red.⁶ The women also sometimes wore leggings.⁷

Moccasins were made usually of moose skin, this leather being thick and durable. When moose skin could not be obtained, deer skin was substituted. Beautiful moccasins of white dressed skin embroidered with dyed moose hair were sometimes worn by the women. Such moccasins were worn at dances⁸ and on other ceremonious occasions.

Mantles or robes were made of the skins of the moose, deer, bear, beaver, otter, raccoon, fox, and squirrel, and were worn by

¹ Williams, *op. cit.*, p. 106.

² Champlain, *op. cit.*, p. 85.

³ Williams, *op. cit.*, p. 106.

⁴ Waymouth, *op. cit.*, pp. 136, 140. Mourt's Relation, *Journal of the Pilgrims to Plymouth*, Cheever's reprint, p. 59.

⁵ Morton, *New English Canaan*, Prince Society's reprint, p. 142.

⁶ John Josselyn, *Two Voyages to New England*, Veazie reprint, p. 100.

⁷ Morton, *op. cit.*, p. 144.

⁸ Mrs. Rawlandson's Captivity in S. G. Drake's *Tragedies of the Wilderness*, p. 52.

both sexes. Beautiful cloaks were manufactured of the iridescent feathers of the wild turkey, "woven with twine of their own making,"¹ so that nothing could be seen but feathers. These cloaks were usually the work of the old men,² but sometimes were made by the women for their children.³

When in the vicinity of Wellsfleet harbor, Massachusetts, Champlain⁴ saw robes woven of "grass and hemp scarcely covering the body and coming down only to the thighs." These were probably identical with the silkgrass mantles of the southern Algonquians illustrated by John White in 1585.⁵

A single skin of the moose, deer, or bear served for a man's robe. Moose skins were commonly dressed without the hair and were made "wondrous white."⁶ Few examples of white-dressed buckskin have been preserved. A pair of old Algonquian moccasins of this material are in the Peabody Museum at Cambridge. They are of a uniform milk white, and in texture resemble the finest chamois skin. When used as a mantle the white-dressed moose skin was ornamented near its edges with a border in color laid on with size "in form like lace set on by a tailor, and some they stripe in size with works of several fashions very curious according to the several fantasies of the workmen wherein they strive to excel one another."⁷ Verrazano saw a similarly ornamented robe upon an Indian whom he met in southern New England in 1524.⁸ The colors used were evidently red, blue, and yellow.⁹ The Nascapsee and Montagnais to the north of the St Lawrence at the present time ornament the borders of their deer-skin robes and coats with elaborate ancient patterns in these colors, laid on with a size made of fish roe, a pointed bone serving instead of a brush. Examples of this modern work may be seen in the larger museums. Similar

¹ Morton, *op. cit.*, p. 142.

² Williams, *op. cit.*, p. 107.

³ Josselyn, *op. cit.*, p. 78.

⁴ *Op. cit.*, p. 85.

⁵ For a reproduction of this drawing see Eggleston, *Household History of the United States*, p. 70.

⁶ Morton, *op. cit.*, p. 142.

⁷ *Ibid.*

⁸ *Op. cit.*, p. 65.

⁹ Josselyn, *op. cit.*, p. 100.

designs in bead-work upon the borders of the cloth coats of the Penobscot and Micmac chiefs are survivals of the ancient New England decoration. These bead-work designs are also similar to the painted designs of the north. Certain decorative motifs in these borders are persistent throughout a large portion of the great Algonquian area.

Deer-skin mantles were dressed with or without the hair, and a perfect tail greatly enhanced their value. In winter the hair was worn innermost.¹ Those especially prepared for summer wear were dressed usually without the hair. These garments were fastened at the shoulders with leather. They were thrown over one or both shoulders and brought usually under one arm.² When traveling they were also secured at the waist with a belt. This belt was sometimes hollow and served as a receptacle for parched corn, the usual food for a journey.³

The common method of wearing a mantle left one arm exposed. In cold weather this arm was usually covered with a "deepe furr'd cat [lynx] skin like a long large muffle which hee shifts to that arm which lieth most exposed to the winde."⁴

One of the Indians who, with Samoset, visited the Pilgrims, wore a "wild cat's skin or such like on one arm,"⁵ not carried hanging over the arm as some have supposed.

Nearly one hundred years previous to the arrival of the Pilgrims Verrazano also saw skins of the bay lynx worn as arm coverings by the Indians of southern New England.

Morrell, in his poem on New England, written in 1623, writes that "an otter skin their right arms doth keep warm." Levett evidently saw beaver skins used in pairs as detached sleeves.⁶ Waymouth says some of the mantles "had sleeves, most had none." He does not make it clear, however, whether they were attached to the mantle or formed separate articles of clothing. The Nascapée

¹ Levett, *Voyages to the Coast of Maine*, Mass. Hist. Coll., 3d series, vol. VIII p. 178.

² Higgeson, *op. cit.*, p. 123.

³ Williams, *op. cit.*, p. 33.

⁴ Wood, *op. cit.*, p. 73.

⁵ Mourt, *op. cit.*, p. 59.

⁶ *Op. cit.*, p. 170.

and Montagnais and the neighboring Eskimo wore coats fitted with sleeves, and it is possible that the eastern Maine Indians may have had such garments in prehistoric times, but there is hardly enough evidence to warrant the assumption.

The men wore at the girdle a pouch of dressed skin containing fire-making implements.¹ A pipe and tobacco were also carried in the pouch, which was sometimes suspended from the neck.² The women's robes were longer and fuller than those of the men. Instead of one deer or bear skin two were sewed at full length. These garments were so long as to drag on the ground "like a great ladies train."³ For want of better clothing the poorer classes sometimes used grass or the leaves of trees.⁴ This practice does not seem to have been common. During the first trading expedition of the Pilgrims the Indian women sold their robes "from their backs, and tied boughs about them, but with great shamefastnesse."⁵

HEADRESS

Eagle or turkey feathers were worn in the hair. A headdress of upright feathers was also worn, which was probably similar to those common among many modern tribes. It was like a coronet,⁶ broadwise like a fan⁷ or like a turkey-cock's train.⁸

A curious head ornament of colored deer hair was worn, similar to those common among certain western tribes during the century just past. The western examples are fastened to the scalp-lock and cross the head from front to back, the dyed hair of which they are made being longer in front and standing upright. Gookin⁹ describes those of New England as "deer shuts made in the fashion of a cock's comb dyed red and crossing their heads like a half moon." Waymouth refers to them as a "kind of coronet . . . made very cunningly of a substance like stiff hair colored red,

¹ Brereton, *op. cit.*, p. 91.

² Williams, *op. cit.*, pp. 55, 108.

³ Morton, *op. cit.*, p. 144.

⁴ Champlain, *op. cit.*, p. 123.

⁵ Mourt, *op. cit.*, p. 91.

⁶ Brereton, *op. cit.*, p. 92.

⁷ Mourt, *op. cit.*, p. 59.

⁸ Archer, *op. cit.*, p. 75.

⁹ *Op. cit.*, p. 153.

broad and more than a handful in depth." The skin of a black hawk was highly prized as a headdress. White feathered bird skins, a fox's tail, or a rattlesnake skin were also used. Headbands decorated with wampum and other beads were not uncommon.

ORNAMENTS IN GENERAL

Bracelets, necklaces, and headbands were common, especially among the women. Mrs Rawlandson saw a necklace of human fingers.¹ Ear pendants of copper were worn at an early period. Pendants in the form of birds, beasts, and fishes, carved from bone, shell, and stone, were worn in the ears,² also the brilliant skin of the humming bird. Verrazano,³ in 1524, saw many plates of wrought copper. Archer saw a piece of copper a foot in length and half as wide, used as a breast-plate. Brereton,⁴ in 1602, saw a "great store of copper, some very red, some of a paler color [brass]. None of them but have chains, earrings or collars of this metal. . . . Their chains are many hollow pieces cemented together, each piece of the bigness of one of our reeds, a finger in length, ten or twelve of them together on a string which they wear about their necks. Their collars they wear about their bodies like bandoliers, a handful broad, all hollow pieces like the other but somewhat shorter, four hundred pieces in a collar, very fine and evenly set together."

From archeological data we learn that native copper ornaments were used to a limited extent by the New England Indians, though they were probably never common. European copper and brass were acquired at a very early date and skilfully worked into tubular beads and other ornaments. At the time of Gosnold's voyage (1602) ornaments of these metals were so common among the southern New England natives that they offered to the explorers their "fairest collars and charms for a knife or such like trifle." Beads, plates, and triangular arrowpoints of copper and brass similar to those seen by Brereton and other writers have been taken from graves and village sites and may be seen in both public and private collections.

¹Op. cit., p. 48.

²Wood, op. cit., p. 74.

³Op. cit., p. 65.

⁴Op. cit., p. 91.

Both discoidal and tubular beads of shell were used in New England at an early date, but they were probably rare and highly prized in prehistoric days. Champlain saw shell beads used in embroidery and also as ornaments for the hair. Weymouth mentions bracelets of little round white bone strung together on a leather string. Bracelets of small shell beads were also found by the Pilgrims on the skeleton of a child at Cape Cod.

The New England Indians could have found little difficulty in making and perforating the discoidal beads with primitive tools. Perforating the larger tubular beads must have been difficult, but not beyond the ability of the primitive artisan.

There seems to be little evidence that the smaller tubular shell beads of the variety generally known as wampum were made to any extent by the New England Indians previous to the beginning of the seventeenth century. After receiving awls from European traders the Narragansetts and Pequots were able to produce it in considerable quantity, and these tribes grew "rich and potent" by its manufacture. Prior to 1627 there seems to have been very little wampum among the New England tribes, its use being confined to "ye sachems and some spetiall persons that wore a litle of it for ornament."¹ This harmonizes with what we have already learned of shell beads from the early explorers.

During the visit of the Dutch to Plymouth, in 1627, they sold to the English 50^{li} worth of wampum to barter with the Indians for furs and other commodities. It was two years before this small quantity was disposed of. The demand, however, steadily increased, and as it became known among the inland tribes the English could with difficulty obtain enough to supply the demand "for many years together." "Neither did the English of this plantation, or any other in ye land, till now that they had knowledge of it from ye Dutch so much as know what it was, much less yt it was a comoditie of that worth and valew. But after it grue thus to be a comoditie in these parts, these Indians fell into it allso and to learne how to make it; for ye Narigansets doe geather ye shells of which y^e make it from their shors. And it has now continued a current comoditie aboute this 20 years."² The purple por-

¹Bradford, *History of Plymouth Plantation*, Boston, 1898, p. 282.

²Ibid., pp. 282-283.

tion of the quahog shell (*Venus mercenaria*) was used for making the colored variety of wampum.

Much of the later white wampum seems to have been made from the white part of the same shell. The columella of the periwinkle was also used for making the white variety. The beads are cylindrical and are perforated lengthwise. They average less than one-fourth of an inch in length by about one-eighth of an inch in thickness. The color of the dark variety varies from a uniform purplish black to a light purple, interveined with white lines and bars. The greater part of the wampum of Indian manufacture was made by the Narragansetts. The Dutch and the Swedes of the middle states from a very early date manufactured large quantities, and as late as 1844 it was made and sold by them to the Indian traders of the west.¹

Besides its use as currency, wampum was woven into garters, belts, bracelets, collars, ear pendants, neck ornaments, head bands, etc. It was used for ornamenting bags, wallets, and various articles of dress. The wampum belt, woven of purple and white beads in symbolic figures, served as an inviolable and sacred pledge which guaranteed messages, promises, and treaties.

Mrs Rawlandson² mentions an Indian woman who wore a "kersey coat covered with girdles of wampum from the loins upward. Her arms from her elbows to her hands were covered with bracelets; there were handfuls of necklaces about her neck." One of King Philip's belts, curiously wrought with "black and white wampum in various figures and flowers and pictures of many birds and beasts," was nine inches broad and when hung about Captain Church's shoulders reached to his ankles. Philip wore two other belts, one with two flags upon the back which hung from his head, the other with a star upon the end being hung from his breast.³ When Philip visited Boston he wore a coat and leggings set with wampum "in pleasant wild works" and a broad belt of the same.⁴

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CAMBRIDGE, MASS.

¹ Beauchamp, *Wampum and Shell Articles used by the New York Indians*, p. 333.

² Op. cit., p. 52.

³ Drake, op. cit., p. 142.

⁴ Josselyn, op. cit., p. 111.

THE SPLAYED OR SO-CALLED "CASCO FOOT" IN THE FILIPINO

By ALBERT ERNEST JENKS

In the *American Anthropologist* for April-June, 1904, there appears an article by Dr George A. Skinner under the title "Casco Foot in the Filipino." In connection therewith I wish to present a few facts.

I have repeatedly seen the abnormal foot development in question among all the unshod people whom I have visited in the islands, and publish herewith (plate xxxiii) illustrations from various groups of them which show the peculiarity. The photographs were made before Dr Skinner's article was read, and only three, the bottoms of feet *a*, *d*, *e*, were taken to illustrate the abnormal. The facts I present are mainly those that I had collected before reading Dr Skinner's article. They were not gathered for the purpose of refuting his thesis and conclusions, which are as follow:

"The constant use of the toes in the work [that of propelling the casco by throwing the human body forward with the weight against a pole, resting its lower end on the river bed] leads to a peculiar and very great development of the feet. . . . One must consider that feet of this formation are an attempt on the part of nature to adapt these people to their occupation" (that of poling the casco); and, "hence it appears to be an occupation development and not hereditary."

There is an Igorot man in Bontoc pueblo, in the province of Lepanto-Bontoc, Luzon, whose great toe on one foot is turned at an obtuse angle from its normal position; the extent of this extreme splaying may be better understood by noting that the great toes shown in the accompanying illustrations are turned simply at acute angles from the normal. I quote from notes made in 1903, in Bontoc pueblo, a town of mountain people:

"Twenty percent of the adults have abnormal feet. The most common and the most striking abnormality is that known as *fà-wing*; it is an inturning of the great toe. *Fà-wing* occurs in all stages, from the slightest spreading to that approximating forty-five degrees.¹ It was found widely scattered among the barefoot mountain tribes of northern Luzon. The people say it is due to mountain climbing, and their explanation is probably correct, as the great toe is used much as is a claw in securing a footing on the slippery, steep trails during the rainy season. *Fà-wing* occurs quite as commonly with women as with men. This deformity occurs in one or both feet, generally in both if at all. An enlargement of the basal joint of the great toe, probably a bunion, is also comparatively common. It is not improbable that it is often caused by stone bruises, as such are of frequent occurrence; they are sometimes very serious, disabling a person many days at a time."

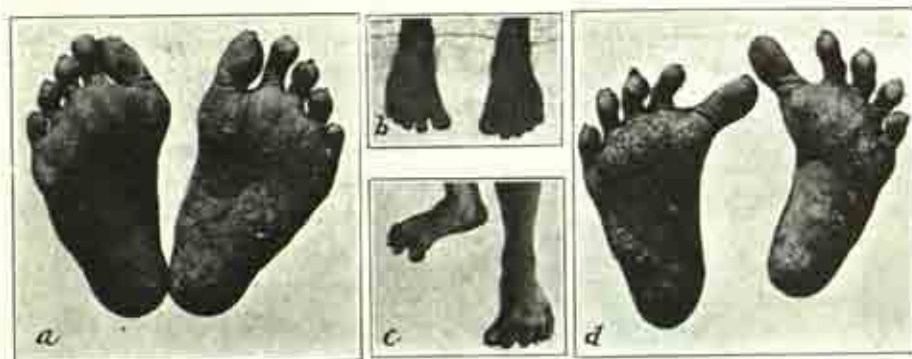
This bunion deformity is shown in plate XXXIII, *a*.

Not one percent of the Bontoc people have ever seen the ocean, or any water navigation, and none of the people of Lepanto-Bontoc province, or, indeed, of any of the Igorot provinces, have any form of water transportation; so water transportation has in no way been the cause of their splayed feet.

In March of the year 1903, during a residence among the Bontoc Igorot people, one of them, a servant of ours, received such an injury to the basal joint of his great toe from a rock in the trail that he was unable to stand on his feet for ten days. The inflamed wound finally broke and considerable pus ran from it. The injured man immediately moved from the town in which we were then living, and I have not seen him since; but he and others in the town said that his great toe would probably be spread somewhat from the others in a short time.

Some of the coastwise people say that the splaying of their feet is frequently caused by tree-climbing—a reasonable explanation, as they climb cocoanut trees by walking up them with their great toes and the tips of one or two of their smaller toes thrust in small notches cut in the trunk. The majority, however, maintain that they have no knowledge of the cause of the inturning toes, except that it is due to working. This refers to all kinds of work, but

¹ The case of extreme splaying mentioned in the last paragraph had not been discovered when this note was made.



FILIPINO FEET.

a, Feet of Igorot man of Bontoc province, Luzon (the "union foot"). *g*, Feet of Giliangan man, Davao province, Mindanao (slightly splayed). *c*, *d*, *g*, Feet of Igorot men, Bontoc province, Luzon (badly splayed). *e*, Feet of Igorot man, Benguet province, Luzon (badly splayed). *f*, Feet of Giliangan woman, Davao province, Mindanao (probably normal). *h*, Feet of Igorot woman, Bontoc province, Luzon (slightly splayed).

especially to their various forms of agriculture; it means simply that splaying is due to being much on one's bare feet while toiling.

Some people who ride horses, as, for instance, the Sulu Moros of the Jolo archipelago and the Lanao Moros in the vicinity of Lake Lanao in Mindanao, have stirrups which they make in such a way that the upright passes between the great toe and the next, as shown in figure 21. This peculiar stirrup necessitates a spreading of the great toe from the others, and in some cases doubtless becomes the cause of some of their abnormal feet.

On reading Dr Skinner's article I was interested to know more accurately the effect of the casco on the feet of its human propellers; but not being satisfied with my own cursory investigation in one place, I sent two clerks—Tagalog men of Manila—to study at the same hour the two most important water-ways of Manila, namely the Pasig river and the Binondo canal. Thirty-one cascos were examined, averaging six bugadores, or human propellers, each, making a total of 186 men. Of these there were only three whose toes were spread even as much as shown in figure 22, *b*. Those similar to the one shown in *c* of the same figure were not counted, since they are so common in Manila as to have been considered by the two observers not as deformed but as natural feet.

Everywhere in Manila there are men and women with splayed feet who have never worked on cascos. Three women in Manila,

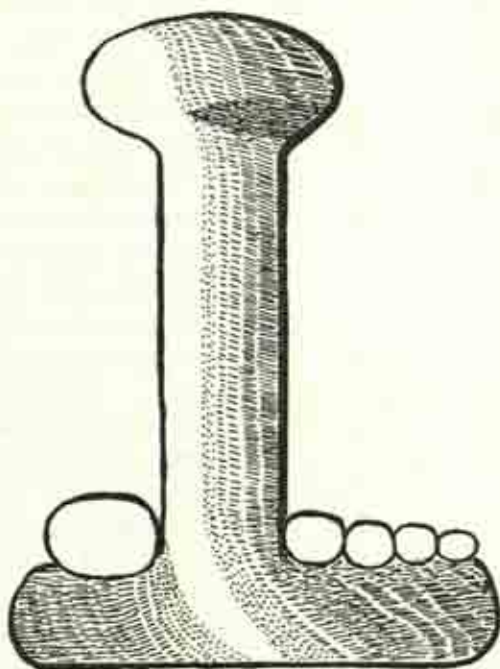


FIG. 21. — Moro wooden stirrup.

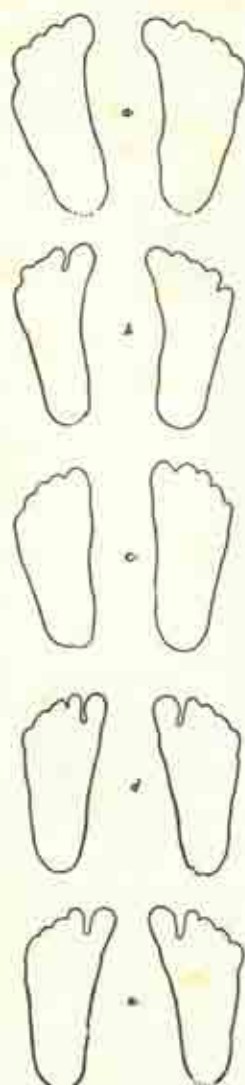


FIG. 22. — *a, c*, Feet of Sakai men, Malay peninsula; *b*, Feet of Sakai woman; *d*, Feet of Tagalog man of Manila, P. I. (normal); *e*, Feet of Pampango man of Pampango province, Luzon (beginning to splay; it shows the slight change from the normal, *d*).

whom I have just met on the street and with whom I have spoken, have toes that turn inward greatly, and none of them could give a reason for the abnormality.

I do not believe that this peculiar foot is hereditary. I have never seen it in children under nine or ten years of age, and many inquiries have failed to reveal babes or small children with inturning toes.

Not only are splayed feet common in the Philippines, but they seem to have been found sufficiently common elsewhere in the Orient to have been noted by men of science. I quote Deniker¹ to this effect:

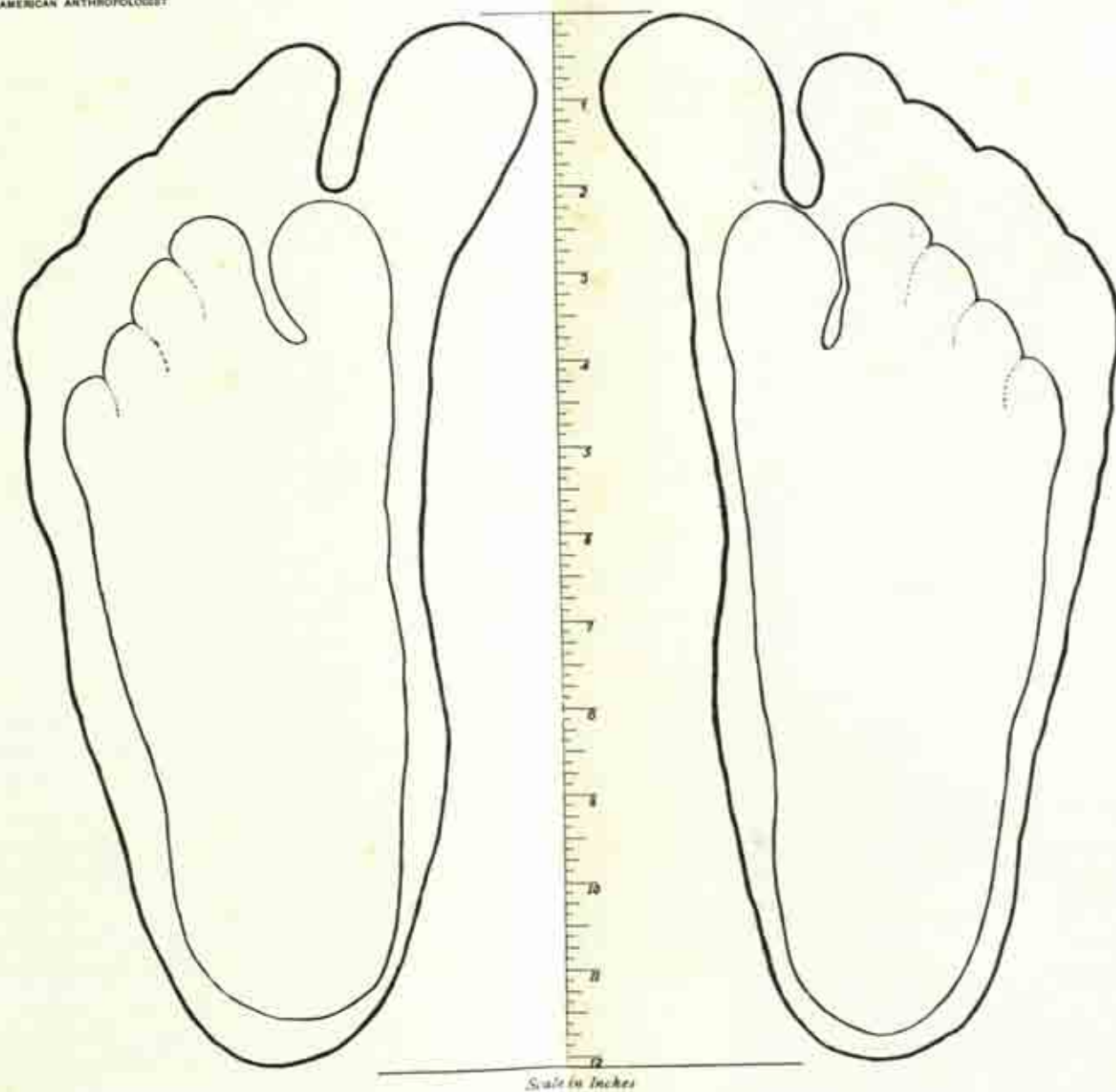
"We cannot enlarge on the exterior characters: . . . on the more or less diverging big toe which is remarked among the majority of peoples of India, Indo-China and the insular world dependent on Asia, from Sumatra to Japan," etc.

Figure 22, *a, b, c*, shows three pairs of feet of the Sakai people of Malay peninsula—a wild mountain people who partake of the characteristics of the Negrito and the Malay. Two are much splayed, while the other might easily become so.²

From the foregoing facts it would appear that splayed feet, similar to those observed among the bugadores in the Philippines, are found over a large part of the area covered by men who possess to a greater or lesser degree the blood of an ancestral Asiatic people who may be called the Primitive Malaysians. These

¹ Deniker, *The Races of Man*, London, 1900, pp. 94-95.

² *Journal Anthr. Inst. Gr. Brit. and Ireland*, vol. xxxii, pp. 142-152, 1902; "Some Anthropological Results of the Skeat Expedition to the Malay Peninsula," by Laurence H. Duckworth.



LARGE SPYLED FEET OF JUAN NAKPÉL (HEIGHT 6 FT. 2.5 IN.), A CHRISTIAN PAMPANGO OF PAMPANGO PROVINCE, LUZON, COMPARED WITH NORMAL FEET OF PEDRO ADOR DANICIO, A CHRISTIAN TAGALOG OF NUEVA ECIJA PROVINCE, LUZON. (ONE-HALF NATURAL SIZE.)

modern peoples occupy not simply the territory spoken of by Deniker, but they are also well spread over the Pacific area.

It appears from instances cited in this paper that the abnormality may be due to a definite injury to the basal joint of the toes, but is most often due to such constant activity as gradually and usually unconsciously spreads or turns the toes inward. These facts agree with Dr Skinner's conclusion that the splayed foot is not due to heredity; but they do not agree with his opinion that it is the result of the particular occupation of poling the casco, and there is no evidence to show that it is "an attempt on the part of nature to adapt these people to their occupation."

It is believed that there is a tendency among the various off-spring of the Primitive Malaysians toward splaying of the feet. This is probably due to a weakness of the basal joints of the toes, coupled with the fact that the toes are naturally in, or very near, a straight line with the inside of the foot, rather than inclined toward the outer side. The feet of Chinamen in the Philippine islands, who do as much toiling, barefoot, as the Filipinos, do not appear to be splayed. I fail to find any with the toes inturning at their bases; there are many with the great toe somewhat separated from the others, but this spreading I believe is likely the result of unshod feet that constantly bear the body of a hard-toiling pedestrian. Since the natural position of Filipino toes is as stated, special habitual efforts, such as walking up-hill, over rough or slipping ground, or with the weight against a casco pole, or horse-back riding with Moro stirrups, would tend to produce the particular foot under discussion, provided the tendency to weakness of the basal joints prevails. When we see that this abnormality occurs commonly, though not hereditarily, among men spread over such an extended area and following such varied pursuits as those of mountain pedestrians, agricultural laborers, coastwise tree-climbers, horsemen, and rivermen, the safest conclusion to draw regarding its origin seems to be that it is the result of various causes, most of which further or accentuate a natural tendency, and that it is not the result of any one occupation, that, for instance, of propelling the casco.

IN MEMORIAM: WASHINGTON MATTHEWS

Washington Matthews, soldier, surgeon, anthropologist, poet, was born in Killiney, county Dublin, Ireland, July 17, 1843, and died in Washington, D. C., April 29, 1905, in his sixty-second year.

Killiney, the little village in which Dr Matthews first saw the light, is one of the prettiest suburbs of Dublin, a few miles south from the city, with the blue waters of the bay in front and the blue mountains of Wicklow behind. It is locally noted for its ancient ruined church, dating back to the sixth century, and for its gray stoned cromlech, the "Druids' Judgment Seat," linking the present to the dim prehistoric past. In a letter written shortly before the end, he says of the old home place: "In Ireland, residences with grounds around them usually have proper names, a custom which, in America, prevails more in the south than in the north. The house I was born in, still standing ten years ago, was named Glenalua (Gleann-a-luaighe), or 'Valley of Lead.' There was a lead mine near there in the ancient days. It was exhausted years ago, but they still occasionally find small fragments of lead ore when quarrying around Killiney."

Dr Nicholas Blayney Matthews, father of the subject of our notice, was himself a leading physician and university graduate in medicine. With that admiration for free government which makes every Irishman half an American, he named the boy Washington. While the child was still in infancy, the mother, formerly Miss Anna Burke, died, and the father, finding the old walks lonely without the companion of his love, closed up his affairs at home and came to America in 1847, bringing his two motherless boys with him. After a short residence in Wisconsin, then a territory, he returned with his children to Ireland, where they remained about three years before coming out again to this country, this time to settle in Dubuque, Iowa. Here the boy grew up, having his first education in the common schools, and at seventeen began the study of medicine under his father, with a course of lectures at the medical department of the University of Iowa, from which he



Photographed in 1877.



Photographed at Gloucester, Mass., 1904.
(Courtesy of *Out West*.)

WASHINGTON MATTHEWS

received the degree of M.D., May 28, 1864, in his twenty-first year.

The civil war being then in progress, Dr Matthews at once volunteered for service, and was assigned to duty as acting assistant surgeon at Rock Island, Illinois, looking after the Confederate prisoners in the government hospital at that place. He remained here until mustered out at the close of the war in May, 1865, when he was immediately appointed to the regular army and received an assignment as post surgeon at Fort Union, Montana. Here he first came in close contact with Indians, whom thenceforth he made a life study, at a time when they were still wild and unsubdued.

His subsequent assignments, as given in the army records, are as follow : Post surgeon, Fort Berthold, N. D., 1865-66 ; in the field with General Terry's expedition, Dakota, 1867 ; at Fort Stevenson, N. D., 1867-68 ; post surgeon, Fort Rice, N. D., 1869-70 ; post surgeon, Fort Buford, N. D., 1870-72 ; post surgeon, David's Island, New York harbor, November to December, 1872 ; post surgeon, Willet's Point, New York harbor, December, 1872 to May, 1873 ; post surgeon, Fort Wood, New York harbor, to June, 1873 ; post surgeon, Fort Sullivan, Maine, to November, 1873 ; post surgeon, David's Island, New York harbor, to November, 1874 ; at Fort Hamilton and Fort Wood, New York harbor, April, 1875 ; ordered to Department of California, April 23, 1875 ; Alcatraz island, San Francisco harbor, Cal., June, 1875 to April, 1876 ; post surgeon, Camp Independence, Cal., to July 10, 1877 ; in the field with expedition against Nez Percé Indians, July to October, 1877 ; in the field with expedition against Bannock Indians, 1878 ; at Camp Bidwell, Cal., to June 30, 1880 ; ordered to the Department of the Missouri, September 7, 1880 ; post surgeon, Fort Wingate, N. Mex., October, 1880 to April, 1884 ; Army Medical Museum, Washington City, 1884-90 ; Fort Wingate, N. Mex. (second assignment), 1890-94 ; retired for disability contracted in line of duty, September 29, 1895. He was commissioned as assistant surgeon in 1868 ; as captain and assistant surgeon in 1871 ; and as major and surgeon in 1889.

On his first assignment to duty on the upper Missouri in 1865, Dr Matthews at once became deeply interested in the native tribes

of that region and soon began the study of the allied Hidatsa (Minitari), Arikara, and Mandan, in the vicinity of Fort Berthold, with whom he remained in close touch for much of the next six years. He brought to this study all the sympathetic enthusiasm of a young man and the exact method of a trained scholar with such good result that he mastered the Hidatsa language — we use the word *mastered* with its full significance — so that, when under the disheartening misfortune of the entire destruction of all his manuscript notes and his library by the burning of his quarters at Fort Buford in 1871, he was able to rewrite from his inner knowledge the "Grammar and Dictionary of the Hidatsa" and the "Hidatsa (Minnetaree) English Dictionary," which remain to-day the monument and authority on this language. A second and amplified revision of these works was issued by the U. S. Geological and Geographical Survey in 1877 under the title "Ethnography and Philology of the Hidatsa Indians." It was characterized at the time by a competent authority as the most important memoir on our aboriginal languages that had appeared since the great Dakota dictionary of Riggs, twenty-six years before.

In 1877 Dr Matthews married Miss Caroline Wotherspoon, daughter of Dr A. S. Wotherspoon, U. S. Army. In the years thenceforward, whether on the remote frontier or in eastern cities, she was ever his closest companion, his most helpful and interested assistant, his best inspiration, and his tender nurse at the end.

In 1880, at the suggestion of Major J. W. Powell, director of the Bureau of American Ethnology, he was transferred to duty at Fort Wingate, N. Mex., in the Navaho country, where he remained four years, with a second assignment of four years more in 1890-94. Here, a thousand miles removed from the distractions of civilization, all his spare time and energy, apart from his duties as post surgeon, were given to the study of the great Navaho tribe, at that period uncontaminated heathens, as he himself has happily expressed it. The greater part of this work, of which the first fruits were given to the Bureau of American Ethnology, was entirely a labor of love, at his own personal expense, involving the hiring and usually the feeding of Indian informants and interpreters, with frequent horseback journeys over a difficult country to witness ceremonies,

identify sites, or collect plants. The results were a marvelous revelation. His "Mountain Chant" and "Prayer of a Navaho Shaman" awakened the scientific world to the possibilities of Indian myth and ritual, and created an interest in the subject which has never slackened. His technologic studies in the same field, as embodied in his papers on Navaho weaving and silverwork, and his botanic and medical studies, chiefly still in manuscript, are of equal importance and alike bear the stamp of careful exactness. The promise held out by his earlier papers has been amply fulfilled by his later and larger works, "Navaho Legends," published as a memoir of the American Folk-Lore Society in 1897, and "The Night Chant," published as a memoir of the American Museum of Natural History in 1902.

Of his Navaho studies it has been well written: "The characteristics of his work as an ethnologist are patience, thoroughness, and safety. He does not imagine, but stops with what he knows, and it is safe to be said that his work will stand practically final for the specialty he undertook. Detail students may yet add to our specific knowledge, for his pet tribe will last a long time, but the last generic authority on the Navaho will be, as it is now, Washington Matthews."

For a term of about six years, 1884-1890, he was on duty at the Army Medical Museum in Washington, during which period he gave special attention to the study of craniology and anthropometry, subjects at that time hardly considered by American science. Within the same period also he made two important investigating expeditions to the Southwest. The first of these was undertaken in the fall of 1884, under the auspices of the Bureau of American Ethnology, to the Navaho country, where by previous arrangement with the priests he was privileged to witness the whole secret rite of the Night Chant. The other, in 1887, was in connection with archeologic investigations in the Salt river valley of Arizona, under the auspices of the Hemenway Southwestern Archeological Expedition. His medical and anatomic writings, chiefly during this time, include a study of consumption among Indians, several notable papers on methods of cranial measurement, and a monograph on "Human Bones of the Hemenway

A specimen in the British Museum¹ is decorated with carving covered with gold on the back only, the front being entirely plain. In one respect, however, this is the most perfect of the four; the finger-loops still remain bound on near the lower end. But there is nothing to indicate that similar loops were originally attached to the three specimens in the Italian museums.

The atlatl in Berlin belongs to a type different from those to which I have referred.

¹ The late Dr Hjalmar Stolpe described and figured this specimen in colors in *Internationales Archiv für Ethnographie*, vol. III, 1890, p. 234. The length of the specimen is given as 506 mm.; width of upper end, 33 mm.; of the lower end, 23 mm.

FLORENCE, ITALY,
April, 1905.

Collection," published as a memoir of the National Academy of Sciences in 1893. In the summer of 1886 he took an opportunity to revisit the places of his childhood in the old land across the sea. In the summer of 1888 he was one of the three physicians selected to attend General Sheridan, lieutenant general of the army, in his last illness. His associates were Dr Robert O'Reilly, now surgeon general, and Dr H. C. Yarrow, both of Washington.

In 1892, while serving his second assignment at Fort Wingate, he was stricken by the insidious disease which eventually caused his death. Two years later, when it was evident that his day of active service was past, he was recalled to Washington. On September 29, 1895, in accordance with the verdict of an examining board, he was retired for disability.

The disease slowly progressed, but although for several years before the end came he was an almost total physical wreck, unable to go about alone, cut off from conversation, frequently suffering intense agony, and with no hope of recovery, yet he kept his mind clear and his heart brave and warm to the last, and some of his best and most monumental work was produced during weeks of pain when he was scarcely able to move without assistance. At last the strength of what was once a magnificent frame was utterly sapped. While writing at his desk he attempted to rise unaided, but the effort was too great. He fell to the floor, sustaining such injury that medical science was powerless to help, and his life passed away a few weeks later. He was buried as a soldier at Arlington where rest his oldtime friends and associates, Sheridan, Mallery, Bourke, Coues, and Powell. He is survived by his wife, by several relatives in Iowa, and by his father's sister in Ireland.

Dr Matthews took an active interest in scientific things and was a member of the American Anthropological Association, American Association for the Advancement of Science, American Climatological Association, Association of American Anatomists, Anthropological Society of Washington, Philosophical Society of Washington, National Geographic Society, American Folk-Lore Society, Chicago Folk-Lore Society, and Torrey Botanical Club. He served as vice-president of the Chicago Folk-Lore Society in 1894, and as president of the American Folk-Lore Society in 1896. In

1888 he received the degree of LL.D. from his own university in recognition of his philologic work. Besides a fluent knowledge of Hidatsa and a good acquaintance with Navaho, he had at command both German and Spanish, while his English was always a model of literary style. He was an expert botanist, a skilful mathematician, and an artist of some ability in oil colors. Those familiar with his Indian ritual interpretations and with his sometimes concealed identity knew him for a poet even without the proof offered by the following little gem written at Gloucester, Mass., a short time before his death :

THE CONTRAST¹

Dark days around the Gloucester moors
Have come again,
With winds that wail and mists that trail
O'er land and sea ;
But darker days are in my soul,
Sad is my lot,
Despair and pain are with me here —
Alice is not.

Bright days around the Gloucester moors
Are now with me ;
Clear is the sky and fair the land
And calm the sea.
The days within my soul are bright,
And life is dear ;
For, shining like the sun's own light,
Alice is here.

Dark days around the Gloucester moors
Have come again,
With northeast gales and slanting sails,
And drifting rain.
Sad are the echoes in my soul
As breakers' moan,
And like the rain my teardrops fall —
Alice is gone.

Dr Matthews was a prolific writer, and besides the more important works already mentioned, was the author of a large number of shorter papers, ethnologic, medical, and general, without counting

¹ Printed by courtesy of Mr Charles F. Lummis, editor of *Out West*, Los Angeles, Cal., in which magazine (May, 1905) the verses, together with the accompanying recent portrait of Dr Matthews, first appeared.

numerous reviews and notes in the journals in which he was most interested. He left a large body of undigested manuscript material, relating chiefly to the Navaho, Modoc, and Paiute, which is now in possession of the University of California.

The world knows and will increasingly appreciate the scholar, but only those who were near to him can understand the rare personality of the man. Physically, mentally, and morally, Washington Matthews was of the highest type of manhood. Of fine physique and soldierly bearing, with a strong and well-modulated voice, carrying perhaps just a little roll to make it all the more musical, he was one to attract the attention of any audience and hold it to the close. His thought was always well ordered, and the expression so gracefully chosen that each word fitted to its purpose as perfectly as the pieces of an Italian mosaic. By a faculty of mingled sympathy and command he won the confidence of the Indian and the knowledge of his secrets, while by virtue of that spiritual vision which was his Keltic inheritance, he was able to look into the soul of primitive things and interpret their meaning as few others have done. He had a deep sense of the physician's mission in the relief of human suffering. With a modesty that shrank from publicity and despised notoriety, he was without jealousy and rejoiced always in the successful reputation of others. One of his last utterances in life was an expression of pleasure at a merited testimonial to a fellow worker. Of sensitive honor and high courage, he was at all times immediate and unsparing in denunciation of anything that savored of cowardice or dishonesty. His humor was keen, without the sting of sarcasm, and so spontaneous that even his serious discourse was often lightened by the play of fancy.

And now, though the golden bowl be broken, not yet shall the silver cord be loosed that held us in affection to one of whom it can be said in full measure —

"His life was gentle, and the elements
So mix'd in him that Nature might stand up
And say to all the world, 'This was a man!'"

J. M.

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12. The origin of the Utes. A Navajo myth. (*Am. Antiquarian*, vol. VII, p. 271-274, Chicago, Sept. 1885.)
13. On composite photography as applied to craniology, by J. S. Billings; and on measuring the cubic capacity of skulls, by Washington Matthews. Read April 22, 1885. (*Mem. Nat. Acad. Sci.*, vol. III, pt. 2, 13th mem., p. 103-116, 19 pl., Wash., 1886.)
14. On a new craniophore for use in making composite photographs of skulls. By John S. Billings and Washington Matthews. Read Nov. 12, 1885. (*Ibid.*, vol. III, pt. 2, 14th mem., p. 117-119, 4 pl., Wash., 1886.)
15. Apparatus for tracing orthogonal projections of the skull in the U. S. Army Medical Museum. (*J. Anat. and Physiol.*, vol. XXI, p. 43-45, 1 pl., Edinb., 1886.)
16. An apparatus for determining the angle of torsion of the humerus. (*Ibid.*, p. 536-538.)
17. Navajo names for plants. (*Am. Naturalist*, vol. XX, p. 767-777, Phila., Sept. 1886.)
18. Some deities and demons of the Navajos. (*Ibid.*, p. 841-850, Oct. 1886.)
19. The mountain chant: A Navajo ceremony. (*Fifth Ann. Rep. Bur. Ethnol.*, p. 379-467, pl. 10-18, Wash., 1887.)
20. The study of consumption among the Indians. (*N. Y. Med. J.*, July 30, 1887.)
21. The prayer of a Navajo shaman. (*Am. Anthropol.*, vol. I, p. 149-170, Wash., Apr. 1888.)
22. A further contribution to the study of consumption among the Indians. (*Trans. Am. Climatol. Ass'n.* [Washington meeting, Sept. 18-20, 1888], p. 136-155, Phila., 1888.)

23. Two Mandan chiefs. (*Am. Antiquarian*, vol. x, p. 269-272, 2 pl., Chicago, Sept. 1888.)
24. Navajo gambling songs. (*Am. Anthropol.*, vol. II, p. 1-19, Wash., Jan. 1889.)
25. Noqoilpi, the gambler: a Navajo myth. (*J. Am. Folk-Lore*, vol. II, p. 89-94, Bost. and N. Y., Apr.-June, 1889.)
26. The Inca bone and kindred formations among the ancient Arizonians. (*Am. Anthropol.*, vol. II, p. 337-345, Wash., Oct. 1889.)
27. The gentile system of the Navajo Indians. (*J. Am. Folk-Lore*, vol. III, p. 89-110, Bost. and N. Y., Apr.-June, 1890.)
28. The Catlin collection of Indian paintings. (*Rep. U. S. Nat. Mus.* 1890, p. 593-610, pl. 130-140, Wash., 1892.)
29. Meaning of the word "Arikara." (*Am. Anthropol.*, vol. V, p. 35-36, Wash., Jan. 1892.)
30. A study in butts and tips. (*Ibid.*, p. 345-350, Oct. 1892.)
31. Human bones of the Hemenway collection in the U. S. Army Medical Museum. (*Mem. Nat. Acad. Sci.*, vol. VI, 7th mem., p. 139-286, 57 pl., Wash., 1893.)
32. Navajo dye stuffs. (*Smithson. Rep.* 1891, p. 613-615, Wash., 1893.)
33. The basket drum. (*Am. Anthropol.*, vol. VII, p. 202-208, Wash., Apr. 1894.)
34. Some illustrations of the connection between myth and ceremony. (*Mem. Int. Cong. Anthropol.*, p. 246-251, Chicago, 1894.)
35. Songs of sequence of the Navajos. (*J. Am. Folk-Lore*, vol. VII, p. 185-194, Bost. and N. Y., July-Sept. 1894.)
36. Mt. Taylor. (*Am. Antiquarian*, vol. XVII, p. 294, Chicago, 1895.)
37. A vigil of the gods—a Navajo ceremony. (*Am. Anthropol.*, vol. IX, p. 50-57, Wash., Feb. 1896.)
38. Songs of the Navajos. (*Land of Sunshine*, vol. V, p. 197-201, 1 pl., Los Angeles, Oct. 1896.)
39. In memoriam: John Gregory Bourke. (*Science*, N. Y., Dec. 4, 1896.)
40. Navaho legends. (*Mem. Am. Folk-Lore Soc.*, vol. V, Bost. and N. Y., 1897; VIII, 299 p., map, 7 pl., 8°.)
41. The study of ceremony. (*J. Am. Folk-Lore*, vol. X, p. 259-263, Bost. and N. Y., Oct.-Dec. 1897.)
42. Ichthyophobia. (*Ibid.*, vol. XI, p. 105-112, Apr.-June, 1898.)
43. Use of rubber bags in gauging cranial capacity. (*Am. Anthropol.*, vol. XI, p. 171-176, Wash., June 1898.)
44. Serpent worship among the Navajos. (*Land of Sunshine*, vol. IX, p. 228-235, Los Angeles, Oct. 1898.)
45. Some sacred objects of the Navajo rites. (*Archives Int. Folk-Lore Ass'n*, World's Col. Expos., p. 227-247, 5 pl., Chicago, 1898.)
46. The study of ethics among the lower races. (*J. Am. Folk-Lore*, vol. XII, p. 1-9, Bost. and N. Y., Jan.-Mar. 1899.)
47. Seeking the lost Adam [mine]. (*Land of Sunshine*, vol. X, p. 113-125, Los Angeles, Feb. 1899.)
48. The cities of the dead. (*Ibid.*, vol. XII, p. 213-221, Mar. 1899.)
49. A two-faced Navaho blanket. (*Am. Anthropol.*, n. s., vol. II, p. 638-642, 1 pl., N. Y., Oct.-Dec. 1900.)
50. Navaho night chant. (*J. Am. Folk-Lore*, vol. XV, p. 12-19, 2 pl., Bost. and N. Y., Jan.-Mar. 1901.)
51. The treatment of ailing gods. (*Ibid.*, p. 20-23.)

52. A Navaho initiation. (*Land of Sunshine*, vol. xv, 353-356, Los Angeles, Nov. 1901.)
53. The earth lodge in art. (*Am. Anthropol.*, n. s., vol. iv, p. 1-12, 10 pl., N. Y., Jan.-Mar. 1902.)
54. Myths of gestation and parturition. (*Ibid.*, p. 737-742, Oct.-Dec. 1902.)
55. The night chant, a Navaho ceremony. (Mem. Am. Mus. Nat. Hist., Anthropology, vol. v; N. Y., 1902, xvi, 332 pp., 8 pl.)
56. Was willow bark smoked by Indians? (*Ibid.*, vol. v, p. 170, Lancaster, Pa., Jan.-Mar. 1903.)
57. The Navaho yellow dye. (*Ibid.*, vol. vi, p. 194, Jan.-Mar. 1904.)
58. The contrast. [In verse.] (*Out West*, vol. xxii, p. 304-305, Los Angeles, May, 1905.)
59. [Various articles on Indian manners and customs and on the Navaho tribe, in the *Handbook of the Indians*, in press for the Bureau of American Ethnology.]

SOME MORE ABOUT VIRGINIA NAMES

By WILLIAM WALLACE TOOKER

In regard to Mr William R. Gerard's last article, in the *AMERICAN ANTHROPOLOGIST* for April-June, 1905, written in answer to mine in the issue for October-December, 1904, I here reiterate the statements in my former essay. I cannot, owing to the limited space at my disposal in this final word, heed all his allegations and mistakes, so will call attention to only a few, which will give some indication of the character of the remainder.

In the first name, *Winauk*, discussed by Mr Gerard, he makes eight blunders: (1) In rejecting Trumbull's derivation. (2) Both Smith and Archer call it Point *Wynauk*, or *Weanocke*, as a rule rather than the contrary. (3) Archer never called it "Careless point." (4) Careless point was on the opposite side of the river. (5) He does not quote Archer correctly, who says (Smith, p. li): "We crossed over the water to a sharpe point, which is a parte of *Winauk* [i. e., under that jurisdiction] on Salisbury syde (this I call careless point)." "Salisbury side" was the south side of James river, while *Wynauk* was on the north or "Popham side." (6) His remarks as to dialect and the quotation from Trumbull in the footnote are erroneous, as if the Powhatan and Massachusetts did not belong to the same language. (7) *Wean-ohke* can be used without the preposition *-ut* or *-it*, as many place-names show. (8) No Indian would have called the place *Winach*, 'sassafras' or 'sweet wood,' without a locative of some sort, as Algonquian nomenclature requires.

Chickahominy. — Mr Gerard cannot find a single reference to a town called "*Tshikēhamēn*."¹ The verb could not be used in this form as a place name, because it does not imply a fixed location. It would be as appropriate to apply to a place the English verb "to

¹ *Manoquosick* was the first town on the river visited by Smith, but not named on his map, for *Meyascovic* of the map is not the same town. The proof of this is very positive.

sweep." My notes, made more than ten years ago, when I wrote the results of my study of "Chickahominy," show that I rejected this verb, along with others, in a better application, viz., *Tschikham-aney-os*, 'they sweep the path,' which I thought at the time might allude to their warlike habits when on a trail, for the words "lustie and daring people" were applied to the Indians of the river collectively, not to the inhabitants of any one town.¹

Werowacomaco. — Mr Gerard greatly confuses the derivation of this name. He does not accept Strachey's² and Trumbull's interpretation, 'a king's house,' but says it means 'fertile land,' and adds some remarkable information which is inapplicable. He does not believe in searching the Natick for the meaning of Powhatan names, but goes there for his altered *Wenauohkomuk* (Cotton); *Weenauohkomuk* (Eliot) = *weenau-ohke-muk*, 'where the land is fat, rich, good,' which he gives as the cognate of *Werowacomaco*, which it is not, in root, prefix, suffix, or anything else. The termination *-muk* is the third person singular of the present conditional passive, 'when or where a thing is,' — a termination of common use by Eliot, who also gives *matohkomuk* (= *mat-ohke-muk*), 'where the land is lean, poor,' thus proving the etymology.³ *Comaco* appears in several Powhatan names, and is the cognate of the Natick *komuk* = Narr. *commock*, 'a house,' 'a place enclosed.'⁴ He further remarks: "The name for a native ruler among the Virginians, variously written *wiróans*, *werowance*, *weroance*, and *wyroaunce*, means 'he is rich.' " This also is contrary to fact, as likewise is the statement that it is from the same stem as *weenau*, as it really comes from another verb found in (Narr.) *wauóntakick*, 'wise men,' 'counsellors,' (Lenape) *wewóátank*, 'the learned' or 'the wise,' whence (Lenape) *wewóánsu* (= Powhatan *werówanse*), 'he is wise.' Smith remarks (p. 377):

¹ Some of my reasons for rejecting the verb were: (1) Strachey has it in *tuckhica*, 'to sweep,' which led me to believe that he never recognized any sounds in the word *tucke*, belonging to *Chickahominy*. (2) *Tucke* is a root formed by onomatopœia to represent the action of a harsh instrument in rubbing up dust or dirt, likewise the hair of animals and the scales of fish.

² The name was probably translated for him by Kemps, the Indian who gave him most of his Powhatan names.

³ Eliot's constructive forms are mostly omitted from Trumbull's *Natick Dictionary*.

⁴ In a note Mr Gerard says: "*Winomin*, 'the grape,' means 'prolific fruit,' " whereas it really means 'vine berry.'

"But this word *Werowance*, which we call and construe for a king, is a common word, whereby they call commanders." Thus we have *Werowacomaco*, 'the king's house.'¹

Pocohiquara, Powcchicora. — Algonquian names of places and objects are all descriptive and admit of no ambiguity or inference; yet Mr Gerard's translation of this term as 'it is brayed,' when modified by nothing, is decidedly ambiguous, as it does not inform us what was 'brayed,' hence such a translation might refer to almost anything except "milk made of walnuts," to which the name was actually applied. My interpretation supplied the missing link, as it furnished an etymology descriptive of how the "milk" was "made of broken shells, skins, or bodies," leaving nothing for supposition. The second element, *-hiquara* or *-hicora* = (Natick) *-hogkδnie*, (Lenape) *-hackeney* or *-hocquina*, is from a root of common use meaning 'to cover,' 'to clothe,' as 'skin,' 'body,' 'shell,' 'husk,' 'scales' (of fish), etc.; hence the "milk" was "made of broken or pounded shells."²

Moickanneu. — There are insurmountable objections to Mr Gerard's etymology and translation ('he eats bones') of this term. First, Algonquian substantives in the plural must have their verbs in the plural. Second, the word for 'bone' in all Algonquian dialects is classed as an inanimate noun, hence it could not be used with the Algonquian verb 'to eat' something animate, which in the Lenape has the form *mohoan* 'to eat'; *mohoen* 'he eats'; *mohowak* 'they eat.' In the same dialect, things inanimate have their plural in *-all*, (Natick) *-ash*, hence 'they eat bones' would be rendered inanimately *mitsowak wochganall*, which Eliot (Zeph., III, 3) gives us correctly, and in the inanimate form *meechuog wuskonash*, 'they

¹ Mr Gerard does not quote Smith correctly. It was not *Werowacomaco* that was in breadth two miles, but the water (Purtons bay). Smith (p. 21) writes: "*Weracomaco* is vpon salt water in breadth two myles, and so [the river] keepeth his course without any tarrying."

² Heckewelder (*History*, p. 194) gives us the best account of the process: "They pound the nuts in a block or mortar, pouring a little warm water on them, and gradually a little more as they become dry, until at last, there is sufficient quantity of water, so that by stirring up the pounded nuts the broken shells separate from the liquor, which from the pounded kernels assume the appearance of milk. If the broken shells do not freely separate by swimming on the top or sinking to the bottom, the liquor is strained through a clean cloth, before it is put into the kettle."

gnaw (eat) bones.¹ So Zeisberger could not by any possibility have written *moëkanneu* for *mohowak wochganall*, for the combination would have been grammatically wrong. The radical *-kan*, in Cree and other dialects, when coalesced with the verb indicates something made of bone. My etymology describes the traits of a 'wolf' dog, as noted by many visitors to Indian villages, viz: *moëkanneu* = (Natick) *maü-konácu*, (Narr.) *moü-kanew*, 'he cries or mourns by night,' from *maü* 'he cries,' 'he mourns,' *nukonáeu* or *nokanew*, 'by night' or 'in the night,' as in composition the prefix is discarded.² The correctness of this etymology, no matter how "extraordinary" it may seem to Mr Gerard, is substantiated by the adverbial termination *-eu*, which does not belong to the verb, for that is already in the third person singular, but to the adverb that governs the verb. To quote Mr Gerard: "All this is simple, and of so very elementary a character that it did not occur to me to furnish an analysis of the word '*Moëkanau*' in my article."

Mr Gerard's article indicates his lack of critical analysis of the Algonquian language, and he is so hasty in his conclusions that his etymologies are rendered worthless. This is conspicuously shown by his statement: "In Narragansett, by incorporating the word *ättóku* 'deer' we have *moättókwew*, 'he eats deer,' and, by changing the intransitive to a verbal adjective suffix we have *moättókwus*, 'deer eater,' a name for the black wolf, called also deer wolf." Now, the Narragansett word "*moättóqus*,³ a black wolf," is simply from *mówi* 'black,' and *nattóqus* 'a wolf'; *nattóqussuog* 'wolves,' i. e., 'they seek their prey,' which describes their chief characteristic. Therefore there is nothing whatever in the name indicating 'eating' or 'a deer,' consequently there can be no such changes in grammar as he asserts.

Wunnauanounuck. — He says further: "What may be stated as absolutely certain is that *wunnau* does not mean 'hollow vessel,' and that *anounau* does not mean 'to carry.'"

Consulting Roger Williams' Key, we find: "*Wunnauanounuck*, a shallop. *Wunnauanounuckquese*, a skiff. Obs: Although them-

¹ Eliot almost always writes it '*wuskonash*' (3d pers. sing.), his bones.

² See Zeisberger's *Grammar* for 'one night,' etc.

³ Compare *móashug*, 'black snake,' in same chapter.

selves have neither, yet they give them such names, which in their language signifieth carrying vessels." Can this translation by Williams be ignored, when we learn that *wunnang* is a 'shallow vessel,' like a 'tray' or 'dish,' and that *-anounau* = (Natick) *konunau* 'he carries or bears,' *kounuk* 'when it carries' as a carriage or anything that bears burdens?

I could extend my observations on Mr Gerard's article, but "why multiply examples?"¹

SAG HARBOR,
NEW YORK.

¹ Mr Gerard's remarks on the grammar of the language are seemingly his own ideas, and are not based on any authority on the subject. For instance, under *Attaangwamuk* he is contradicted by Eliot, who has (Job, xxxi, 2) *nanepaushadt worumot* 'the moon is bright, shining'; *nepaus wolum* (Cotton) 'the sun shines,' and so we can have *anogkus wolumuk* 'he appears shining.' His remarks under other words are equally erroneous. He seemingly does not hesitate to make any change in any notation, whether it be Williams', Eliot's, or Zeisberger's. Brinton's remarks will apply: "Zeisberger showed the Delaware as it actually was spoken, though perhaps not as scientific linguists think it ought to have been spoken."

BOOK REVIEWS

Neolithic Dew-ponds and Cattle-ways. By ARTHUR JOHN HUBBARD, M.D., and GEORGE HUBBARD, F.S.A. *With illustrations.* London: Longmans, Green & Co., 1905. 8°, vii + 69 pp.

General Pitt-Rivers, Mr E. H. Willett, Canon Greenwell, and others have made us acquainted with the numerous earthworks on the Sussex Downs. The most notable of these works is that of Cissbury, some three or four miles north of Worthing. The Cissbury Ring, roughly oval in shape, enclosing an area of 60 acres, was thought by the early writers to be of Roman origin, but Col. A. H. Lane Fox (General Pitt-Rivers) proved it to be the work of the neolithic inhabitants of Britain.

The Cissbury embankments, pierced at intervals by openings, suggest the earthworks of our own mound-builders. The inner embankment is the larger, and rises 40 feet above the ditch that separates it from the outer.

These hill fortifications generally cover the most elevated points of the Downs, those at Chanctonbury, a short distance north of Cissbury, being 800 feet above sea-level. The magnitude of the works implies a considerable population and a settlement covering a time period of no mean length. The question, therefore, of water supply for such high elevations is one of moment. The Messrs Hubbard, in an attractive little volume, have attempted to solve this problem.

Some distance below the Cissbury Ring, and on opposite sides of the summit, are two artificial depressions — one at present dry, the other (on the north) filled with water. The authors call them "dew-ponds." The mode of construction and thermodynamics of a dew-pond are best described in the authors' own words:

"There is still in this country at least one wandering gang of men (analogous to the mediæval bands of bell-founders, masons, etc.) who will construct for the modern farmer a pond which, in any situation in a sufficiently dry soil, will always contain water, more in the heat of summer than during the winter rains. This water is not derived from springs or rainfall, and is speedily lost if even the smallest rivulet is allowed to flow into the pond. The gang of dew-pond makers commence operations by hollowing out the earth for a space far in excess of the apparent requirements of the proposed pond. They then quickly cover the whole of the hollow with a coating of dry straw. The straw in its turn is covered by a layer of well-chosen, finely-puddled clay, and the upper surface

of the clay is then closely strewn with stones. Care has to be taken that the margin of the straw is effectively protected by clay. The pond will gradually become filled with water, the more rapidly the larger it is, even though no rain may fall.

"If such a structure is situated on the summit of a Down, during the warmth of a summer day the earth will have stored a considerable amount of heat, while the pond, protected from this heat by the non-conductivity of the straw, is at the same time chilled by the process of evaporation from the puddled clay. The consequence is that during the night the moisture of the comparatively warm air is condensed on the surface of the cold clay. As the condensation during the night is in excess of the evaporation during the day, the pond becomes, night by night, gradually filled.

"The dew-pond will cease to attract the dew if the layer of straw should get wet, as it then becomes of the same temperature as the surrounding earth, and ceases to act as a non-conductor of heat. This practically always occurs if a spring is allowed to flow into the pond, or if the layer of clay is pierced."

The dried up dew-pond already mentioned bears a definite relation to the neolithic settlement at Cissbury. The origin of both, therefore, may be presumed to date from the same epoch, a presumption confirmed by the fact that the dew-pond in question "appears to be thoroughly fortified by a surrounding ditch and earthen wall, precisely similar to, though on a lesser scale than the great prehistoric earthworks on the top of the Downs."

Two roadways, roughly parallel and in places deeply cut, lead from the eastern entrance down to the dew-pond on the north. These are called "cattle-ways," and form another link in the chain of evidence tending to prove that the earthworks and dew-ponds are contemporary. Another bit of evidence is that remains of a "dwelling" similar to those within the Ring are sometimes found adjacent to a dew-pond. These so-called dwelling sites marked by gentle depressions in the surface of the ground are, however, primarily the sites of ancient pits sunk in neolithic times to depths of from 15 to 30 feet through the chalk in search of seams of flint suitable for the manufacture of implements. As soon as flint of the desired quality was reached, side chambers and horizontal connecting galleries were opened for the further exploitation of the flint nodules. Similar works are found at Grime's Graves near Brandon, Suffolk, and at Spiennes, Belgium. Pits, chambers, and galleries have long since been filled by debris of one sort and another, and possibly may have been utilized from time to time as habitations.

There is a dew-pond still full of water near Chanctonbury Ring. It is surrounded by protecting earthworks within which are the remains of a so-called "dwelling" or "watch-house." The latter is evidently the site of a shaft sunk for the purpose of exploiting flint from the Chalk.

Part II of the book treats of Maumbury Rings and Maiden Castle, both near Dorchester. The Maumbury earthwork "appears to us to differ entirely in purpose from the ordinary neolithic hill settlements with which it is certainly contemporary." Its orientation was carefully determined and found to coincide accurately with that of Stonehenge. It is in all probability a prototype of the great stone structure erected on Salisbury Plain and suggests the practice of sun worship in the neolithic period.

There are no dew-ponds at Maumbury Rings, but there is one within the ramparts at Maiden Castle. The area enclosed by the Rings at Maiden Castle is from 40 to 50 acres in extent. The enclosure is protected by a series of great embankments, even now 50 to 60 feet high; and the "maze of stupendous earthworks by which the entrance is guarded baffles description."

Part III deals with "cattle-tracks," a term employed to indicate the routes selected by the herds in contradistinction to the term "cattle-ways," used in the sense of roads built by man for the use of his cattle.

Two of the most important systems of cattle-tracks are at Ogbury Camp near Stonehenge and at Figsbury Ring between Salisbury and Stockbridge. At Ogbury Camp the cattle-tracks are connected with dew-ponds, as was the case at Cissbury and Chanctonbury.

Much emphasis is placed on the value of domestic herds to these neolithic settlers and the necessity of protecting their flocks as well as themselves from wild beasts and other enemies. The illustrations are all half-tones from excellent photographs and serve their purpose admirably. To have supplemented them with a few ground-plans and sections would have been of material assistance to the general reader in obtaining a proper conception of the extent and meaning of the neolithic hill settlements and their relations to the so-called dew-ponds and cattle-ways.

GEORGE GRANT MACCURDY.

Antropometria Militare. RIDOLFO LIVI. Two volumes, 4°, with atlas. Rome: Preso il Giornale Medico del Regio E Sercito, 1896, 1905.

The first volume of the valuable work by Dr Livi on military anthropometry in Italy, which appeared with an atlas in 1896, has just been followed with a second volume, devoted more particularly to data of a demographic and biologic character. Volume I deals with the stature, color of the eyes and hair, cephalic index, and the facial characters of Italian conscripts, chiefly from a racial point of view; while the second volume is devoted to the consideration of stature, weight, thoracic circumference, etc., more from the standpoint of physiology and hygiene.

The data on which the entire work is constructed were obtained by military medical examiners and are based on the examination of 299,355 recruits throughout Italy, of the classes from 1859 to 1863. In the author's investigations it was found, and is clearly shown, that physically the population of Italy is by no means homogeneous, but that it differs radically in the northern and southern parts of the peninsula, while the central provinces exhibit stages more or less transitional. The northern, and particularly the northeastern portions of the country — Venetia, for example — have a population of relatively higher stature, with higher cephalic index, and a relatively greater proportion of blonds than the southern provinces, Sicily and Sardinia, whose people are short and dark, with a tendency to dolichocephaly.

The highest average statures are: Venetia, 166.6; Tuscany, 165.6; Liguria, 165.5; Lombardy, 165.3 cm.; the lowest: Sardinia, 161.9; Basilicata, 162.6; Calabria, 161.1; Sicily, 163.5 cm. The cephalic index, which in the northern provinces ranges from 82.3 to 85.9, is in Puglia 79.8; in Sicily, 79.6; in Calabria, 78.4; and in Sardinia only 77.5. The percentage of blond-haired individuals ranges from 12.6 in Venetia to 7.2 in Emilia, in the north; but is only 5 percent in Sicily, 3.8 in Calabria, and 1.7 in Sardinia. On the whole the people of northern Italy are shown by the data to be allied to the Alpine and other northern races of whites (very probably including, in Venetia at least, the Slavs), while the southern Italians, the Sicilians, and the Sardinians belong chiefly to the Iberic or Mediterranean type.

The size of the chest, determined by the thoracic circumference, was found to differ widely; but in 50 percent of the subjects examined it ranged between 84 and 88 cm. The largest average chest is found in the northern, the smallest in the southern provinces, particularly in Calabria and Sardinia. Large stature in general was found to be associated with more ample thorax; but the increase in the size of the chest is inferior to the increase in stature. It should here be mentioned that the relation between the thoracic circumference, c , and the stature, s [$(c \times 100)/s$], is incorrectly termed by the author "thoracic index." Like "cephalic index," "nasal index," and "orbital index," the term "thoracic index" should be restricted to an expression of the relations of measurements (preferably the bilateral and antero-posterior diameters) of the thorax, the part of the body indicated by the name; and in fact the term has already been employed for such relations. The index of Dr Livi is the chest-height index.

To return to the results obtained by the author, it is found that the

weight of more than 40 percent of the subjects ranged from 47 to 62 kg. (126 to 137 lbs.), and here again the average was higher in the northern than in the southern provinces. The average weight increased with stature, but the relative proportion (grams per cm., or, as the author expresses it, $100 \sqrt[3]{W/S}$) diminishes slowly with increase in height. Excepting those whose stature falls below 167 cm., the weight of the American soldier, according to Gould's statistics, exceeds that of the Italian.

Among the various professions and trades, students and butchers attain the greatest average stature and weight, while barbers and tailors are the smallest. For many interesting details of a similar character the work itself must be consulted.

During the period of military service there is an increase in stature and weight, particularly in those who through malnutrition had been retarded in these directions; consequently from a physical point of view military service is beneficial.

A chapter of the second volume is devoted to the consideration of the diseases of soldiers and their distribution, geographically and professionally.

Dr Livi's work exhibits a vast amount of labor brought to a successful issue. The volumes are illumined with numerous diagrams, a valuable aid to the text. Both Dr Livi and the military authorities who have supported and encouraged him may be assured of a full and general appreciation of this service in the cause of anthropology.

A. HRDLIČKA.

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

Alsberg (M.) Krankheit und Descendenz. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 118-122.) Discusses the question whether there does not exist a coincidence or a relationship between the phylogenetic stage of evolution in an organ and a more or less pronounced disposition in the same to morbid changes, between the changes run through in the course of phylogenetic evolution and certain so-called "pathological phenomena," or "diseases." Dr A. considers the ribs, the vermiform appendix, certain glands and gland-like organs, anomalies of refraction in the human eye, rumination, etc., from this point of view.

Andree (H.) Kurzer Rückblick auf Richard Andrees literarische Tätigkeit. (Globus, Brunschwig, 1905, LXXXVII, 148.) Lists, with brief notes, chief publications, 1860-1904, which covered such topics as the Jews, metals among primitive people, anthropophagy, ethnographic parallels, deluge myths, folk-lore, votive offerings, etc.

Anthony (R.) Rapport de la commission nommée pour l'attribution du prix Broca, 1904. (Bull. Soc. d'Anthrop. de Paris, 1904, 7^e s., V, 589-590.) Prize divided between MM. Launois et Roy's *Études biologiques sur les géants* (Paris, 1904) and M. Demonet's MS. *Recherches sur la capacité vitale*.

Barchielli (A.) Variazioni del margine superiore dello sterno umano e loro significato. (Mon. Zool. Ital., 1904, XV, 54-61, 2 pl.) Gives results of examination of 162 sternums of adults and a few embryos. The *tubercula epis-*

ternalia, of which three cases occurred, are regarded by B. as rudiments of the episternum of the lower vertebrates.

Beddoe (J.) A method of estimating skull-capacity from peripheral measures. (J. Anthropol. Inst., Lond., 1904, XXXIV, 266-283.) Discusses briefly various methods and adds "new proofs" with slight modification of author's process. Tables of measurements of Naqada, Romano-Briton, Vedda, Negro, Sumatran, Australian skulls. Pages 277-283 reply to article by Prof. Pearson in *Biometrika* in criticism of B's scheme.

Bernbach (Dr) Ueber Pfeilgifte und vergiftete Pfeile. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 51-52.) Notes on arrow poisons and poisoned arrows in Asia and Indonesia (Ainu, Malays, Malaccans, etc.), S. America (Orinoco-Amazonian region, Choccos, Cayapas, Goajiros, etc.), Africa (East Africa, pygmies, Congo region, Bushmen, etc.). Snake poison is a wide-spread constituent. Vegetable poisons are obtained from aconitum, strychnos, antiaris, solanum. American poisons are *curari*, toad-poison, poison from corpses, etc. In parts of Africa spider-poison is employed.

Boas (F.) Some traits of primitive culture. (J. Amer. Folk-Lore, Boston, 1904, XVII, 243-254.) Discusses "the general lack of differentiation of mental activities." In primitive life religion and science, music, poetry and dance, myth and history, fashion and ethics, appear to us inextricably interwoven, yet, when we consider that all vestiges of similar forms of thought have not yet disappeared from our civilization, we can

see how these phenomena may fall into an orderly array. Dr B. notes the association between traditional etiquette and ethical feeling (e. g., sense of propriety, religious intolerance, food aversions, styles of dress) in modern life and compares them with analogous phenomena in primitive life (taboos, education, ritual, decorative art, etc.). The resistance to change is largely due to emotional sources, and in primitive culture emotional associations are the prevailing type. In civilization reasoning is able to modify activities having no emotional value, but "we cannot remodel, without serious emotional resistance, any of the fundamental lines of thought and action which are determined by our early education, and which form the subconscious basis of all our activities." The loss of conservatism accompanying the substitution, in the progress of primitive culture to civilization, of intellectual for emotional associations, does not affect seriously the mass of subconscious activities and modes of thought learned more by imitation than by education.

— The history of anthropology. (Science, N. Y., 1904, N. S., XX, 513-524.) Address at St Louis, Sept., 1904. Discusses "the general conditions of scientific thought that have given rise to anthropology,"—the anthropological science of to-day is distinct in scope and method from the speculative anthropology of the 18th and of the early part of the 19th century. About the middle of the last century the beginnings of anthropology were laid from three distinct points of view—historical, classificatory, geographical (Darwin, Spencer, Tylor, Bastian, Gerland, — *Elementargedanken*, "Culturbrille," etc.). The linguistic aspect was discussed by Steinthal, the somatic was set going by the metric method of Quetelet. Folk-psychology felt the influence of Steinthal and subsequently of Wundt, Baldwin, Tarde, Stoll. Somatology owes much to Huxley, Wiedersheim, Galton, and Pearson, — the last two have developed the methods of the quantitative study of the varieties of man. The research work of the field anthropologist is of some importance, and detailed archeological and ethnological studies have reacted upon the theories of anthropology. Anthropology is now becoming of great value in

the general system of our culture and education, particularly in enabling us to see our origins and criticize objectively our own work.

Brower (C. DeW.) Collection and preservation of antiquities for the benefit of the public. (Rec. of Past, Wash., 1905, IV, 57-60.) Cites examples of valuable relics hidden away in attics, bureaus, etc., and inaccessible to students. Argues for the better preservation and exhibition of these, preferably in museums.

Buschan (G.) Cultur und Gehirn. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., 1904, XXXV, 127-133.) See *American Anthropologist*, 1905, N. S., VII, 135. This paper, in extended form, has appeared as *Cultur und Gehirn* (Wiesbaden, 1905) in the series of monographs entitled *Grenzsfragen des Nerven- und Seelenlebens*.

Cartailhac (E.) Les anneaux-disques préhistoriques. (L'Anthropologie, Paris, 1904, XV, 359-368, 5 figs.) Résumé et critique of an article by Ch. Buttin on *Les anneaux-disques préhistoriques et les téchakras de l'Inde* in the *Revue Savoisienne* for 1903. B. compares the prehistoric disc-rings found at Combes, near Chambéry, in 1883, with the steel disc-rings now used as weapons only by the Akalis, a Sikh tribe of the Punjab. Cartailhac thinks the comparison suggestive, but asks more evidence.

Chamberlain (A. F.) Proverbs in the making: Some scientific common-places. II. (J. Amer. Folk-Lore, Boston, 1904, XVII, 268-278.) Nos. 206-450 of trite statements of scientific facts and fancies by writers in various modern languages.

Cosentini (F.) Les recherches anthropologiques modernes et la sociologie génétique. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 591-600.) Discusses origin of human race (author thinks "polygeny is not only a logical consequence of the Darwinian theory, but is also confirmed by the results of prehistoric investigations"), migrations (rare in primitive times), paleolithic (fire created the hearth and gave birth to sociability; no religion) and neolithic (industry and social life developed; division of labor; nomad becomes sedentary) man, age of metals (augmentation of human strength and improvement of all forms of work, analogy between pre-

historic men and the savages of to-day, and the atavistic regression of criminals in physical and psychical characters toward the condition of the lower races of man.

Dieterich (A.) Mutter Erde. (A. f. Religaw., Lpzg., 1904, VIII, 1-50.) First two sections of extended discussion of "mother earth" in folk-thought, custom, mythology, religion, etc., especially the folk-religions of ancient Greece and Rome. Earth is mother of men, from her they come forth as children, to her they return at death to be reborn. Begetting and birth belong with sowing and plant-growth. "Mother earth" is the first root of all religions. The Athenian was proud of his autochthony. Hellas abounded with traces of the earth-cult. Through Plato the world caught up something of Attic folk-belief.

Fischer (W.) Ein einfaches und praktisches Verfahren für Hand- und Fussabdrücke auf Papier. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 49-50.) Brief account of a method of obtaining impressions of the hands and feet on paper by means of a water-color solution.

Frassetto (F.) Appunti sulla scafocefalia patologica. (A. d. Soc. Rom. di Antrop., 1905, XI, 195-210.) Gives results of observation of four scaphoid crania in the Anthropological Museum of the University of Padua, with brief descriptions of such skulls in other collections or recorded by other authorities. A valuable bibliography, 1781-1901, of 54 titles, including references to living scaphocephali, is appended. The facts met with in the examination of scaphoid crania are best explained, according to F., by the theory of obelie hypervascularization, manifesting itself in the early fetal periods. Hereditary syphilis may be one of the ultimate causes of the hypervascularization due to neoplasia of the capillaries following irritation.

— Appunti sulla trigonocefalia. (Ibid., 211-215.) Lists all known cases (27) of trigonocephaly. This anomaly is not due, F. thinks, to precocious synostosis of the bifrontal or metopic suture, but rather to hypervascularization of the metopic region, causing such synostosis, and due sometimes to syphilis. This hypervascularization arises in the embryonic period. Bibliography of 11 titles.

— In morte di Leopoldo Maggi. (Ibid., 322-328.) Brief account of life and scientific activities of the Italian anatomist-anthropologist with bibliography (74 titles) of writings, 1872-1899.

Guibert (A.) Évolution mentale, son apogée, ses lois. (Bull. Soc. d' Anthr. de Paris, 1904, V^e s., V, 615-630.) Dr G. argues that when it has reached adolescence and maturity the human understanding is autonomous and does not disappear with the vanishing of the majority of the sensorial perceptions. At its apogee it directs, controls, and utilizes these. The laws of mental evolution are: Heredity of understanding, evolution by progressive differentiation of ideas among themselves, evolution by adaptation to the milieu, hierarchization of the ideas of the understanding (slow process).

Günther (S.) Die Anfänge des Zählens, Rechnens und Messens im Lichte der vergleichenden Ethnologie. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 133-134.) Touches on discontinuities in numeration (Danish *halvtredindstyve*, 50; French *quatre-vingts*, 80), fingercounting, the Hindu invention of zero, prehistoric sense for geometry seen in ornamentation, use of same stereometric form of buildings by widely separated peoples, Micronesian charts, etc. In the discussion Dr Oppert discussed at some length the invention of zero.

— Entwicklung, Richtpunkte und neuere Methoden der Völkerkunde. (Ibid., 42-43.) This address has appeared in extended form as *Ziele, Richtpunkte und Methoden der modernen Völkerkunde* (Stuttgart, 1904, pp. 52).

Hales (F. N.) Materials for the psychogenetic theory of comparison. (Brit. J. Psych., Cambridge, 1905, I, 205-239.) Treats of comparison in the gesture-language of deaf-mutes and primitive peoples, in spoken languages (American, Australian, Polynesian, African, Melanesian, Dravidian, Indo-Germanic). In comparisons the development of linguistic forms in the race parallels that in the individual. The most primitive methods are opposition and exclusion, — graduation comes later.

Hogg (A. J.) The patination of flint implements. (Man, Lond., 1905, 6-7.)

Author concludes that, in certain implements from Knowle (Wiltshire) the glaze is due to the operation of sand in running water. In Egypt stones are polished by wind-driven sand.

Jacob (S.), Lee (A.), and Pearson (K.)

Preliminary note on interracial characters and their correlation in man. (*Biometrika*, Cambridge, 1903, II, 347-356.) Treats of correlation of breadth on living head, cephalic and nasal indices, orbital, cephalic and nasal indices of cranium, length and breadth of living head. The material is Naga, Bengalese, Bavarian, Aino, etc. Authors hold that the anatomists' "principle of compensation" is quite fallacious.

Kittredge (G. L.)

Disenchantment by decapitation. (*J. Amer. Folk-Lore*, Boston, 1905, XVIII, 1-15.) Well-documented comparative study of a motif occurring in two Middle English romances, *The Carl of Carlisle* and *The Turk and Gawain*. Whatever their dates these romances preserve, in the matter of disenchantment, a naïve and ancient superstition, which may fairly claim universal currency. Gaelic, Welsh, Irish, Scotch, German, Austrian, Gypsy, Swedish, Norwegian, Breton, Armenian, and other cognates are discussed.

Kollmann (I.)

Neue Gedanken über das alte Problem von der Abstammung des Menschen. (*Globus*, Brnshwg., 1905, LXXXVII, 140-148, 3 figs.) Discusses the Pithecanthropus of Dubois, man of Neandertal and Krapina, — theories of Schwalbe, Klaatsch, Ginfrieda-Ruggeri, etc., — pygmies and their place among the varieties of the human race, the anthropoids (gorilla fetus), etc. Prof. K. considers that the Neandertal man was an ancestor of modern European man; the pygmies were the first form of the human race, since transformed, their high, well-developed skulls are archetypal for man. K. is a monogenist, and for him the man of Neandertal is only an offshoot of the large races. The same article (with 7 figs.) appears also in the *Abh. d. Deutschen Ges. f. Anthr.* (München), 1905, XXXVI, 10-20.

Lang (A.)

Misgivings of an anthropologist. (*Man*, Lond., 1905, 7-10.) Enumerates 10 "fallacies" in opinions concerning the origin and nature of totemism, particularly with reference to the Australian aborigines.

Layard (Nina F.)

Further excavations on a paleolithic site in Ipswich. (*J. Anthr. Inst.*, Lond., 1904, XXXIV, 306-310, 2 pl.) Describes excavations made in October, 1903, in a pit in the brick-earth of Ipswich and the paleolithic implements diverse in form discovered there. They are probably due to "a post-glacial colony of paleolithic men."

Newell (W. W.)

The Passover song of the Kid and an equivalent from New England. (*J. Amer. Folk-Lore*, Boston, 1905, XVIII, 33-48.) Comparative study with text of "Kid do go" ca. 1800 from Salem, Mass. N. concludes that "indications point to a single old French root for the European song" (ca. 12-13th century). The Jewish Passover song (song of the Kid) is only a translation of the *randonnée*, which has found its way to parts of Africa, Asia, etc.

Nicola (B.)

Sopra le inserzioni dei muscoli lumbricali nella mano dell'uomo. (*A. d. Soc. Rom. di Anthr.*, 1905, XI, 217-227.) Gives results of observation of the lumbrical muscles of 153 hands in 100 human bodies (adult, mostly Piedmontese) with references to the literature of the subject. Some of the less common observations are recorded in detail. Abnormal lumbricals occurred in 50 percent of the cases and were more frequent in men than in women. The third lumbrical is most anomalous. Bibliography of 13 titles.

Pearson (K.)

Professor Aurel von Török's attack on the arithmetical mean. (*Biometrika*, Cambridge, 1903, II, 339-345.) Critique of von Török's paper in the *Ztschr. f. Morph. u. Anthr.*, IV, 500-588, and consideration of his craniometric data of 2,000 Hungarian skulls.

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Homogeneity and heterogeneity in collections of crania. (*Ibid.*, 345-347.) Criticizes C. S. Myers' discussion of the Naga and other crania in *Man*, 1903, 13.

Ranke (J.)

Jahresbericht des General-secretärs. (*Corr.-Bl. d. Deutschen Ges. f. Anthr.*, München, 1904, XXXV, 71-75.) Contains brief notes on recent anthropological literature: Prehistory (Gorgianović-Kramberger, Nüesch, Salin), Ethnology (von Luschan, Abraham und Hornbostel), Somatology and racial anthropology (Fritsch, Nieuwenhuis, Birkner, Sakaki, Walkhoff, Retzius, etc.).

- Zur Anthropologie des Schulterblattes. (Ibid., 139-144, 1 fig.) Discusses the general structure of the shoulder-blade, its form, etc., among the anthropoids. In man alone the fore-limbs have been freed from the duty of serving as organs of movement and support, — this, a last cause of the upright walk is the mechanical ground for the specially human structure of the shoulder-blade.
- Ranke (K. E.)** Das Gauss'sche Fehler-gesetz und seine Verallgemeinerungen durch Fechner und Pearson in ihrer Tragweite für die Anthropologie. (Ibid., 99-104.) Discusses the bearing of Gauss's law of error, and its generalizations by Fechner and Pearson, for anthropology. Fixed organic variation-series of simple measurements must always follow Fechner's law of distribution (close to Gauss's). Otherwise the material is not homogeneous or the variation has been seriously interfered with.
- Schmidt (E.)** Die Grösse der Zwerge und der sogenannten Zwergvölker. (Globus, Brunschwig, 1905, LXXXVII, 121-125.) Discusses the stature of dwarfs and dwarf-like races (African pygmies, Bushmen, Minkopi, Philippine Negritos, etc.). The Malaccan Semang and Sakai, the Celebesan Tuala, the Veddas of Ceylon are hardly pygmies. Reference to the average stature, etc., of the people to which civilized explorers belong, has vitiated their ideas of pygmyism sometimes. Pygmies are also to be distinguished from small-statured people.
- Spitzka (A.)** The development of man's brain. American mind destined to dominate human powers of the earth. Illustrated by studies of the brains of intellectual persons, of individuals of various races and of criminals. (Connecticut Magazine, 1905, 319-355, 6 pl.) Discusses cerebral localization, brains of intellectual persons, cerebro-cerebellar ratio, callosum, race brains, criminal brains. The brains of sane and intellectually eminent persons give evidences of morphologic superiority in surface configuration, complexity and area of certain cortical territories, etc. Sane criminals have no "criminal cerebral characteristics." The formation of an "American Family of the Aryan Race" now going on will lead to bigger and better brains.
- von den Steinen (K.)** Die Bedeutung der Textilmuster für den geometrischen Stil der Naturvölker. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 126-127.) Points out how the forms of nature and those of technique stimulate the artist formation-power and thus "suggested motives" have a large rôle in primitive decorative art. Zigzags, triangles and lozenges with central cross as a model, due to the diagonal disposition, are the starting point for numerous examples of "symbolism" among the American Indians. For the North American Indian the triangle is a tent, for the Polynesian a shark's tooth, for the Xingu Indian the woman's cover. Explanations are secondary interpretations.
- Toldt (C.)** Ueber einige Structur- und Formverhältnisse des Menschlichen Unterkiefers. (Ibid., 94-99.) Discusses and criticises Walkhoff's *Der Unterkiefer der Anthropomorphen und des Menschen* (Wiesbaden, 1902) and Weidenreich's *Die Bildung des Kinnes in der Anatomischen Anzeiger* for 1904, and gives results of radiographic investigations. The conclusion reached is that the human chin is a correlate of the whole structure of the head — a peculiar feature of man as compared with all other animals, and not a regressive or degenerative phenomenon, as would be the case if it had to be referred to a reduction of the teeth.
- Uhlenhuth (Hr.)** Ein neuer biologischer Beweis für die Blutsverwandtschaft zwischen Menschen und Affengeschlecht. (Ibid., 114-118.) Discusses the use of serum-reactions as a means of determining affinity and résumés the chief facts (which he has confirmed) of Nuttall's *Blood Immunity and Blood Relationship* (Cambridge, 1904). With the orang-utang, gorilla, and chimpanzee the reaction was almost as strong as with man; with the *Cynocephali* and *Cercopitheci* the result was weaker; with the New-World monkeys still weaker; no complete reaction was obtained from the *Cebidae* or from *Hapalidae*, nor from lemurs. The degree of the blood relationships of man and the apes is thus indicated.
- Volkov (Th.)** Les variations squelettiques du pied. (Bull. Soc. d'Anthrop. de Paris, 1904, 4^e s., V, 720-725.) Bibliography, 89 titles, to monograph.
- Walkhoff (O.)** Das Femur des Menschen und der Anthropomorphen in seiner

functionellen Gestalt. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 87-88.) Gives results of experiments concerning the functional form of the femur in man and the anthropoids, made with X-rays, etc. Details are given in the author's *Das Femur des Menschen und der Anthropomorphen in seiner funktionellen Gestalt* (Wiesbaden, 1904.)

Witkowski (Dr) Die Bäder und Bädelerleben in früherer Zeit. (Ibid., 1905, XXXVI, 23.) Résumé of address before Wiesbaden Anthropological Society. The use of baths for purposes of cleanliness is comparatively new. Water was "feared" by many primitive men. Hydro-mythology is quite extensive. In India baths first make their appearance among the civilized races. Then in Babylon and Assyria. With the Jews springs were the center of social life. In Japan baths had a high development, — not so in China. The ancient Greeks had sea and river baths (later also house-baths). Rome had gorgeous baths, curative and otherwise, which the barbarians and Christians adopted. Sun-baths were introduced from Greece into Rome.

EUROPE

Anouchine (A.) L'archéologie en Russie. (L'Anthropologie, Paris, 1904, XV, 351-358.) Résumé by M. Déchelette from the German translation in the *Centralblatt für Anthropologie* for 1903. See *American Anthropologist*, 1903, N. S., V, 560.

Ardu-Onnis (E.) Restes humains préhistoriques de la grotte de San Bartolomeo, près Cagliari. Contribution à l'anthropologie de la Sardaigne. (L'Anthropologie, Paris, 1904, XV, 313-331, 11 figs.) Discusses the prehistoric human remains (2 skulls and a number of bones of the face and cranium; with measurements, etc.) discovered in 1880 by F. Orsoni. The cave of San Bartolomeo contains three successive deposits indicating the presence of man of the stone, bronze, and iron ages. The cranial remains resemble strikingly modern Mediterranean forms (Sardinian).

Baudoin (M.) Débris d'une mâchoire d'enfant trouvé sous un mégalithe de Vendée. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 570.) Note on the fragment of the jaw of a child (5-6 yrs.)

found in 1904 under the megalith of the Champ de Savatole, Bernard, Vendée.

— Luxation préhistorique de l'atlas sur l'axis. (Ibid., 553-554.) Describes luxation indicated in a skeleton from a megalith in Vendée, the first on record. The luxation was caused by a falling block of stone, death being instantaneous.

— et Bonnemère (L.) Les haches polies dans l'histoire jusqu'au XIX^e siècle. (Ibid., 496-548, 3 figs.) Interesting, well-documented article treating of the history of polished stone hatchets: Synonymy ("thunder-stones," etc.), folklore (amulets, folk-medicine, legends), Greek and Latin periods, Renaissance (the text of Aldovandus *De Ceramnia* is given in detail, also Gerner and Mercatus), other writers briefly, from Shakespeare down to close of 18th century. The connection of polished stone hatchets with thunder, in folk-lore, is very widespread.

de Blasio (A.) Stenopigia in prostitute. (A. di psich., neuropatol., etc., Torino, 1905, XXVI, 257-264, 1 pl., 1 fig.) Describes two cases (Apulian aged 22, Neapolitan, 19) of stenopigia (excessive development noticed in early life, marked at puberty) in free-will prostitutes. Author suggests that prehistoric man may have been stenopygous.

Bolk (L.) Répartition du type blond et du type brun dans les Pays-Bas. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., V, 578-586, 3 figs., map.) Based on personal examinations of 5,000 Dutch school children and data from 3,400 questionnaires representing some 477,200 school children, Jews not counted. Dr B. concludes that the population of Holland is no less mixed than that of Belgium or England. The principal elements (*Homo Europæus* and *Homo Alpinus*) occur in the proportion of 1:2, the Alpine variety occupying the south especially. The primitive Zeeland type (Alpine) has crossed with the Frisian (European) to produce a pseudo-alpine variety with brown eyes, long face, and broad skull. The brunets are most numerous in Zeeland, Limburg, North Brabant; blonds in Friesland, Drenthe, and the northern part of N. Holland. Brunetism increases toward Belgium.

Bonnet (—) Demonstration des Greifswalder Scaphocephalen. (Corr.-Bl. d.

Deutschen Ges. f. Anthropol., München, 1904, xxxv, 89-91.) Describes the scaphocephalic skull of a weaver of Stettin (it was the subject of a dissertation by Schade in 1858), who died in 1855 at the age of 38. The cause of the premature synostosis of the sagittal suture was probably some affection of the periosteum of the bones, occurring in fetal life.

Boxich (G. I.) Contributo allo studio morfologico-clinico e antropologico dei delinquenti. (A. d. Soc. Rom. di Anthropol., 1905, xi, 229-299.) This detailed monograph, of which pages 236-267 give anthropometric data in tabular form (stature, weight, head, limbs, hand, etc.) and pages 268-288 list of degenerative and other related characters, with list of frequency, is based on Dr B's personal measurements and observation of 100 male criminals from various parts of Italy (29 from Sicily). Of degenerative characters, etc., 89 are cited, occurring in all 391 times, — the most frequent are low forehead 17; "handle ears" 14; tattooing 16; severe childhood diseases 21. Two types of constitutions occur, — one with ample chest and large heart, the other with narrow chest and small heart. Of these the first corresponds to the violent class of criminals, the second to the ordinary delinquent committing petty crimes, theft, etc. Deficiency in proportion of fingers and certain other somatic peculiarities also characterize the first type. Interference with the typical evolution of the organism, disturbance of its normal equilibrium, modifications of the sense of self, these morbose phenomena, lowering the physiological and mental functioning of the human being, are the matrices of crime.

Bünker (J. R.) Windische Fluren und Bauernhäuser aus dem Gailtale in Kärnten. (Mitt. d. Anthr. Ges. in Wien, 1905, xxxv, 1-37, 39 figs.) Describes the five "fields" belonging to Riegersdorf, east of Arnoldstein, as typically Wendish (Krainberg in particular). These villages seem to have had different origins. Also the characteristic Wendish house of the Gail valley (in Pökau, Feistritz, Arnoldstein, Nösch, Agoritschach). The Wendish house was originally a wooden house. Externally it resembles very much the German house, but the internal arrangement

is quite different. The primitive type consisted of "stable" and vestibule.

Burne (Charlotte S.) Northumbrian social customs. (Folk-Lore, Lond., 1904, xv, 341-343.) Notes from parish of Ilderton connected with the Roddam family, — agricultural laborers, wedding-custom, rhymed charter of Athelstan.

Buschan (G.) Bornholm. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, xxxv, 149-152.) Discusses name ("island fortification"), archeological history (settled from the peninsula of Schonen in the later stone age) through stone, bronze, iron ages and early Christian period (of 37 rune-stones discovered some 5 or 6 belong to heathen times), present population, physical characters, language ("low Danish" mixed with "Swedish"), religion, geology, etc. Up to 1886, Vedel, whose *Bornholm's Old-tidminder* (Kopenhagen, 1886), with a supplement (1897) tells the story of the island 400 B.C.-1050 A.D., recorded 36,000 graves of the prehistoric period.

Capelli (L. M.) Per la distribuzione regionale della genialità in Italia. (A. di psich., Torino, 1904, xxv, 252-268.) Treats of the local distribution of men of genius (enumerated from De Gubernatis' biographical dictionary in the various Italian provinces. C. finds that they bear a certain relation (Lombrosian) to the figures for the prevalence of high stature, large skull capacity, mental diseases, epilepsy, alcoholism, suicide, illegitimate birth, idiocy, density of population, illiteracy, wealth, etc.

Cook (A. B.) The European sky-god. (Folk-Lore, Lond., 1904, xv, 264-315, 370-426.) First two sections of a monograph discussing the nature of the sky-god among the ancient Greeks, Italians, Celts, Germans, Slavs, etc., — deals with the nature, functions, folk-conception, name, affinities, etc., of Zeus (the brilliant; also the thunderer, rain-bringer, etc.), sky-god, sun-god, rain-god, water-god, earth-god, — Zeus had his sacred tree, the king was a human Zeus, named after him, acting as his vice-regent, etc. The divine king was doomed to die as his physical strength waned. A stronger man succeeded, or he abdicated after a fixed term. The victors at great festivals and games posed as Zeus. Apollo was a mere solar aspect of Zeus and more anciently connected with the oak, not

the laurel,—there were other surrogates besides the latter. C's general view is that his conclusion in regard to Zeus and Jupiter hold good perhaps for the whole Indo-European stock. Some of his analogies and etymologies are quite venturesome.

D'Aeth (F. G.) Saint James's day and grottoes. (*Ibid.*, 1905, xvi, 180-182.) Brief account of children's festival at Leytonstone, Essex, on St James's day, when "grottoes" are constructed of clinkers and rubbish on the edge of the pavement,—oyster-shells are used, if possible. A lighted candle is put in the grotto (purchased with the first halfpenny given by passers-by). This custom is "fairly general in the London district." The grottoes are probably imitations of shrines of St James of Compostella, so the custom is ca. 500 years old.

Deecke (W.) Farbendifferenzen prähistorischen Steinwerkzeuge. (*Corr.-Bl. d. Deutschen Ges. f. Anthrop.*, München, 1904, xxxv, 86-87.) Discusses briefly the color of flint tools. Those of Rügen are black, a color rare at Stralsund. (Experiment shows that fire has no rôle in making or in coloring flints.) The patina may be a test of "eoliths." The spurious flint can also be detected.

Deniker (J.) Les six races composant la population actuelle de l'Europe. (*J. Anthr. Inst.*, Lond., 1904, xxxiv, 181-206, 6 pl.) Dr D. argues for the existence in modern Europe of six races: 1. Nordic, tall dolichocephalic, blond. 2. Eastern, sub-brachycephalic, small-statured, blond. 3. Ibero-Insular, dolichocephalic, small-statured, brunet. 4. Western, brachycephalic, small-statured, brunet. 5. Atlanto-Mediterranean sub-dolichocephalic, tall, brunet. 6. Adriatic, brachycephalic, tall, brunet. To these are added, as secondary races, for No. 1 a sub-Nordic, for No. 2 a Vistulian, for No. 5 a Northwest, and for No. 6 a sub-Adriatic. The localization of these races is indicated. D. considers that his scheme and Ripley's do not differ so much as might be supposed.

Dennis (L. J.) Fin Mac Coul's pebble. (*Folk-Lore*, Lond., 1905, xvi, 186, 1 pl.) Note on a "pebble," which this famous giant once threw at his wife. Fin is now Carlingford mountain, County Down.

Dittmeyer (—) Bericht über aufgefundenen Trichtergruben. (*Corr.-Bl. d. Deutschen Ges. f. Anthrop.*, 1904, xxxv, 42.) Brief account of the examination in September, 1903, of the funnel-pits near Oberwaldbehrungen, said to be the sites of dwellings, a view confirmed by the discovery of bones, ashes, clay, sooty stones, etc.

Elbert (J.) Ueber die Altersbestimmung menschlicher Reste aus der Ebene des westfälischen Beckens. (*Ibid.*, 106-114.) Discusses the age of finds of human remains, etc., in the plain of the Westphalian basin (Lippe, Ems and tributaries),—geological and archeological evidences are considered (the measurements of a dolichocephalic skull are given on p. 113). The skeletons are of neolithic type, but they have been to ascribed the old diluvial stratum. The evidence is not sufficient to settle the question of geological age.

Eyre (Margaret) Folk-lore of the Wye valley. (*Folk-Lore*, Lond., 1905, xvi, 162-179, 1 pl.) Treats of the stones of Trelleck ("Harold's stones"), the "virtuous wells," charms and folk-medicine, witches and their ways, white magic, witchwives, fairies, etc. Offa's dyke still divides England from Wales. In this region are the Forest of Dean people, the Welsh, and on the hill-tops "the ancient Silurians [?]."

da Costa Ferreira (A.) La capacité du crâne et la composition ethnique probable du peuple portugais. (*Bull. Soc. d'Anthr. de Paris*, 1904, v^e s., v, 473-491.) Résumés investigations of Ferraz de Macedo, Fonseca Cardoso, Severino Marques, etc. According to the author there exist in Portugal two dolichocephalic (small stature, small head; tall, large head) and three mesocephalic (small, large head; taller, small head; taller than first, shorter than second, small head) types of man. The short, small-headed dolichocephal of Traz-os-Montes is related to the race of Cro-Magnon; the mesocephaly of Minho is due to the Celts; in Alentejo a Semitic (?) and in Algarve a Berber-Moor element has persisted. Da C. F. looks on skull capacity as a good ethnic criterion.

Fuchs (K.) Ueber ein prähistorisches Almenhaus. (*Globus*, Brnschw., 1905, lxxxvii, 85-90, 151-156, 8 figs.) Prof. F. argues that "the wooden prototype

of the Greek temple was an *Almenhaus*, the house of a rich cattle-breeder of the middle European plateau, whom a long winter compelled to lay by great stores of hay, and so erected over the stable a large hay-loft which kept it warm." He describes in detail a house, at the same time the primitive form of the modern Czik wood-houses, the ancient Greek temple and several modern Alpine types of dwellings.

Fuhse (F.) Hügelgräber in der Nähe von Gandersheim, Braunschweig. (Ibid., 125-128, 6 figs.) Brief account of a group of mound-graves (first investigated by Thiele in 1865-1874, then by Dr F. in 1904) and contents. New for this region are the packing of incinerated bones and votive gifts in a covering of wood; also the presence as grave-gifts of wheel-needles (4-eyed Middle German type).

Griffiths (G. B.) Measurements of 130 criminals. (Biometrika, Camb., 1904, III, 60-62.) Give tables of details of cranial and head measurements of 100 "ordinary" and 30 lunatic criminals, made at Parkhurst Prison. The cephalic index of the former ranges from 71.2 to 90.2; of the latter from 73.1 to 87.1.

Guldberg (G. A.) Ueber die Krümmung des Oberschenkels. (Int. Mittsch. f. Anat. u. Phys., Berlin, 1904, XXI, 292-298.) Gives results of examination of 90 femora (right and left) from old Norwegian graves. The infantile and fetal type is rectilinear. The physiological curvature develops when the child begins to walk and is well-marked in the second and third year; and in the period from 8-12 years the curve reaches practically the adult state.

Gunther (R. T.) The cimarruta, its structure and development. (Folk-Lore, Lond., 1905, XVI, 132-161, 8 pls., 1 fig.) Treats in detail of the *cimarruta*, or sprig of rue, "a compound charm of some complexity," dedicated to the service of infants. In a good *cimarruta* are these emblems: Rue, hand, moon, key, flower, horn (or fish), cock (or eagle) and, sometimes, in later and more elaborate specimens also serpent, cornucopia, cherub. The modern *cimarruta* is of silver. G. thinks that the *cimarruta* is not a descendant of any of the Roman phallic amulets, but had an essentially separate origin (materially in a real sprig of

rue). The change from an actual *materia medica* to a symbolic representation of it is easy enough. Association with trees accounts for some of the added elements. From an earlier broader significance it shrank to be the special protection of women in childbirth. Although not mentioned by writers before 1888 the *cimarruta* is not a mere spurious *roba Americana*, but an ancient amulet, closely resembling old Etruscan and Assyrian objects of similar nature.

Hedinger (Dr) Die Ligurer. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 53-54.) Author argues that the primitive Ligurians were a dolichocephalic people closely resembling the Cro-Magnon race and related to the Berbers, Kabyles, and Guanches. They were pushed southward and westward by the descent of the Aryans from the north.

— Aegäische Cultur. (Ibid., 57-59.) Résumés briefly recent discoveries. The Kamaras culture is to be ascribed to the Carians (neither Aryan nor Semitic), whose civilization produced in Crete was taken over by the Greeks.

Hodgson (M. L.) Some notes on the Huculs. (Folk-Lore, Lond., 1905, XVI, 48-55, 6 pls.) Notes on habitat, religion, marriage-customs, easter-eggs, ornaments, implements, etc., of the Hutzuls of Galicia, compiled from the data in Prof. Szuchiewicz's *Huculicyzna*. The Hutzuls have preserved their ancient customs, original dress, etc., to a large extent. Their religion has many elements of paganism.

von Jaden (H.) Ueber den isländischen Bauernhof. (Stzgb. d. Anthr. Ges. in Wien, 1904, 102-103, 4 figs.) Brief account of the typical farm buildings of the Iceland peasants, who are more cattle-keepers (rather shepherds) than farmers, as they cannot cultivate grain.

Jaeger (J.) Die Chiemseelandschaft. (Globus, Brnschw., 1905, LXXXVII, 181-186.) Geological and archeological-historical account of the region about Chiem, the largest of the lakes of the Bavarian Alps. Evidence of man's presence here in the oldest stone period is not yet forthcoming, nor does clear proof of lake-dwellings exist. The later stone age is sparsely represented. Stations of the bronze and Hallstatt period, —

the iron-using people were perhaps Germanic, — occur, remains of the Roman domination, etc.

Jennings (Hermione L. F.) A Cambridgeshire witch. (Folk-Lore, Lond., 1905, xvi, 187-190.) Describes Mrs S. (1810-1880) and relates stories concerning her.

Jones (B. J.) Stories from Leitrim and Cavan. (Ibid., 1904, xv, 336-341.) English texts of 6 brief stories (dead letter, dog spirit, dead priest, man who sold his daughter to the devil, fairy's question, crock of gold) told in 1894 by a domestic servant.

Karo (G.) Neue Funde von Knossos. (A. f. Religsw., Lpzg., 1904, viii, 144-148.) Résumés the discoveries of religious importance in the recent expeditions of Evans 1902-03.

— Ausgrabungen im östlichen Kreta. (Ibid., 148-149.) Treats briefly of the terra cotta statuettes and animal figures found at Palaikastro.

Kauffmann (Fr.) Altgermanische Religion. (A. f. Religsw., Lpzg., 1904, viii, 114-128.) Critical résumés of recent literature on ancient Teutonic religion, — works of Meyer, Frommhold, Goldmann, Müller, Schöning, Staerk, Hensler, Ebermann, etc.

Kemke (H.) Die Bedeutung der Ostsee für die Vorgeschichte unserer Provinz. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, xxxv, 44-46.) Points out the significance of the Baltic for the prehistory of the province of East Prussia. Commerce with the north and west was considerable in pre-Roman times, and before the Christian era relations with the west had been established.

Kretische Forschungen. (Globus, Brnschw., 1905, lxxxvii, 190.) Résumés articles of Harriet A. Boyd in *Transactions* of the Department of Archeology, University of Pennsylvania, and A. J. Evans in *Nature* for January 26, 1905.

Leroy (R.) Deux cas de thorax en entonnoir dans la même famille. — Autopsie. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 571-578.) Describes two cases (father and son) of the pathological (rare) malformation known as funnel chest, *Trichterbrust*, with references to the literature of the subject. The autopsy

of the son is given. The cause of this anomaly is still in dispute.

Lett (H. W.) Winning the churn, Ulster. (Folk-Lore, Lond., 1905, xvi, 185-186.) Brief account of a custom, "prevalent all through the counties of Down and Antrim 50 years ago." The churn is a sort of lost sheaf or corn-maiden.

Lindner (A.) Die Hügelgräber im Kotlover Walde bei Lippen, Bezirk Budweis. (Mitt. d. Anthr. Ges. in Wien, 1905, xxxv, 38-44, 2 pl., 4 figs.) Enumerates and describes contents (clay urns and other pottery, etc.) of 5 hill-graves, of which the first four belong to the close of the Hallstatt period. The excavation took place 1902-1904.

MacLagan (R. C.) Additions to "The Games of Argyleshire." (Folk-Lore, Lond., 1905, xvi, 77-97, 192-221.) First two sections of data supplementary to author's *The Games of Argyleshire* (London, 1900), — rubrics: general activity, articulation, auguries, ball games, balancing, bat games, blind-fold games, archery, choosing partners, chucks, circling, cock-fighting, concealed object recovering, counting out rhyme, dancing, finger-names, funeral games, gambling, nine-holes, hand-clapping, hen and chickens.

Macquart (É.) Les mouvements de la population et de la richesse privée de France au cours du dernier quart de siècle. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 587-588.) M. concludes that, "in spite of the most ingenious and seductive theories, there really exists no relation between the demography of a nation and the economic condition of its inhabitants."

Mehlis (C.) Eine neue neolithische Station in der Vorderpfalz. (Globus, Brnschw., 1905, lxxxvii, 337-338, 4 figs.) Describes the excavation of a house-pit at Venningen in February, 1905. The upper layer yielded pottery fragments of the Roman period, the lower a pottery fragment of the neolithic age, a piece of elk-horn, etc. The neolithic pottery fragment has three finger-nail impressions, which Köhl considers a mark of the lake-dwelling type.

— Wilser's "Germanen." (Ibid., 254-255.) Résumés Dr Ludwig Wilser's *Die Germanen* (Leipzig, 1904). Wilser finds the home of Homo Primi-

genius in Central Europe,—the North European race gave birth to the Aryan tribes.

Montelius (O.) Die frühesten Zeiten Roms. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 122.) Brief account of the oldest archeological remains found on the site of Rome. The graves discovered in the Forum last year must all be older than 750 B. C. The earlier iron age (the last centuries of the second and the first centuries of the first millennium B. C.) are numerously represented,—here belong some Esquiline and Forum remains of the close of the bronze age abound. Some objects from the copper age, more than 2000 B. C., also occur. The site of the city must have been inhabited at a very early period.

Much (R.) Das Zeitverhältniss sprachgeschichtlicher und urgeschichtlicher Erscheinungen. (Ibid., 135-138.) Discusses consonantal sound-shifting (known to primitive Teutonic) and the regression of the accent, a somewhat later phenomenon, which probably was known in the iron age (La Tène period). Examples and illustrative words are given. The nature of the accent and the presence of sound-shifting enable us to determine the age of certain words, and consequently, the antiquity of the use of iron, etc.

Myres (J. L.) The evil eye and the camera. (Man, Lond., 1905, 12, 1 fig.) Reproduces, with comments, photograph of group of Italian boys at Segri, one of whom makes the two-finger charm against the "evil eye" of the camera.

Niceforo (A.) Contribution à l'étude de l'indice céphalique en Suisse. (Bull. Soc. d'Anth. de Paris, 1904, v. s., v, 493-495.) Gives results of measurements of 587 school-children (aged 10-14 years) of Lausanne, Switzerland, all born in Vaud and nearly all of Vaudois parents. The cephalic index ranges 74 to 93,—the most frequent 12.94 percent is 80, followed closely by 82. In Vaud the population is predominantly sub-brachycephalic.

Nordische Namensaitten zur Zeit der Völkerwanderung. (Globus, Brnschw., 1905, LXXXVII, 96-97.) Notes that Axel Olrik, in his *Danmarks Heltedigtning* (1903), has shown that ca. 500 A. D., the rule was for the name of the son to

alliterate with that of the father, a good test of the age of sagas.

Osthoff (H.) Etymologische Beiträge zur Mythologie und Religionsgeschichte. II (A. f. Religsw., Lpzg., 1904, VIII, 51-68.) Discusses etymologies of Greek *πῆλῆρ*, "monster," and *τέρας*, "strange, ominous phenomenon." O. considers that the words are, with Indo-German sound-changes, the same. Cognates are found in O. N. *skars*, "monster, witch, etc.," Lith. *keras*, "magic," etc. All from the root *k-r*, "make, do."

Padstow (The) bobby horse, etc. (Folk-Lore, Lond., 1905, XVI, 56-60, 2 pl.) Brief account of the "hobby horse," a May-day custom of great antiquity in Cornwall, with texts of Padstow May songs.

Papillault (G.) Contribution à l'étude des "crânes négroïdes." (Bull. Soc. d'Anth. de Paris, 1904, v^e s., v, 554-558, 1 fig.) Discusses, after Sergi's observations and measurements, the "negroid" skull from the old graves of Novilara, near Pesaro in the Picenian country. Dr P. considers that studies of cranial morphogeny are yet very hypothetical and should be carefully separated from ethnological classifications. Ethnic must be distinguished from serial characters.

Piroutet (M.) Nouvelles fouilles de tumulus aux environs de Salins, Jura. (L'Anthropologie, Paris, 1904, xv, 297-312, 16 figs.) Describes a number of tumuli and contents (skeletons, fibulae, bracelets, rings, fragments of pottery, etc., terra cotta objects, ear-rings, belt-plate of stamped bronze, etc.). The first tumulus contained some 13 skeletons in whole or in part.

Pittard (E.) L'indice céphalique chez 837 Tsiganes (hommes) de la péninsule des Balkans. Influence de la taille sur l'indice céphalique. (Ibid., 333-349.) Discusses, with résumés of measurements and curve, the cephalic index of 837 male gypsies of the Dobrudja. Comparisons are made of so-called Roumanian, Turkish, Tartar, Servian, Hungarian gypsies. The average index is 78.25. The Bulgarian gypsies have a larger proportion of dolicephals than Turkish or Roumanian—with the last the proportion of brachycephals is highest (15 percent), due to Roumanian inter

mixture. Dolichocephaly increases with increase of stature.

Prähistorische Ausstellung des Württembergischen anthropologischen Vereines in Stuttgart. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1905, XXXVI, 21-22.) Brief account of the exhibition of prehistoric objects, etc., held January 12-30, 1905. The periods represented were: The older stone age, later stone age, pre-Roman metal period, Roman period, Frank-Alemanian period.

Pratt (W. A.) Recent archeological studies in Rome. (Iowa J. Hist. & Pol., Iowa City, 1905, III, 455-457.) Now the spirit of archeology rules in investigations, not that of commercialism. The oldest Rome lies under a mass of debris 30 to 50 feet deep. Parts of the Forum were covered 40 feet. The earlier graves (ninth century B. C.) show Etruscan, but not Greek influence.

R. Die Wormser Steinzeitfunde. (Globus, Brnschw., 1905, LXXXVII, 283-285, 10 figs.) Discusses the recent finds in graves and "stations" of the stone age about Worms, now in the Paulus museum. Three types of pottery occur in places with corresponding difference in the position of the skeleton, the votive gifts, etc. The skulls found are rather highly developed, the teeth excellent. The dwellings seem to have been pits over which a light hut was erected.

Rademacher (—) Die prähistorischen Begräbnisstätten am Niederrhein. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 50-51.) Brief account of investigations and remains found, — some 20 burial-sites are now known. The contents indicate that they were in use from the Hallstatt period down to the era of Roman domination.

Randolph (C. B.) The mandragora of the ancients in folk-lore and medicine. (Proc. Amer. Acad. Arts and Sci., Boston, 1905, XL, 487-537.) A well-documented résumé of data concerning mandragora in the Greek and Latin authors and their commentators, an account of mandragora as known to the ancients, particularly its uses in medicine, for to the Greeks and Romans its rôle in folk-lore was a subordinate one. Among the topics considered are: The digging ceremony, the "human form" of the mandragora, the "hanged thief," etc.; the

beliefs that the plant induced madne and influenced sexual relations; uses of mandragora in ancient medicine (plasters and poultices, wine-drug, soporific, anesthetic, "there never had been a time since the first century of the Christian era when the use of mandragora was wholly unknown to writers," few passages, however, prove its actual employment), — while mandragora was the principal and almost the only anesthetic of antiquity, its use never became very general either in ancient or medieval times, on account of the danger attached thereto. A good paper.

Rasari (E.) La popolazione israelitica in Italia. (A. d. Soc. Rom. di Antrop., 1904, X, 82-93.) Treats of the number, condition, occupations, etc., of the Italian Jews. The Jews seek large centers of population and are most numerous in the western and central parts of the country. There are in Italy ca. 36,000 Jews, about the same as 40 years ago. Females exceed males and the number of the old is proportionately large. Analphabetics are few. Trades and industries lead in occupations. The number of children is less than might be expected.

Rhamm (K.) Die Ethnographie im Dienste der germanischen Altertumskunde. (Globus, Brnschw., 1905, LXXXVII, 131-136.) Points out the importance of ethnography for Teutonic archeology and early history. Forms of buildings and the terms used to name them and their parts, the dialect names of instruments, implements, etc., are valuable for former tribal distinctions. R. enumerates among the chief things to be studied in this respect: The body, clothing, peasant farm economy (particularly buildings, their parts, construction, etc.), agriculture (tools, methods of planting, caring for, reaping, etc.), mythological figures. The wooden shoe is discussed with some detail and R. concludes that among the primitive Teutons and Gauls, as also among the ancient Slavs and Lithuanians, the folk-shoe was the bast-shoe.

— Ehe und Schwiegerschaft bei den Indogermanen. (Ibid., 285-289.) Discusses Indo-German family relationship (with special reference to Magyar terms also) and gives a critique of Schrader's *Die Schwiegermutter und der Hagastols* (Brnschw., 1904). Interesting is the

accommodation of earlier terms (such as Gothic *atta*, "father," Albanian *ame*, "mother," etc.), first used respectfully of the older members of a group or horde, to the members of the family proper when it arose. The mother-in-law of ancient times was the mother of the man, the real "housewife," the *bête noire* of modern days is the mother of the wife (Schrader sketches her history as well as that of the other). In primitive Indo-German times, for religious as well as secular reasons, there were no bachelors. Schrader's general contention that the bachelor was the product of the town and town life, does not, according to R., hold for the Teutonic *hagstolz*.

Röse (C.) Beruf und Militärfähigkeit. (Polit.-anthrop. R., Berlin, 1905, IV, 124-150.) In this article with numerous tables the author gives results of his extensive investigations in Saxony and Thuringia and makes suggestions for increasing the physical well-being of the people. Open-air employment yield the most qualified for military service; cities and towns (*i. e.*, places over 6,000 pop.) much fewer than the country. The physical degeneration of the urban population begins early. The order of military efficiency is country, half-urban, urban. Degeneracy is most marked in room-workers.

Rosen (F.) Ueber Kindersparbüchsen in Deutschland und Italien. (Globus, Brunschwg., 1905, LXXXVII, 277-281, 1 fig.) Describes German and Italian children's clay-banks in the shape of *mamma*, sometimes presented to women after child-birth to put gifts and savings in for the child. They are broken when the child is a year old or when it is weaned. Similar banks, from Pompeii, etc., are 2,000 years old. Connected with these things are the cults of Bona Dea, the Roman Rumilia, the Egyptian Isis, etc.,—the *mamma* was a symbol of luck with the deities of fortune.

Rouse (W. H. D.) Presidential address. (Folk-Lore, Lond., 1905, XVI, 14-26.) Discusses chiefly folk-tales of modern Greece, in order to study which one must "avoid all newspaper and all self-conscious literary works, which are written in the most astonishing jargon that was ever heard of." But real modern Greek has a wealth of resource. Folk-tales contain many echoes of mythology.

Sartori (P.) Votive und Weihgaben des katholischen Volkes in Süddeutschland. (Globus, Brunschwg., 1905, LXXXVII, 91-96, 10 figs.) Résumés the recent work (Brunschwg., 1904, 191 pp.) with the same title by Richard Andree, a valuable contribution to the study of sacrificial and votive gifts and to the literature of heathen survivals in Christendom.

Schmidt (E.) Prähistorische Pygmäen. (Ibid., 309-312, 325-329.) Discusses details of measurements, the pygmy skeletons hitherto reported from prehistoric graves and "stations" in various portions of Europe.—Schweizersbild, Grotteux, Fées, Châlons, Mentone, Chamblandes, Mureaux, Worms, Silesia, etc. Prof. S. points out that, since they occur in a region where cretinism is endemic, the ossification of the sutures in alleged pygmy skulls may be of pathological import and not an indication merely of age. Too little attention also has been paid to individual and racial variations in stature (*e. g.*, the proportion of small-statured among the Baden recruits). A more serious objection against the Kollmann pygmy theory, viz., the fact that the women of any race are smaller statured than the men. Thus, the so-called "pygmies" may be only small (mostly female) individuals belonging to a race of average size.

Schmidt (H.) Die Keramik der makedonischen Tumuli. (Z. f. Ethn., Berlin, 1905, XXXVII, 91-113, 90 figs.) Discusses the pottery remains found by Traeger in 1900-1901 in the conic and flat tumuli of the great plain of Saloniki, —very few in the former, abundant in the latter: The indigenous monochrome pottery and its ornamentation (rectilinear, spiral, ribbon-spiral), imported painted pottery (Mycenian, Hellenic, etc.), ethnologic data. An indigenous development through three stages is noted, and S. ascribes the three older groups of Macedonian pottery to peoples of Thracian stock,—they are a local variety differing considerably from the Trojan forms, yet indicate the place of origin of the latter in Europe. The Trojans may have emigrated to Asia Minor before in their original home the development of the pointed and scratched spirals assumed the proportions of a full decorative system.

Schroeder (O.) Hyperboreer. (A. f. Relig., Lpzg., 1904, VIII, 69-84.)

Treats of the "Hyperboreans," — foreign to the oldest Epos, and first appearing in the Epigones and Hesiod. The hyperboreans' country was "heaven," and the celestial folk were by and by degraded into an ethnographic wonder. The myth grew up in a land and at a time when "mountain" was called *βόρεα*, — i. e. in pre-Hellenic northern Greece. It took its finer form in Boeotia, and thence fertilized the hero-tale and the literature, and inspired the cults of Delos and Delphi.

Schröder (Prof.) Ortsnamen und Siedlungsgeschichte mit Berücksichtigung von Südhannover und Hessen. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 47-48.) The greater part of South Hanoverian and Hessian place-names belong to the period 400 B. C. to 1200 A. D. The *-hagen* names mark the 11th and 12th centuries; those in *-rode* mostly Carolingian; most of those in *-feld*, *-bach*, *-hausen*, *-darf*, *-heim*, etc. Older names are those in *-ingen* (e. g. Göttingen), *-lthi*, *-lari*, *-mar*, etc. Göttingen is more than a thousand years old.

Schultze (Dr.) Demonstration des Croy-Teppichs. (Ibid., 81.) Brief description of a remarkable piece of tapestry, with figures of historical characters of the period, made in 1554, and once on the walls of the ducal castle in Wolgast.

Schwalbe (G.) Bericht über die Thätigkeit der Commission für eine physisch-anthropologische Untersuchung des Deutschen Reiches. (Ibid., 75-79.) Outlines program and method of proposed anthropological investigation of the population of the German Empire, by a committee of the Society at a cost of some 360,000 M., spread over a period of perhaps ten years. The schedule to be employed is appended.

— Ueber das individuelle Alter des Neanderthalmenschen. (Ibid., 92-94.) Criticizes Walkhoff's contention that the bones of the Neanderthal man belonged to an individual *ca.* 30 years of age. Dr S. believes him to have been between 40 and 65, — the evidence considered is the condition of the femur and the skull.

Seeger (—) Berichte über die Thätigkeit der Commission für den Schutz der vorgeschichtlichen Denkmäler. (Ibid., 79.)

Gives recommendations of committee on preservation of prehistoric monuments: Passage of special laws, institution of care-takers for prehistoric antiquities, strengthening and better endowment of museums with funds for investigations, etc.

Singleton (A. H.) Dairy folk-lore and other notes from Meath and Tipperary. (Folk-Lore, Lond., 1904, XV, 457-462.) Treats of May-day customs, "overlooking" cattle, "wise woman (*piishogur*)," folk-medicine, marriage charms, superstitions.

Sökeland (—) Ueber das Berliner Trachtmuseum. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 148-149.) Notes that the "Custom Museum," founded by Virchow, has been taken over by the Prussian government as a part of the Ethnological Museum at Berlin. A questionnaire has also been prepared.

von Stenin (P.) Dr A. A. Iwanowsky's Anthropologie Russlands. (Globus, Brunschwig., 1905, LXXXVII, 198-200.) Resumes chief facts of Iwanowski's monograph on the anthropology of Russia published in the Proceedings of the Imperial Society of Devotees of the Natural Sciences, Anthropology and Ethnography (University of Moscow) for 1904, with a bibliography of 38 pages. The Slavs are anthropometrically a very mixed group, and the Great Russians vary much in physical type from place to place, — the Little Russians also. The Poles are nearest the Great Russians, and of the non-Slavs the nearest to the latter are the Syrianians. The Lapps, Letts, Mordwins, the Little Russians of Kiev, the Armenians, Ossetes, the Kumyks, the Kurds — Persians and Transcaucasian Tartars (one group), the Central Asiatics (Kirghiz, Tarantches, Afghans, Sarts, etc.) in one group, Karakirghiz and Turkmen, the Mongols, are separate anthropological groups. The Yakuts, Buriats, and Northern Tungus belong together. The Ainos and Ostiaks are two other separate groups. I.'s work is accompanied by maps of distribution of color of hair and eyes, stature, cephalic index.

Svenonius (F.) Den nya Norrbottenskartan, med särskildt afseende på ortnamns stäfnig. (Ymer, Stockholm., 1904, XXIII, 400-406.) Treats of Norse,

- Lapp, and Finn names on the new map of North Bothnia, their orthography, etc.
- Thilenius (G.)** Kröte und Gebärmutter. (Globus, Brunschwg., 1905, LXXXVI, 105-110, 3 figs.) Discusses, with references to the literature of the subject, the votive toads and frogs of wax, iron, silver, in South German folk-lore and folk-custom, the connection in folk-thought between the womb and children and the frog and toad, etc., and related phenomena in folk-medicine. The origin of these "magic" relations is in doubt, —perhaps they sprang from some resemblance between the uterus and the frog in form, combined with the idea that women sometimes gave birth to such creatures.
- Traeger (P.)** Ueber die Jürükien und Konjaren in Makedonien. (Z. f. Ethnol., Berlin, 1905, XXXVII, 198-206, 11 figs.) Describes the Yuruks of lake Langa (Industries, — "the most industrious people in Macedonia, according to Beaujour; physical characters, — Mongol element noticeable) visited by author in 1901. Also notes on the Konyars of southwestern Macedonia, also immigrants from Asia Minor. Their carpets are well-known.
- Variot (G.)** L'atrophie infantile comme facteur de l'abaissement de la taille dans les faubourgs de Paris. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., V, 633-637.) From the observation, by himself and collaborators, of more than 3,000 children (from birth and for several months) in 1892-1904 at the Belleville free dispensary, Dr V. comes to the conclusion that digestive troubles and the inanition resulting therefrom (or "prolonged infantile atrophy") are a prime factor in lowering the stature of Parisian man of the faubourgs. The child exists, or vegetates, rather than grows or increases in weight and stature. Food is very important here.
- Vauville (O.)** Fonte d'armes de l'époque du bronze à l'époque gauloise dans le département de l'Aisne. (Ibid., 492.) Notes on the fragment of a bronze sword belonging to the bronze age, but recast during the Gaulish epoch. This recasting would account for the disappearance of many bronze age weapons.
- Veblen (A. A.)** Recent archeological investigations in northern Europe. (Iowa J. Hist. & Pol., Iowa City, 1905, III, 453-455.) Notes on burial mounds, boat burial, etc. In prehistoric times the great center of human development in northern Europe was around the Baltic sea. In the iron age culture ran up the Norwegian coast. The oldest important relics are bronze (ca. 1700-500 B.C.).
- Verneau (R.)** Crâne de Baoussé-Roussé. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., V, 559-561.) Describes a plaster-cast of one of the negroid skulls from the Grotte des Enfants, presented to the Society by the Prince de Monaco.
- Verworn (—)** Ein altsächsisches Gräberfeld bei Grone in der Nähe von Göttingen. (Corr.-Bl. d. deutschen Ges. f. Anthrop., München, 1904, XXXV, 48.) Brief account of excavation of four graves and contents belonging to the seventh to ninth centuries. In one a horse and man were buried together.
- Vram (U. G.)** Osservazioni antropologiche nel Montenegro 1902. (A. d. Soc. Rom. di Antrop., 1905, XI, 183-195.) Gives details of cranial measurements, etc., of 35 individuals (8 from Dubido, 10 from the prison at Podgorizza, 6 from Nickmaras, and 9 from other places, all Albanians), — all males, except 4. The cephalic index ranges 75.1-92.1, and 24 out of 34 lie between 85 and 90 (29 brachycephalic). The sphenoid form of head is most common (19 out of 34) and the oval form of face (14 out of 29). Tattooing is rare.
- W. (R.)** Die Gewichtssysteme des XI. und XII. Jahrh. inden jetzigen Russischen Ostseeprovinzen. (Globus, Brunschwg., 1905, LXXXVII, 206.) Résumés article by Dr J. Sachssendahl in the *Sitzb. d. Gelehr. Estn. Ges.* (Dorpat) for 1904 on the weights of the Baltic provinces in the twelfth and thirteenth centuries. The weight-sets (3 to 10) are of two types, one duodecimal in distinction, the other with no marked divisions.
- Weber (F.)** Spuren des Menschen der Bronzezeit in den Hochalpen des deutschen Sprachgebiets. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1905, XXXVI, 2-7.) Discusses the traces of man of the bronze age. Neolithic man did not climb the mountain-heights; in the German high Alps prehistoric paths led over several passes. The remains discovered are of an individual character,

lost objects perhaps, indicating travel and trade of a sedentary people, lasting through the older stages of the Hallstatt period.

Weissenberg (S.) Die Fest- und Fasttage der südrussischen Juden in ethnographischer Beziehung. (Globus, Brnswgw., 1905, LXXXVII, 262-271, 9 figs.). Treats of the festivities and fasts, etc., relating to the Sabbath (physical labor avoided, but shops kept open), the month Elul, (Aug.-Sept.), New Year's festival (Rosch Haschanah, the ten penitential days, the day of atonement (Jom Nippur), the festival of arbors (Sukkoth), The Maccabean festival, the festival of lots (Purim), the Passah festival, the festival of weeks, destruction of the temple, day of the new moon.

Weston (Jennie L.) The "Scoppio del Carro" at Florence. (Folk-Lore, Lond., 1905, XVI, 182-184.) Brief account of annual ceremony as performed at Easter, 1904. The shape of the *carro* is curious and the elaborate decoration of the oxen is suggestive of a sacrificial origin.

Wherry (Beatrix A.) Miscellaneous notes from Monmouthshire. (Ibid., 63-67). Treats of fairies (child-stealers), underground music (boddler), banshee, folk-medicine, wooing and wedding customs, burial ceremonies, etc.

Wilser (L.) Die Etrusker. (Corr.-Bl. d. Deutschen Ges. f. Anthropol., München, 1904, XXXV, 52-53.) Discusses briefly Rhaetian place and river names, physical characters, language, etc. W. holds that both the Rhaetians and Etruscans were Aryans, belonging to the long-headed blond North European race. Clothing, weapons, writing, art, religion ally them with the Aryan stock (particularly the Hellenic branch). The text of the Agram mummy-cloths (1,200 words legible), according to W., proves the Aryanism of the Etruscans in speech and the affinities of their tongue with ancient Greek.

— Ueber Pytheas und sein Nordlandfahrt. (Ibid., 60.) Pytheas in his famous northern voyage did not reach the Baltic proper. He was the first to record in writing the names Cimbri, Teutons, Goths. Others hold that Pytheas came into the Baltic and that the Tanais was one of the great rivers of Germany emptying into that sea.

Zaborowski (S.) L'âge des sépultures de Chamblandes en caisses de pierre à squelettes repliés. (Bull. Soc. d'Anthrop. de Paris, 1904, N. S., V, 610-615.) Discusses recent publications of Schenk, who holds that the men of Chamblandes entered Switzerland from the south before the arrival of the brachycephalic builders of lake dwellings. Z. holds that there exists a certain synchronism between the graves of Chamblandes and the lake-dwellings belonging to the last phase of the neolithic age. The Worms necropolis of Dr Koehl are also contemporaneous.

— Origine des Slaves. (Ibid., 671-720.) In this detailed monograph, in which are discussed the Veneti (the oldest Slav people, — who burned their dead and propagated brachycephalism) and their physical and other characters, archeological remains, graves and customs connected therewith, mingling with other people of central and western Europe, etc., ethnographic resemblances between the Bretons and Carpathian peoples (due to Hallstatt-Gallic survivals), — in fact all aspects of the question of Slavic origins, — Z. concludes that the Slaves *in situ* are the descendants and representatives of the brachycephalic race who practised incineration, — the incinerating peoples of Illyria, Pannonia, Bohemia, etc., were Slavs, or their ancestors. The head-dresses of the Hallstatt epoch, *e.g.*, are represented by the covers of cinerary urns still in use on the upper Vistula, in Moravia, and in the Carpathians. The Slav type arose in the Danubian region by modification of the Protarian and Thracian stock. The remains at Glase-nac (1100 B.C.) indicate the appearance of a new people, whose progress is marked by incineration of the dead and the expansion of "Hallstatt industry."

Zechlin (K.) Ueber Silexmanufakte in der Altmark. (Z. f. Ethnol., Berlin, 1905, XXXVII, 209.) Notes on flint-arrowheads and other implements, large and small, found in gravel-pits in various parts of Altmark, particularly near Salzwedel.

Zirngast (Dr) Ueber das Wachstum der Schüler. (Z. f. Schulgesundheitspf., Berlin, 1904, 695-646.) Discusses the stature-growth of 278 students of the Emperor Francis Joseph Gymnasium, Mähr.-Schönberg, measured (since 1894-5) at the beginning and end of

each semester. Those of the first three classes grew more in the first semester; those of the fourth class showed no distinction; those of the higher classes grew more in the first semester. The students of all classes grew faster in vacation than in school time. The maximum of growth increase is reached in the third class, augmenting from the first. Then the average increase varies little, and the fifth class sees a decline.

AFRICA

- Bazley (W.)** Exploration of a Bushman's cave in Alfred county, Natal. (Man, Lond., 1905, 10-11, 3 figs.) Describes excavation of deposit (several strata) and human (three skeletons) and other remains discovered. At a depth of 16 feet below the floor "thousands of scrapers of all sizes, some not larger than a finger-nail, also cores, chips and flakes, by the cart-load, with a few arrow-heads and knives, but mostly broken," were found. In the upper strata other human remains and stone implements occurred.
- Berkhan (O.)** Helwân, ein Kurort in der Wüste. (Globus, Brunschwig, 1905, LXXXVII, 117-119, 2 figs.) Brief account of Helwân, a sanitarium, in the desert south of Cairo.
- Bertholon (L.)** L'année anthropologique Nord-Africaine 1903-04. (Rev. Tunisienne, 1904, extr., pp. 16.) Résumés anthropological literature concerning northern Africa.
- Origine néolithique et mycénienne des tatouages des indigènes du Nord de l'Afrique. (A. d'Anthrop. crim., Paris, 1904, XIX, 756-786, 59 figs.) In this monograph the author compares the modern tattooing of the natives of northern Africa with the statuettes, etc., of the neolithic period of eastern Europe, and attributes to the former, with other elements in the culture of the Berbers, etc., the civilization of neolithic Europe, particularly in the Mycenaean region.
- Cartwright (Minnie)** Folk-lore of the Basuto. (Folk-Lore, Lond., 1904, XV, 244-263.) Treats of cannibalism and ghosts, charms, spirit of maternity, customs connected with birth of first child, child-birth, wooing and marriage, woman's property (hut), death and funeral practices, avoidance of name of dead (among older and less civilized), "Thokolosi" (a baboon-like evil spirit and poisoner, etc.). The English text of "The Maid and her Snake-lover" is also given.
- Deyrolle (M.)** Sanctuaires à poterie néolithiques et dolmen moderne en Tunisie. (L'Anthropologie, Paris, 1904, XV, 373-375, 1 fig.) Treats of the *khalloua* or ex-voto sanctuaries (often ancient sepulchral monuments) of northeast Tunisia. That of Ain Bathia is interesting, being really a modern dolmen erected by the Arabs. Close at hand are the remains of a Byzantine fort, and of a Roman town.
- Hutter (Hptm.)** Völkerbilder aus Kamerun. (Globus, Brunschwig, 1905, LXXXVII, 235-238, 301-304, 365-370.) Discusses linguistic relations (Hamitic tongues: Kanuri, Arabic, Fula; Logon group: Makari, Musgu, Marghi, Batta; Falli; Mbum group: Mbum, Bal, Tikar; Fan, — Bantu); Hausa; the so-called dwarf-peoples (H. thinks the pygmy riddle will be solved rather in Asia and Europe than in Africa); the Fan (noticeable political decentralization; dwellings; rudiments of phallic cult); Sudan Negroes (dwellings, clothing, religion); Arabs (Shoa, — people had to give up camel for cattle); Fula (the chivalric) and Hausa (mercantile element) of Sudan.
- Kirk (J. W. C.)** Specimens of Somali tales. (Folk-Lore, Lond., 1904, XV, 316-326.) Gives English texts of eleven brief tales (the native versions are soon to be published) from men of the Ishhak tribes from the Burao district. A note by E. S. Hartland discussed some of the incidents. H. attributes the defects of certain tales to the fact that they were not told by women, who are "notoriously the best tellers of *märchen*." Some Arab additions are indicated.
- Passarge (S.)** Die Mambukuschu. (Globus, Brunschwig, 1905, LXXXVII, 229-234, 295-301, 26 figs.) Treats of habitat, anthropological characteristics, clothing and ornament (women's dress more than men's), dwellings, implements and weapons (one type of hut-group resembles that of the Ovambo, another that of the Bechuana; conical huts, mat-huts), beds, iron-forging, bow-and-arrow (arrow held between second and third fingers of right hand), drum (reverenced as a god) called *moréta*, river and island

life of natives, agriculture and cattle-breeding (formerly much more important), hunting (spearing hippopotamus, shooting antelopes with poisoned arrows, traps for hyenas, etc., — fishing is not practised), trade and industries (commerce with Bushmen, — ostrich shells, feathers, etc.) social and political conditions (chief and council of family-heads), language (vocabulary of 150 words and a few phrases), etc. The Mambukushu belong to the Bantu stock and are closely related to the Barutse, both in speech and culture.

Read (C. H.) A necklace of glass beads from West Africa. (Man, Lond., 1905, 1-2, 1 pl.) Describes necklace from tomb of a renowned chief at Mausau on the route from Elmina to Kamasi, — the crystalline glass is "identical in appearance with those from the tombs at Camirus in Rhodes, dating from the sixth century." This first find in Africa of "glass beads of classical style" is a new datum of great importance.

Seidel (H.) Togo im Jahre 1904. (Globus, Brunschwg., 1905, LXXXVII, 238-241.) After January 1, 1906, English will no longer be taught in the mission schools of Togo.

— Erste Namengebung bei den Ewe-negern in Togo. (Ibid., 176-177.) Based on articles on Ewe names by Spiess in *Afrikanische Studien* for 1903 and 1904. At birth comes the day-name (from names of the days of the week), eight days later the child is given a second name by the father. These consist of fear-names, shame-names, names of occasion, wish-names, names from personal peculiarities, devotional names, etc. When converted to Christianity the negro keeps his day-name, e. g., *Julie Afrima*, and, it might be said, Robinson's man *Friday*.

Seiner (F.) Die Wichtigsten neuen Aufgaben in Deutsch-Südwestafrika. (Ibid., 165-168.) Author advocates strict treatment of the aborigines with fixed reserves, the giving up of them as laborers, etc.

Sewell (R. B. S.) A study of the astragalus. (J. Anat. & Phys., Lond., 1904, XXXVIII, 233-247, 4 pl.) Based on examination of more than 1000 human astragali, of which a large part were obtained from Egyptian graves (from prehistoric to Roman era). The index of

length-breadth averaged 78, ranging from 66.7 to 91.7; the greatest length averaged 50 mm., ranging from 41 to 65 mm., greatest breadth averaged 39 mm., ranging from 32 to 48 mm.

Sheppard (W. H.) Light in darkest Africa. (So. Wknn., Hampton, Va., 1905, XXXIV, 218-227, 5 figs.) Contains notes on King Lukenga, the Zappo-Zaps and their chief, Malumba N'kusa etc.

Spiess (C.) Zeitrechnung bei den Ewe in Togo. (Globus, Brunschwg., 1905, LXXXVII, 173-174.) Notes on record of time by notch-cutting, marks on door, wall, etc., placing grains of corn in vessel, bundles of grain, etc. Time of day is told by position of sun, distance by time of eating meal, etc.

Tate (H. R.) Further notes on the Kikuyu tribe of British East Africa. (J. Anthr. Inst., Lond., 1904, XXXIV, 255-265, 2 pl.) Treats of painting and tattooing of unmarried youths and maidens, habitations (unmarried sleep by themselves), swimming (side stroke only), basket-work, string, leather-work, fire (drill, fire-god with she-goat sacrifice), food, cooking, drinks, meals (day-break meal-time), religion, fetishes, obsession and possession, spiritualism, idolatry, spirits and demons, nature-spirits, polytheism (two good gods and one bad), worship, dance-festivals, ceremonies, etc., circumcision (only a custom).

Wake (C. S.) Traits of an ancient Egyptian folk-tale compared with those of aboriginal American tales. (J. Amer. Folk-Lore, Boston, 1904, XVII, 255-264.) Discusses Egyptian tale of the Two Brothers (nineteenth dynasty), whose opening episode resembles the story of Joseph and Potiphar's wife. Compares with Arapaho legends (Light-stone, the sun, sleepy young-man and the cannibals, etc.), the Celtic "Battle of the birds," the classic Eros and Psyche, etc. W. seems to explain them all as sun-myths.

Wasserbindung (Die) zwischen Niger und Tadssee. (Globus, Brunschwg., 1905, LXXXVII, 168-173, 187-190, 11 figs., map.) Describes, after his recent book *La grande route du Tchad* (Paris, 1905), Lenfant's journey from Garna on the Benue, up the Mao-Kebi, and through Lake Tuburi to Logone, the

great left tributary of the Shari. Contains notes on the palace of Gontione in Lere, the Mundang tribe (their houses, etc.), the people of Musgu, etc.

Weeks (J. H.) Notes from the Upper Congo, III. (Folk-Lore, Lond., 1904, xv, 326-331.) Gives, with some explanatory notes, the English text of two legends relating to Libanza, "the nearest equivalent we can get to God." God with these natives consists of "four persons all seeming equal, and each supreme in his own department."

Westermann (D.) Ueber die Begriffe Seele, Geist, Schicksal, bei dem Ewe- und Tschivolk. (A. f. Religsw., Lpzg., 1904, VIII, 104-113.) Treats of the etymology and meanings of the words for "soul," "spirit," "fate," etc., among the Ewe and Tshi negroes of Western Africa. The pre-existing soul and protective spirit, personal principle, etc., of man, is called in Ewe *aklamā*, Tshi *āra*. After death it is no longer "soul" but "spirit, ghost," and is then Ewe *ngli*, Tshi *āsa*, or *esamān*, and is dangerous until it receives a second incarnation,—the child repeats the ancestor. Another word for "soul" is Ewe *luto*, Tshi *zūm*, "shadow,"—these are used in the Christian literature for "soul." *Aklamā* signifies also "fate, fortune, luck."

Westermarck (E.) The magic origin of Moorish designs. (J. Anthr. Inst., Lond., 1904, XXXIV, 211-222, 1 pl., 52 figs.) Dr W. produces evidence to show that "belief in the evil eye has exercised a very extensive influence on decorative art." People endeavor to "protect their property from the envious eyes of their fellow-men," by patterns representing the human hand, the figure five (five fingers), the cross (as a five, etc.), and its derivatives, intersecting squares (as pair of eyes), combinations of hand and eye, the eye itself (colossal sometimes), triangle (for eye), conventionalized eye and eyebrow. Many of the familiar patterns on rugs, carpets, tapestry, wall-paper, trays, china, etc., have such a "magic" origin.

—Midsummer customs in Morocco. (Folk-Lore, Lond., 1905, XVI, 27-47.) Treats of fire-ceremonies for purifying men and animals, water rites (at midsummer all water is endowed with magic energy), earth throwing, evil-eye charms,

eating-ceremonies (a means of transferring blessings). Although the Moorish midsummer customs have an Arabic-Hebrew name, they may be genuine Berber rites. Purification ceremonies at midsummer occur only in Europe and northern Africa, and Dr W. thinks they may "date from a period when such ceremonies were common to the Mediterranean race." He thus favors the hypothesis of "a racial affinity between the Berbers and most European nations of the present day."

Zaborowski (S.) Races de la primitive Égypte. (Bull. Soc. d'Anthr. de Paris, 1904, V^e s., v, 600-610.) Résumés recent articles by Flinders Petrie and J. Kollmann, and Chantre's *Recherches anthropologiques en Égypte* (Paris, 1904). According to Petrie, Upper Egypt had but one prehistoric indigenous type (aquiline), long-faced brachycephalic, proto-Semitic (Zaborowski); Kollmann recognizes four. Z. does not admit the existence of real brachycephals in prehistoric Egypt, and no indigenous broad-headed race ever existed there. Chantre's data indicate a continuity of Egyptian race and culture, no entire foreign stock having ever settled in Egypt and founded a civilization by oppressing or destroying the indigenes. Although owing not a little (e. g., obsidian, copper, etc.) to Asia, the Egyptians were essentially Africans. The pottery and ivory marks of Negada may be connected with Libyan writing, the *graffiti* also.

ASIA

Adachi (B.) Häufigeres Vorkommen des Musculus sternalis bei Japanern. (Z. f. Morphol. u. Anthropol., Berlin, 1904, VII, 133-141.) The muscle in question was found in 13.2 percent of 129 corpses (European percentage is 3.2-5.3 percent) and in 15 percent of 500 living individuals.

—(B. und V.) Die Fussknochen der Japaner. (Mitt. d. med. Fak. d. k.-Jap. Univ. Tokyo, 1905, VI, 307-344, 2 pl., 7 figs.) This excellent study by Dr and Mrs Adachi of the bones of the Japanese foot is based upon a selection of the feet of 25 adult Japanese (men 15, women 10) and of 10 adult Europeans. Details of form, measurements, etc., of the separate bones are given. Also bibliography of subject. The foot-bones

of the Japanese in general are smaller and relatively thicker and shorter than those of Europeans. They have also more marked attachments for muscles, etc., and larger and more curved articular surfaces; some of these are culture-deformities. The European foot (due to the shoe, etc.) is stiffer, and the first and second toes much less mobile (every adult Japanese can use these more or less). Many minor differences exist.

Becker (C. H.) Islam. (A. f. Religsw., Lpzg., 1904, VIII, 129-143.) Brief critical reviews of numerous recent (1902-1904) books and articles relating to various aspects of Mohammedanism: General, life of Mohammed, Koran and tradition, etc., orthodoxy, law and ethics, dogma, mysticism, heterodoxy, heathen substrate.

Birkner (F.) Beiträge zur Rassenanatomie der Chinesen. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 144-148, 7 figs.) Gives results of examination of six heads of Chinese, (three with respect to facial musculature), with X-rays, plaster cast, lead wire for profile, etc. Three heads show marked variation in facial muscles as compared with the European; the Chinese face is also flat. The highest point of the cheek-bone in Chinese is farther from the ear-nose line than in Europeans, and lies also farther forward. More details are given in the author's *Habilitationschrift* on the same subject (1904).

Bracht (E.) Ueber datierbare Silixgeräte aus den Türkisminen von Maghara in der Sinaihalbinsel. (Z. f. Ethnol., Berlin, 1905, XXXVII, 173-188, 2 pl.) Gives results of the examination of 650 flints found in 1880-1881 at the turquoise mines of Maghara in the Sinai peninsula. According to B. these flints were used to mine turquoise by the Egyptians of the time of Rameses II, and the abandonment of the mines soon after (no inscription of his son and successor, Merneptah, occurs) may have been due to the exodus of the Jews. At Maghara an old stone-age industry continued into the ages of metal. Some notes by W. Flinders Petrie are appended and discussed.

Brandenburg (E.) Ueber Kysylbasch- und Jürükendörfer in der Gegend des Turkmenag. (Ibid., 188-198, 10 figs.)

Treats of habitat (Yuruks nomadic, half-nomadic, sedentary; Kizilbash mostly in villages), dwellings (often richly ornamented with wood-carvings), clothing, burials, religion, personal habits, etc., of the Kizilbash and Yuruks of the Turkmenag, visited by B. in 1901-1904. Some Kizilbash have settled in Bulgaria and Rumania, in the Maritza valley particularly.

Brown (A. J.) Yuan Shih Kai. (So. Wmn., Hampton, Va., 1905, XXXIV, 111-118.) Sketch of the viceroy of Chih-li, commander-in-chief of the Chinese army and "the most powerful present factor in the policy of the Chinese Empire," his achievements, etc.

Comer Ohlmütz (Caroline) Heathen rites and superstitions in Ceylon. (Nineteenth Cent., Lond., 1905, 133 ff.) Discusses Sinhalese belief in demons, in hours and times most favorable, when they in turn are most accessible (the so-called "yama"), and in bodily conditions propitious for obsession. Author gives dramatic account of exorcising of a demon from a young girl from near Colombo. Other methods having failed she was taken to a temple (near Candy) of the powerful evil demon Dewiyo, where the priest succeeds, aided by votive offerings and corporal punishment upon the girl.

Fischer (A.) Ueber die Kachin im äussersten Norden und Nordosten von Birma. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 123-126.) Treats of habitat, physical characters (cross with Tarang), spirit-worship, offerings to thunder-god, artistic posts of altar-place to which sacrificial cattle are tied, augury from entrails, dwellings (large and rather clean), marriage and family (polygamy and bride-stealing rare, in the latter case the bride is dragged through an improvised "jungle"), clothing and ornament (peculiar "ear-rings," and hip-rings), division of labor (husband does field work), graves and funeral ceremonies. The Kachin present possibilities of a higher culture.

François (C. H.) Notes sur les Lo-lo du Kien-Tchang. (Bull. Soc. d'Anth. de Paris, 1904, v^e s., v, 637-647, 4 figs.) Describes situation, relation to Chinese government, physical characters, clothing, personal habits (baths abhorred),

- dwelling, family (monogamy general), attitude toward foreigners (only Chinese hated), etc., of the Lo-lo, aboriginal people of the Kien-Tchang region, known to the Chinese as "Man-Tsen," a term of opprobrium. Chinese mandarin rule has not improved the Lo-lo.
- Harris (J. R.)** Notes from Armenia, in illustration of *The Golden Bough*. (Folk-Lore, Lond., 1904, xv, 427-446.) Cites items in support of Mr. Frazer's arguments, from various parts of Armenia. The topics considered are: Annual rain-charm (all over Armenia), occasional rain-charm (Turk pebble-charm, etc.), Armenian Candelmas, animal sacrifices, sin-eating, foundation sacrifice, offering of the first-fruits, holy trees, curious child-birth customs.
- Hartland (E. S.)** A votive offering from Korea. (Ibid., 447-450, 1 pl.) Brief account of cast-iron "tiger" from shrine on top of Charyong Pass, south of Gensan, with notes on Korea religious ideas.
- Hellwig (A.)** Die jüdischen Freistädte in ethnologische Beleuchtung. (Globus, Brnschw., 1905, LXXXVII, 213-216.) Discusses the counterparts of the Jewish "city of refuge" (form, content, purpose of right of refuge) in Africa (Abyssinians, Kabyles, Gold coast) and other regions of the globe. H. concludes that "there is no trait in the Jewish city of refuge idea that is not to be found somewhere else in the world." The general subject has been treated by the author in his *Das Asylrecht der Naturvölker* (Berlin, 1903).
- Karutz (R.)** Von den Bazaren Turkestans. (Ibid., 312-317, 329-333, 8 figs.) Describes bazaars in Bokhara, Tashkend, Samarkand, and Kokand, the articles sold, etc. Among liquids tea plays the largest rôle. Tea is drunk at all times and seasons from morning to night.
- Kellner (M.)** The Hammurabi code and the code of the covenant. (Rec. of Past, Wash., 1905, iv, 99-118, 5 figs.) Comparative study. Professor K. concludes that the Hebrews appropriated legal provisions as well as legends and institutions from the ancient Babylonians. Thus, "the enactments of the old Babylonian king, formulated in the twenty-third century B.C., passed more than 1,000 years later into the Book of the Covenant, and so became the heritage of the Hebrews and of the world."
- Körtel (A.)** Phrygisches. (A. f. Religsw., Lpzg., 1904, viii, 150-154.) Résumés the important data concerning ancient Phrygian religion contained in G. and A. Körte's *Gordion* (Berlin, 1904), based on excavations carried out in the summer of 1900 at Gordium.
- de La Mazelière (M.)** L'évolution de la famille japonaise. (Bull. Soc. d'Anthr. de Paris, 1904, v^e s., v, 650-671.) Sketches, after the *Kojiki* (712 A. D.) and subsequent documents, the history of the family in Japan,—the civil code is also analyzed (pp. 665-670). Of primitive Japanese society almost nothing survived, except the ancestor cult. In the VI-VIII centuries Chinese influences were felt and under Confucianism marriage-forms became fixed. Shinto-Confucianism and Buddhism also modified customs, etc. Japanese feudalism and *Bushido* had their effects in strengthening paternal authority. The era of thinkers (eighteenth century), the revolution of the nineteenth, the triumph of the Mikado, and the impetus to individual emancipation given by European and American contact, are other important facts. The author sees reflected in the terms of the Code the conflict between the communal constitution of Japanese society and the individualistic influence of European civilization. If individualism wins, the civilization of Asia will one day fuse with that of Europe; otherwise, they will simply influence each other much, but never unite.
- von Landau (—)** Ueber prähistorische Funde unweit Sidon und Gebeil, Byblos. (Z. f. Ethnol., Berlin, 1905, XXXVII, 209-211.) Describes some round amulet-stones from Saida and the Lebanon region, and a celt, in form resembling the smaller West African axes, from a grave of the classic period at Gebeil (Byblos),—buried with the dead, having been also used as an amulet.
- Laufer (B.)** Zur Geschichte der chinesischen Juden. (Globus, Brnschw., 1905, LXXXVII, 245-248.) Discusses the evidence of the inscriptions of K'ai fong fu as to the coming of Jews to China, where they were found (in Honan) by the Jesuits in the early part of the eighteenth century, having been there for centuries. Dr. B. derives the Chinese Jews from India, and thinks that "Judaism is not older, as has been pre-

viously thought, but later than Islam in China." The existence of a colony of Jews in Hong-Kong and Shanghai, who speak Arabic, shows the same condition of affairs as in the ninth century.

Libbey (W.) Jerash. (Rec. of Past, Wash., 1905, IV, 35-46, 10 figs.) Chapter from Prof. L's book *The Jordan Valley and Petra* (N. Y., 1905) treating of the stupendous ruins of Jerash (Gerasu), "second only to Palmyra in size and importance, and second only to Baalbec in beauty of architecture." A Circassian colony has settled here and built inscribed stones into their lintels and doorposts, likewise clearing spaces for farms among the ruins.

Lorenzen (A.) Die chinesische Weltkarte Ferdinand Verbiests von 1674. (Globus, Brunschwig., 1905, LXXXVII, 157-159.) Notes on the history of the cartography of China and Verbiest's map of 1674.

Marquand (A.) The facade of the temple of Apollo near Miletus. (Rec. of Past, Wash., 1905, IV, 3-15, 10 figs.) Discusses various theories (Rayet, Haussoullier, Wernicke). Prof. M. considers Haussoullier's theory the most reasonable and concludes that the entire facade, consisting of foundations, columns, and entablatures, belongs to one building period ca. 150 B. C.

P. Die Stadt Mangaseja und das Mangasejische Land. (Globus, Brunschwig., 1905, LXXXVII, 222-223.) Résumé a recent article by Anutchin in the *Zemlevidenje*, where the name *Mangaseja* is discussed in detail, — variants are Molgomzey, Molgonjei, Mangonseja, Mun-gasej, etc. The word may signify "those living at the outer edge," a term describing the Yuraks in their relation to the Samoyeds.

Prince (J. D.) and Law (R.) The Pierpont Morgan Babylonian axe-head. (J. Amer. Orient. Soc., N. Y., 1905, XXVIII, 93 ff.) Discusses Babylonian (ca. 3000-2300 B. C.) votive axe-head made of agate in layers, with dedicatory inscription on obverse side, now in the Tiffany gem collection of the American Museum, New York. It is perforated for a handle.

Rössler (E.) Bericht über archäologische Ausgrabungen in Transkaukasien. (Z. f. Ethnol., Berlin, 1905, XXXVII, 114-

151, 119 figs.) Gives results of excavations of 14 graves on the left bank of the Kotchar, north of Bajan, and a *kurgan* containing 18 on the right bank to the south (with descriptions of urns and other ceramic remains in particular) during February and April, 1901. The graves belong to the bronze-iron period and are chiefly chest-graves. Among the objects found are: Arrow and spear points, needles, beads, rings, bracelets, knives, daggers, shells, ornaments and other objects of *ferblanc*. The *kurgan* seems to have been a family burial place. Marking-stones of a phallic sort might indicate the graves of males. Altogether these graves suggest comparison with those of Helenendorf, though the mode of construction is different, and are probably contemporaneous with the chief group of the latter, and belong to the end of the later Caucasian bronze period, ca. 600 B. C. The graves belong to an Aryan people, perhaps, as the form of skull, head-dress, etc., suggest the ancestors of the present Haik population of Bajan.

Schmidt (H.) Troja-Mykene-Ungarn. (Ibid., 1904, XXXVI, 890-891.) Additional notes and corrections to article reviewed in *American Anthropologist*.

Schwally (F.) Zur Heiligenverehrung im modernen Islam Syriens und Nordafrikas. (A. f. Religsw., Lpzg., 1904, VIII, 85-96.) Treats of saint-worship and sanctuaries in Syria and northern Africa. In the former female saints are few; in the latter very numerous, a fact connected with the position of woman as prophet and magician from time immemorial among the Berbers. The number of sanctuaries is enormous, and survivals from older heathendom are seen in the sacred trees, springs, and other natural objects. In Syria both Christians and Mohammedans visit the shrines, and some Christian characters, like Simon Stylites, Sergius and Thekla, are included among the saints of Islam. Jewish and Christian renegades sometimes turn *marabouts*. These saints serve some useful purposes as peace-makers, and they afford refuge to fugitives and help the robbed and the injured, sick, etc. The folk-belief in them is great and abiding.

Shearme (D.) The shwe-hmu, or Burmese taxgather. (Folk-Lore, Lond.,

1904, xv, 334-335.) Brief account of office and procedure. The *shue-hmu* also acts as judge, arbiter, etc. Whoever in fair fighting (use of iron prohibited) was able to deprive the *shue-hmu* of his scales (the insignia of office) succeeded him,—stealing and fraud were excluded. If the claimant failed he was fined.

Starr (F.) The hairy Ainu of Japan. (Iowa J. Hist. & Pol., Iowa City, 1905, III, 423-427.) Notes on history, houses, etiquette, bear hunting and bear feast, improvised songs (home-coming), physical characteristics. Prof. S. believes that the Ainu who are "a white race," were once the sole population of Japan,—they have been beaten back, like the Indians in America. They are not the ancestors of the Japanese.

Vollers (K.) Die Symbolik des Mash in den semitischen Sprachen. (A. f. Religsw., Lpzg., 1904, VIII, 97-103.) In ritual *mash*,—the root is common Semitic,—is identical with the "washing" before prayer, etc. "Rub, stroke, salve," etc., belong also here, then "bless, praise." From the rubbing away of a physical blemish was derived the symbolic use.

Wright (A. R.) Tibetan prayer-wheels. (Folk-Lore, Lond., 1904, xv, 332-333, 1 pl.) Brief account of two wheels and prayers. The characters in which the *am* formula is embossed are ancient Indian *ranja* of the seventh century.

— Tibetan drum and trumpet. (Ibid., 333-334, 1 pl.) Brief notes on a trumpet made of the human thigh bone and a drum made of the caps of two skulls, with their bases covered with human skin. These trumpets are made with elaborate incantations, and preferably from the bones of criminals or those who have died by violence.

Wright (T. F.) The tombs of Gezer. (Rec. of Past, Wash., 1905, IV, 79-82, 3 figs.) Brief account of the results of Macalister's excavations in the ruins of Tell Jezar (the Gezer of the Bible) near Jaffa,—tombs of the pre-Israelites, who use caves both for dwelling and burial purposes; later (Israelite) rock tombs, containing, among other relics Assyrian seals, Egyptian scarabs, etc.; tombs of the Maccabean period; Christian tombs with great quantities of lamps (some with Greek inscriptions).

Zaborowski (S.) Collection d'objets de toilette et autres du sud de la Chine. (Bull. Soc. d'Anth. de Paris, 1904, v^e s., v, 632-633.) Brief notes on toilet objects, etc. (pillows, couch, shoes, hats, compass, flint and steel), from the province of Kwang-Hsi, in southern China, presented to the society by M. Beauvais.

INDONESIA, AUSTRALIA, POLYNESIA

Branco (W.) Ueber die fraglichen fossilen menschlichen Fusspuren im Sandsteine von Warnambool, Victoria, und andere angebliche Spuren des fossilen Menschen in Australien. (Z. f. Ethn., Berlin, 1905, XXXVII, 162-172, 2 figs.) Résumés data concerning the "human" foot-prints in the Warnambool sandstone and other alleged traces of fossil man in Australia,—opinions of Archibald, Alsborg, McDowell, Bücking, Gregory, etc. B. concludes that "the foot-prints are human, but very narrow," and that the sandstone is old and not "merely a few centuries old," as Wilser suggested. The Wellington cave human molar and the marsupial (fossil) bone with marks of human implement are considered genuine.

Grabowsky (F.) Musikinstrumente der Dajaken Südost-Borneos. (Globus, Brnschw., 1905, LXXXVII, 102-105, 9 figs.) Brief descriptions of kettle-drums (*garantung*), and its melodies,—the chief pieces in Dajak orchestras,—drums proper (*gandang*), and the drum-like *gambang* and *biak betong*. Of stringed instruments there are the *rabap* or *garadap* (borrowed from the Malays), which is played with a bow; the *kanjapi*, somewhat resembling the violin; the *gandang barwi*. Of wind instruments the *sarunai* (clarinet), borrowed from the Malays; the flute; a hunter's whistle; the *garode*, a sort of oboe. Both adults and children use a "jew's-harp."

Gregory (J. W.) The antiquity of man in Victoria. (Proc. R. Soc. Vict., Melbourne, 1904, N. S., XVII, pl. 1, 130-133.) Discusses among other things the Warnambool "human" footprints. G. thinks it possible they are human,—they may be wind-sports,—but, with others, gets from them the impression of *shed*, not naked feet. The bone-find of Buninyong he regards as accidental. G.

considers that man is a comparatively recent inhabitant of Victoria, and was in no sense there in earlier geological periods.

Haferland (R.) Ueber einen Schädel mit einem Processus asteriacus. (Z. f. Ethnol., Berlin, 1905, XXXVII, 207-208, 1 pl.) Describes briefly a Fijian (male?) skull with a well-marked *process asteriacus*, a peculiarity not rare among Melanesians. The formation is probably atavistic.

Hagen (B.) Neu-Guinea. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., 1905, XXXVI, 22-23.) Résumé of address before Wiesbaden Anthropological Society. The Papuas are the primitive type, or a primitive type of man. Two different varieties of Papuas (one mostly coastal) exist, but the women of the two varieties differ little. Family and social life are briefly considered.

Holmes (J. H.) Introductory notes to the study of the totemism of the Elema tribes, Papuan gulf. (Man, Lond., 1905, 2-6, 1 fig.) Discusses tribal organization, marriage-laws, land-tenure, individual rights, tribal obligations. According to H., totem kinship has "a greater influence on the moral life" of the Elema tribes than conjugal or parental relationship. This influence of totemism is far-reaching, restrictive and preventive.

Howell (W.) and Sheiford (R.) A Sea-Dyak love philtre. (J. Anthr. Inst., Lond., 1904, XXXIV, 207-210.) Describes briefly a *jayan* (love philtre) obtained from a Sea-Dyak woman, with native texts and English translations of two typical incantations. Also incantation uttered by a woman who wishes to become attractive to men. The basis of all *jayan* is "coco-nut oil, which must be made by a girl who has not yet arrived at the age of puberty." Other ingredients, *e. g.*, the tears of a female porpoise (very potent), may be added. A needle in the stopper represents sympathetic magic.

Klaatsch (H.) Übersicht über den bisherigen Verlauf und die Errungenschaften meiner Reise in Australien bis Ende September 1904. (Z. f. Ethnol., Berlin, XXXVII, 211-213.) Notes, among other things, discovery at King's creek of stone implements with pieces of fossil bones with evidence of human working;

frontal bone of a new-born child at Princess Charlotte bay, with *Arcus supraorbitalis* suggesting the Neanderthal skull. Dr K. made many observations and measurements of the natives, collected specimens, etc.

Krämer (A.) Das neue Kolonialalphabet in seiner Anwendung auf die Südsee. (Globus, Brunschwg., 1905, LXXXVII, 293-295.) Discusses the new alphabet adopted by the Colonial Department of the German government for the spelling and pronunciation of geographic names, and severely criticizes some of the items.

Lampert (—) Melanesien. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 59-60.) Notes on physical characteristics, culture, etc. Up to the period of contact with the Europeans the Melanesians were still in the stone age. The most marked feature of their culture is love of ornament; another is an impulsive spirit of adventure.

Lang (A.) All-fathers in Australia. (Folk-Lore, Lond., 1905, XVI, 222-224.) Discusses views of Howitt and Hartland. Author considers that in associating the All-father belief with advance in social organization, "Mr. Howitt has overlooked his own valuable collection of social facts."

Lasch (R.) Gregory über die Ältesten Spuren des Menschen in Australien. (Globus, Brunschwg., 1905, LXXXVII, 90-91.) Résumés the article of J. W. Gregory (q. v.).

Maass (—) Ta kã-kã-kã Tabu. Ein Beitrag zur vergleichenden Kenntnis der Malaio-Polynesier. (Z. f. Ethn., Berlin, 1905, XXXVII, 153-162.) Describes the *ta kã-kã-kã* ("it is forbidden"), the first and foremost "law" of the Mentawi islanders off the coast of Sumatra, and "a terrible moral weapon against the foreigner." The Mentawi custom is compared with the Sumatran — Malay *pantang*, Madagascar *fadi*, Dayak *uhum*, Micronesian *ugul*, and the Polynesian *tabu* with its varieties. The origin of these customs is due to the mental constitution of the Malayo-Polynesians and their peculiar psychological consciousness. Their fulfilment of the law of impulse is here represented.

Mathews (R. H.) The Wiradyuri and other languages of New South Wales. (J. Anthr. Inst., Lond., 1904, XXXIV,

284-305.) Brief grammatical sketches of Wiradyuri, Burreba-burreba, and Ngunawal, with vocabularies of 430 words in Wiradyuri and 290 in Ngunawal, classified under categories of family terms, parts of the body, natural objects, animals, trees and plants, weapons, adjectives, verbs. The Wiradyuri is more widespread than any other tongue in New South Wales. These languages have double forms of the first person, dual and plural, for every inflected part of speech.

Morris (Margaretta) Harvest gods of the Land Dyaks of Borneo. (J. Amer. Orient. Soc., N. Y., 1905, XXVIII, 165 ff.) Enumerates supernatural beings, lords of agriculture, of sun, moon and stars. Also the supreme being Tuppa (an agglomeration or accretion of functions) is discussed. These supernatural beings, with two human potentates are invoked for a blessing on the rice-fields. Miss M. regards Tuppa as a projection of the change in the Dyaks' natures from ferocity and cunning to the peaceful co-operation necessary to successful agriculture. The philosophy of the gods of the field is somewhat abstruse.

Nieuwenhuis (A. W.) Kunst und Kunstsin bei den Bahau und Kénja-Dajak. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 82-84.) Discusses the art, art-motives, and art products of the Bahau and Kenyah Dayaks of Borneo. Many motives are of religious origin, and the human genital organs have served as models for a long series of beautiful ornaments, for use in adornment of houses in particular. Children seem to receive no special instruction, but the advent of puberty and the period of courting stimulate both sexes artistically, — youths carve presents for maidens and the latter make ornaments for the former. Both men and women, more so, carry on artistic work, but few to a very high degree, the best workers being individuals having the necessary leisure, members of the families of chiefs, etc. The same motives are often used to decorate very different objects; and for a many-sided art there is a seeming poverty of motive. Conventionalization gives play to their fancy. Dr N. thinks that, for various reasons, Dayak art has degenerated here, — the introduction of foreign materials has influenced greatly the art and industries

of the women. Bad European models have led to worse native ones.

O'Ferrall (W.) Native stories from Santa Cruz and Reef islands. (J. Anthr. Inst., Lond., 1904, XXXIV, 223-233.) English texts of brief tales concerning: Sickness, death, marriage, food, sun and moon, canoe-building, broken food, sun and rain, white folk (spirits), *tapu*, ourselves, an old man and woman, holy stones, — from Santa Cruz; and from Reef islands concerning Lata and Sinota, the volcano Tinakula, a tradition of Nukapu, spirits, the dead, those who die of arrow wounds, a great spirit called Thaumaka, abundance of food. And two longer tales from Reef islands: About a certain woman, and concerning a nian who ate human flesh, and a very big pig.

Parkinson (R.) Ein Besuch auf den Admiralitätsinseln. (Ibid., 238.) Brief notes of visit to chief island in December, 1904. To the Moanus (seafarers and fishermen; pile-dwellings) and Usiai (in the interior, agriculturalists), must be added now the Matankor, or Marankol (agriculture, seafaring, fishing, canoe-builders, wood-workers). P. saw the making of the obsidian swords. The Matankor are smaller and lighter than the Moanus and Usiai. The author's party took the first photographs of women on the island.

Riggs (A. S.) The drama of the Filipinos. (J. Amer. Folk-lore, Boston, 1904, XVII, 279-285.) Treats briefly of Filipino plays and poems: Prehistoric (before 1521), religious (from 1521 to present time), Moro-Moro, middle period (1750-1876 and to the present day), seditious or anti-American since 1898. The Moro-Moro plays, reciting the struggles of the Christian against the Mohammedan Filipinos, are interesting and important for the study of native character. A typical Moro-Moro is "Magdapi, or Fidelity Rewarded," by P. A. Paterno; a representative anti-American play is "Hindi Aco Patay (I am not dead)" by Juan M. Cruz. The official recognition of the theater in the Philippines did not occur till 1836.

Seidel (H.) Die Bewohner der Tobi-Insel, Deutsch-Westmikronesien. (Globus, Braunschweig, 1905, LXXXVII, 113-117.) Discusses briefly habitat name, physical characters, food (coconut chief item), fire,

making (friction), dwellings and wood-working, textile industries, clothing and ornament, tattooing (no untattooed person can approach holy places), tabu, weapons, canoes, contact with whites, etc. The natives of Tobi are of a lighter color than those of Sonso, Pul, and Merir.

Senft (A.) Ueber die Tätowierung der West-Mikronesier. (Ibid., 174-175, 3 fgs.) Brief account of tattooing on the island of Yap, where it was introduced some 100 years ago from the island of Ulusi.

Seurat (L. G.) Sur les anciens habitants de l'île Pitcairn, Pacifique Sud. (L'Anthropologie, Paris, 1904, xv, 369-372, 14 fgs.) Describes petroglyphs and stone axes, etc. Other remains of pre-European inhabitants, — *marae*, human skulls, etc., have been found. Their discovery astonished the mutineers of the *Bounty*.

von den Steinen (K.) Proben einer früheren polynesischen Geheimsprache. (Globus, Brunschwig, 1905, LXXXVII, 119-121.) Describes, with word-list, a secret language, *eo uhiua* ("language concealing the back, i. e., surface"), in use among the Hapaa of Nukuhiva, the principal one of the northern Marquesas islands, now reduced to a few individuals. The chief item is the exchange of consonants (in quadrisyllables the first half only is touched, *Nukuhiva* = *Kunuhiva*). Examples: *eti* (small) becomes *kiki*, *ouoho* (hair) *nouoe*, *Taiohau* (name of a bay) *Hatohal*; *meitai* (good) *emiate*, etc. Similar processes have been reported from a tribe of Indian jugglers, Herzegovinian goat-herds, etc., by Krauss and others. Dr von den S. considers that the existence of a similar phenomenon in New Zealand suggests the former existence of a widespread Polynesian secret language. It doubtless had its practical value at festivals, meetings with foreign peoples, etc.

AMERICA

Adam (L.) Grammaire de l'Accawai. (J. de la Soc. des Amér. de Paris, 1905, N. S., II, 43-89.) First part of a grammatical sketch (gender, number, personal pronouns, postpositions and case-indices, verbal adjectives derived from postpositions, demonstratives and pronouns of the third person, nouns of num-

ber and collectives, indefinite pronouns and adjectives, interrogatives, augmentatives and diminutives, adverbs, conjunctions), based on texts (Genesis in part, St Matthew, etc.) published by the late Rev. W. H. Brett (missionary) in the Accawai (Acaròdò) a Cariban language of Guiana.

Aimes (H. H. S.) African institutions in America. (J. Amer. Folk-lore, Boston, 1905, XVIII, 16-32.) Treats of the "governor" of the negro communities in New England, elections, parades, etc. These inaugural parades may have antedated those of the whites, — such customs were "a direct survival of practices in Africa; fantastic parades in all parts of Cuba, Sunday reunions and festivals (*cabildos* of each "tribe"); "societies" for dancing, and also for political purposes, in St Lucia (as late as 1844), "kings" and "queens" in Jamaica, etc. The influence of African institutions in the French West Indies was great, and the author seeks to show that in Haiti the government of Toussaint and Christophe was really African in origin — they had a clear insight into the needs and peculiarities of their people. The actions of Souloouque betray also the African character.

Barry (P.) Some traditional songs. (Ibid., 49-59.) Discusses with text and music four traditional songs (The Elfin Knight, The Ram of Darby, The Quaker's Wooing, The Twelve Days of Christmas), contained in Rosa A. Allen's *Family Songs* (Medfield, Mass., 1899). They have been traditional in this family for generations.

Boas (F.) and Wissler (C.) Statistics of growth. (Rep. U. S. Comm'r Ed., Wash., 1904 [1905], 25-132.) Of this valuable monograph the greater part consists of statistics of anthropometric data obtained in 1891 and 1892 in the public schools, high schools, etc., of Worcester, Mass. The conclusions reached are of profound importance for the proper understanding of the phenomena of child-growth. Dr Boas' earlier assumption of "a symmetrical distribution of variations in period — i. e., of accelerations and retardations — following the laws of chance, giving an adequate explanation of the characteristics of the observed curves of growth," is confirmed. As a result it follows that

"the developmental stage of a child at a certain period depends primarily on phenomena of retardation and acceleration, which influence the whole body at the same time, so that all measurements should show a tendency to vary in the same direction: either all of them would tend to lag behind the normal average, or all would be in advance of it." This would tend to overturn the rather widespread view that "during a period of energetic physical growth there is a rest of mental development and *vice versa*." The variations of social groups should follow the same laws as those of individuals. A maximum of correlations occurs during the periods of most rapid growth and a sudden drop to negative correlations when growth is nearly completed. The interval 14-15 years in boys forms the dividing line between positive and negative correlations.

Boman (E.) Adan Quiroga. (J. Soc. d. Amer. de Paris, 1905, N. S., II, 139-140.) Brief appreciation of life and works of A. Quiroga (d. at Buenos Aires, Nov. 10, 1904, aged 40), poet, lawyer, politician, criminologist, archaeologist, folklorist, and authority on Calchaqui. His most ambitious volume was, perhaps, *La Cruz en America* (1901).

Brady (W. J.) The faces, jaws, and teeth of the Okoboji mound people as indications of their stage of development. (Iowa J. Hist. & Pol., Iowa City, 1905, III, 441-444.) One skull exhibits "an immense bifurcation of the pre-molars, seeming to indicate a low type." In the older (lowest in mound) skulls the teeth approximate closely the modern Caucasian. In the case of the uppermost the bones of the jaw, rather than the teeth, are reduced in size. One shows "intensive white characteristics." The bottom-most skulls "represent a type well advanced beyond the present primitive men and the lower early man."

Breysig (K.) Die Entstehung des Staates aus der Geschlechterverfassung bei Tlingit und Irokesen. (Schnollers Jahrb., Berlin, 1904, XXVIII, 45-89.) Discusses the origin of the state from conditions found among the Tlingit of Alaska and the Iroquois. With both peoples there is a mixing of divisions according to families and grouping, and according to localities and tribes,—the first, B. thinks, older, the second having arisen from

practical needs. The first "state" appears with the coalition of the two primitive families, when a community of life is substituted for a community of blood.

— Ueber die Entstehung des Gottesgedanken insonderheit bei den amerikanischen Urzeitvölkern. (Z. f. Ethnol., Berlin, 1905, XXXVII, 216-221.) Gives notice of monograph on origin of the idea of God among the American Indians, based on consideration of the N. W. Coast natives, particularly the Tlingit. With the latter the three primitive elements—beginnings of reverence of nature powers, soul and spirit, cult priesthood, sacred legend,—are still separate. B. criticises Brinton's concept of Iroquoian deities. The idea of God is not due to personification of nature forces, but springs from the conception of animal or human personalities.

Broda (R.) A visit to Haiti. (So. Wknn., Hampton, Va., 1905, XXXIV, 285-290, 4 figs.) Brief account of visit in December, 1904. Author takes rather optimistic view of situation. In the university and colleges of Port au Prince "the professors are all Haitians, mostly graduates of the University of Paris," and "their scientific works seem to me of high rank." In the list of members of the International Institute of Sociology are three Haitians, Justin Devot, Massillon Colcu, and Firmin Faure, the last once candidate for President of Haiti.

Brown (C. E.) Wisconsin caches. (Rec. of Past, Wash., 1905, IV, 82-95, 10 figs.) Gives account of caches of stone, metal, and bone implements, etc., in various parts of the state. A cache of 300 stone implements from Dane co. is now in the U. S. National Museum. Mixed caches seem to be uncommon. No uniform method in the making of these caches prevailed. The deposits are sometimes of finished implements and sometimes of pieces suitable for manufacture. Leaf-shaped flints are of such frequent occurrence as to be styled "cache types."

Curtis (W. C.) The basketry of the Caribs. (So. Wknn., Hampton, Va., 1905, XXXIV, 337-340, 3 figs.) Based on accounts of Mason and Ober with data and illustrations from Prof. Lloyd, who visited Dominica in 1903. The Carib baskets are said to resemble those of the Louisiana Chetimachans.

- De Charency** (Comte) Le Marquis de Nadaillac. (J. Soc. d. Amér. de Paris, 1905, N. S., II, 133-137.) Sketch of life and scientific activities with list of published works, 1870-1904. His best known volume was *L'Amérique pré-historique*, which was translated into English.
- Diguet** (L.) Notes d'archéologie Mixteco-Zapotèque: Tumulus et camps retranchés. (Ibid., 109-116, 3 figs.) Describes briefly the pyramids of the Cerro de Cuta and La Rinconada and the *mogote* (tumulus) of Ejutla, etc.,—all funeral monuments, at the same time sepulchers and altars of a cult of the dead. The most imposing are doubtless individual mausoleums. These tumuli and entrenched camps represent one aspect of Mixtec-Zapotec culture.
- Du Bois** (C. G.) The story of the Chaup: A myth of the Diegueños. (J. Amer. Folk-lore, Boston, 1905, XVII, 217-242.) Gives English text, with snatches of songs in native tongues *passim*, of the legend of Chaup ("the name for shooting star, etc."), who now is said to live in the San Bernardino mountains with his grandmother.
- Flom** (G. T.) The coming of the Norwegians to Iowa. (Iowa J. Hist. & Pol., Iowa City, 1905, III, 347-383, 2 maps.) Contains data as to origin of immigrant groups, migration, etc. North-eastern Iowa has always been, "educationally and culturally, the center of Norwegian influence in the state."
- Förstemann** (E.) Die spätesten Inschriften der Mayas. (Globus, Brnschw., 1905, LXXXVII, 272-273.) F. argues that a certain inscription from Chichen-Itza bears date 1581 and another from Sacchaná that of 1582. They represent perhaps a temporary renaissance of Mayan hopes, due perhaps to the Netherlands revolution.
- Froidevaux** (H.) Un précurseur de l'Americanisme; le capitaine Champion, 1580. (J. Soc. d. Amér. de Paris, 1905, N. S., II, 163-164.) Note on the statement in the *Calendar of State Papers* (West Indies and America, vol. I, 1574-1660, p. 1-2) that a certain Capt. Champion, of Havre-de-Grâce, had bought from one David Ingram for 100 pieces of silver an "ancient" or war-flag of the Indians of the river May in Florida.
- Fuller** (Grace P.) The Seri Indians. (So. Wkmm., Hampton, Va., 1905, XXXIV, 271-278, 4 figs.) Based on McGee. Treats briefly of habitat, physical characters, houses, clothing, food, pottery, implements, balsas, government, marriage, etc. The Seri are one of the lowest tribes of American aborigines.
- Heilmüller** (Dr.) Nordamerikanische Pfeilspitzen. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 46.) Brief note on flint arrowheads from near Lafayette. Dr. H. distinguishes 3 types.
- Hepner** (H. E.) The Cora Indians of Mexico. (So. Wkmm., Hampton, Va., 1905, XXXIV, 92-99, 3 figs.) Treats briefly of physical appearance, houses, religion, legend accounting for rough character of country, occupations and industries, family, fasting and prayer (to "Master of the Mountain"), adoration of stones and rocks (their ancestors), dances, etc. (ceremonial of "mother bowl," prayer to morning star). Nominally Christians, the Cora retain much of their old heathen faith. They have also avoided some of the vices of the whites.
- Hewett** (E. L.) Government supervision of historic and prehistoric ruins. (Science, N. Y., 1905, N. S., XX, 722-727.) Prints correspondence with Commissioner of General Land Office, Commissioner of Indian Affairs, and Chief of the Bureau of American Ethnology concerning the preservation of ruins. Professor H. approves the bill of Commissioner Richards of the Land Office.
- The last survivor of the extinct pueblo of Pecos. (Rec. of Past, Wash., 1905, IV, 54-57, 1 fig.) Condensed by the author from the *American Anthropologist*, 1904.
- Hill-Tout** (C.) Ethnological report on the Stse'e'lis and Sk'a'ulits tribes of the Halokme'lem division of the Salish of British Columbia. (J. Anthr. Inst., Lond., 1904, XXXIV, 311-376.) Treats of tribal history, sociology; marriage, puberty; mortuary, birth, and naming customs; food-tabus and restrictions, *suliaism*, hereditary totems, dances, religious ideas, shamanism, dwellings, household utensils, dress, cardinal points, winds, the year, linguistics (numerals, personal pronouns), myths and traditions

(pages 336-362; English text of eight tales, native text with interlinear and free translation of one for the Stsee'lis; and, for the Sk'a'ulits, tribal history and legends, native texts, interlinear and free English renderings of four legends — also Salish Pater Noster from Mengarini and modern Sk'a'ulits version). T. considers it not improbable that the Stsee'lis are "a somewhat modified remnant of the race that occupied these regions prior to the advent of the Salish." Only one of the five old camping-sites is now used by them. Although Catholic converts, "there is a very general hankering after the old condition of things." Youth are no longer trained in the ancient way and have deteriorated. Each Salish tribe seems to have had its own puberty customs. T. believes that "no doubt can any longer exist that the Salish tribes in former days had not only personal *sûlia*, or totems, but also hereditary group-totems as well. The Sk'a'ulits are reduced to a scattered village of a dozen houses — a few generations ago they numbered two or three hundred souls.

von Ihering (H. E. R.) *Bibliographia* 1902-1904: *Historia Natural e Anthropologia do Brazil*. (R. do Mus. Paul., S. Paulo, 1904, VI, 584-659.) Section D, pp. 607-615, relates to anthropology, — 10 titles, embracing works by Barbosa Rodrigues, A. B. Meyer, Theodor Koch, J. B. Steere, P. F. Vogt, Paul Ehrenreich, M. Schmidt.

Archeologia comparativa do Brazil. (Ibid., 519-583, 4 pl.) Treats of archeology of Rio Grande do Sul and craniology of its primitive inhabitants, the *sambaquis* of southern Brazil, the extra-sambaquian culture of the State of S. Paulo, archeology of Bahia, archeology of the Amazonian region, the archeological provinces of Brazil and their relations with the neighboring regions (provinces: sambaquian south Brazilian, Bahian, Amazonian), data from early writings, etc. Bibliography of 53 titles. Von I. concludes that the Amazonian region of Brazil has been considerably affected by the Andean civilizations, but not the center or the south. Both the extra-Amazonian parts of Brazil and the eastern sections of Argentina possessed in prehistoric time no higher culture than that of the modern natives. A great part of the archeological objects from southern Brazil are to be attributed to the Calchaqui

culture, non-indigenous to that region. On the coast the dolichocephalic (Botocudo) and the brachycephalic (Guarani?) types, are represented, in prehistoric times, in the sambaquis.

Jacob (C.) *Contribution à l'étude de la morphologie des cerveaux des Indiens*, etc. (Rev. d. Mus. de La Plata, 1904, XII, extr., pp. 15, 7 pl.) Describes and figures brains of 4 Indians (2 Fuegians, 2 Aracanians), the anthropometric data concerning whom had been given by ten Kate (q. v.). Dr J. concludes that all four brains are up to the level of development of the average European brain. The Yahgan brain is rich in convolutions and that of the Alakaluf woman rich in secondary convolutions. In these Indian brains the parietal and temporal lobes are typically developed, while the frontal and occipital vary as with Europeans. No distinctly pathological anomalies occur.

de Jonghe (É.) *Histoire du Mexique*. Manuscrit français inédit du XVI^e siècle. (J. de la Soc. des Amér. de Paris, 1905, N. S., II, 1-41.) Publishes for the first time a French MS. of the sixteenth century, treating of the origins of the three chief tribes, the Mexican calendar, various cosmogonic myths and legends, the life of the culture-hero Quetzalcoatl, etc. An index of Nahuatl terms is added. The Spanish original of the MS. de J. identifies with the lost *Antigüedades Mexicanas* of the Franciscan de Olmos, mentioned by Mendieta. The translator was André Thevet, whose signature the French MS. bears. This is a very valuable discovery.

"Amerikanistenklub" de Berlin. (Ibid., 168-171.) Résumés the proceedings of the February, 1904, meeting of the Berlin Americanist Club, at which papers were read by Dr Lehmann on the history of the Mexican codices and Hr Uhle on botanical explorations in South America.

ten Kate (H.) *Matériaux pour servir à l'anthropologie des Indiens de la République Argentine*. (Rev. d. Mus. de la Plata, 1904, XII, repr. pp. 27, 9 pl.) Gives psychological notes, anthropometric (post-mortem) data, osteological observations and notes on the brains of four Indians (Yahgan man, a Huilliche chief and a woman of the same tribe, an old Alakaluf woman), three of whom

were government prisoners. Also anthropometric measurements (living) and observations on three Araucans, three Tehuelches, and four Chiriguano. The results of an autopsy of the Vahgan are likewise given. The two Fuegians were mesocephalic, the two Araucans brachycephalic. Of the ten living Indians four were mesocephalic, the rest brachycephalic, the Tehuelches being very round-headed. The condition of the brains examined was such as to permit only certain details of observation. The brain-weights of the two males were average or ordinary, that of the woman small (see: Jakob). The author notes "the Japanese aspect of young Araucan children," while two of the Tehuelches "recalled, by their general aspect, certain fine types of the North American Indian (Yaqui, Pima)."

Koch (Th.) *Forschungsreise in Brasilien*. (Globus, Bruchswg., 1905, LXXXVII, 281-283.) Notes on journeys, July-December, 1904, in the Caiary-Maupés region of Brazil, among the Kobéua (possessing mask-dances, etc.), Umáua, ill-treated by the whites, but taking vengeance; Tucano, Tariána, Pira-tapuyo, Uanána, Baniwa, Maku, etc. Dr K. obtained numerous vocabularies, photographs, ethnologic specimens, including some 100 dance-masks of the Kobéua, and some stone axes of curious form looked on as reliques. The language of the Umáua is "a pure Cariban dialect."

Latham (R. E.) Notes on some ancient Chilean skulls and other remains. (J. Anthr. Inst., Lond., 1904, XXXIV, 234-254, 2 pl.) Describes, with detailed measurements, 4 male and one female skull (all subdolichocephalic) found at an average depth of 4 ft. 9 in., in a quarry near Coquimbo. The evidence indicates submersion and upheaval subsequent to burial, and the ground "has not been disturbed for hundreds, perhaps for thousands of years." One male skull (subdolichocephalic) was from one of a number of shell-mounds about Coquimbo bay. With the female skeleton were found buried two mullers, a flat mortar-stone, and a flat stone amulet. With the others flint implements, some fragments of coarse pottery, etc., were found. The general type of these skulls "is quite distinct (even to a casual observer) from that of any other Chilean race which I have examined, including that of the

natives of the time of the Spanish Conquest." Several points of resemblance to Fuegian and Eskimo skulls are noted, which, L. considers, are racially cognate. L. adds a note by Dr Flores describing three ancient skulls from the island of Mocha, representing a mixture of the ancient race with the later Araucans.

Lehmann-Nitsche (R.) *Gefälschte ethnologische Gegenstände in Buenos Aires*. (Sonntags-Ztg., Buenos Aires, 1905, Heft 18, s.-A., p. 1, 1 fig.) Brief account of spurious Indian objects (stone and bone axes, wooden statuettes with real but not Indian hair, etc.) manufactured by a certain M. Goireau of Lomas de Zamorra. Some fantastic pieces have been disposed of by him.

— *El Congreso de Americanistas XIV Sesión — Stuttgart, 1904*. Informe del Delegado de la Facultad de Filosofía y Letras de la Universidad de Buenos Aires. (Rev. de la Univ., Buenos Aires, 1905, III, repr., pp. 52.) Report of Dr Lehmann-Nitsche as delegate to Stuttgart Congress of Americanists. Contains very good résumés of over 40 papers and addresses, some quite extensive, particularly those of Fraas, Jochelson, Hans Meyer, Plagemann, Kapff, Jonkheer van Panhuys.

Lejeal (L.) Emanuel Domenech. (J. Soc. d. Amér. de Paris, 1905, N. 5., II, 131-132.) Note on the Abbé Domenech, whose recent death at Lyons, where he had lived long in retirement, recalls his *Livre des Sauvages* (1860), once much discussed and by many looked on as apocryphal. L. thinks critics have been too severe.

Marcel (G.) Gabriel Gravier. (Ibid., 137-138.) Brief sketch of G. Gravier, geographer of Rouen (d. aged 78), an authority of eminence on Norse and other early voyages to America.

McLane (A. C.) Anthropology at Harvard. (Iowa J. Hist. and Pol., Iowa City, 1905, III, 445-453.) Treats of the Peabody Museum and its collections, the propagators of anthropology at Harvard, anthropology in the curriculum, interest of students, instructors and courses, etc. The department is growing fast.

Mead (F. H.) The Peabody Museum of Harvard University. (Rec. of Past, Wash., 1905, IV, 68-79, 14 figs.) Gives account of origin, arrangement, charac-

ter of exhibits (N. American Indian, Swiss lake dwellings, S. America, C. America and Mexico, Pacific islands, Japan, etc.). There are also an extensive osteological collection and a library of 3,000 volumes, besides 3,000 pamphlets. The Museum has its special publications. The civilizations of ancient America are particularly well represented, also the native tribes of California, Arizona, and prehistoric man of Delaware valley.

Meisinger (The) of the Archeological Institute of America. (Ibid., 27-31, 1 fg.) Gives abstracts of papers by Messrs Norton, Eliot, Paton, Ward, Lummis, and Lythgoe.

Merriam (C. H.) Distribution of Indian tribes in the southern Sierra and adjacent parts of the San Joaquin valley, California. (Science, N. Y., 1904, N. S., XIX, 912-917.) According to Dr M., "in the Sierra the distribution of tribes conforms closely with certain faunal belts," and generally the "distribution of the Indians conforms closely with that of the faunal and floral areas." In California no Indians live in the boreal zones, and few, if any, in the upper half of the transition zone. The great majority live in a single life zone (the upper Sonoran), many in the lower Sonoran, and a few in the transition. The author lists 9 Yokuts and 7 Paiute tribes, with their locations, the former belonging to the hot valley and adjacent foot hills, the latter to the cooler ponderosa-pine belt of the mountains.

Monoyer (E.) Les Indiens Guatós de Matto-Grosso. (J. Soc. d. Amér. de Paris, 1905, N. S., II, 155-158.) Notes on physical characters (stature of men 1.65-1.75, women 1.55-1.70 meters), family (children 6-8, mixed breeds favor Guato), temperament (gentle, idle), fishing (shooting *pacu*), dwellings, clothing, music, dances (*coureours* and *viriri*), alcoholism, etc., obtained in 1900-1902. The Guatós are nominally Christians. Physically they are among the finest in South America.

Pepper (G. H.) An unusual Navaho medicine ceremony. (So. Wkmn., Hampton, Va., 1905, XXXIV, 228-235.) Brief account of the ceremony with sand-painting for cure of sore throat, said by medicine-man to be caused by nightly visits of eagle.

Preuss (K. Th.) Der Kampf der Sonne mit den Sternen in Mexiko. (Globus,

Brnschw., 1905, LXXXII, 136-146, 6 fgs.) Discusses the ancient Mexican idea that the sun fights with the stars and the conquered are offered up in sacrifice. The stars were daily killed by the sun, sacrificed, fell down into the underworld, and rose again the next day. The identity of this process with the sacrificial death which the gods had to suffer to renew themselves and increase their power, there were transposed to the heavens. There was a complete parallel between the mundane and the celestial processes. The relations of festivals, etc., to this basal idea are discussed.

Rieck (Dr) Reisebilder aus Patagonien und von der chilenischen Küste. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXV, 46.) Contains some notes on the Fuegian Pesheri.

Sapper (K.) Der Charakter der mittel-amerikanischen Indianer. (Globus, Brnschw., 1905, LXXXVII, 128-131.) Among the chief characteristics of the Central American Indians are: Stolidity and emotional control, noticeably in children, and more the result of adult example than family education. Moderation (but great tribal differences,—the Mayas are quick and more excitable than the Kekchi) in movement, language, gesture of the face, etc., but energy and intellectual qualities are, nevertheless well developed. Exceptionally (at festivals, etc.) they run riot for a time. Woman has an important rôle. Their childlikeness tempers their hate and vengeance. Begging was met with only among the Guatós, to whom the missionaries once gave presents of clothing, etc. The Indian woman is very industrious; the man, too, accomplishes much, and has also persistence. In twelve years the author had nothing stolen by Indians. The southern Indians lie more barefacedly than the northern, but the lying of the aborigines has been exaggerated. European culture must not be rammed down the throat of an Indian.

Seler (E.) Mischformen mexikanischer Gottheiten. (Ibid., 110-112, 8 fgs.) Describes briefly mixed-forms of Mexican deities, due to a sort of reaction against the systematization of the priestly school of the *tonalamatl* period,—different qualities are united in the same person. The deities discussed are Tepeyollotli, Xipe, Quetzalcoatl.

- Smith (A. G.)** Okoboji Indian skull measurements. (Iowa J. Hist. & Pol., Iowa City, 1905, III, 435-441, 4 pl.) Gives chief measurements of 5 (others fragmentary) skulls from Okoboji mound. Three were dolichocephalic, two brachycephalic.
- Smith (Harlan L.)** An archeological expedition to the Columbia valley. (Rec. of Past, Wash., 1905, IV, 119-127, 9 figs.) Describes human figure made from antler, found in child's grave at Tampico, and other objects. Article is partly résumé from *American Museum Journal* for January, 1904, and *Science* for April 8, 1904.
- Tooker (W. W.)** Meaning of some Indian names in Virginia. (William and Mary Coll. Quart., Williamsburg, Va., 1905, XIV, 62-64.) Discusses etymology of Arrohetac, Cantaunkack, Capahowasick, Kecoughtan, Kiakiack, Nansamund, Paspahgh.
- Vogt (Fr.)** Yerba: und Holzgewinnung im Misiones-Territorium. (Globus, Brnschw., 1905, LXXXVII, 248-254.) Describes *mata*-cultivation and lumbering in the Misiones territory of Argentina. Contains notes on the history of "Paraguay tea," now the "national drink" of the majority of the natives on the LaPlata.
- Waldeyer (W.)** Ueber meinen Aufenthalt in St. Louis und die Anthropologische Abteilung der Weltausstellung daselbst. (Zeit. f. Ethnol., Berlin, 1905, XXXVII, 213-216.) Notes on trip to Mexico, etc. W. doubts the unity of the Indian stock of N. America, and considers the aborigines of ultimate Mongolian origin.
- Ward (D. J. H.)** Second yearly meeting of the Iowa Anthropological Association. (Iowa J. Hist. and Pol., Iowa City, 1905, III, 422-458.) Account of proceedings and condensed report of papers by Starr, Ward, Smith, Brady, McLane, Veblen, Pratt (see these names).
- The investigation of the Okoboji mounds and the finds. (Ibid., 427-435.) Describes excavations made in November, 1904, objects found, etc., chiefly human bones representing more than 30 individuals, though possibly 100 altogether had been buried in the mounds. Some of the uppermost finds (beads, iron, etc.) indicate contact with whites. Evidences of perhaps six different orders of burials occur. The lowest was a bone burial; those in the top were interred sitting.
- Wintenberg (W. J.)** French Canadian folk-tales. (J. Amer. Folk-lore, Boston, 1904, XVII, 265-267.) English texts of three brief tales: Transformation with animals, the evil eye, Jack with his lantern.
- Wright (G. F.)** The physical conditions in North America during man's early occupancy. (Rec. of Past, Wash., 1905, IV, 15-26, 4 figs., 6 maps.) Treats of the Trenton gravel data, Canadian boulders in Missouri, "Lansing man," etc. Author considers that "when we speak of glacial man in America, we do not necessarily imply an antiquity any greater than that which is now assigned to his more civilized brethren in Egypt and Babylonia."

ANTHROPOLOGIC MISCELLANEA

Recent Work of the Wisconsin Archeological Society. — The bill to promote the work of the Wisconsin Archeological Society, introduced in the Wisconsin legislature early in February last and previously mentioned in these pages (*American Anthropologist*, vol. 7, 1905, p. 170), received the unanimous support of that body and became a law by approval of the Governor on June 10. This enactment, which is the first that has ever been made in the interest of Wisconsin archeology, provides for the printing, at the expense of the State, of 1,500 copies of the bi-monthly Transactions of the Wisconsin Archeological Society in pamphlet form, not to exceed 75 pages per number, with the necessary illustrations. Of this edition several hundred copies will be presented to the Wisconsin Free Library Commission for distribution among its traveling libraries. These Transactions will supersede the Bulletin that has been published quarterly by the Society under the editorship of Mr Charles E. Brown. One of the first numbers of the Transactions that will be published under the new law will consist of a monograph on the Aboriginal Pipes of Wisconsin, by the president of the Society, Mr George A. West, who has devoted many years to a study of the subject and the collection of material relating thereto. This noteworthy collection, comprising many hundreds of specimens, representing every period and type from the primitive pebble and tube pipes to the clay, lead, and iron pipes of early historic times, will eventually be presented to some worthy institution. It is also proposed to publish catalogues of archeologic collections from Wisconsin, and to this end a beginning has been made toward listing all collections of the sort now deposited in large museums outside the State. This is a laudable enterprise, as it will make available to students of Wisconsin archeology all scattered material pertaining to the subject.

Research work under the auspices of the Society is being conducted in many parts of the State by a larger number of trained students than ever before. Mr Charles E. Brown, secretary and curator, now devotes his entire energy to the work of the Society. During the present season Mr Brown will conduct a small party in the field with the view of completing the location and survey of the aboriginal monuments and eventually of effecting their preservation, and for the purpose of obtaining notes, photographs, maps, and artifacts. Headquarters for the Society have been

opened at Milwaukee, where a bureau of records is established and whence members throughout the State will be directed in their researches. The State Board of Agriculture has become interested in the Society's endeavors, and is furthering its plans for lectures and the exhibition of collections, photographs, charts, maps, and models of the archeologic features of various sections of Wisconsin, at the forthcoming State Fair at West Allis, where, it is hoped, interest in the work will be greatly increased, particularly as a group of mounds, preserved through the efforts of the Society, is situated within the limits of the fair grounds, forming an object lesson in the preservation of local antiquities.

One of the purposes of the Society, in which it has been especially successful, has been to induce the owners of fugitive specimens, as well as of large collections, to present them to or to place them on deposit in some local museum or educational institution; and in some instances the Society has purchased collections for this purpose. No effort has yet been made to concentrate the collections of Wisconsin in a great central museum, so that while journeys of considerable length are necessary in order to examine representative collections of Wisconsin artifacts, the plan has the advantage of arousing local interest in archeology in many communities, and ultimately will stimulate effort in many directions toward advancing the Society's project for the preservation of antiquities.

The growing interest in archeology is manifest throughout Wisconsin. For several years a course in American history and archeology has been given by Dr George L. Collie, of Beloit College, to which Mr Frank A. Logan, of Chicago, generously presented the Rust collection at the close of the Columbian Exposition in 1893, and to which he has recently added the W. H. Elkey collection of 6,000 stone and copper implements. The Oshkosh Public Library, through the efforts of the Wisconsin Society, has become one of the repositories of Wisconsin archeological material, and in addition has recently received the James G. Pickett collection, from the Lake Winnebago region, through the liberality of Mrs Leander Choate. The Kellogg Library at Greenbay is another repository, having recently received on deposit the collection of J. P. Schumacher, a member of the Wisconsin Society. These objects were gathered from the vicinity of Greenbay. The collection of the late L. A. Lapham, well known through his researches in Wisconsin archeology and history, and the J. A. Rice collection of Mexican antiquities, will shortly be presented by the Wisconsin Archeological Society to the Milwaukee-Downer College. It is thus seen that the Society's efforts in placing private collections where they will be accessible to students and open to view by every one, have met with gratifying success.

A project is afoot to prevent the counterfeiting of Wisconsin specimens and to prohibit artifacts from being taken from the State for commercial purposes. In this endeavor every one will wish the Society success, since its officers assure us that the plans will not hinder the acquirement of Wisconsin collections by the great museums of the country or of the world, recognizing the fact that archeology cannot be limited by political boundaries nor the interests of science advanced by illiberality. As the work of the Archeological Society develops, and the collections within the State become better known and catalogued, it will be found, no doubt, that the collections of even the great museums of the country may be greatly enriched by exchange for the Society's duplicates.

HARLAN I. SMITH.

Explorations at Cavetown, Maryland. — In May, 1905, explorations were carried on by Phillips Academy of Andover, Mass., at Cavetown, Washington county, Maryland, in a cave controlled by Mr G. M. Bushey. His son, Mr F. E. Bushey, was much interested in the spot, and it was largely through his representations that the work was attempted. Previous excavations had been made by Mr Joseph D. McGuire, of Washington, and by others. The cave is in a limestone formation to the west of the Blue Ridge mountains, itself facing east from a ridge running parallel to the main ridge of the mountains. The opening, resembling that of an ordinary rock shelter, is about 21 meters wide and leads to a chamber of which the front part is about 16 meters deep. In this most of the explorations were carried on. Farther under the hill the cave runs westward for about two hundred meters, ending in a small pool. Pits were sunk and trenches dug in the hope of finding traces of early man, but nothing suggestive of great age was found. Stone and bone implements in moderate profusion existed, also numerous animal bones. Along the north wall of the chamber, as well as elsewhere, stalagmitic formations containing a sort of charcoal-bone breccia were discovered and specimens taken. At the back of the chamber a hard stalagmitic floor had formed, and under this was a deposit of red cave earth. In this were no traces of man's occupancy, but in a similar deposit in a quarry outside the cave were found many fossilized animal bones; the identification of these will determine the paleontological character of the red-earth stratum, in which, if anywhere, future excavations are likely to lead to the discovery of traces of the early "cave man" of European reputation. The research was greatly aided by the work and advice of Prof. William H. Holmes of the Bureau of American Ethnology, and of

Mr McGuire whose previous work made his coöperation, freely extended, almost a necessity. The results of the work, which will be embodied in a bulletin of the Department of Archeology of Phillips Academy, was in charge of Mr W. K. Moorehead and the writer.

CHARLES PEABODY.

Preservation of Antiquities.—More people have visited the prehistoric ruins of the Southwest during the present season than during any five previous years. This points to a marked revival of interest in American archeology, and to the necessity for an unremitting campaign for the preservation of our antiquities. Had it not been for the activity of the General Land Office, the Office of Indian Affairs, and the Bureau of Forestry during last year, there would have been an increased amount of vandalism among the ruins. Happily the policy of the Government with reference to these matters has become fairly well known and is generally respected. Almost no collections of prehistoric material are now exposed for sale in New Mexico; but so much cannot be said for Arizona.

As the spoliation of ruins upon the public domain becomes more and more restricted by governmental authority, it becomes apparent that the presence of extensive ruins on lands open to settlement add much to their desirability as homesteads, since these antiquities may be made a source of revenue. Accordingly homesteads are sometimes located with a view solely to the acquisition of valuable ruins, with no intention of improvement and with no possibility of agriculture. Nothing but the most liberal interpretation of our homestead laws can construe such an entry as anything but fraudulent. No obstacles should be thrown in the way of bona-fide settlers who homestead the lands of the Southwest "for the purpose of actual settlement and improvement," but the gift of the lands alone is all that is contemplated and this is offered under the assumption that the settler will assist in the development of the country. It is negligence inexcusable if we continue to allow these priceless ruins to pass to individual ownership, or to give them away to be destroyed outright or excavated by unscientific methods and their contents scattered and lost. Some method should be devised whereby ruins situated on unappropriated public lands would never be alienated and at the same time no desirable agricultural land be withheld from entry. The Commissioner of the General Land Office should be empowered to withhold from any homestead entry small parcels of land on which antiquities are situated which in his judgment are of sufficient importance to warrant preservation. At present there is no law permitting him to do this. Congress must be looked to for such authority.

Gran Quivira.—A conspicuous example of the alienation of important archeological sites through the operation of the homestead laws is that of Tabira, popularly known as "Gran Quivira," in eastern Socorro county, New Mexico. A homestead entry was filed some years ago on the quarter-section of land upon which are situated the ruins of this pueblo. This was the most extensive of the Piro settlements and is the best preserved of all the Piro ruins. Its situation on the eastern frontier of the Pueblo region renders it of unusual importance. No collections of any importance have been made from the ruins of that region. After a long contest this homestead has recently been declared valid and a patent issued to the claimant.

Pajarito Park.—By executive order of July 29, 1905, an additional reservation of about 33,000 acres has been given to the Santa Clara Indians. This extension embraces all of the great Puye or Santa Clara group of cliff-dwellings, the principal center of interest in the proposed Pajarito National Park. There can be no question as to the justice of this extension. It is merely giving the Indians a part of what already belonged to them by virtue of the grant of 90,000 acres by the crown of Spain to the Santa Clara pueblo in 1727, which was confirmed by Governor General Cachu-pin in his decree of 1763. The restitution of even a part of this land to the Indians must be commended. It is to be regretted, however, that the Indians were not offered in lieu of the few sections containing the most important ruins, other lands equally valuable for timber and grazing, and this great group of prehistoric ruins, which many travelers have asserted would be the most attractive of all our national parks, held by the Government for the benefit of the public. As it is, the national park proposition will probably be abandoned. The Indian Office will provide for the preservation of the ruins. Fortunately the other groups of ruins of the Pajarito plateau are brought within the recently proclaimed Jemez Forest Reserve, so that their protection and preservation are assured.

EDGAR L. HEWETT.

Supposed Shoshoneans in Lower California.—The peninsula of Lower California has been regarded by some to have been held in its entirety, and by everyone over at least its whole northern half, by Indians forming part of the Yuman linguistic stock. In 1902 appeared Dr N. León's map of the Linguistic Families of Mexico in the publications of the National Museum of Mexico, in which a small area on Todos Santos bay in Lower California, a short distance south of the international boundary, is represented as belonging to the Shoshonean stock.

This area on the map is apparently intended to designate the general location of a Shoshonean group rather than to define its exact geographical limits. In the same year the same author published in the *Annals of the Museo Nacional of Mexico* (vii, 263), an article under the title "Los Comanches y el dialecto Cahuilla de la Baja California." The second part of this contribution consists of a Cahuilla vocabulary communicated to the author in manuscript by A. Peñafiel. It is stated that according to the census of 1895 there were 558 "Cahuillos" in "Ensenada and Todos Santos." The Peñafiel vocabulary is compared by Dr León with a Cahuilla vocabulary from Latham's *Comparative Philology*, originally from Whipple, and it is found that "great and radical differences between them become apparent, to such a degree that they appear to be of diverse origin. There seems to be a marked Nahuatl influence in the one from Lower California."

The reason for this difference is easily discovered. Latham's vocabulary, like those of Loew, Boas, and others, which are all from within the United States, is Cahuilla, that is, Shoshonean; the Peñafiel "Cahuillo" vocabulary from Lower California, however, is Yuman. This is not only certain, but in entire accord with the unvarying statements of travelers and investigators to the effect that the Indians of the northernmost part of Lower California are closely related to the Diegueño of southernmost Upper California, and therefore Yuman. It is accordingly apparent that the term Cahuilla, also written Coahuilla, Kawia, Kauvuya, etc., which has ordinarily and properly been used of the Shoshonean Indians who inhabit the region between the San Jacinto and San Bernardino ranges in southern California and who are most nearly related in dialect to the Agua Caliente, Luiseño, and San Juan Capistrano Indians of the coast region to the west of themselves, has somehow also come to be a designation, how commonly is not known, of the northernmost Yuman Indians of Lower California.

In 1903 Mr C. H. Marks Jr accompanied a biological expedition of the California Academy of Sciences from San Francisco to the Revillagigedo islands. During a one day's stay of the expedition at Ensenada, the settlement on Todos Santos bay, Mr Marks met and overcame various difficulties that arose and succeeded in obtaining and verifying a vocabulary of the Indians of the region. This vocabulary completely corroborates the "Cahuillo" one of Dr León in being Yuman, as appears from the following selected words:

One, *cin*; two, *uwá*; three, *umòx*; four, *cipáp*; five, *sārāp*; eye, *yiū*; nose, *hu*; ear, *cinātl*; tongue, *nipātl*; mouth, *ax*; fire, *ahatūu*; wood, *i*; earth *mūt*; rock, *wix*; water, *xa*; drink, *si*.

It is accordingly plain that the supposed Shoshonean territory in northern Lower California does not exist, and that all the northern half of the peninsula was, as has heretofore been believed, an unbroken area of Yuman territory.

A. L. KROEBER.

Ponce de León and the "Fountain of Youth." — On reading in the last number of the *Anthropologist* (pp. 368 A, B) an abstract of Mr James Mooney's paper on the "Ethnography of Florida," I am reminded of the fact that, some years ago, while making some historical and philological investigations, it became of interest to me to know the meaning of the word *bimini*, which the Spaniards of *Boriken* (Porto Rico), Juan Ponce de León among the number, understood from the Arawaks to be the name of an island which lay far out at sea to the northwest; which was extremely rich in gold; and on which there existed a spring of which the water possessed the miraculous property of renewing the youth and restoring the vigor of any aged person who drank of it or bathed in it. It was with the object in view of discovering, subjugating, exploring, and settling this island of Bimini, and of taking advantage of the restorative power of its marvelous spring, that Ponce, enervated by the "strenuous" life that he had led, set sail from the port of San German, March 3, 1513, on an expedition in which, although he failed to find Bimini, he discovered what he supposed to be an island, to which he applied the name of Florida.

It appears from history that the existence of a vigor-restoring spring on some far-away island of uncertain location had long been a tradition current among the Arawaks, and that some of these Indians had, as Mr Mooney states, reached the mainland in their efforts to find it, long anterior to the time of Ponce. Failing, in my researches, to ascertain that any explanation of the meaning of the name of this mythic island had ever been given, I finally consulted an Arawak vocabulary in von Martius' *Beiträge zur Ethnographie . . . Amerikas* (II, p. 319), and, from the elements of the word which I found therein (*bi*, 'life'; *mini*, 'fountain,' 'spring,' 'source'), discovered its signification to be 'fountain of life.' According to the metaphorical system of nomenclature in vogue among both the Arawaks and Caribs, the name of the spring may have been applied to the supposed island on which it was believed to exist. Bimini is now the name of a group of small islands lying at the northwest extremity of the Grand Bahama Bank and east of the Gulf stream. A large island named "Illa de Beimeni parte" appears on a map in Peter Martyr's *Decades*, published in 1511.

The phrase, "Fountain of Youth," with which we are so familiar in connection with the name of Ponce de León and his discovery of Florida, is doubtless a translation of the phrase used by old Spanish writers, and this again may originally have been a free translation of the Arawak word, although I have met with no statement by the Spanish historians that would seem to give countenance to such a supposition.

W. R. GERARD.

Recent Folk-lore Meetings in California.—The first regular meeting of the Berkeley Folk-Lore Club, founded May 3, 1905, was held in the evening of August 18 at the University of California. The committee appointed to draft an organization reported as follows:

The committee appointed May 3, 1905, by unanimous vote of the charter members of the Berkeley Folk-Lore Club to report on a scheme of organization for the Club, beg leave to submit the following:

Constitution of the Berkeley Folk-Lore Club

1. This Society shall be called the Berkeley Folk-Lore Club.
 2. Besides the fifteen charter members, to wit: Messrs Lange, Mitchell, Goddard, Dresslar, Hart, Setchell, Merriam, Richardson, Fryer, Gayley, Miller, Ritter, Keeler, Noyes, and Kroeber, members shall consist of such men members of the Academic Senate of the University of California, and such men members in good standing of the American Folk-Lore Society, as are unanimously elected by the Club; and of such only.
 3. The officers shall be a President, Vice-president, and Secretary, who shall constitute an Executive Committee which shall arrange for all meetings and transact all business of the Club.
 4. Four or more meetings annually shall be held, at the first of which in each academic year the officers shall be elected.
 5. Five shall constitute a quorum for the transaction of business.
 6. Amendments to this constitution may be proposed at any meeting of the Club and adopted by a two-thirds vote of those present at the next meeting.
- The Committee recommend the adoption of this constitution and the immediate organization of the Club under its provisions.

Signed: { A. L. KROEBER
CHARLES KEELER
G. R. NOYES

The report of the Committee was discussed and accepted, the proposed constitution being thereby adopted.

The following officers were then elected: President, A. F. Lange; Vice-president, Charles Keeler; Secretary, A. L. Kroeber. New mem-

bers elected were: Prof F. W. Putnam, Dr B. P. Kurtz, and Prof H. K. Schilling.

The Committee on the establishment of a California Branch of the American Folk-Lore Society reported as follows:

The committee appointed May 3d, 1905, on vote of the charter members of the Berkeley Folk-Lore Club to report on the feasibility of the establishment of a California Branch of the American Folk-Lore Society, beg leave to submit the following recommendations:

That the formation of the Berkeley Folk-Lore Club provides an opportune basis for the establishment and successful development of a California Branch of the American Folk-Lore Society, which will extend the work undertaken by the Berkeley Folk-Lore Club to a wider sphere of influence and bring it before a larger body of persons, thus enhancing the promotion of folk-lore interests on the Pacific Coast. Be it resolved therefore,

That a California Branch of the American Folk-Lore Society be hereby organized by such of those present as signify their willingness; and

That a committee of five be appointed to arrange for a meeting, including a program, in Berkeley, on the evening of August 28; said committee to submit at this meeting a formal draft of organization, with nominations for officers, for the California Branch of the American Folk-Lore Society.

Signed: { A. L. KROEBER
 { CHARLES KEELER
 { G. R. NOYES

This report was adopted, and the following committee appointed under its provisions to report at the first meeting of the California Branch on August 28: J. C. Merriam, G. R. Noyes, A. L. Kroeber, W. C. Mitchell, and Charles Keeler.

The work of the California Branch of the American Folk-Lore Society is designed to be directed to the study of the many elements of folk-lore existing in California among its Indian, Spanish, American, and Asiatic populations, and to the awakening of interest in such studies, by the institution of public lectures, meetings devoted to discussions and comparisons, systematic researches leading to the publication of new information, and the ultimate formation of branch or affiliated societies in various parts of the Pacific Coast. The work that is thus planned is connected so intimately with the history of California, and will be so illustrative in a wider sense of the development of the state, that the furtherance of this work should be of general interest.

The first regular meeting of the California Branch was held August 28 in the Philosophy Building, at the University of California, Berkeley. Dr C. Hart Merriam of Washington City gave the address of the even-

ing on "Aboriginal Folk-lore from California." Prof F. W. Putnam, president of the Boston Branch, Dr Roland B. Dixon, president of the Cambridge Branch, Dr Charles Peabody of Cambridge, and Professors J. C. Merriam and W. E. Ritter of the University of California spoke on the aims and possibilities of the Branch and the development of folk-lore studies in California. A second meeting was held in Berkeley August 31 in conjunction with the American Anthropological Association.

At present meetings will be held chiefly in Berkeley and San Francisco, but it is hoped that before long it will be possible to meet also in other cities in California and adjoining states.

Muskwaki Indians of Iowa.—Dr Duren J. H. Ward of Iowa City has recently spent eight weeks in the study of the Muskwaki, or Fox, Indians near Tama, Iowa, in the interest of the State Historical Society. These and the Sauk, or Sauki, Indians have been so long and intimately associated that their separate tribal identity has been lost for generations. While their dealings with the Government have nearly always been as Sauk and Foxes, yet most of these 350 Indians in Iowa are said to regard themselves as Muskwaki. With the exception of half a dozen Winnebago these people are descendants of those who in 1846 were forced to move to Kansas after ceding to the United States all their lands west of the Mississippi in 1842; but small bands wandered back to their old home, and on petition of five hundred citizens, between 1852 and 1854, were permitted to remain. About the winter of 1856-57 the band that had settled at Tama purchased eighty acres of land for \$1,000, and from that date to 1886 the tract had increased by purchase to about 1,500 acres, the Indian title to which was confirmed by act of Congress of October 1, 1886; and by 1899 additional purchases increased their holdings to about 3,000 acres, at a total cost of \$85,635. To the section occupied by these Indians Dr Ward suggests that the name "Musquakia" be applied. What may be regarded as the most interesting discovery made by Dr Ward is a fragmentary history of the tribe, written by Chakatakase. With the understanding that it shall not be translated, the manuscript has been transferred to the State Historical Society for publication in the Muskwaki language, the Indians to receive three hundred copies of the printed work, which will make about fifty pages. A model of a Muskwaki house, 36 by 28 by 22 inches in size, has been deposited among the collections of the Historical Society.

Inlaid Objects: A Correction.—In an article on "Ceremonial Objects and Ornaments from Pueblo Bonito," published in the last number

of the *American Anthropologist*, Mr George H. Pepper thus misquotes (p. 197) my account of the mosaic frog from Chaves Pass, Arizona: "As an example of mosaic work, this object is the only veritable mosaic known to me from ruins in the Southwest." What I did publish (Smithsonian Report for 1896, pp. 529-530) is as follows: "As an example of mosaic work this object *is unsurpassed and with the exception of one other* is the only veritable mosaic *frog* known to me from ruins in the Southwest." I have here italicized the words that Mr Pepper has omitted in his version. There are several ancient Pueblo mosaic objects in the National Museum, collected, figured, and described by me.

J. WALTER FEWKES.

The So-called "Oldest House" in Santa Fé. — In the city of Santa Fé, New Mexico, opposite the chapel of San Miguel, there stands an adobe house that is locally reputed to have been the oldest house in this next to the oldest permanent settlement made by Europeans within the limits of the United States, and also to have been the last remnant of the ancient Indian pueblo of Analco. In January, 1902, I had the good fortune to be present during the repairing of this old structure and of having the opportunity of thoroughly examining the walls as they were reconstructed. These were found to consist of (1) numerous fragments of recent Mexican adobe work, the result of occasional repairs; (2) large portions, perhaps three-fourths of the entire structure, of old Mexican adobe masonry contemporaneous with the major part of San Miguel chapel, and (3) in three places, forming the foundation and at no point exceeding 18 inches in height, considerable fragments of the original pueblo wall, the adobe masses exactly corresponding, in texture, dimensions, and mode of construction, with those in the remaining walls of the pueblo of Kwapoge on the hill formerly occupied by Old Fort Marcy, at the northern edge of the town. The results of this examination are thus in accord with the belief of Mr Bandelier, expressed years ago, that this so-called "oldest house" belongs mainly to the historical period.

EDGAR L. HEWETT.

El Morro Inscriptions. — The latest contribution to the literature of the historically important inscriptions made by early Spanish explorers and missionaries on the face of El Morro, or "Inscription Rock," a sandstone mesa about 35 miles east of Zúñi pueblo, New Mexico, appears in vol. 1, no. 1, of the *Proceedings* of the Delaware County Institute of Science (Media, Pa., 1905), under the title "Photographs of Some of

the Inscriptions on El Morro, New Mexico." The illustrations consist of ten excellent half-tone reproductions of photographs made by Mr Homer E. Hoopes, and are accompanied by transcriptions and annotated translations by Mr Henry L. Broomall, who corrects some of the translations made by previous writers on the subject. The Spanish inscriptions on El Morro are interesting from both a historical and an ethnologic point of view, as they furnish tally dates and other information respecting some of the most important visits by the Spaniards to the western Pueblo tribes in the seventeenth and eighteenth centuries. All of the inscriptions are not included in the present treatise, but it is hoped that the remainder will be similarly photographed and translated in a future publication.

THE MISSOURI HISTORICAL SOCIETY has adopted a resolution requesting its president, Dr C. A. Peterson, to prepare a form of declaration of trust whereby the Society can vest the beneficial ownership of all the property owned by it in the people of the state of Missouri, to be subject to the control of the Society as heretofore. By transferring its building and other property to the State, it is believed a greater degree of safety for the records and collections will be insured, while the Society will become more permanent in character. Among its possessions is a valuable archeological collection, recently enriched with some of the objects recently found by Mr David L. Bushnell Sr in his excavation of the N. D. McEver's mound in Pike county, Illinois.

DR GEORGE GRANT MACCURDY of Yale University has been elected to honorary membership in the Missouri Historical Society. He has also been chosen to represent the École d'Anthropologie de Paris at the forthcoming inauguration of Dr Edmund J. James as president of the University of Illinois.

THE BRITISH GOVERNMENT has granted a pension of £200 to Dr J. G. Frazer in recognition of his literary merits and of his anthropological studies, and a pension of £150 to the Rev. Lorimer Fison in appreciation of the originality and importance of his researches in Australian and Fijian ethnology.

THE MEETING of the American Anthropological Association held in San Francisco, August 29-31, was successful in every way. The proceedings of the meeting and several of the important papers that were read will be published in the next issue of the *American Anthropologist*.

THE GOVERNMENT OF ONTARIO has planned to publish a Handbook of Canadian Ethnology and Archeology for the benefit of the Fifteenth

International Congress of Americanists to be held at Quebec in September, 1906.

THE SIXTH Congress of Criminal Anthropology will meet at Turin on April 28, 1906, under the presidency of Professor Lombroso. An exhibition of criminal anthropology will be held in connection with the congress.

THE SAUK COUNTY HISTORICAL SOCIETY has been organized in Wisconsin, to further archeological and historical research, by Messrs A. B. Stout and H. E. Cole, members of the Wisconsin Archeological Society.

DR W J MCGEE, who has devoted the last two years to the Department of Anthropology of the Louisiana Purchase Exposition, has been appointed managing director of the new Saint Louis Public Museum.

THE UNIVERSITY OF PENNSYLVANIA will receive \$60,000 from the estate of the late Professor Maxwell Sommerville, who held a chair of archeology in the university.

THE BERLIN MUNICIPALITY has appropriated \$20,000 to erect a statue in honor of Rudolf Virchow, which will be placed on the Karlsplatz, close to the Charity Hospital.

PROF G. F. WRIGHT, of Oberlin College, is making a trip to southern Russia and the Red sea to continue his geological and anthropological studies in that region.

THE fourth meeting of the German and Vienna Anthropological Society was held at Saltzburg on the 28th to the 30th of August.

CLARK WISSLER, Ph.D., and Berthold Laufer, Ph.D., have been appointed lecturers in anthropology at Columbia University.

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SYSTEMATIC NOMENCLATURE IN ETHNOLOGY¹

By A. L. KROEBER

If one were asked to name the one work which has been of greatest importance and influence in the development of American anthropology, it could scarcely be any other than Powell's "Indian Linguistic Families of America North of Mexico," published in the Seventh Annual Report of the Bureau of Ethnology fourteen years ago. Its importance does not lie in any statement of new principles, for, other than a few subsidiary ones relating to nomenclature, it contains none. Neither has its influence been due to the originality of its methods and the consequent novelty of its conclusions. The idea of the linguistic family was not a new conception in American ethnology. Students of American languages and ethnological conditions had for some time previous had a clear conception of the linguistic family as a unit, and it is only necessary to turn to the works of Gatschet, Boas, and others of the period immediately preceding the appearance of Powell's work; in a certain measure to the writings of Brinton; and for all essentials to the pioneers Gallatin and Hale; to see that the idea of an ethnological classification on the basis of linguistic relationship was a familiar one. What Powell did was to seize clearly the conception of the necessity of some classification, and of the inevitability of this being on a linguistic basis; and then to carry through his purpose rigorously, systematically, and completely. In two respects only did his attempt differ from the more indecisive and narrower attempts of predecessors. He for the first time broke definitely with the old

¹ Read at the meeting of the American Anthropological Association, Berkeley, California, August 31.

association between linguistic classification and philological study. In Powell the method of classification is purely linguistic; the purpose, ethnological. This is one factor that made his work what it is. The other was the completeness with which he carried out his plan. For the first time there was presented a map without blank spaces. Every inch of territory in the continent north of the Rio Grande, and every tribe and band inhabiting this territory, were at least implicitly accounted for. That there were errors is inessential. Anyone can correct mistakes. But by the mere completeness of Powell's classification, however faulty it might be, a standard had for the first time been set which could never be receded from. In these two factors then, simplicity of purpose rigidly adhered to, and systematic completeness, lay the value of Powell's work. It was the achievement not of a thinker, but of an executive. But in that fact lay its vitality, its success, and its influence. And it was fitting that this great work should be an emanation from the official national ethnological institution and that it should appear under the name of its director and founder. It is well known that Powell himself did not carry out the work on his undertaking. Another hand, that of a scholar-administrator, was necessary for the fulfillment and realization of the plan; and to him the credit that is his due will come before the reckoning is done. That he was not by training or profession an anthropologist will make his distinction all the greater. But it was Powell's mind that first fully conceived the idea of a classification, and planned it with such comprehensiveness that it will long be the basis of future classifications; and it was Powell's will and character that held to the idea, that found the man fit to carry it out, and that called into being and maintained the national institution through whose accumulation of material and assemblage of students it became possible to achieve its execution. So it was that the work which will be the chief monument to Powell's anthropological fame was accomplished. Its importance has been such that to us of a younger generation, who have entered the study of American anthropology since the appearance of his paper, it is difficult to conceive how systematic work could have been carried on in the period, which to our eyes seems comparatively one of chaos, previous to its completion.

In one respect only has the acceptance of Powell's classification, which otherwise was universal and immediate, met with resistance and partial failure: on the side of nomenclature. Some of the names that he employed, especially for the larger and better known families, have found general approval; some of his names indeed had been in common use long before. A great number of Powell's names of linguistic stocks, however, were to all intents and purposes new. Many were to be found only in obscure and uninfluential works known to no one but the synonymist and the specialist in the ethnology or philology of some limited region; and, what is more, many of these practically new terms were used to replace well-known and generally used names. That a considerable proportion of these names that owe their life and continuance entirely to Powell are long, difficult to pronounce, and in barbarous and unphonetic orthography — an orthography which on other occasions Powell himself denounced vigorously and effectively — is perhaps a minor consideration, but one that has also been of consequence in preventing their acceptance in many quarters. It is only natural that one should hesitate before using such words as Palaihnihan, Moquelumnan, Kalapooian, Skittagetan, and Koluschan.

Essentially, however, the unfortunateness of such terms lay in the fact of their comparative novelty and in the resulting consequence that a double nomenclature, one founded on general and often deserved usage, the other backed by the importance and the official authoritativeness of Powell's classification, was thereby introduced for many stocks. While names are only handles to things and means to an end, they and their form yet derive importance and merit consideration from the very fact that they are a means and an indispensable one. It is for this reason that the nomenclature of ethnological classification is entitled to consideration.

A few instances of Powell's stock names, as compared with those in current use, will bring out more clearly the facts involved and the essential principles of his nomenclature.

The Indians of Queen Charlotte islands formed a single, compact, well-marked linguistic family. They lived in separate villages and had a well-developed clan organization. They were however not divided into true tribes. The name that these people com-

monly went under at the time of Powell's classification, and still go under both in scientific literature and in current designation, was Haida; a name, moreover, not confined in its use to the English language. What the origin of this name is does not matter; that in its original significance it was the proper term of these people for themselves is unessential. It is a distinctive term which sets off the people of this linguistic family from all others, and which is the only one that is thus distinctive and in common usage. In place of this well-established name Haida, Powell introduced Skittagetan. This is the adjective, derived by the ending *-an*, from Skittaget, a way of spelling the name of one of the Haida villages generally known as Skidegate. That this unusual orthography of the name of the village was chosen by Powell, and that the name of a single village of the stock was adopted for the whole stock instead of the well-known and appropriate name in current usage, was not due to random accident or any censurable desire for novelty; but to the fact that the first writer who had in print clearly referred to these people as constituting a linguistic group distinct from others, had happened to use the term Skittaget to designate them. In other words, the cause of the employment of this name in Powell's classification lay in the fact of a rigorous application of the principle of priority of nomenclature.

In California, between the Sacramento river and the crest of the Sierra Nevada, lived a body of Indians speaking clearly related dialects. Like most Indians of North America, they had no name for themselves as a linguistic family; like most Indians of California, they had no tribal names, for they possessed no tribes. Their only political organization was on a basis of independent village groups. Clearly, therefore, there was no native name in existence which could be taken over into ethnology without a change of denotation to designate these people as a whole. The linguistic unity of the group was recognized in print, and its limits sharply and on the whole correctly drawn, by Powers in his monumental work "*The Tribes of California*," which was published as many years before the appearance of Powell's classification as have elapsed from that date to the present time. The name used by Powers for these people, and used also by Powell himself in his linguistic ap-

pendix to Powers' volume, was Maidu. This name means "man" or "person" in the greater number of the dialects of this stock and is therefore as appropriate a term as could be found under the circumstances. The Indians all know the meaning of the word; and that the white inhabitants of the region are unacquainted with it is no argument against it, for the only term that they employ is "Digger," which is applied indiscriminately to the Indians of at least a dozen distinct linguistic families and of several states. In 1877, in his appendix to Powers' work, Powell had not formulated the doctrine of priority of nomenclature, and therefore accepted and in fact helped to establish the entirely appropriate and in every way reasonable term Maidu. In 1891, in his general classification, he announced the principle of priority; and, pursuing it consistently, took from the same short and unimportant publication, however well done a piece of work it may have been in its time, from which he had derived other terms, the name Pujunan for the Maidu. Latham, using the incomplete and unsatisfactory material available at an earlier period, had attempted a classification, which on many points has proved correct, of the numerous native languages of the Pacific Coast. With the fragmentariness of his knowledge, and his remoteness from the region with which he was dealing, he was hard put to it for terms by which to call the linguistic groups which he established. The Pujuni had been regarded or called, in the terminology of those days, a tribe. Actually the name is only that of a village; of a place, not of a body of people. In default of anything else, however, and under the necessity of finding some designation, Latham selected at random this term Pujuni; and, as he was the first to refer to the Maidu or any part of them as a linguistic group, his name was entitled, by Powell's law of priority, to become the standard and permanent designation of the stock. If the name Maidu could have been thereby done away with and blotted out of existence, no great harm would have been done, even though Pujuni is less appropriate as a designation for the whole stock than Maidu. But Maidu had come into common scientific usage through its employment in the only work which up to that time, or for that matter up to this day, has treated comprehensively and systematically of the Indians of all California. Two terms of the same de-

notation were therefore set into use by Powell's adoption of Pujunan. In the absence of any tribal divisions or other political organization, it is usually necessary, even in purely ethnological descriptions, to designate these people by the name of their linguistic stock. The double terminology accordingly results in the objectionable condition of the same people, ethnologically considered, being called by one name and linguistically considered by another. Nothing but difficulty and confusion can arise from the double nomenclature.

One of the great families of North America is among those in connection with which Buschmann attained to ethnological and philological fame; the Athabaskan. Buschmann, Gallatin, and others have written the name Athapaskan and Athapascan, and the latter is the form adopted, again on the principle of priority, by Powell. The name has had a more extensive and general geographical than ethnological use. It is the name of a large lake in north-western America and the official designation of a governmentally constituted territory and future province of the Dominion of Canada. Geographers and the government of Canada have written and still write Athabaska and Athabasca. In the case of this stock name the difference between the terms in question is a trivial one, that of a single letter; but comparatively slight as the moment of this letter may seem to be, it is yet unnecessary and therefore unfortunate, especially in a matter of science, that this widely known name should have been made to have one form when employed ethnologically, and another in its political and geographical sense. It is not in the least a question of whether Athabaskan or Athapascan is the more correct spelling. Powell himself has insisted that the appropriateness of any term according to its usage in the language from which it is taken is not essential; and everyone will be disposed to agree with him, at least to the extent that such appropriateness is one of the less important considerations in nomenclature. Moreover, without going into the origin and history of the word, it is practically certain that neither Athabaskan nor Athapascan is an accurate phonetic representation of the word as it was spoken by the Indians, for it is well known that there is scarcely one Indian word in a hundred, geographical or otherwise, which has passed into civilized usage and is so rendered orthographically as to reproduce

exactly its original phonetic form. Whether *b* or *p* should be used by ethnologists is a matter of utter indifference as long as uniformity is obtained; and therefore the form which has the widest usage, and the promise of most permanent usage, would seem to be the desirable one. Every one would probably agree that all interests will be best subserved by the universal acceptance of the most desirable form and the suppression of all others. Viewed under this aspect, what chance of survival and final adoption has a form, based on a single publication issued a generation or two after the term had passed into wide-spread employment, limited to technical ethnological use, and with no advantage of a more reasonable orthography in its favor, as against the form of the name appearing in every school geography and standard atlas, and written annually in thousands of official documents and on tens of thousands of letters?

These are typical cases of the names adopted by Powell and given a wide currency through the authoritativeness of his work. The inconveniences caused by the introduction of these new forms by the side of the names then and still current, may seem trivial; but in the cumulative course of time the confusions and additional difficulties which the new forms will cause must be considerable and regrettable. Essentially all the mischief is due to the adoption by Powell of the one principle of priority of nomenclature. Allied in his mind to this principle was the idea that names should be denotive, not connotive or descriptive: that any name, irrespective of its origin or the history of its use, which denoted a family, was a fit name to be used for such family; and that any name which was in other respects satisfactory should not be given up because in its original meaning it was inappropriate. That the name of a linguistic family rested on a misunderstanding, or that it was a term of opprobrium in the language of another family, was not to militate against its acceptance in science, if only it fulfilled the other requisite conditions entitling it to usage. To this last principle everyone would be inclined to agree, if not absolutely, at least within reasonable bounds. Other things equal, a fit name, if possible the name of the people for themselves, is preferable to any other, just as names in phonetically correct orthography, and names easily pronounceable, are preferable to others; but, as Powell has pointed out,

the Indians of most linguistic families in North America have no name for themselves as linguistic families. Over the greater part of the continent there are tribes, which have tribal names; but the linguistic families are usually of large extent and as a rule no tribe has a name for the whole linguistic family to which it belongs. Algonkin, a name which everyone accepts, is originally the name of a tribe. The eastern members of the Algonkin family, such as the Micmac, and the western members, such as the Blackfeet, did not even know of each other's existence. It is obvious that in this case a native name for the entire family is out of the question. The same is true of most other families on the continent. Siouan, Shoshonean, and Caddoan are other names designating important families and taken from the names of single tribes; and no one but a purist would dream of finding fault with them. They are employed by every one with the same significance: to designate all tribes belonging to certain linguistic groups, and no others. All the essential requirements of a scientific name, that it should denote one thing, all of that thing, and nothing but that thing, are therefore fulfilled by such terms as these. Eskimo is another word that is satisfactory in every respect, for no confusion has ever arisen through its use. Who cares now whether it is a term of contempt meaning raw-flesh-eaters in the language of an alien stock, and that it was unknown to certainly the greater part of the Eskimo? The Eskimo have a name for themselves, Inuk, which means "person," and which, in most cases at least, they apply only to themselves and not to the Indians or whites of whom they have knowledge. This, being a native term with the same signification as our "Eskimo," has sometimes been used by authors; but difficulties at once arise from such usage. Where one dialect says Inuk, others say Inung. The plurals Inuks or Inungs are false English plurals. The native plural, which alone should be used if we insist on native terms, is Innuut. To ask everyone who will ever speak of the Eskimo to remember this plural, which is so abnormal in our language, or to believe that these singular and plural forms could be generally used without frequent confusion, is unreasonable. As a matter of fact, the people who have employed Inuk and Innuut instead of Eskimo have been the very ones to speak of "an Innuut" and of "the

Innuits," terms as barbarous as "an Americans" or "the Frenchmens." It is thus evident that the persistent search for names that are appropriate and correct in form must in certain cases be fruitless, and must frequently lead, not to greater purity, but to greater inappropriateness and barbarity of expression. The principle which seems the only safe and wise one to follow is to regard every name, once it is used ethnologically, as part of the scientific civilized language in which the work in which it occurs is written, and to treat it accordingly, irrespective of its original meaning or its original form. Of course, where a new name is to be coined, or where a choice is to be made between two names neither of which has acquired a predominance in usage, it is desirable that the name chosen should be as appropriate in meaning, and as correct in form, as possible; but where a name is once established, whether through the acceptance of the law of priority or through usage, nothing can be gained and much lost by allowing any room to considerations of appropriateness and correctness. With this principle of Powell's then, that names are only handles and that it is therefore sufficient if they are exactly denotive, every one not actuated by motives of sentiment will agree. It is Powell's other principle, that priority should be the deciding factor in the choice of names, that is vulnerable.

The advocated law of priority in ethnological nomenclature is taken directly, with only such modifications as are necessary to altered conditions, from the laws governing the artificial system of nomenclature now universally obtaining in the biological sciences.¹ It was therefore introduced merely through an analogy, and it becomes obvious that if the analogy between ethnology and biology

¹The chief provisions of the law of priority in nomenclature as formulated by Powell, are that "the name originally given by the founder . . . to . . . a family . . . shall be permanently retained"; that "a family name once established shall not be cancelled in subsequent division" of the family; and that "the original orthography of a name shall be rigidly preserved." It is by following these principles that he adopts the almost unknown Skittagetan instead of Haida, the unknown Pujunan instead of his own currently known and accepted and appropriate Maidu, the divergent Athapascan in place of the officially fixed Athabaskan and Athabaskan, Eskimaun in place of the orthographically more reasonable Eskimoan, Koluschan instead of Tlingit, Mariposan instead of Yokuts, Copehan instead of Wintun, Kulanapan instead of Pomo, and Sastean instead of Shasta.

is not real, or even if only it is not complete, the adoption of biological principles must be attended with unsatisfactory results. Powell himself clearly recognized that the basis of his law of priority was only one of analogy, and he raises the question whether the analogy between the two sciences is sufficiently complete to justify his course. He concludes that it is; but the fact that his terminology has met with so much resistance, while his classification itself has been both universally accepted and of profound influence, has left the question open.

The essential defect of the principle of priority lies in the assumption that conditions in ethnology are parallel to those in biology. For many years now an artificial nomenclature has been accepted and has held universal sway, except on the part of a few fanatics, in all biology. Whether this system of nomenclature will continue to be used indefinitely, or whether in the course of time it will be superseded, does not now matter. Until now at least it has been indispensable. Without it all systematic biology would be reduced at one blow to an utter chaos. In this system of biological nomenclature the principle of priority has been an essential element; and while there is some tendency at the present day, and one that is likely to become stronger, to restrict the absolute operation of this principle of priority, the essential necessity of this law is almost universally recognized. The law of priority in biological nomenclature is however only a means to an end; this end being the establishment of a uniform and stable artificial nomenclature irrespective of popular and general usage. This in fact is the purpose and aim of the standard biological nomenclature; to be international instead of national, and to be free from the variable and changing effects of current usage by the substitution of a rigid and automatically operative system whose value lies in the fact that the terms which it provides are artificial. It is in these two factors, internationality and artificiality, contributory to uniformity and stability, that the same system of nomenclature breaks down when it is applied to the kindred but distinct science of ethnology.

The first aim of artificial biological nomenclature, the finding of a terminology which shall rise above the varying usage of nationalities to an international and cosmopolitan plane, is from the very

nature of things rendered superfluous in the case of names of bodies of people. Such names are not, like the popular names of animals and plants, common nouns forming an integral part of a language, but are proper names which can be and are equally used in any language. The names of the animals and plants known to the people speaking any language are found in its dictionaries; the names of the tribal, linguistic, and national groups known to the same language are found in its encyclopedias. "Pomo" and "Eskimo" will never form part of English, or of any other language, in the same way that "elk" and "eagle" and "oak" do; and what is more, they will be and are susceptible of identical use in French and German and Russian and every other language. The first need of biological nomenclature, the internationality of the terms used, is therefore not felt in ethnology; for the terms with which it deals in designating bodies of people are in the nature of things international.

And so when we come to the second need of biological nomenclature, that its terms shall be rigorous and fixed in denotation and therefore artificial, conditions are also radically different in ethnology. Scientific biological nomenclature is something apart from daily life. It is confined absolutely to biology. It does not enter into literature or art or law, nor does it obtain official or governmental recognition. This aloofness which its system of nomenclature gives to biological science is felt by all broad-minded biologists as an evil; but under present conditions a necessary one. In ethnology it would be an equal evil, and an unnecessary one. It is not only anthropologists who deal with and speak of tribes and nationalities and other divisions of people; all of us, directly or indirectly, are in relations of many kinds with these divisions of humanity. They are not only parts of nature like inanimate objects and animals; they are men like ourselves, — men with whom we trade and converse and intermarry, with whom we make treaties, and for whom we make laws. Mankind will therefore always have names for tribal and national and linguistic divisions, irrespective of what organized professional anthropology may or may not do; and these names, being proper terms and therefore denotive, and not like the real words forming an integral part of a living language connotive, ful-

fill, in potentiality at least, all the essential requirements of exact scientific nomenclature. There is therefore nothing to be gained by anthropologists in the attempt to enforce recognition for parallel terms, identical in all the principles which they observe, and differing only in their particular form, from those in the current usage of mankind. If the attempt to introduce such a parallel nomenclature into ethnology should ever be successful for any short period, it would lead only to a separation and greater aloofness of anthropological science from the great main stream and development of civilization. It would render ethnology a more isolated and self-contained thing, more useless, less effective, and less influential. It would tend toward making it a dead science instead of a live issue in the world. It would give it rigidity and artificiality without any compensation. And when the final tale is told, when a generation or a century has passed, and the reckoning is made, who can doubt which would prevail,—the terminology of mankind as a whole, however chaotic and provincial but real, or the reactionary and isolating terminology of a small body of professional anthropologists?

Why, therefore, trouble with any artificial nomenclature in ethnology at all? All that we want is to have names that shall mean only one thing, and to have not more than one name for that thing. These conditions are furnished in the names already in popular and general usage. Here then should be the test and here the discrimination when there is question between more names than one. The name which is already prevailing, or which all things considered bids fair to prevail, is the one which we should choose. That name will prevail in any case. The attempt to substitute for it a name perhaps better in itself, but resting only on an artificial foundation, can never be permanently successful. To resist the general tendencies associated with the march and development of the world is hopeless for so puny a part of the world movement as ethnology at its best can hope to be. What ethnological science can do, is to coöperate with the inevitable movements of civilization instead of opposing them, and to guide and direct them in a reasonable and profitable manner. The popular mind is no more inclined than that of the specialist to be burdened and confused with two names for one thing or by two orthographies for one word, nor,

other things equal, does it prefer the inappropriate and incorrect word to the right one. It is only in knowledge and breadth of experience that popular usage is at fault. Here is the function of the ethnologist. Where two names are in the balance in the scales of general usage, where the weight of usage is equal between two orthographies of the same name, the influence of ethnologists should be cast in favor of the more rational one. Where one name or one orthography predominates and gives promise of predominating, it is the opportunity and business of ethnologists to secure so far as possible universal acceptance and usage of the prevailing term. In these endeavors they will be given a ready hearing by the world; but in attempting to drag the forgotten and useless to light, to revivify the dead, to duplicate an already confused terminology, and to separate the course of anthropological development from that of the world, they will be passed by unheeded, and their work will be brushed aside, forgotten, and superseded by later generations.

Usage then, and usage as wide as possible, and not priority, must be the determining test in systematic ethnological nomenclature; but it must be supplemented by reason. Because the average American calls the Indians of most of the twenty-two linguistic families of California all indiscriminately "Diggers," is no reason for advocating the use of the term Digger to designate these twenty-two families. The average layman, being without special ethnological proclivities, and having no motive for distinguishing between Indians of different linguistic families, does not do so. Ethnology does and must make such distinctions and must have terms for them. Further, there is a large element of the public, a larger one proportionally in the case of ethnology than of biology, and a growing and intelligent element, which is interested in these and other distinctions, and which is ready to follow the lead of ethnologists. Why then undo all this progress that has been made, by attempting to set up a new nomenclature which has no motive except the blind pursuit of a principle borrowed from a differently conditioned science? "Pomo" was originally the name only of one village in Potter valley, California; "Kulanapo" also the name of only one village, of the same linguistic stock, on Clear lake. What does it matter that Gibbs in 1853 in an obscure report used

Kulanapo to designate the family to which both villages belonged and that it was nearly twenty-five years later when Stephen Powers used Pomo for the same purpose? The latter name has been used again and again in scientific and popular literature and is known perhaps to millions of people, and certainly intimately to thousands; Kulanapan is known only to a few dozen anthropologists. If Kulanapan were the name which had obtained the wider usage, we should gladly forgive its additional two syllables, and with equal unprejudice lend it our support in the hope that it might before long entirely supplant the rival name which it had already outstripped. Is it too much on the other hand to ask that we should forget our abstract principles, which even if successful can lead to nothing essential or vital, and to support in turn the name Pomo, which, as facts actually stand, is the one that predominates and will predominate?

Because, then, usage, and not priority, should govern and will govern systematic ethnological nomenclature, one other consideration, though a minor one, must be allowed. Under the operation or the law of priority, questions of correctness and appropriateness can be entirely eliminated; but when the appeal is to the bar of popular verdict, conditions are slightly altered, in that considerations of correctness and appropriateness are among the factors that guide the popular verdict. Every consideration of form, including that of correctness, is subsidiary, and should be unhesitatingly sacrificed where the case is otherwise clear. When a name is generally accepted, let us take it at its face value, and forget its history and original legitimacy. Its usage is sufficient sanction and should make it more than welcome. But where the scale is nearly in the balance, or where there is reason to believe that the tendency of the future will be toward the name which is at present less used but which is inherently better, it will be well to pause before rendering a definite verdict. It is a disadvantage of usage as a canon that it is at times indeterminate and that no vote or poll is possible or desirable; and for this reason, with usage as a guide, we shall always have a few terms on which opinions will differ. But, to compensate, is the fact that this occasional indeterminateness leaves room and provides opportunity for improvement, for the substitution of

the better name for the worse, and of the better form for the inferior. It is well, therefore, to go slowly and consider maturely. Sooner or later the cases that seem most indeterminate will solve themselves; and while the one essential criterion should always be usage, it will be worth while at least to consider correctness and appropriateness of names.

The time is ready for a formal abandonment of the principle of priority in systematic ethnological nomenclature. It is not ready, and it is to be hoped never will be ready, for the formal establishment of a series of terms based on any artificial principle or on any contract or agreement. The biological sciences may constitute themselves an independent entity sufficient unto themselves; ethnology cannot afford to do so. Its last court of appeal will always be, not the opinions of a small body of professional anthropologists, but the opinion of the world at large. All that is desirable now is the abandonment of theories and principles which lead aside or backward. It was as head of the institution officially devoted by the people of this country to the furtherance of ethnological study, that Powell prepared and had prepared the invaluable classification which we all respect and use and shall long continue to use. It will be particularly fitting if the movement to recede from the one defective position in his work, the nomenclature, emanates from this same institution which is now carrying on, to greater achievements it is to be hoped, the work which he founded. Such a movement would not diminish the renown of his greatest life work; but, by making the one correction necessary to perfect it in its fundamentals, would notably and permanently add to his fame.

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THE INDIAN POPULATION OF CALIFORNIA

By C. HART MERRIAM

California at the time of its discovery was more densely populated than any area of equal size in North America. Not only was this the case, but the number of tribes and of distinct linguistic stocks within its boundaries nearly equaled those of all the rest of the continent north of Mexico. It is an extraordinary fact that among the multitude of languages spoken there were at least two dozen stocks differing from one another more than German from English, or Dutch from Italian. This points to a very remote antiquity, for languages are not developed in a day.

Although the aboriginal population is known to have been exceptionally large—owing mainly to the bounty of the food supply and the mildness of the winter climate—its numerical measure has never been carefully taken, and the published estimates differ widely in their totals. In seeking a basis on which to frame a logical estimate, one is confronted by the fact that the only reliable statistics for any considerable part of the state are those of the Mission fathers, prior to 1834; and of the first U. S. Indian commissioners and agents, for 1850–1852. The records of the padres relate only to the limited area dominated by the missions—a belt along the coast from San Francisco bay southward—and deal only with the baptized Indians, making no attempt to give the entire population. The records of the Indian commissioners relate mainly to tribes living along the western base of the Sierra and those of the northwestern quadrant of the state. They are manifestly incomplete, and moreover treat of a period so late that the native population had been sorely reduced by contact with the whites. It must be admitted at the outset, therefore, that no data exist to serve as a basis for an accurate estimate of the aboriginal population. Nevertheless, if it is possible to ascertain approximately the number

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 29.

of inhabitants of an area of considerable size, and to establish a relation between the density of population of this area and that of other parts of the state, a rough estimate for the whole state may be ventured. Fortunately, the records for the Mission strip furnish material for such an estimate.

The Mission strip, even if allowed to spread over the inner Coast ranges to San Joaquin valley, comprises only one-fifth of the non-desert part of the state. Hence if the aboriginal inhabitants were evenly distributed, the total population would have been five times that of this area.

Personal observation during ten years of field work in California, in the course of which I have enjoyed unusual opportunities for noting the character and quantity of the food supply, and the location of Indian villages in nearly all parts of the state, has convinced me that throughout the non-desert areas the food supply was surprisingly bountiful and the aboriginal population correspondingly large, and that in neither of these respects was the Mission strip more favored than other areas. Furthermore, in this strip the proportion of uninhabitable land was at least as large as elsewhere.

Even the great interior valley, in spite of its barren places, abounded in food. The plains were inhabited by doves, ground-squirrels and rabbits, and by bands of antelope and herds of elk; the brushy and weedy places along the streams gave shelter to countless thousands of quail; the Sacramento and San Joaquin rivers with their sloughs and tributaries swarmed with waterfowl and teemed with mussels and fish; a sea of wild oats covered the land, and broad belts of noble oaks followed the rivers, affording a prodigious store of acorns.

The foothills and lower slopes of the Sierra for a distance of 500 miles, and the inner Coast ranges for a still greater distance, were likewise in the main carpeted with wild oats, interrupted by thickets of berry-bearing manzanitas and shaded by open forests of nut-bearing Digger pines and numerous kinds of oaks, which together furnished the principal food of the people. Throughout this vast area fish were plentiful in the streams, and game — rabbits, ground-squirrels, quail, and deer — overran the land. The north-western quadrant was equally favored and possessed several of the best salmon and eel rivers of the state.

The staple food was not everywhere the same: Along the Colorado river it was the mesquite bean; in the deserts east of the Sierra, the rich oily nuts of the piñon or nut pine; in the north-west and along salmon streams elsewhere, salmon and acorns; in the interior generally — the Sierra region, Coast ranges and included valleys — the acorns of a number of species of oaks. Indeed, in most parts of California acorns were and still are the staff of life. They are pounded into meal, which is leached to take out the bitter taste and then boiled in baskets by means of hot stones, forming a thick jelly-like nutritious mush. Acorns also are made into bread. The yield is not constant, having cycles of abundance and scarcity, but since in most localities half a dozen or more kinds occur together, and since all of these rarely if ever fail the same year, an absolute failure is probably unknown. In case of scarcity of acorns, however, the large nut of the California horse-chestnut or buckeye — a widespread and prolific bearer — was commonly used as a substitute. Buckeye meal needs more washing to take out the poison, but makes fairly good bread. Bread was made also from the nuts of the California laurel (*Umbellularia*). In certain areas oatmeal mush, made from wild oats, formed an important part of the food; and edible roots were always to be had. But acorns were rarely wanting, for it was the universal practice to gather and store each fall enough to last two years, so that if a bad year came the people would not suffer. Similarly, dried salmon, manzanita berries, mesquite beans, pine nuts, and other staple commodities were gathered and stored in large quantities.

From these facts it is obvious that the food supply was adequate for a very large population; and the number of occupied villages at the beginning of the gold period shows conclusively that the number of inhabitants was very great — though probably never large enough to press on the food supply.

There is every reason to believe, therefore, that the average density of population (excluding the deserts and high boreal mountains) was at least as great as in the Mission strip; and since this strip comprises only one-fifth of the non-desert area, the total population should have been five times that of the Mission strip. With this assumption as a basis, let us examine the data.

The padres, throughout the 65 years of their rule (1769-1834), not only made every effort to bring to the missions and baptize as many Indians as possible, but kept a careful record of the number baptized each year, and also, from time to time, of the total number present at all the missions. The period of most rapid growth was the decade covering the end of the 18th century and the beginning of the 19th (1795-1805), during which the number swelled from 12,216 to 20,627—a gain of 8,411. Then the rate slackened and a quarter of a century was needed to add 4,000. In 1830 the number had reached 24,634, and in 1834 upward of 30,000, after which it fell off rapidly. In selecting a date for an estimate of the population, therefore, we have little choice, it being necessary to take the period for which the data are fullest and least likely to lead to error. This beyond question is the year 1834—the year in which the number of baptized Indians attained its maximum.

The number of these being known, it is important to determine the number of unbaptized or free Indians. This unhappily cannot be done with any degree of certainty. The Indians brought within the jurisdiction of the church were virtually slaves and were obliged to perform all the labor of the missions. Discontent was widespread and often led to desertion. Deserters were pursued, and if caught were flogged or otherwise punished. Hence it is not difficult to understand why the continued efforts to bring in new recruits were not always crowned with success, why so large a part of the population kept away from the missions, and why the natives came to be disposed in two sharply contrasted classes—the baptized and the unbaptized—called by the padres respectively 'neophytes' and 'gentiles.' While the record is full as to the number of neophytes, it is silent as to the number of gentiles. This is the weak point in the argument and there appears to be no way of getting around it. The ratio between the two classes was ever changing, for the number of neophytes not only fluctuated from year to year, but showed on the whole a progressive increase up to 1834, the year in which the secularization of the missions took place. In the early years the gentiles vastly outnumbered the neophytes, but at the close of the mission period it is practically certain that the neophytes largely outnumbered the gentiles. It being necessary to assume a ratio, I

have conjectured that in 1834 the 30,000 baptized Indians formed three-fourths; the unbaptized or free Indians one-fourth of the native population, making a total of 40,000 for the Mission strip. This is believed to be a conservative estimate.

The question now arises as to the native population of the rest of the state. It having been shown that the aboriginal population except on the deserts was in all probability fully as dense as that of the Mission strip, it follows that the whole population of the non-desert part would be five times that of the Mission strip, or 200,000. But this takes no account of the Modoc, Washoo, Paiute, and Shoshonean tribes of the region east of the Sierra, or of the Mohave, Chemahueve, and Yuma of the lower Colorado, whose members living within the state must have numbered collectively at least 10,000. Hence the total Indian population of California at the close of the Mission period (1834) could hardly have been less than 210,000.

This estimate is likely to err on the conservative side, for although under Mission rule the number of neophytes continued to increase, the death-rate was startlingly high and the population as a whole steadily decreased, so that at the close of the Mission period it had already undergone material diminution. The padres state that up to the year 1824 they had baptized in all 86,000 persons, of whom at that time no fewer than 61,000 had disappeared. It would seem a conservative estimate, therefore, to assume that during the 65 years of Mission rule the decrease had amounted to 10,000 persons. Adding this number to the 40,000 already found to be the probable native population of the Mission strip in 1834 gives 50,000 as approximately the population before it had suffered from contact with the Spaniards. And if at the time of the discovery of California the population of the coast region from San Francisco bay southward was 50,000, the population of the main or non-desert part of the state, on the basis here adopted, would have been 250,000 (instead of 200,000). Adding to this the probable desert population of 10,000 gives for the whole state at the time of its discovery a probable population of 260,000.

It may be urged that there is no evidence that the population was equally dense in different parts of the state at the same time.

Admitting this, there surely is no evidence to the contrary, and the known facts point to a continuously contemporaneous population of large size throughout the non-desert parts up to the time each area in turn was smitten by the blight of foreign invasion. The widespread bounty of the food supply, the freedom from intertribal wars (except in the northwest), and the probable absence of epidemic diseases until introduced by the whites, all point in this direction.

Decrease and Extermination

There is every reason to believe that the native population, from the date of the discovery of California to the time when it was shriveled by oppressive contact with foreigners, had remained reasonably constant. It may be assumed, therefore, that the number of Indians at the beginning of the last century was approximately 260,000, and the number in 1834, 210,000.

During the height of the gold period, from 1850 to 1853 (disregarding Schoolcraft's absurdly low estimate of 32,000, and Barbour and Wozencroft's exaggerated guess of 200,000 to 300,000), at least three estimates were published by men whose business it was to deal with Indians. Adam Johnson, sub-agent in charge of the Valley Indians, gave the number as 80,000; Gen. E. F. Beale, superintendent of Indian affairs, as 75,000 to 100,000; and the Commissioner of Indian Affairs, as 100,000. The mean of these is 88,750, which probably is not far out of the way.

The native population in 1856 was estimated by Hittell at 48,100.

Beginning with 1860 and continuing to the present time the Federal Census has recorded the number of Indians, as follows:

| | |
|---------|--------|
| In 1860 | 31,338 |
| 1870 | 29,025 |
| 1880 | 20,385 |
| 1890 | 16,624 |
| 1900 | 15,377 |

In spite of obvious errors and discrepancies these statistics are of considerable interest and in the main may be regarded as approximately correct. Up to 1900 they doubtless err consistently in underestimating the number of wild or 'uncivilized' Indians liv-

ing away from the reservations, of which no count was made. The omission of this class—or its reduction to an absurdity—is conspicuous in the Census of 1890, where the number given is only 43. The actual number at this date could not have been fewer than 1,500 and probably exceeded 2,000.

I have made such corrections in the census and other returns as seemed called for in the light of the data already gathered, and submit the results as my personal estimate of the population at different times during the century ending with the year 1900.

Estimate of Probable Indian Population of California at Different Dates from 1800 to 1900.

| | |
|------|---------|
| 1800 | 260,000 |
| 1834 | 210,000 |
| 1849 | 100,000 |
| 1852 | 85,000 |
| 1856 | 50,000 |
| 1860 | 35,000 |
| 1870 | 30,000 |
| 1880 | 20,500 |
| 1890 | 18,000 |
| 1900 | 15,500 |

The tremendous decrease that has taken place during the last century—a decrease amounting to the complete annihilation of scores of tribes and the reduction to scattered remnants of scores of others—is due wholly to the coming of the white man. It began in the early days of the mission padres, as we have already seen, and has continued to the present time. While in the main gradual, there were two periods in which its rate was suddenly and greatly accelerated. The first of these was the period immediately following the confiscation of the missions, beginning in 1834; the second the period immediately following the discovery of gold, beginning in 1848.

The decrease following the mission period was startlingly rapid. The four years immediately preceding the confiscation of the missions were years of unprecedented prosperity and of marked increase in the neophytes, the number in 1834 having attained its maximum of upward of 30,000. By means of this multitude of subjugated

Indians, as stated by Hittell in his admirable *History of California*, the flocks of the mission fathers were herded, their fields tilled, and the value of their properties and possessions augmented in all directions. They had upward of 420,000 cattle, 60,000 horses and mules, 320,000 sheep, goats, and hogs; raised more than 200,000 bushels of grain and beans, and the income for the year exceeded a million of dollars. But this year was not only the one of greatest material prosperity for the missions; it was also the one in which their doom was sounded and their downfall begun. The government issued a decree providing for their 'secularization,' and the confiscation of the properties began at once. So fatal was the move, and so swift its operation, that in eight years the neophytes had dwindled to one-seventh the number present in 1834, leaving only 4,450 at the missions. This does not imply that in eight years 25,500 Indians had perished, but that the deaths and removals together amounted to this number. In the succeeding years the neophytes who had left the missions found themselves wholly unable to cope with the changed conditions and soon passed out of existence. They had been long clamoring for freedom, but when it came were unable to live under the new regime. A generation of bondage had unfitted them for self support; their old homes had been occupied or overrun by Spanish-Mexican rancheros and they found themselves unable to return to the old life or to adjust themselves to the new.

It may be argued that the Indians who left the missions, either before or after their confiscation, and also the free or wild Indians of the same territory, had fled to other parts of the state, and thus in disappearing from the Mission strip had merely moved away. This they undoubtedly did to a certain extent, particularly in the Tulare or Tache Lake country, but so far as any substantial migration is concerned, the evidence points in the opposite direction. In order to go anywhere else they were obliged to invade the territory of other tribes—tribes without exception speaking different languages. While it is known that individual Indians did this in many cases, there is no evidence to show that any considerable number joined other tribes. Had they done so they would have left many descendants; but in all my field work in California I have rarely met,

outside of the Mission strip and the small reservations from Tule river southward, a Mission Indian or the descendant of a Mission Indian. This to me is conclusive evidence that the great bulk of Mission Indians perished in their own territory.

The process of confiscation of the missions covered a dozen years (1834-1845) and its disastrous effects on the natives continued for several years longer—till in fact those of the Mission strip, except in the far south, had been practically exterminated. During the early part of this period the Spanish-Mexicans, who by this time far outnumbered the padres and their attendants, were establishing ranches in various outlying districts, and during the latter part, particularly after the seizure of California by the United States in 1846, American fortune seekers were pouring into the state in rapidly increasing numbers and pushing into districts previously unknown, thereby augmenting the pressure on the Indians and extending it far beyond the area of Mission influence. The shrinkage of the native population during the fifteen years from 1834 to 1849 I have estimated at 110,000, which is at the appalling rate of more than 7,000 a year.

The discovery of gold, in 1848, set in motion a tremor of excitement that swept around the world like a tidal wave, gathering recruits from all nations and hurrying them by land and sea to the Golden State. During the single year 1849 no fewer than 77,000 arrived. This army of gold seekers was a heterogeneous assemblage, comprising many good and noble men, but also thousands of the rougher and more turbulent classes, not excepting criminals. As these adventurers spread north and south over the flanks of the Sierra and penetrated the rugged mountains of the northwest, they everywhere invaded the territory of the Indians and decimated the native population. From Humboldt and Trinity counties, from the Siskiyou, and from the flanks of the Sierra, the story is the same: villages were broken up and the inhabitants scattered or massacred; men and women were debauched with whisky; men were ruthlessly killed; women were appropriated, and seeds of disease were sown which undermined the constitutions of succeeding generations. This is not the place to recite the sickening details, which blacken many pages in the history of the Golden State. For present pur-

poses let it suffice that in most localities the Indians showed no resistance, although those of the northwestern area resented the conduct of the intruders and thus brought upon themselves a series of so-called 'Indian wars,' resulting in the extermination of many of the tribes and the reduction of the remainder to small remnants, which later were removed to Government reservations. Had the Indians of California been fighters, like the Apache or Blackfeet or Sioux, or any of the Plains tribes, the conquest of the state would have been a very different matter.

The fatal decrease following the mission period continued long enough to be overlapped by the beginning of the gold period, the two together forming a continuous series of years, extending from 1834 till the decline of active gold operations in 1855. But the distinctness of the two should be kept clearly in mind: One was a period of Spanish aggression; the other, of American aggression. There is also an important geographic difference, for the territory under jurisdiction of the missions was the coast strip from San Francisco bay south, from which the mission influence reached only to Sonoma on the north and to the San Joaquin valley on the east, although the Spanish-Mexican *rancheros* and raiding expeditions extended considerably beyond these limits. The operations of the gold seekers covered nearly the whole of the remaining parts of the state, and their blighting influence was particularly severe throughout the Sierra region and in the mountainous and until then unknown northern and northwestern districts. The two destroying armies together therefore covered practically the whole of California, leaving only the deserts on the east — and these were not wholly exempt.

We have already seen that the average annual decrease from the close of the Mission period in 1834 to the gold rush in 1849 was a little more than 7,000. Throughout the gold period this terribly devastating rate continued, the decrease during the seven years from 1849 to 1856 amounting to about 50,000. It appears, therefore, that for a period of not less than 22 years (1834-1856) the average annual decrease exceeded 7,000, amounting in the whole period to a loss of 160,000 Indians. But while the actual annual decrease seems to have been remarkably constant, the

population as a whole was rapidly diminishing, so that the percentage of decrease to the total population was rapidly increasing.

Later, when mining gradually gave place to agriculture, the tillers of the soil coveted the lands of the Indians and proceeded to take them without fear of interference from either the owners or the law; for until the year 1872, in cases in which a white person was a party, the testimony of Indians — be it said to the shame of California — was not admitted in any court of justice. Down to recent times, therefore, a white man could confiscate the home of an Indian, and even kill the occupants, without danger of punishment — and it may be added, in spite of the change in the law, that conditions today are not much better for the Indian.

Why, it may be asked, did not the Indians take matters into their own hands and defend themselves against the intruders? Because, as many of them have told me, they had learned that it was hopeless to oppose the will of the whites — to do so meant the loss of their property and probably also of their lives. Hence an Indian, when ordered by a white man to vacate the home where he was born and where his ancestors were buried — the spot more dear to him than all the world — usually obeyed, and obeyed promptly and without resistance. In the Sierra region many instances of this kind have been related to me by the sufferers from these cruel evictions.

According to the estimates here given, the shrinkage of the native population, particularly during the 22 years from the close of the mission period in 1834 to the decline of the gold period in 1856, was so great as to seem almost incredible, and prompts one to ask if additional contemporary evidence exists bearing on the subject. Evidence of this kind is so abundant that if assembled it would fill a volume. It relates not only to the steady decline of the native population throughout the state, but also to epidemics of smallpox and other diseases, to the demolition of sources of food supply, to the burning of stores of food laid up for winter, to the confiscation of homes, to cold-blooded massacres by both Spaniards and Americans, to raids for the alleged purpose of punishing horse thieves, but in most instances for the real purpose of capturing Indian children and young women for servants, and to the destruction of life attending the capture of Indians and their removal to

Government reservations. I have been told by eye-witnesses of an incredible outrage practised by a gang of cattle and hog men who in 1856 or 1857 took it upon themselves to drive the helpless Taches and other tribes from Tulare lake and lower Kings river to the Fresno reservation. Men, women, and children, including the sick and the aged, were hurriedly driven through mud and water during the height of the rainy season by brutal men on horseback; many fell out and perished by the way, and those who reached the hated destination and afterward escaped, returned to find their food caches appropriated for the hogs, and on making their presence known, were themselves hunted down and quietly "taken care of" by the whites.

Speaking of the reservations in general, Hittell says that in nearly every case of removal the Indians had to be driven by force, and "not unfrequently only a remnant was left by the time the reservation was reached." He states also, with reference to the general shrinkage during the gold period, that "of over 10,000 Indians in Yuba, Placer, Nevada, and Sierra counties in 1849, not more than about 3,800 remained in 1854." In 1849 General Bidwell found about 1,000 Indians living on the Sacramento river near the place where Colusa now stands; the survivors at present number fewer than 50. In 1829 Kit Carson saw 'thousands' in Napa valley; in 1859 he could not find a twentieth of that number, and now hardly one is left. In 1850 Lieut. George H. Derby of the Topographical Engineers, U. S. A., found 1,100 Indians living about Tulare or Tache lake; the number in this region at present is less than a dozen. The same year he found on Kings river seventeen villages with an aggregate population of 3,000; at present only one village remains and the number of inhabitants is less than 20. In the early fifties the native population along the lower Kaweah river and delta is said to have been about 5,000; at present it consists of about 25 persons.

These instances, and many others that might be given, show conclusively that the reduction of the native population, allowing liberally for overestimates as to original numbers, was of monstrous proportions and progressed with startling swiftness.

Another kind of evidence is furnished by the half-obliterated sites of villages which in the early days were thriving communities. Hundreds of these are now known.

In September, 1850, Adam Johnson, sub-agent in charge of the Valley Indians, wrote the Commissioner of Indian Affairs that within the short period of occupancy by the whites, the red man had fast faded away; many had died of disease; others had fled to the mountains to enjoy for a brief period their primeval sports of hunting and fishing. Practically all the coast Indians had gone; of the numerous tribes which only a few years before inhabited the country bordering on the bay of San Francisco, scarcely an individual was left. Two years later Gen. E. F. Beale, superintendent of Indian affairs in California, said in his official report: "Driven from their fishing and hunting grounds, hunted themselves like wild beasts, *lassoed*, torn from homes made miserable by want, and forced into slavery, the wretched remnant which escapes starvation on the one hand, and the relentless whites on the other, only does so to rot and die of a loathsome disease, the penalty of Indian association with frontier civilization."

The principal cause of the appallingly great and rapid decrease in the Indians of California is not, in my judgment, the number directly slain by the whites, or the number directly killed by whisky and disease, but a much more subtle and dreadful thing: it is the gradual but progressive and relentless confiscation of their lands and homes, in consequence of which they are forced to seek refuge in remote and barren localities, often far from water, usually with an impoverished supply of food, and not infrequently in places where the winter climate is too severe for their enfeebled constitutions. Victims of the aggressive selfishness of the whites, outcasts in the land of their fathers, outraged in their most sacred institutions, weakened in body, broken in spirit, and fully conscious of the utter hopelessness of their condition, must we wonder that the wail for the dead is often heard in their camps and that the survivors are passing swiftly away.

NOTE. — The chief sources of information drawn on in the preparation of the foregoing article are: Hittell, *History of California*; Bledsoe, *Indian Wars*; Derby, *Report of a Reconnaissance of the Tache Lake region, in 1850*; Reports of the first California Indian Agents and Commissioners, *Senate Ex. Doc. 4, Special Session, 1853*; Powers, *Indians of California, 1877*; Reports of the Commissioner of Indian Affairs; the Federal decennial census, and my personal field notes. — C. H. M.

WASHINGTON, D. C.

THE MYTHOLOGY OF THE SHASTA-ACHOMAWI¹

By ROLAND B. DIXON

The Shasta-Achomawi occupy an irregular strip running north-west and southeast across the northern end of California, about forty miles or so in average width, and extending from near the western edge of Siskiyou county to the Nevada line. Until recently they have been regarded as two distinct linguistic families, but in a recent note¹ I have tried to show that, from linguistic grounds, they may be regarded as probably related members of a single stock, though in many respects quite distinct. Although the linguistic relations which these two members bear to each other and to the surrounding stocks are of much interest, and will, I believe, eventually shed some light on the larger problems of Californian ethnology, the general cultural features of the stock are no less important in this regard.

As has been clearly pointed out by Dr Kroeber, in a recent publication of the University of California, we may distinguish broadly three contrasted culture areas in California—the north-western, occupying the northern coast from about the southern portion of Humboldt county to beyond the Oregon line, and extending inland some forty or fifty miles; the southwestern, including the southern coast counties from Monterey southward; and the central, occupying all the remainder of the state excepting its southern border. These are the main broad divisions, but immediately one looks closer he finds each of these major divisions broken up into a number of minor subdivisions which may be more or less clearly distinguished one from the other. This is particularly true in the case of the large central area.

This brings us face to face with the fundamental characteristic of California ethnology—its diversity. In other parts of the North

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 29.

² *American Anthropologist*, vol. VII, no. 2, 1905.

American continent uniform or closely similar cultures spread over large areas, as in the plains, the southwest, and the northwest coast; here the area covered by a culture type is much smaller, and each is split up, rather more clearly than elsewhere, into a number of diverse subtypes. The Shasta-Achomawi form one of these subtypes of the general central Californian culture area, and lie geographically between the Maidu and Wintun subtypes of this area, the northwestern area, and the as yet little-known type of southern Oregon.

In mythology, as in language, the two components of the stock are alike, yet different. As one might expect, the eastern, or Achomawi, branch resembles the Maidu in not a few particulars. We find in the first place much of the systematic, sequent quality which has been pointed out as characteristic of the Maidu, and also the considerable importance of a Creator and of the episode of creation. In outline, the Achomawi account of the creation runs somewhat as follows:

In the beginning all was water, everywhere was nothing but the sea, and the clear sky. In the clearness a cloud formed, and from it the Coyote appeared. A fog then arose from the surface of the water, and from it the Creator, the Silver-fox, appeared. The prior appearance of the Coyote is here to be noted. Wearying of suspension in mid-air, the Creator *thinks* a canoe, into which Coyote and Creator descend, and for a long time float about. At length the canoe becomes old, moss-grown, and rotten, and the Creator determines to obtain some better abiding place. While the Coyote sleeps, he combs out from his own body a mass of hair, forms it into a flat disk, sets it afloat on the water, and on it places what are to be trees and plants. The world is thus created, and the canoe floats gently ashore, when the Creator arouses the Coyote, who wakes to find himself overshadowed by drooping branches of fruit. The two step ashore, build for themselves houses, and live there together. After a time the Creator makes the various animal-people, and the deer, and for a while all live together. The use of obsidian for knives and arrowpoints is discovered, mankind is made, and the struggle begins between the Creator and Coyote for the mastery: the former desirous that life shall be easy for the man

he has made, the latter wishing conditions to be hard. As in the case of the Maidu, the Coyote wins, death is brought into the world, and his own child is the first to die. At length, the Creator having tried in vain to destroy the Coyote, the events described in the tale of the Loon-woman among the Maidu and Yana take place: all the animal beings try to escape the wrath and fire of the Loon by ascent to the sky; Coyote as usual is responsible for their fall, and with few exceptions all are burned to death. Their hearts however are restored to life, and then Silver-fox gives to each animal-person his or her peculiar markings and cries, and sends them off to different parts of the country. From here, as the Indians say, the "story branches," and the multitude of tales of the doings of the different animal-beings follow, in little or no order. In comparison with the Maidu, one notices here the animal name of the Creator; the Coyote's precedence; the rather more philosophical account of the origin of things; the rather slighter development logically of the dualism so strongly shown in the Maidu, and, on the whole, a less logical and orderly working out of the cycle.

If we turn to the Shasta, we find a notable difference. Here the development of the Creator and the episode of the creation is practically wholly lacking, and the dualism, still clear in the Achomawi, entirely disappears. Apparently there is no very clear idea of creation, and the most that has been found is a confused account of a flood brought on by a mysterious being;—after the subsidence of the water, the Eagle largely shapes the world, and then sends down a boy and a girl, brother and sister, who marry, and are the ancestors of the human race. Of the creation proper, or the making of the animals, there seems to be little trace. The Coyote assumes a very important role, however, for he names the animals and is responsible for the introduction of death into the world, but in a manner wholly different from that in the Achomawi or the Maidu. The systematic, orderly character, strong in the Achomawi, has entirely disappeared, it seems, and in its place there is a mass of meager incidents, with little correlation, and as in the northwestern California cultures the creation episode practically disappears.

So far, then, there is considerable difference between the Shasta

and the Achomawi, each apparently resembling its neighbor (the Hupa and the Maidu) rather than the two components resembling each other. If, now, we turn to the remainder of the mythology, we shall find a different state of affairs. In the Achomawi there is a large mass of tales, which may be divided into Coyote tales and miscellaneous tales. The former are numerous, and in part agree with the similar type of Maidu tales. The Coyote preserves his character as a mischievous trickster, continually led into trouble by his curiosity and amorous propensities, and we find here again the familiar incidents of the "Tar-baby" stump, the Bags of Wind, the Cannibal feast, etc., with also a large number of new ones, particularly those of an erotic character. The number of tales, however, that are similar to those of the Maidu is less than the new ones, so that while we clearly have relationship here, there is also, and no less clearly, evidence of a new type.

In the class of miscellaneous tales, the same holds true. As compared with the Maidu we find, to be sure, several old friends, such as the tale of the Loon-woman, the Fire-quest, the Two Girls sent in search of a Husband, etc.; but these tales are either quite a little changed, or, as in the case of the Loon-woman, play quite a different part in the general sequence of events. We find, moreover, a large number of tales quite different from any found as yet among the Maidu, such for example as the tale of the Lost Brother, or the tales of the prowess of Lizard in his conflicts with the Grizzly Bears. In the former, a notable incident is the ascent to the sky by the Mice to ask the Sun for information relative to the whereabouts of the lost brother.

Turning to the Shasta now, we find a considerably greater agreement with the Achomawi in the Coyote and miscellaneous tales than in the Creation series. The major part of the Coyote stories are alike or nearly so; practically all the characteristic Achomawi incidents appear, with of course numerous new ones also. On the other hand, the Maidu incidents found in the Achomawi disappear to a large extent. The Coyote, moreover, in the Shasta is not so purely a trickster as in the case of the Achomawi, and indeed in several tales he appears as a benefactor of mankind and a destroyer of monsters. The number of tales in which he figures as an important character is also greater.

In the miscellaneous tales from the Shasta we may note several points of interest. Many of the typical Achomawi stories appear, notably that of the Lost Brother, but here it assumes a different form, being apparently part of a series of tales relating to two brothers, culture heroes, one of whom seems to wander about the country killing monsters. The incident of the ascent to the sky is elaborated more than in the case of the Achomawi, and the brother's quest is much more elaborately described, and includes such incidents as the cutting of the bow-strings and the gnawing of holes in the bottoms of the canoes in order to hinder pursuit. These incidents recall the type of tales characteristic of the region of western Washington. A number of other incidents in other tales, as well as in this series, also suggest some relationship with the Puget Sound region. In addition to these, however, there are not a few which are strongly typical of the Basin area, and as such resembling those of the northeastern Maidu. Wintun resemblances may also be noted in some cases. In general there is but little which directly resembles the northwestern area, although the Shasta are in immediate contact with it.

From the foregoing it appears, then, that we have in the mythology of the Shasta-Achomawi more or less corroboration of the evidence obtained from linguistic comparisons, namely, that the two branches of the stock are unquestionably allied, and closely so, yet present features of essential difference, and that the stock as a whole is, so far as the mythology is concerned, a subtype of the general central Californian culture area. Presenting many points of agreement with the Maidu subtype, and with that of the Basin area, as we know it from the Salish of Thompson river, it also has much that reminds one of the type of tales characteristic of the Oregon-Washington section. On the other hand, although the Shasta-Achomawi are in close contact with tribes of the northwestern Californian culture, it presents, on the whole, few points of agreement with this. As this lack of agreement holds almost equally well in the remainder of the culture, and also in language, we may perhaps be justified in regarding this as evidence that the two cultures have been in contact but a comparatively short time. This lack of agreement is emphasized all the more by the great

number of instances in the rest of the state, where neighboring stocks very clearly show association one with another. Taken in connection with several other small indications, and with direct traditions of a former considerable extension of the stock, particularly the Shasta branch, in southern Oregon, and the comparative lack of several characteristic features of the central Californian culture, we may perhaps regard the Shasta, at least, as comparatively recent comers into the area south of the Siskiyou mountains. This southward advance must have been early enough, however, to have all recollection of it lost. Yet the matter is not at all simple, as there are one or two conflicting traditions, and references to the regions farther south, about Redding and even as far as Tehama. The recent finding, moreover, of three fragments of Shasta dialects along the western and southern periphery of the stock area is a further contradictory feature, suggesting possibly the earlier occupancy by these dialects of much or all of the present Californian territory covered by the Shasta branch of the stock, and their later being overwhelmed by the influx of a more northerly branch, from beyond the Siskiyou. Unfortunately, corroboration of any such hypothesis, from the cultural side, is virtually impossible, owing to the almost complete extinction of these newly found fragments.

Speculation aside, I trust the foregoing brief discussion of the mythology of the Shasta-Achomawi has made clear the nature of some of the problems awaiting solution in the ethnology of the northern portion of California, and how well the data obtained from the study of the general culture agrees with that gathered from linguistic material.

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MECHANICAL AIDS TO THE STUDY AND RECORDING OF LANGUAGE¹

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Language is essentially two-fold, consisting of spoken sounds and mental concepts. Only in comparatively recent times and among certain peoples have written symbols been employed to represent the sounds. There are only a few among those having written characters who are able to connect them directly with the mental concepts. The vast majority must go from the written symbol first to the sound and then to the mental concept. In ordinary practice then, writing is simply a device for bringing to one's own mind, or to the mind of another, sounds which are well known. Unless the sounds are known, or can be made known by other means, the written characters fail both in conveying them to those who are interested in their study, and in preserving them after the language of which they are a part has ceased being spoken. Nowhere has the inadequacy of alphabets, however ingenious, made itself more felt than in the field of American languages.

The only proper method of learning a language is to go among those who speak it, to hear it constantly and practise speaking it. For a child there is little difficulty in this, but a person who has reached his majority finds it practically impossible to acquire a foreign language so as to be able to speak it without an accent. For the practical purpose of making one's self understood this accent matters little, but for the scientific study of a language such imperfect pronunciation is far from satisfactory. The difficulty seems to lie almost entirely in the lack of ability of the person to hear correctly the sounds uttered. He does not realize that his own speech of the acquired language is imperfect, or at least he does not know in what particulars it is faulty, and therefore is

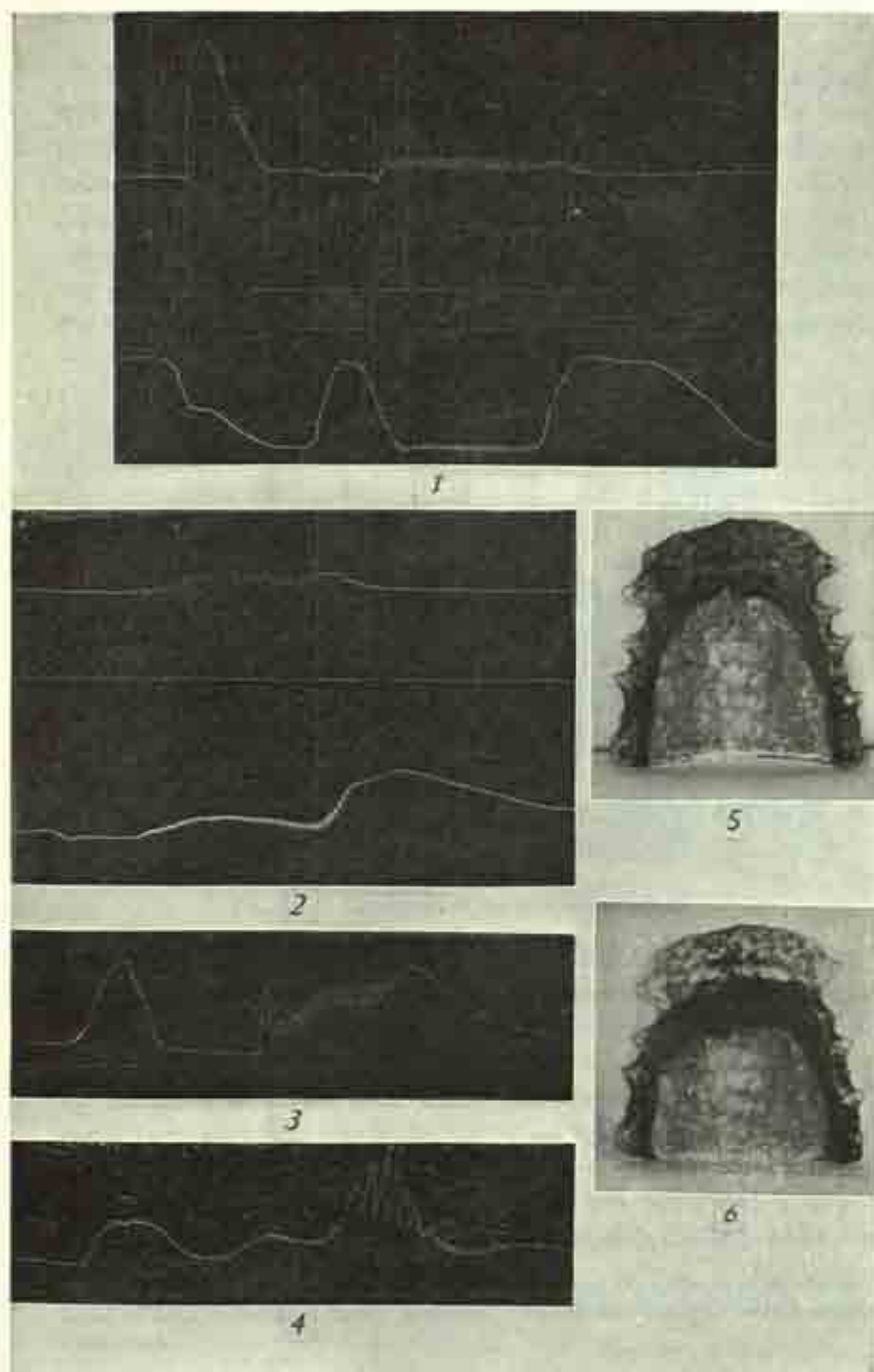
¹ Read at the meeting of the American Anthropological Association, Berkeley, California, August 31.

unable to perfect it. To remedy this fault the ear must be aided by some means.

The lip movements may be directly observed by the eye. Where a comparison between the sounds made in part by the lips, in the same or in a different language, is desired, the camera may be employed. The subject should be placed in strong sunlight and a very rapid lens and shutter used. The photographs so taken may be arranged, measured, and compared. By this method it may be readily shown what vowels in the language are rounded, the relative degree of lip opening for each vowel, and the amount of lip activity characterizing the language as a whole.

To a certain extent tongue movements may also be directly observed, but more difficulty is experienced with them than with the lip sounds. To determine and fix the movements of the tongue certain mechanical devices may be employed. The simplest of these is the artificial palate.¹ This should be made as thin as possible and adjusted so as to fit the roof of the mouth perfectly. The work can be done by any good dentist. There is difficulty in extending the artificial palate beyond the joining of the soft and hard palates because the movement of the soft palate is likely to dislodge it and its pressure upon the soft palate often produces gagging. The palate, which must be perfectly dry, is dusted with powdered chalk and put in place. Single syllables should be uttered, care being taken that a complication of impressions is not brought about. Where the naturally moist tongue touches the surface of the palate the chalk is removed and the black surface is exposed. The palate should be quickly and carefully removed from the mouth and photographed. This method fixes the exact position occupied by the tongue in making a certain sound, provided the contact is upon the hard palate or the teeth. By this means it is shown that a Hupa, who speaks his own language perfectly and English fairly well, makes the contact for *d* in Hupa considerably farther forward than he does for English *d* (pl. xxxvi, figs. 5 and 6).

¹ Dr Norman Kingsley seems first to have employed this method for the correction of oral deformities. It has been frequently employed for linguistic purposes in Europe. Kingsley, *On Oral Deformities*, London, 1880. Scripture, *Elements of Experimental Phonetics*, New York, 1902, p. 298.



1. Tracing of *lanaa* (mouth and tip of tongue). 2. Tracing of *a#* (mouth and nose). 3. Tracing of *aiidana* (mouth). 4. Tracing of *paaxaf* (mouth). 5. Palatogram of Hupa *a*. 6. Palatogram of English *a*.

To register the exact time of the beginning, culmination, and end of tongue movements, the Rousselot apparatus may be employed.¹ This apparatus (figure 23) consists of a kymograph — a cylinder horizontally placed, driven at a uniform rate of speed by delicate clockwork. A sheet of paper is placed around the cylinder and given a thin, even coating of smoke. The fine elastic tracing point of the Marey tambour resting upon this paper registers the varying force of the column of air which issues from the mouth

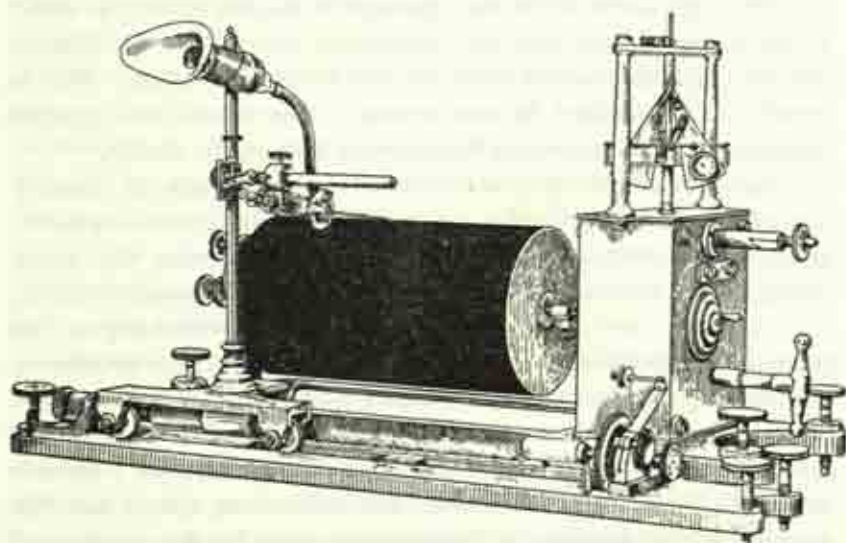


FIG. 23. — Kymograph of the Rousselot apparatus

or nose, or any compression of a closed chamber that may be connected with it. For registering the movements of the tongue, a rubber bulb is placed between the tongue and the roof of the mouth at the desired point. This bulb is connected with a Marey tambour by means of a rubber tube which passes out through the side of the mouth-piece into which the words are spoken. Two tambours are used, one connected with the bulb and one with the mouth-piece, arranged so that their tracing points will make but a single line when the carriage with the tambours is pushed along while the

¹ Many parts of this apparatus have been designed and the methods of its use perfected by Abbé Rousselot of Paris. Rousselot, *Principes de phonétique expérimentale*, Paris, 1897.

cylinder is at rest. When the word or phrase is spoken two synchronous tracings are made (pl. xxxvi, fig. 1). In this case the upper one is from the mouth-piece and shows the varying force of the air column from the oral passage, the lower one is from a bulb placed on the point of the tongue, the elevations in the tracing indicating the time of the raising of the tongue and consequent pressure upon the bulb. These correspond to the moments of closure of the oral passage for *t*, *n*, and *n* in the Hupa word *tanan*, 'water.'

The movements of the back portion of the tongue and the exact points of its contact with the soft palate are difficult to observe directly, and mechanical aids are not easily employed. This is greatly to be regretted because several of the American languages have whole series of sounds formed well back in the mouth.

The movements of the velum may sometimes be directly observed. The uncertainty concerning one Hupa sound was removed in this manner. The subject was made to open his mouth widely, facing a strong light. When he uttered the sound in doubt, the velum was seen forced outward and strongly vibrating in the current of expired air. The position of the velum may be inferred from tracings made with the Rousselot apparatus. A bulb of glass open at both ends is inserted in one of the nostrils with a rubber tube connecting one of its ends with a Marey tambour. By this means the flow of the air through the nose is registered and the duration of the opening of the nasal passages by the lowering of the velum is ascertained. In plate xxxvi, fig. 2, tracings of the Hupa word *an* (*ang*), 'yes,' is shown. The lower tracing is from the nose, showing considerable nasalization of the vowel and a decided nasal sound after the vowel is terminated by the closing of the oral passage.

The movements of the walls of the mouth and throat, and the condition of the tongue as to shape and rigidity are exceedingly difficult to determine or to record. On these largely depend the quality of the vowel sounds.

The action of the glottis, both as to the degree and time of sonancy may also be shown by Rousselot tracings. These may be made with the mouth-piece, when the vibrations of the vocal chords will appear, if the tambour is properly adjusted, as tiny waves

imposed upon the breath curves. For more exact work a thin membrane of rubber may be applied to the wall of the larynx and the vibrations conveyed to a tambour by means of compressed air. It is possible in this manner to settle the puzzling questions in American languages concerning the degree and constancy of sonancy in certain consonants.

So far only the physiological causes of the sounds have been considered, and they are the most important, since if one understands the cause he can with practice produce the result. There is however another side to phonetics — the physical. Puffs of air of certain regularity of occurrence, force, and shape fall upon the ear and produce the sensation known as sound. Here, in the realm of physics, exact measurements are possible and well known laws prevail. It is quite possible to make visual records of the sounds of a language, to analyze and measure them, and to tabulate the results. Comparisons may then be made within the bounds of the language itself, or between it and other languages, and its physical characteristics made a matter of permanent record.

For making tracings of the consonants, a mouth-piece connected with a Marey tambour is employed. The stopped consonants appear with horizontal straight lines of no elevation for the period of silence caused by the closure of the mouth passage which change almost instantly into vertical lines when the explosion occurs. The continuant consonants are represented by lines which gradually rise and fall as the air issues with greater or less force. If these continuants are also fricatives, irregularities appear in the lines, due to interference with the air column as it passes the constrictions of the mouth passage. Plate xxxvi, fig. 1, shows the aspirated *t*, and the middle of figure 3 of the plate, *d* as spoken in the Hupa language. The initial sound in the tracing last referred to is *s*, showing a gradual smooth curve, and figure 4 of the plate shows coarse, irregular waves produced by the vibration of the velum in the Hupa sound mentioned on page 616.

The vowel sounds, which are the most difficult to deal with from the physiological side because of the difficulty in ascertaining, or making a record, of the shape and rigidity of the mouth and throat chambers in which the vowels resound, are in theory easily

disposed of from the physical side. Theoretically the vowel is a harmonic series consisting of a fundamental and at least two overtones. The individual waves making up a vowel need to be traced, enlarged, analyzed, and the results expressed in terms of the coefficients of their fundamental and partial tones. These results may then be compared with the results obtained from an analysis of the other vowels of the same language, or of similar vowels of other languages. The difficulty in practice consists in eliminating, or allowing for, certain constant errors due to the resonance of the chamber of the speaking tube and the natural period of vibration of the diaphragm which must be employed in recording the sounds.

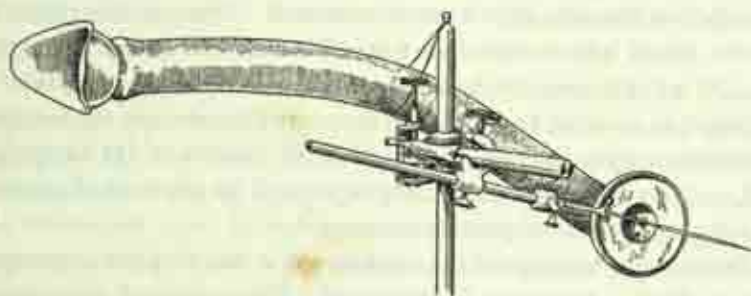


FIG. 24. — Vowel tracer

Hermann¹ and Bevier² have made tracings from the wax cylinders of the phonograph. The former transferred them to smoked paper, enlarging them by means of a system of levers. The latter successfully employed a mirror and a beam of light for the same purpose. Scripture made use of the flat disks of the gramophone and a system of levers.³ The method employed at the University of California is to make Rousselot tracings direct from the voice and to enlarge them by microphotography. A rather large and long rubber speaking tube is employed with a glass diaphragm 2 inches in diameter and .008 of an inch thick (figure 24). The glass disk is connected at its center with a steel swing-needle which carries

¹ Hermann, *Phonographische Untersuchungen, I.*, Arch. f. d. Ges. Physiol., 1889.

² Bevier, *The Acoustic Analysis of the Vowels from the Phonograph Record*, Physical Review, vol. x, 193 (1900); vol. xiv, 171 (1902).

³ Scripture, *Researches in Experimental Phonetics*, Stud. Yale Psychological Laboratory, 1899.

a straw with an attached tracing point of horn. The surface of the cylinder upon which the tracing is made travels at the rate of 28 centimeters ($11 \frac{1}{8}$ inches) per second. The waves so obtained are analyzed by means of the Le Conte curve analyzer¹ after they have been sufficiently enlarged.

The purely physical effects of language, the sounds themselves, may be recorded and preserved upon the commercial phonographs, which employ wax cylinders. There is difficulty in breaking up the sounds of a strange language so recorded into words and in connecting these words with their proper meanings. This difficulty may, in part, be overcome by means of carefully prepared texts with interlinear translations to accompany each cylinder. It is greatly to be regretted that phonograph cylinders are not more durable and permanent. Phonograph records, in any case, can never be sufficient in themselves because they utterly fail to show the physiological processes by which the sounds upon them have been produced, and after all the manner of making the sound is more important in the study of language than the sound itself.

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¹ Le Conte, *An Harmonic Analyzer*, *Physical Review*, vol. VII, p. 27 (1898).

RELIGIOUS CEREMONIES AND MYTHS OF THE MISSION INDIANS¹

By CONSTANCE GODDARD DUBOIS

It is to-day extremely difficult to collect the relics of the past among the Mission Indians, for their condition is in many respects unique and peculiar. For a hundred and fifty years, since first the Franciscan missionaries organized them into industrial communities, they have been under the influence of the white man's civilization, and this has resulted in the abolishment of primitive habits and customs, so that a superficial observer may imagine that nothing of the sort remains. The younger generation of Indians, under our false system of education, have lost the knowledge of the past. Religious teachers have long inveighed against what they consider heathenish superstitions. In consequence, the old men, influenced by the fear of ridicule or blame, are inclined to bury the secrets of the past from the cognizance of the unsympathetic white man.

But this is not the only cause of the prevailing habit of concealment. In no other Indian religion, perhaps, was the veil of mystery so closely drawn; and the intense, almost fanatical devotion of the dwindling remnant of old men to the sacred things of their ancient worship is directly derived from the reverence induced by this means.

Father Boscana, a Franciscan missionary, located about 1825 at San Juan Capistrano, and working in the region lying back of that place in the mountains, has left a most valuable account of the habits and beliefs of the Indians under his charge, including the Serranos (Luiseños) with some mention of the Diegueños, the habits of the tribes being almost identical, though their language and origin are diverse. With a penetration unequalled at the time, he recorded all that he was able to observe, and he prefaced his manuscript with a remark which is well expressed and literally true.

"It is difficult," he says, "if unacquainted with their language,

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 29.

to penetrate their secrets, as they do not all understand the significance of their usages and customs, this knowledge being confined to the chiefs of their tribes, and the old men who officiate as priests; and when they reveal anything to their children it is only to such as they intend to rear for their successors, and these are enjoined to keep fast the secrets and not communicate them to any one under pain of severe chastisement. A veil is cast over all their religious observances, and the mystery with which they are performed seems to perpetuate respect for them, and preserve an ascendancy over the people. This is the reason that the ceremonies of the dances in their grand feasts, which are properly exercises of religion, cannot be understood."

My friend, the old chief of the Diegueños, Cinon Duro (Indian name, Ho-ko-yél Mut-a-weér) has told me some of these sacredly guarded myths; but his wrath fell upon his brother Antonio because he, without permission, had related to me the story of *Cuy-a-ho-márr*, which I published in the *Journal of American Folk-lore* under the title "The Story of Chaup." Each son of the old chief Quum-ech-loup had his own story with its accompanying songs. Cinon, the eldest, and successor in the chieftainship, had the religious myths, the story of creation, the death of the god Tuchaipa, etc., together with all the knowledge pertaining to the conduct of the various religious festivals, a primitive but elaborate ritual full of exact detail.

Antonio's story was that of *Cuy-a-ho-márr*; and the three other brothers, now dead, had each his story, lost at his death, and existing only as stray fragments in the memories of the hearers.

In regard to more material relics of the past the same holds good. A century of civilization has scattered the objects of primitive use. The collector finds little that is distinctive, except those sacred objects which have been handed down and are jealously guarded and seldom to be had for money. One reason for the dearth of objects of use and decoration is the custom, still prevailing to a limited extent, of burning the house and possessions of the dead, and of making costly feasts for an anniversary celebration in honor of the departed. This custom rendered it impracticable to occupy enduring homes, though the primitive style of building was

quite substantial. The house was constructed with a framework of logs set on end to form the walls, and held in place by cross-pieces supporting slanting rafters at the top. When the frame was made it was filled with closely wattled brush, and the whole was then covered with earth, an opening being left for a door, which was closed with a hanging of deer-skin, while a hole in the apex of the roof allowed the entrance of light and the egress of smoke from the fire in the middle of the floor.

The myths are full of allusions to the house, the door, and the hole in the roof, while the rafters of the house are referred to as a hiding place from the search of an enemy.

The primitive religious *fiestas* (a convenient Spanish word to express the gatherings for the important religious ceremonies) were, 1st, the *Toloache* fiesta, the initiation of boys at puberty; 2d, *A-keél*, the fiesta of the girls' entrance upon womanhood; 3d, *Wú-ka-rúk*, the great fiesta of the Images of the Dead, and 4th, the Eagle fiesta as preparatory to *Wú-ka-rúk*, and necessary to obtain the feathers for the decoration of the images and also to make the sacred eagle-feather skirt for the Eagle dance. There were also numerous minor ceremonies founded on local beliefs, each requiring an all-night dance, or several nights of dancing, to the accompaniment of a rattle or of a basket rubbed and pounded with a stick, etc. At the girls' fiesta the accompaniment to the song was the striking of two specially selected ringing or musical stones one upon the other.

The *Toloache* fiesta was first in importance, since only those thus initiated could take part in the religious dances and other tribal ceremonies. *Toloache* is the Spanish name for the plant *Datura meteloides*, of which the Diegueño name is *kur-schá* and the Luiseño *nak'-ta-mush*. The roots of this plant were dug according to custom and ritual, which carefully governed each act in every ceremonial. The Diegueños dug only two roots, and only those running toward the north were selected.

A great bonfire, the largest used in any fiesta, was lighted, the flames reaching high into the air.

The song of the pounding of the root, *chö'k-e*, *chö'k-e*, etc., introduced the ceremony. The chief sat bending forward over the *toloache mortera*, the large stone mortar, perfect in shape, brought

out only on this occasion and carefully buried from sight during the rest of the year. The roots were placed within it, and, lifting the heavy pestle, he expressed the juice in time to the solemn chant, pausing at intervals to give a curious grunt or groaning expiration used in many of the dances. Among the Luisenos the dried root was used and ground into powder.

The juice or the powdered root being mixed with water in a large bowl, the drink was doled out to the candidates for initiation in smaller stone bowls of symmetrical shape and great sacredness. In the center of the sacred house, a brush enclosure (*casa grande*), the chief had made preparation for the occasion by painting upon the ground with paint and variegated sands and heaps of differently colored seeds, a representation of various figures of mystic significance. He depicted the world with its mountains, rivers, and lakes; the rattlesnake, object of dread; and more terrible still, because less understood, the figure of the Milky Way, *Ha-tat-kurr* (signifying 'backbone,' because it is the backbone of the sky). Boscana, not knowing its significance, calls this "the uncouth and ridiculous figure of an animal."

The youths were instructed in their future duties as members of the tribe and participants in the ceremonies, and were threatened with dire punishment if they should prove recalcitrant. *Ha-tat-kurr* would break their backs or deprive them of sight if they failed in the appointed way of life. After each had partaken of the intoxicating drink the dance began. The men crawled in on all fours with strange cries and groans as of the animals which they apparently represented. Men and women took part, dancing in rows, the men in feathered head-dresses, the *hechiceros* ('witch-doctors,' 'shamans') with their wonder-working plumed sticks tied with bunches of *tecolote* (Spanish Mexican for 'owl') or yellow-hammer feathers; the initiated youths (each being led and supported by his sponsor, as we might say) dancing with the rest. Soon the madness of the *toloache* intoxication began to manifest itself in wandering senses and benumbed limbs; but as long as they could stand the youths were dragged forward, half carried in the dance, till at last they sank into a helpless stupor. When this stage was reached, they were given into the guardianship of some of the aged

men and women who relieved each other in keeping watch over them lest they should stray away into the wilderness and be destroyed. For twenty-four hours or more they remained in this condition, and for three days they fasted from all food and drink, while for a month or more thereafter they could eat neither meat nor salt.

Boscana gives a full description of this fiesta, and he brings out, as it is impossible for the modern observer to do, its importance as leading the initiated to acquaintance with his totem animal.

"That they might know the class of animal," he says, "which the god had selected for their particular veneration, a kind of drink was administered to them made from a plant which was reduced to a powder and mixed with other intoxicating ingredients. Soon after taking this preparation they became insensible, and for three days were deprived of any sustenance whatever. During this period they were attended by some old men and women who were continually exhorting them to be on the alert and not to sleep for fear the coyote, the bear, the crow, or the rattlesnake might come; to observe if it were furious or gentle, and to inquire of the first that should come what were its desires. The poor Indian, thus intoxicated, without food or drink, suffering under delirium, beheld all kinds of visions; and when he made known that he had seen any particular being who explained the observances required of him, then they gave him to eat and to drink and made a grand feast, at the same time advising him to be particular in obeying the commands of the mysterious apparition." Old Indians have told me that after they had drunk the *toloache* the earth shone with dazzling colors; the commonest objects were transformed into beauty and colored with rainbow hues. They felt for a time possessed of power, wealth, and importance. Not every one saw an animal in a vision. Those who had this experience were distinguished above the rest. They might become *hechiceros* or possess powers denied to the ordinary man.

At the conclusion of the dance, while the fire was still burning, the *hechiceros*, of whom there would be many in the company, would stand about in a circle, and, placing their plumed sticks or curved swallowing sticks in their mouths, would in some unexplained way expel from their stomachs a quantity of liquid sufficient to extinguish the fire.

The ceremony for girls, called *A-keil* in Diegueño, *Wu-kün-isch* in Luiseno, was conducted in a somewhat similar way, the sand painting and the threat of Ha-tat-kurr's vengeance in case of disobedience being the same in both.

The girl was placed in a hole dug in the ground (which had been heated by a fire for some time previous), which was covered above and lined beneath with boughs. She too must fast for several days, and for a long time refrain from everything but acorn mush, or pinole, eating no meat or salt. Sometimes, voluntarily, the girl would extend her fast from meat and salt for a year, or even for two years, in the belief that this would conduce to her bodily health and vigor.

The fiesta of the Images was one of the most important ceremonies. It is still occasionally performed in a modified and modernized manner; but in the old days it required a year's preparation, and great elaboration and expense. In the first place the eagle must be killed in a prescribed manner to furnish the feathers for the decoration of the images. A young eagle was secured in the spring and kept in captivity until it was fully grown, when it was killed, as Boscana says, "without shedding a drop of blood." This was done by pressure upon the lungs and heart. The red tail-feathers of the yellow-hammer were also obtained, a great number of the birds being slain to secure them. These as well as the owl feathers were sacred to religious use. To make the images, first of all a woven matting was manufactured by taking a certain kind of tall slim rush for the warp and twine of mescal or yucca or milkweed fiber for the woof. The same sort of matting was used to wrap up sacred bundles, hechicero sticks, etc.

When the matting was ready it was slit with a knife in two parts, which, being rolled up separately, made the legs. The upper part, for the chest, was strengthened by two sticks laid diagonally crossed upon it. The head was made of the matting with a crooked oak stick carefully selected as to shape, placed in the proper position for the nose. The face was covered with cloth, in early days with buckskin, and the mouth was painted red outside and black within, where teeth carefully shaped from pearls, obtained from the coast, or something resembling them, were inserted. The eyes

were of abalone shell, with the pupil a dot of black wax. Human hair was put upon the head. The face was painted and decorated with glistening powdered mica stuck on with thick black mescal juice. The characteristic features of the dead man whom the image represented were reproduced as closely as possible. The finest decorations were then placed upon the figure: bunches of eagle and of yellow-hammer feathers were stuck upon the shoulders, and strings of beads and other ornaments were disposed upon it. Around the neck was hung a net like a small carrying net, holding two tiny decorated ollas to contain food and drink for the spirit on its journey through the unseen world.

At the beginning of the fiesta a ramada, or brush building, was constructed, circular except at one end, where it was square. The building of this, like every act connected with the fiesta, was done in a prescribed manner according to an elaborate ritual. Each part of the ramada had a name, and a song connected with its construction.

If continued for a week the dance was performed every other night. In later times the fiesta lasted only four days and was held every night. While the dancing went on the songs were sung, as is the case with every ceremony, being started by the leader of the dance and taken up by the dancers, the women's voices rising in an accompanying chorus. Where to-day the singers profess their ignorance of the meaning of the songs of the different dances, it is by no means because, as some have judged, they are in an archaic language, but by reason of the fact that the story of the songs has been forgotten, having been known in perfection only to the chief or leader of the fiestas. The only exception to this is in the war dance, the songs of which are in the Kawia language, hence their signification is unknown to the Diegueños, who speak a distinct tongue. The story of the songs has always a religious purport; but each song is only a part of the whole, advancing the narrative by slow degrees or connected in idea with the main subject.

The Image fiesta is called *Wu-ka-rúk* in Diegueño, and the songs that accompany it are called *Cha'-yo-tai'*. Any subject connected with death would be appropriate for these songs. For instance, one song refers to two brothers who were traveling together

when one was bitten by a rattlesnake. He died of the bite, and his brother was afraid of his spirit, which was following and terrifying him. Another song celebrates Ish-pa, the Eagle, killed to make the fiesta, and describes his feelings when he knows that death is near. Another song of Wú-ka-rúk tells of the death of Tu-chai-pa, which was brought about by the evil machinations of the frog.

At a certain point in the dance the images are lifted and carried about by the dancers, who dance in rows, first the men and then the women. On the last night of the ceremony the images are thrown into the fire and are consumed, together with rich gifts of clothing, baskets, etc. A great feast is then held, but the relatives of the dead must not eat. The sanction for this fiesta, as for all the religious ceremonies, is to be found in the myths. I will give one of these, told by an aged Indian of Manzanita. I call it :

The Origin of Song and Dance

In early days, when people first were made, at the mountain called Wik-a-mee, in the Mohave country, they wanted to give an Image dance, but no one knew how to perform it. No one then had any songs or any knowledge of the ceremonies of the fiestas. So they said, "What shall we do? How shall we manage it?"

Then some one said, "I know a place where a man lives who can give us a song and dance."

So they appointed a man to go far to the south, to where, in the islands of the ocean, lived Mai-hā-o-witt, who was able to teach them how to do it. But the messenger said: "How can I go? If I go by land I shall be devoured by some animal, and if I go by sea I shall be destroyed." Then they said: "Make yourself the foam of the waves and float along on top of the water; but watch carefully that nothing swallows you, for in that way alone can you be destroyed." So he turned himself into the foam of the waves, and floated southward on top of the water that carried him down. But there was in the middle of the river something with wide open jaws lying in wait to swallow all that came that way. And in the great mouth the foam was swallowed up so that he could go no farther. He was in darkness, but he groped about and felt all around him with his hands. "It must be that I was swallowed," he said. So he reached out, and got a flint knife, and cut open the belly of the thing, and got out and went on his way.

He came to the islands of the sea where Mai-hā-o-witt was living.

"Who is there?" asked Mai-hā-o-witt.

"It is I."

"And what do you want, coming where it is impossible for man to come?"

"We want to make the fiesta of Images, but no one knows how to do it. They told us you could teach us, and I ask that you will come to our home and show us how it should be done."

"I consent. Go home and I will come. Make everything ready, and clear the road. Make a ramada, but do not go inside of it. Then watch for my coming."

When the messenger reached his home he told them that Mai-hā-o-witt was coming, and day and night they kept watch for him. He came. He had a head like a snake, and a long body, very long, and he came through the air, resting himself on the tops of the mountains that border the river, making a white streak running from south to north which can still be seen. When he reached Wik-a-mee his head came first, and then he came crawling into the ramada, coil upon coil, until he had filled the place.

The people were afraid, and one man threw a lighted brand on top of the ramada so that it began to burn, and the body burned. The great tail curled up with the heat, and the body burst open, and out came fiery matter which flew through the air, and the people swallowed it. From this came all knowledge and power of song. Every one who swallowed this matter knew at once how to sing and the meaning of all the songs and ceremonies. So the body burned until all was consumed but the head, and this broke loose and rolled down to the river where it can still be seen as a great cave in the rocks.

Then they began at Wik-a-mee to make all the songs for the fiestas and dances; and from there the knowledge spread to the western Indians, those who lived at Manzanita, and elsewhere. That is the reason also why the dead are burned.

So far I have referred chiefly to the Diegueños, but this paper would be incomplete if no mention was made of the religion of the Luiseños.

The two tribes were separated by a lofty mountain ridge which formed a natural barrier, by no means insurmountable, since constant intercourse was carried on by means of its rugged trails. But it marked the natural limit to the migratory progress of the Diegueños in this direction, while toward the south and east they were

connected through the mountain passes with the desert across which they had originally come. The Luiseños, on the contrary, through the open valleys of Temecula, San Luis Rey, Pala, etc., had their natural connections with the members of their family who lived near the coast.

The religion of Chung-itch-nish, with its reverent mystery and awe-inspiring ceremonies, came originally from this direction, and impressing itself upon the Diegueños mingled its ideas with their myths, merging the characters of Chung-itch-nish and Oui-ot, entirely distinct in Luiseño conception, with the Diegueño Tu-chai-pa, who dies like Oui-ot, and is worshiped like Chung-itch-nish.

The Luiseños claim that the sacred ceremony of the *toloache* intoxication was original with them and was taught by them to the Diegueños, and this is undoubtedly the case. In their creation myth the *tam-yush* (stone pots and mortars for the Toloache fiesta) were (as people originally) the first-born children of the Earth-mother, and were sent by her abroad — north, south, east, and west.

It is interesting to note that the account which Boscana gives of the belief of the mountain Indians concerning Chung-itch-nish (whom he calls Chin-ig-chin-ich) and Oui-ot can be verified to-day in the remote mountain reservation of La Jolla (not to be confounded with the La Jolla on the coast), and the creation myth as he gives it is substantially the same as that told by the old men among the Luiseños who still preserve the memory of the past. These interesting myths will be published elsewhere.

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CONNECTICUT.

THE NAMING OF SPECIMENS IN AMERICAN ARCHEOLOGY¹

BY C. PEABODY AND W. K. MOOREHEAD

That the present nomenclature of American archeology is unsatisfactory is felt by all students. Some reasons for this may be given, as well as reasons for devising a better one:

1. As detailed study of specimens becomes more common, stricter classifications arise; classification is ineffective without adequate names.

2. There are at present too many specimens in the "unknown" class, or, as Professor Holmes puts it, the "problematical" class.

3. The present naming of classes is too loose, entailing a multiplicity of headings loosely applied; for instance, in a certain study² of stone ornaments there are one hundred and fifty-six headings, and in the excellent classification of Mr Douglass' collection of objects³ there are ninety-one.

4. In the present system there are names of unscientific or undignified use or application; for instance: "star-arrangements," "mineral lumps" (Douglass), "perforated plates."⁴

5. There are names that assume uses not proved, and that should be written in quotation marks; for instance: "plummets," "bar-amulets."

6. There are terms indefinite in application; for instance: "club-stones" (Douglass), "pitted" and "cupped stones," "banner-stones," "spool-shape ornaments";⁵ and the general classes of stones given the compound titles ending in "-shape" or "-like."

7. There are English names not closely defined or that are subject to variation in meaning with time or place; for instance:

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 30.

² Study prepared by C. Peabody.

³ Cf. A. E. Douglass, *Bull. Am. Mus. of Nat. Hist.*, N. Y., vol. VIII, art. x.

⁴ Cf. W. H. Holmes, *Art in Shell*, Second Rep. Bur. Ethnol., 1880-81, p. 264, ff.

⁵ Cf. Gerard Fowke, *Stone Art*, Thirteenth Rep. Bur. Ethnol., 1891-'92, p. 125.

"bowls," "pot-shaped vessels," "wide-mouthed bottles," "high-necked bottles," "ordinary forms," "eccentric forms."¹

8. There are sometimes two or more names for the same object; for example: "spade," "spud," "hoe," "gorget;" "disc," "discoid," "discoidal," "bicave stone," "chungke-stone;" "skinner," "flesher," "celt."

9. There is sometimes a single name for two or more distinct classes; for instance: "gorget" = "bracer," "breast-ornament," "pendant," "shuttle"; "ceremonial" covers a multitude of ignorances; "pendant" is anything perforated apparently for suspension.

10. It is desirable to introduce to the general public names that may be substituted for the common and commonplace "tomahawk," "dart," "arrowhead," "idol," etc.

11. In pottery, especially, a more definite and consistent nomenclature, based perhaps on the classical differentiations, is needed.

12. The spelling and form of present names should be made uniform; cf. "disk," "disc"; "-shape," "-shaped."

13. A system of names should be devised that needs a minimum of interpretation for foreign scholars.

14. Authority is needed wherewith to establish or condemn new words; for instance: "Amerind," "artifact," "nomenology."

In American archeology the complete classification has not yet been thought out. It should be possible for a committee of the American Anthropological Association to make or to adopt a classification, at least provisional, in each material—stone, bone, shell, horn, clay, wood, etc.—and then to give definite names to definite types in each material. The types should be based on shape and size or both, and the uses when known, or at any rate on characteristics recognizable in the subdivisions. For instance, the objects, generally of decorative stone, known as "ceremonials," should be renamed and those most clearly defined given a nomenclature not subject to change in the vernacular.

In like manner one may proceed with "discs" (often not discs at all), with vases, with bone objects, etc.

There will remain a large majority of objects refusing absolute

¹ Cf. W. H. Holmes, *Ancient Pottery of the Mississippi Valley*, Fourth Rep. Bur. Ethnol., 1882-'83, contents, pp. vii, viii.

certainly of classification; it would be well to establish a limitation of classes, such that a specimen, otherwise unknown, can be described as possessing certain characteristics of, say, Class A, certain others of, say, Class B. A picture, partial at any rate, is then presented to the mind of the reader.

The nomenclature of the natural sciences is not ideal, but it is fairly definite, and the use of the so-called dead languages takes it out of the region of variation in meaning.

Latin and Greek names for American objects are difficult for the untrained, through whom many specimens are procured, but a judicious compromise between the unbending Classics and the fluctuating English should be possible.

It is necessary that the naming should be clear and dignified, and if results are to follow an investigation they must bear the stamp of a national organization. Such an inquiry would be a grateful act on the part of the American Anthropological Association to attempt.

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[NOTE. — At the San Francisco meeting of the Association a committee was appointed to consider and report on the feasibility of carrying out the suggestion made by the authors. — *Editor.*]

A FEW ETHNOLOGICAL SPECIMENS COLLECTED
BY LEWIS AND CLARK¹

BY CHARLES C. WILLOUGHBY

The loss to American ethnology by the breaking up and partial destruction of the earlier collections of examples of modern Indian handicraft can be appreciated only by those familiar with the comparatively few remaining specimens of the higher class of these objects collected previous to the middle of the nineteenth century. The relatively small collection brought together by Catlin, for example, probably contained more choice specimens of the earlier handiwork of the modern tribes of the Siouan culture area than all the museums of America can ever hope to bring together from other sources. A few of the objects collected by Catlin escaped destruction and are preserved in the National Museum, the Free Museum of Science and Art of Philadelphia, and the Peabody Museum of Harvard University. These examples, however, represent but a very small part of the original collection.

The ethnological material brought together by Gov. William Clark in his museum at St. Louis seems to have suffered a fate similar to that of the greater portion of the Catlin collection. Many of Governor Clark's specimens were probably collected by the Lewis and Clark expedition. Catlin, being a friend of Clark's, had access to his museum and profited by it. He also obtained from Clark a number of objects from the Columbia river region which are generally supposed to have been collected by Catlin. Some of these are in the National Museum. There are in the Peabody Museum at Cambridge two Chinook cradles and a wedge for splitting wood which were in the Catlin collection and doubtless originally belonged to Clark's museum.

The first winter quarters of the Lewis and Clark expedition, Fort Mandan, was situated on the left bank of the Missouri, seven

¹ Presented at the meeting of the American Anthropological Association, Berkeley, California, August 31.

or eight miles below the mouth of Knife river, in central North Dakota. It was in the heart of the Indian country, and the members of the expedition were in communication not only with the Indians of that vicinity but with the Assiniboin, Cree, and other remote tribes. This afforded an unusual opportunity for collecting objects illustrating the ethnography of the region. It will always be a source of regret that such an opportunity was allowed to pass with so little accomplished.

On April 3, 1805, the packing of the articles obtained during the winter was completed and a list prepared of the specimens contained in the three cages, four boxes, and large trunk. These were sent to St Louis upon the barge which started on its return trip on April 7. They "reached Mr Jefferson and some of them were long on view at Monticello. Others passed to Peale's Museum in Philadelphia."¹ A list of these objects can be found in the first volume of the recently published "Original Journals of the Lewis and Clark Expedition." In the following condensed list only the ethnological material is enumerated in detail.

Box 1: A Mandan bow and quiver of arrows with some Arikara tobacco seed, besides several natural history specimens.

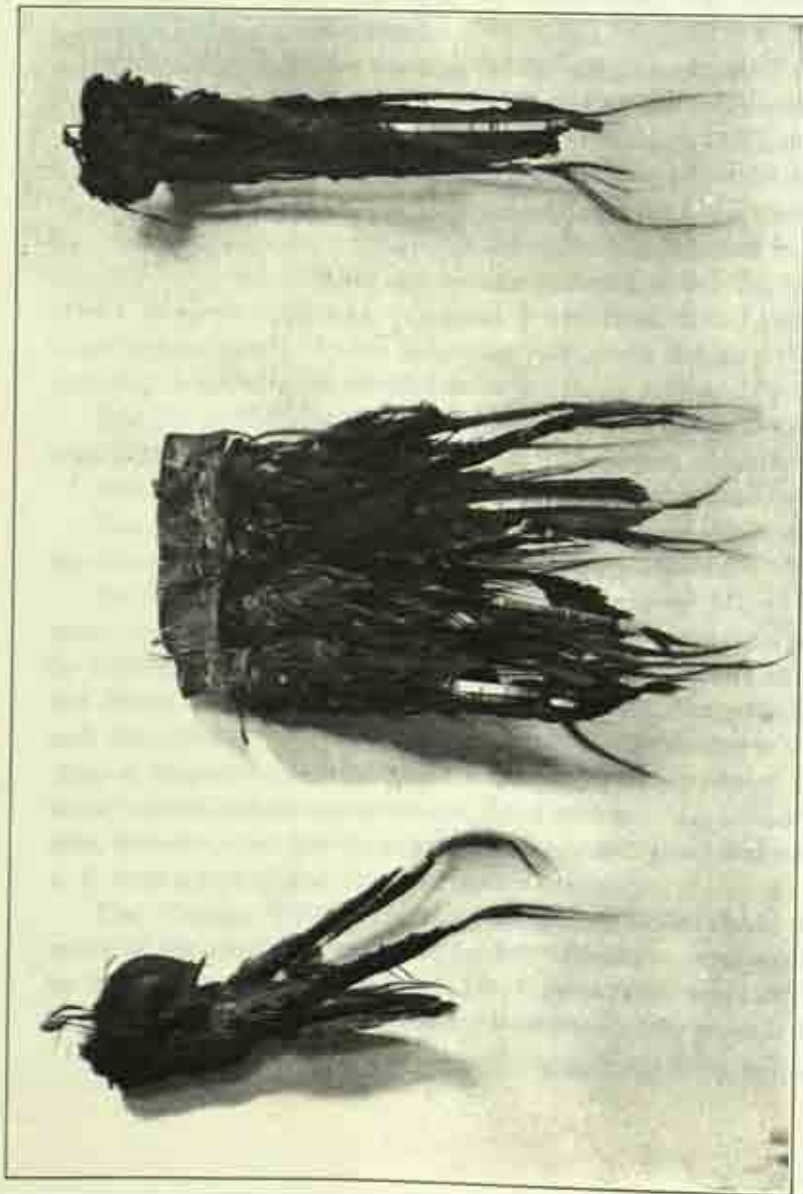
Box 2: Four buffalo robes and an ear of Mandan corn.

Box 4: Natural history specimens and "an earthen pot such as the Mandans manufacture and use for culinary purposes."

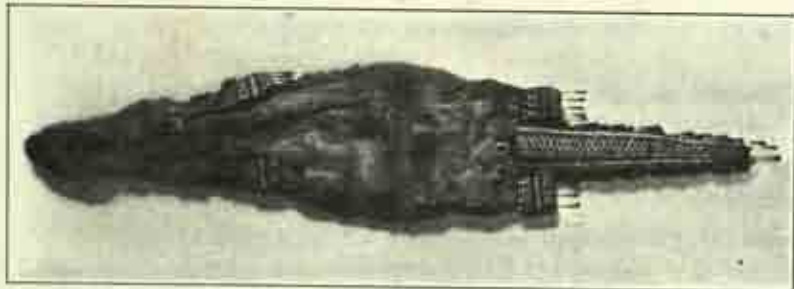
In the large trunk were packed several natural history specimens, some Arikara tobacco, a Mandan robe, a "buffalo robe painted by a Mandan man representing a battle fought eight years since by the Sioux and Recaras [Arikara] against the Mandans, Menitarras and Ah-wah-har-ways [Amahawi], Mandans &c on horse back." Also a Minnetaree buffalo "robe containing *some articles of Indian dress*," which unfortunately are not listed in detail. It is very probable, however, that the objects shown in plates xxxvii and xxxviii, *a, b*, were a part of the contents of this package.

The Charles Wilson Peale Museum, at Philadelphia, where many of the specimens collected by this expedition were sent either by Mr Jefferson or by Lewis and Clark personally, was established in 1785 and had a successful existence of nearly fifty years. It was

¹Elliott Coues, *History of the Lewis and Clark Expedition*, vol. 1, p. 250, note.



Raven-skin badges of office. Sioux Indians



Otter-skin bag used in the ceremonies of the Shell Society. Sent to Captains Lewis and Clark by the Senek Indians

finally discontinued and a part of its collections, probably a majority, passed to the well-known Boston Museum which in its earlier days was as noted for its cases of wax figures, its ethnological and natural history collections, and historical objects as for its theater. In the winter of 1898-99, a fire broke out in the Boston Museum, but did little damage to the collections in the exhibition galleries. In the following spring the interior of the building was repaired and partially remodeled, and the museum which gave to the famous playhouse its name was discontinued, the collections being distributed as gifts among the museums of Boston and vicinity. The Peabody Museum of Harvard University received the valuable ethnological collection, which included the following objects as well as several other specimens probably also collected by Lewis and Clark, including the Mandan bow noted in the above list. The label belonging with the bow has unfortunately been lost and there is no satisfactory proof of its identity.

Raven Skin Badges of Office

Plate XXXVII, *a, b, c*, shows three badges of office such as were worn by certain individuals belonging to various tribes of the Siouan and other linguistic families. The group shown at *a* was attached to the back of the girdle in such a way as to stand out horizontally. Those shown at *b, c*, hung, one from each arm, at the elbow. Similar ornaments are seen in position in portraits painted by King and Catlin. These badges were worn by trustworthy men appointed by the chief. An idea of their duties may be derived from the following account by Lewis and Clark¹ of one seen among the Teton Okandanda:

"While on shore to-day we witnessed a quarrel between two squaws, which appeared to be growing every moment more boisterous, when a man came forward, at whose approach every one seemed terrified and ran. He took the squaws and without any ceremony whipped them severely. On inquiring into the nature of such summary justice we learned that this man was an officer well known to this and many other tribes. His duty is to keep the peace, and the whole interior police of the village is confided to two or three of these officers who are named by the chief

¹ Lewis and Clark, *op. cit.*, pp. 140, 141.

and remain in power some days, at least till the chief appoints a successor. They seem to be a kind of constable or sentinel, since they are always on the watch to keep tranquility during the day and guard the camp at night. The short duration of the office is compensated by its authority. His power is supreme, and in the suppression of any riot or disturbance no resistance to him is suffered; his person is sacred, and if in the execution of his duty he strikes even a chief of the second class, he cannot be punished for this salutary insolence. In general he accompanies the person of the chief and when ordered to any duty, however dangerous, it is a point of honor rather to die than to refuse obedience. Thus when they attempted to stop us yesterday, the chief ordered one of these men to take possession of the boat; he immediately put his arm around the mast, and, as we understood, no force except the command of the chief would have induced him to release his hold. Like the other men his body is blackened but his distinguishing mark is a collection of two or three ravens' skins fixed to the girdle behind the back in such a way that the tails stick out horizontally from the body. On his head too is a raven-skin split into two parts, and tied so as to let the beak project from the forehead."

The badge worn at the back (pl. xxxvii, *a*) consists of an oblong piece of rawhide to which are attached four raven skins with the legs removed. These are in a fairly good state of preservation, although but one retains all of its symbolic appendages. The front part of each skin is stuffed with a roll of buckskin which projects and is turned upward and backward. The beak and skin of the head and neck are fastened to the end of this roll so that the beak rests upon the back of the skin, as shown more clearly in the arm ornament, *b*. The upper mandible is perforated about half an inch from its tip and to it, at this point, are attached four of the inner webs stripped from the tail-feathers of the hawk or the owl. These webs have been dyed red.

At a point between the base of the bill and the eye is attached, upon each side, a loop of rawhide about three inches in length. The strip forming the loop is about one-fourth of an inch in width and is wound with porcupine quills or thin strips from feather shafts, dyed. The outer third of the loop is red, the inner two thirds yellow. These colors are separated by a single brown quill. At the base of each loop, and fastened to it by sinew wrappings, is a tuft of horse-hair, about twelve inches long, dyed red.

The wings are closed and brought together beneath the body and tied with sinew. A carefully finished strip of hard wood, about eleven inches long and a little more than a fourth of an inch wide, is fastened to the inner side of the outer quills of each wing. These are wrapped with porcupine quills in their natural color or dyed red, and what appear to be split roots colored black. These wrappings are arranged so as to form bands and figures which vary in the different birds. Each end of the stick is ornamented with a tuft of horse-hair, dyed red, wrapped with a strip of ermine skin where it is attached to the stick. Both tufts fall in the same direction away from the head.

A third strip of wood, a little wider than the others and ornamented in the same way, is joined to the base of the tail beneath the coverts and extends along the upper side, where it is fastened to the shafts of the upper feathers. The design formed by the arrangement of the quill wrappings upon these tail-pieces was evidently the same in each of the four birds. Beginning at the base of the tail for a space of about an inch, the wrapping is of white quills followed by black squares upon a white ground, then two inches of white with a black cross in the center, then an inch and a half of alternating brown and white transverse stripes. Below this are three inches of orange divided into three sections by bands of white, each two quills in width.

The central portion of the web of the feathers upon one side of each tail has been stripped from each side of the shafts for about three inches with the exception of the central feathers and the outer feather which have the web removed from the inner side only. Two of the birds have the webs removed from the left side of the tail and two from the right side.

The raven ornaments worn at the elbow (pl. XXXVII, *b*, *c*) lack the four pendant feathers of the beak, and the webs have not been stripped from one side of the tail. The quill designs also differ slightly, otherwise they are the same as the four skins forming the back piece. Specimen *b* is in nearly perfect condition, but *c* is somewhat dilapidated. It is probable that the three pieces belonged to the same outfit.

One of the arm-pieces was accompanied with an old printed label

of the Peale Museum which reads: "Ornament. Worn upon the elbow by the Sioux Indians. Collected by Captains Lewis and Clarke."

Mandan Buffalo Robe

The label belonging with the specimen shown in plate xxxviii, c, has been lost, but there can be no question as to the identity of the robe. We learn from the list, already quoted, that the battle represented thereon was fought about the year 1797 by the Sioux and Arikara against the Mandan, Minnetaree, and "Ah-wah-har-ways," and that the "Mandans &c" were on horseback. There are sixty-four Indians shown in the painting, twenty of whom are mounted. With one exception the figures are outlined in brownish-black. This exception is the mounted warrior just above the middle of the central line of quills and to the left of the stooping figure shooting an arrow. This mounted Indian is red with black head and hair. He carries a green shield with concentric circles of red, having a yellow center. Some of the other shields are painted with these colors, differently grouped. The horses are outlined in brownish black. Some of their bodies are painted brown, others yellow or red. A few "calico" horses are represented.

The contestants are armed with spears, bows and arrows, guns, and tomahawks, a few individuals having both guns and bows and arrows. A number are shown in the act of shooting arrows, throwing spears, or striking with tomahawks. The latter weapon is represented sticking in the head of two or three individuals.

The central dividing line is wrought with porcupine quills in white, black, green, red, and yellow. It is probably symbolic of a path or trail connected in some way with the battle shown in the picture.

Otter-skin Bag

The quill-ornamented otter-skin bag shown in plate xxxvii, d, is an unusually fine example of a "medicine-bag" used in the ceremonies of the widely distributed Shell Society and as a receptacle for the shell and other sacred objects. Catlin figures similar bags which he calls tobacco pouches. The old printed label of the Peale Museum accompanying this reads as follows: "Sioux Tobacco Pouch. Sent to Capts. Lewis and Clark by the Sock [Sauk] Nation. Presented

by Capts. Lewis and Clarke." The skin is uncut with the exception of a slit in the throat through which the body of the animal was removed, and the underside of the tail which was split its entire length and opened flat. The feet, underside of the tail, and the anal opening are covered with pieces of buckskin dressed without the hair and ornamented with elaborate designs in porcupine quills, the colors being black, white, and orange. The tail-piece is bordered upon the sides and the feet coverings upon their lower edges with pendants of tin and deer hair. A looped ornament of buckskin wrapped with quills is fastened to each ear. These probably have a significance similar to that of the looped ornaments at each side of the ravens' heads illustrated in the same plate.

Cree Women's Dresses

The two garments shown in plate xxxviii *a, b*, are of unusual interest, as they illustrate a very rare type of dress. They were undoubtedly obtained from the party of Cree (Knisteneaux) that came down from the vicinity of the Saskatchewan river in November, 1804, to Fort Mandan. Clark writes: "Our Interpreter informs that 70 Lodges one of 3 bands of Assiniboin & some Crestinoes [Knisteneaux] are at the Mandan Village. The Crestinoes are abt 300 (240) men Speak the Chipaway Language the[y] live near Fort De prari (on Assiniboin & Assaskashawan) they are bands of the Chippeways."¹

The native dress of a Knisteneaux woman is thus described by Mackenzie:²

"The female dress is formed of the same material [moose skin] as those of the other sex but of a different make and arrangement. Their shoes are commonly plain and their leggings gartered beneath the knee. The coat or body covering falls down to the middle of the leg and is fastened over the shoulder with cords, a flap or cape turning down about eight inches before and behind and agreeably ornamented with quill work and fringe; the bottom is also fringed and fancifully painted as high as the knee. As it is very loose it is enclosed round the waist with a stiff belt decorated with tassels and fastened behind. The arms are covered

¹ *Original Journals of the Lewis and Clark Expedition*, Thwaites ed., 1905, vol. 1, p. 222.

² *Voyages*, vol. 1, pp. xc, xci.

to the wrist with detached sleeves, which are sewed as far as the bend of the arm; from whence they are drawn up to the neck, and the corners of them fall down behind as low as the waist. The cap when they wear one, consists of a certain quantity of leather or cloth, sewed at one end, by which means it is kept on the head, and, hanging down the back, is fastened to the belt as well as under the chin. The upper garment is a robe like that worn by the men. Their hair is divided on the crown and tied behind, or sometimes fastened in large knots over the ears."

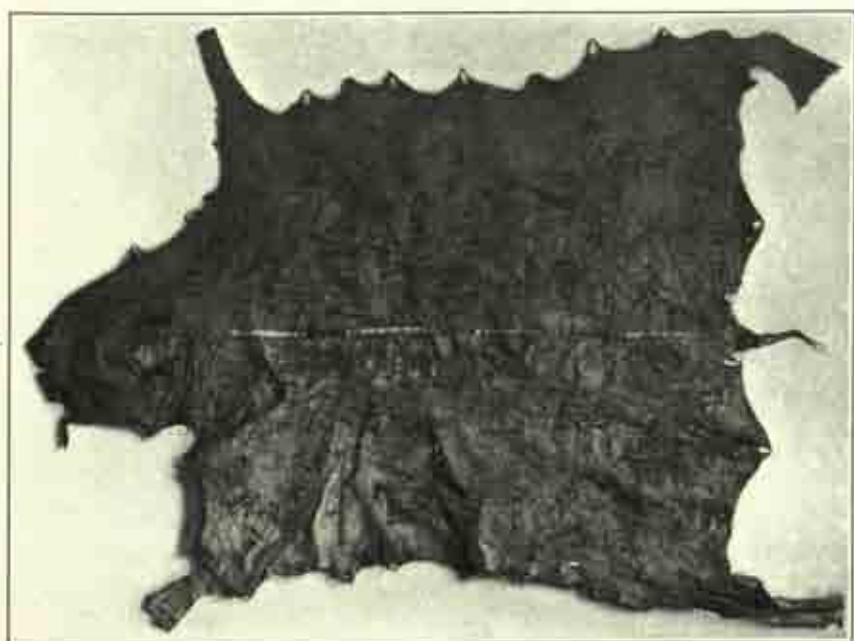
The dresses illustrated are alike on both sides and are each made of two nearly rectangular pieces of skin of about equal size, dressed without the hair. The piece forming the upper portion of the garment is folded horizontally through the center, then perpendicularly in the middle. A slit is cut through the upper half of the second fold for one arm. The upper folded edges are joined over the shoulders with a short strap and thongs, but the side for the other arm is left open. The second piece forming the skirt is broader at the lower edge to give fulness. It is folded once perpendicularly and the edges at the right side are sewed together. The skirt is then joined to the upper part of the garment by sewing its upper edge to the lower edge of the inner fold of the waist. There is an ornamental band about two inches in width joined at its upper edge to each skirt not far from the bottom. Both garments are ornamented with the characteristic linear designs used upon women's clothing in early times.

The upper portion of the dress shown at *a* is ornamented with blue beads and brass buttons, doubtless obtained from the Hudson Bay Company traders. Below are horizontal and perpendicular bands of lines seared with a hot bone. The skirt is decorated with symbolic lines and bars in blue, green, yellow, red, and white porcupine quills, with tufts of red worsted at intervals. The applied band near the bottom is covered with a blue bead ground-work with transverse ladder-like bars of white beads. This is bordered on the lower edge with pendants of tin and deer hair. The primary function of this ornamental band is probably to strengthen the lower portion of the skirt.

The accompanying label, written in the same hand as many others from the Peale Museum, is as follows: "Indian Hunting



Women's dresses. Cree Indians. Assiniboia, Canada



Buffalo robe painted by a Mandan man with design representing a battle fought about 1797 by the Sioux and Arikara against the Mandan, Minutari, and "Ahwahharways" (Amahami)

Shirt made of Buffalo skin. This was formerly owned and worn by Capt. Clark in his Exploring Expedition. Presented to Peale's Museum by Capt. Lewis and Clark."

The other dress (*b*) is ornamented with painted lines and characteristic figures in red and black. A bar along the upper part of the waist, the disks on the breast, the band near the bottom of the skirt, and the ornamental figures just above this band are wrought with blue and green beads. The label, written in the same hand as the other, reads: "Indian Hunting Shirt formerly owned by Capt. Lewis. Presented to Peale's Museum by Capt. Lewis and Clark."

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASS.

MAYA DATES¹

By J. T. GOODMAN

The more comprehensive paper I had prepared for this occasion was found to be too long. It is as well, perhaps, for the only general interest in my subject is as to just how old the Maya ruins are.

Many efforts have been made to satisfy that curiosity; they can be only guess-work, however, until the ancient Maya chronology is aligned with ours. But one possible way of doing this exists: that is, by correlating the Xiu and Archaic chronological calendars. There have been several attempts in that line, but those I have seen were based on mistaken premises and therefore must of necessity be wrong.

It is not certain the thing can be done even by the use of proper data; but as our only present hope of coördinating the Archaic dates with ours lies in such a correlation, I have deemed it worth while to make one as correct as possible.

There are two chief obstacles. If we could be sure they were overcome without violence, not a particle of doubt would remain.

The first is that the katuns were computed differently in the two systems—the Archaic reckoning by a cycle of 20 katuns, the Xius by one of 13; the former numbered in the order of their succession, the latter designated by their terminal day number.

But this objection seems to vanish in face of the fact that the Archaic system, in addition to its 20-katun cycle, had a 13-katun count also—specified for some reason as “the 16-day reckoning”—in which the katuns were designated by their terminal day number, exactly as in the Yucatec plan.

I will state here, by the way, that I have found good reasons in the inscriptions for revising my chronological calendar in one particular. The signs which I thought indicated the beginning really

¹ Read at the meeting of the American Anthropological Association, Berkeley, California, August 31.

denote the end; so that what appears in the tables as the first day of an *ahau*, *katun*, cycle, or great cycle is, instead, the last day of that period. Fortunately the numbering is such that no change will be required in that respect. The notation of dates will be exactly the same as now, only it will mark the end, not the beginning, of the periods recorded. Thus the two calendars are brought into conformity in this important regard.

The second obstacle is that the annual calendars of the systems in question do not agree, there being a difference of one in the month numbers of the days. But that difficulty also seems to disappear under examination.

It is certain the *Xius* migrated from a region where the Archaic calendar was in use, for the style of chronological reckoning they brought with them and preserved to the last does not accord with that of any other of the Maya branches, as the *Quiches* or *Cakchiquels*.

Now, what would likely happen when a people settled in a country where a different calendar was in vogue? As they came into intercourse with the older settlers they would naturally, for the sake of convenience, adopt the current day and year count, but retain their chronological one in order to keep their records unbroken.

It is evident that precisely this happened with the *Xius* in their new home. Two of the chronicles state that "*Pop* was put in order" shortly after they came in contact with the *Itzas*. As mention of this fact occurs only in the chronicles of the *Xius*, as they did not conform their chronological count to the standard of their neighbors, and as there was no necessity for any other change, this in all likelihood refers to their adoption of the *Yucatec* annual calendar.

Whatever period it may have been necessary to intercalate or cancel to effect this change — whether but a day, or years — one consideration had to be kept in view: the order of their chronological count must not be disturbed.

Now, that order did not consist merely of every *katun* ending with a number two less than its predecessor. It involved the regular succession of seventy-three different month dates as well, any disarrangement of whose sequence would throw their chronology into

confusion. Hence, supposing the change to have been made at the close of a katun ending with 13 Ahau-17 Pop (as it was), the succeeding katun must terminate with 11 Ahau-2 Pax, however much it had to be lengthened or shortened in order to do so, else the whole Xiu chronological scheme would have been thrown into disorder.

That no other change was made is certain from the facts that the Xius did not align their katun count with that of the Itzas, Cocoms, and Chels, and that its character remained unaltered and its continuity unbroken from the time they left their mother-country.

The two main obstacles being thus disposed of with a reasonable assurance of certitude, the way is cleared for the next step, which is to identify some day of the Yucatec annual calendar with the corresponding one of our era.

Luckily two dates are given by the native writers with a particularity that renders their position unmistakable.

Dr Brinton states, in his *Maya Chronicles*, that one of the manuscripts (presumably in his possession) gives the year Montejo arrived at Chicchen Itza as 11 Muluc.

Nakuk Pech's "Chronicle of Chicxulub," in the same volume, says the year the Spaniards settled in Merida was 13 Kan.

These statements agree, which renders them reliable beyond cavil. We may be positive therefore that July 16, 1526, was the Yucatec day 11 Muluc, and July 16, 1541, 13 Kan.

The death of Napot Xiu, the *ahpula*, or priestly heir to the throne, is the event we must rely upon to fix exactly the terminal day of a Xiu katun. It is the reef on which all the chronologists have been wrecked.

The dates of other occurrences are given, but none so circumstantially as this. Besides, it was an important event in Xiu history, and would likely be carefully chronicled.

The chroniclers confused the account by attempting to give the year of our era. Like every other of our dates given by them, it is wrong. They were invariably misled by the difference between our years and their ahaus. But they all agree that the *ahpula* died on the day 9 Ymix, the 18th of the month Zip, in the year beginning with 4 Kan. As this was their own style of reckoning, there is every reason for supposing the date to be correct.

Now, 1541 being a Kan year (as the two authorities just mentioned assure us it was), it is impossible that 1536—the year in which it is said the ahpula died—could have been one also. It was, in fact, the year 8 Cauac. The only 4 Kan year within a reasonable range began in 1545.

The translators have confused the account of the ahpula's death still more by construing one of the sentences so as to read: "For six years the count of the 13 Ahau will not be ended," whereas it actually says: "The sixth year will not end from the count of the 13 Ahau."

This makes a great difference and gives a very definite location to the end of that katun. It could be only 13 Ahau-7 Xul, October 30, 1539. Counting by calendar years there would be five years and fifteen out of their eighteen months to 9 Ymix-18 Zip, September 11, 1545, the day the ahpula died; reckoning by ahaus, as it is likely the natives computed it, but nineteen days would be lacking to complete the sixth ahau from the end of the 13 Ahau katun. No other 13 Ahau would fit the conditions in either way, while this fulfills them in both. But, to fortify its position, I will cite some additional proof.

Landa states that the natives said the Spaniards arrived at Merida during the month Pop, 1541, which was the first year of the 11 Ahau katun. This information must have come from the Xius, for the 11 Ahau katun of the Itzas, Cocoms, and Chels began December 25, 1536.

The month Pop, 1541, was really in the second ahau of the Xiu 11 Ahau katun, as we would count; but as periods were not reckoned by the Mayas until they had wholly elapsed, speaking of the date in round numbers the natives would say it corresponded to the first ahau.

It has been generally assumed, however, that this statement of Landa and that of the chronicles (that the ahpula died in 1536, when according to the mistranslation six years were wanting to complete the katun) are strongly corroborative, and therefore the 13 Ahau katun must have ended in 1541.

The assumption, notwithstanding its outrage of arithmetic, seems plausible in a vague sort of way; but the chronicles themselves upset it.

All the Xiu chronicles say Landa died in the 7 Ahau katun. By a chronological count based on the 13 Ahau katun ending October 30, 1539, the 7 Ahau katun would begin April 14, 1579, the very year and month in which Landa died; therefore any date more than seventeen days later than October 30, 1539, for the ending of the 13 Ahau katun would bring Landa's death into the 9 Ahau katun.

Thus the assurance given us by the annual calendar is made doubly sure, and we may rest certain that the 13 Ahau-7 Xul which fell on October 30, 1539, was the end of a 13 Ahau katun in the Xiu chronological count.

We now turn to the Archaic calendar for a katun ending with 13 Ahau-8 Xul, remembering we are supposed to have overcome the difference of a day. We must also keep in mind that owing to my rearrangement of the calendar it will be a date now at the head of a column.

Happily, in support of the correctness of the Xiu chronology, we find it in a very reasonable position—the 16th katun of the 11th cycle of the 54th great cycle.

Assuming that date to have been October 30, 1539 (as the foregoing considerations show there is just reason for doing), we are enabled to align every other date in the Archaic scheme and to fix at least the prosperous period of all the ruined cities.

The result shows that Copan, Quirigua, Tikal, Menche, Piedras Negras, and the other more modern capitals, flourished from the sixth to the ninth century of our era, speaking in round terms, and that Palenque was in existence 3,143 years before Christ.

I am aware that the older Palenquean dates are so remote that it has been commonly agreed to discredit their historical value. There is no warrant for this. They stand on exactly the same footing as the dates assumed to be historical, and all must be accepted or rejected alike.

But, apart from this general reason, there is definite proof of their historical value.

There are two kinds of initial dates in the inscriptions. One sort is merely a starting-point from which to project a computation

illustrative of some peculiar style of reckoning: as that on the east face of Stela C, Quirigua, demonstrating the ways by which a great cycle can be reckoned; those on Stela C, Copan, showing a count by 4,680 years, or ninety calendar-rounds; that on the steps at Palenque, and so forth.

It will be observed that this style of dates is never followed by what I termed "the initial directive series," but which the Harvard school designates "the supplemental series." This series—which, whatever we may name it, the Mayas called "the day reckoning"—was a computation by single days to 180, originally, but later to 200; thence, respectively, to 3,600 and 4,000 days; but in both cases it led up to seventy-three 5-ahau, or 360-year, reckoning. It started from a different date in every city, and began with a different day in all of them except Copan and Quirigua.

There can be but one inference from this general diversity in a system where everything else was uniform—namely, that it was an *ab urbes conditâ* reckoning, showing the relation of the regular chronological count to one from the founding of each particular city. In other words, every city, in addition to the standard chronology common to the whole race, had a reckoning from the date of its founding—like Rome. Therefore it is reasonably certain that all the initial dates which are accompanied by this supplemental series are historical.

The earliest Palenque dates are not only followed by it, but it appears there in a form so radically different and primitive as to require a vast stretch of time, considering the conservatism shown in everything else, to account for its later development in the other cities. Hence, those dates are not only historical, but they bear an unmistakable badge of relatively great antiquity.

ALAMEDA,
CALIFORNIA.

BASKET DESIGNS OF THE POMO INDIANS¹

By S. A. BARRETT

The following is a preliminary account of the basket designs of the Pomo Indians of California and is intended to show only the more important features of the subject. It is based chiefly on investigations carried on during 1904 for the Department of Anthropology of the University of California. Among the seven dialects of the Pomo linguistic stock there are but three, the Northern, Central, and Eastern, all in central Mendocino and central Lake counties, that are now spoken by any considerable number of Indians, and with the people in this particular region the art of basket making is, at present, on the whole more highly perfected than with the people of the remaining Pomo area. Consequently it is chiefly from the people of these three dialectic groups that information concerning basketry was obtained.

In technique Pomo basketry shows great variety. Of coiling there are two forms: single-rod and three-rod foundation. Of twining there are, exclusive of those used for border finish only, five forms: plain-twined, diagonal-twined, lattice-twined, three-strand twined, and three-strand braided. Of these twined weaves the first three are in common use, the fourth is rarely used as the weave of an entire basket, and the fifth is very rarely so used. The lattice-twined weave seems to be confined entirely to the Pomo and adjacent Indians of other linguistic stocks but of similar culture. The following fact concerning manipulation is noteworthy: As one looks at the outer surface of the bottom of a basket, coiling always progresses in a counterclockwise direction, twining always in a clockwise direction.

In form also a very great diversity is shown, there being all shapes from cylindrical, through globose and conical, to the flat

¹ Read at the meeting of the American Anthropological Association, Berkeley, California, August 31.

plate-form. To these should be added a special form, the elliptical or canoe-shaped, which it would seem is more rarely found elsewhere.

One of the most striking features of Pomo basketry, and the one which has been perhaps the most noticed by collectors, is the feather decoration, which finds its highest development with the Pomo. The variously colored feathers of different species of birds may be woven into the basket at intervals, thus allowing the pattern which is worked out in the fiber of the basket to show among them; or the entire surface of the basket may be so thickly covered with feathers as to entirely hide the fiber of the basket, in which case some simple pattern is worked out by the use of differently colored feathers. Similar to feather decoration is decoration with beads; but both may be regarded as only auxiliary ornamentation and usually secondary to the patterns which are produced by the use of fibers of different colors. Of these patterns some are simple, some complex; but all are composed of simple design elements, each with its special name.

In dealing with these design names a sharp distinction must be made between the design element as a simple elemental figure, and the pattern as a whole, the complex figure composed sometimes of a single repeated element, but as often of two or more elements in combination. In the three Pomo dialects under consideration there have been found in all twenty-nine names which are applied to design elements and may therefore be called elemental names. Eighteen of these are names of animate objects or parts of animate objects, as follows: deer hip or deer back, deer teeth, deer elbow, ant, striped water-snake, grasshopper elbow, turtle neck, quail plume, bear foot or track, bat wing, man, crow foot or track, goose excrement, turtle foot, fish rib, crab claw, star-fish, and mosquito. Of the remaining eleven, three are plant names — acorn head (cup), wild "potato" forehead, and pine tree; and four are names of natural or artificial objects — arrowhead, string, star and cross, the last having its origin in and taking its name from the cross¹ introduced by Roman Catholic missionaries. Three are names of more

¹ The name commonly given to the cross by the Indians is *haras*, evidently derived from the Spanish *cruc*. The design itself was not known to the Indians before the coming of the missionaries.

or less geometric figures occurring in nature — spot and two forms of zigzag, to which may be added a fourth, the finishing design.

Some of the design elements bearing these names are of rare occurrence, and about fourteen constitute the bulk of the designs to be found in any ordinary collection of Pomo baskets. Two at least of the elemental names given are used only by the people speaking one of the three dialects, different names being applied to the same design elements by the people speaking the other dialects.

Some examples of these commonly occurring design elements are given in plate xxxix,¹ where seven of the most frequently occurring animal designs are shown. The central circle in figure 1 shows the deer-hip or deer-back design; the three upper bands in figure 2 show the deer-teeth design; and the two bands of very small square figures in figure 3, and also the lowest band in figure 4, show the ant design. In figure 3 also the four dark bands running around the middle of the basket are striped water-snakes, while in figure 4 the two bands of acute-angled triangles, the triangles in each band being separated by a white zigzag, show the design called grass-hopper elbow. The large figures on the side of the basket shown in figure 5 are the turtle-neck design; and the lowest band of figure 6 shows the quail-plume design, the plumes in this case being arranged in pairs with a narrow dark line separating the individual plumes.

From these examples it will be evident that, although design elements are given names of special signification, as of animals, birds, and so on, they are in most cases not realistic. They are not intended by the Indians to be so; nor on the other hand have they any religious significance. They are primarily decorative and seem to have been named from some real or fancied likeness to the objects bearing the same names.

These designs bearing elemental names may be modified in size, form, and otherwise, and these modifications are not only recognized by the Indians, but qualifying terms indicative of them are used in

¹ The baskets shown in figures 2, 3, 4, and 6 of plate xxxix and figure 3 of plate xl are in the collections of the Museum of the Department of Anthropology of the University of California. Those shown in figures 1 and 5 of plate xxxix and figures 1, 2, and 4 of plate xl form part of a collection made by the writer and now the property of the Königliches Museum für Völkerkunde of Berlin.



1



2



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4



5



6

POMO BASKETS, SHOWING ANIMAL DESIGNS

connection with the elemental names to form the complete name of the design. There are fourteen such qualifying terms used exclusively in connection with elemental names and descriptive of form, size, color, and direction. These are: large, small, long, short, crooked, half, sharp, slender, black, white (space, naked), inward, outward, above and below. Some of these terms are equally applicable to any and all design elements, while others are used only in connection with one or two; as, inward, outward, above, and below, which are used only with the arrowhead design.

Plate XL shows various modifications of the arrowhead. Figure 1, showing an elaborate spiral pattern, contains three forms of the arrowhead: inward arrowhead, outward arrowhead, and arrowhead sharp. The inward arrowhead is the triangular figure shown on the lower or left-hand side of the spiral. In weaving the basket each successive round made reduces the breadth of the triangle and tends to carry its outer line inward toward the median line of the pattern; hence its name inward arrowhead. Opposite this, on the upper or right-hand side of the spiral, is the outward arrowhead, the breadth of which widens with each successive round in weaving, the outer line tending outward or receding from the median line of the pattern. The arrowhead sharp is shown as a small triangle along the outer margins of both the inward and outward arrowheads, being separated from the larger triangles by narrow white lines. The wide elaborate pattern passing around the middle of figure 2 shows the above arrowhead and the below arrowhead, the former being the large triangle pointing downward from the upper edge of the pattern and the latter being the triangle pointing upward from the lower edge of the pattern. The derivation of these terms is self evident. The large plain triangles arranged as in figure 3 are always called arrowhead half. The long tapering points, some of which project downward and some upward in figure 4, are called arrowhead slender.

A design element may occur alone or in repetition as a pattern, in either of which cases the simple elemental name with appropriate qualifying terms is given as the name of the pattern. However, two or more design elements may be combined to form a complex pattern, thus permitting of a great variety. The name given to such

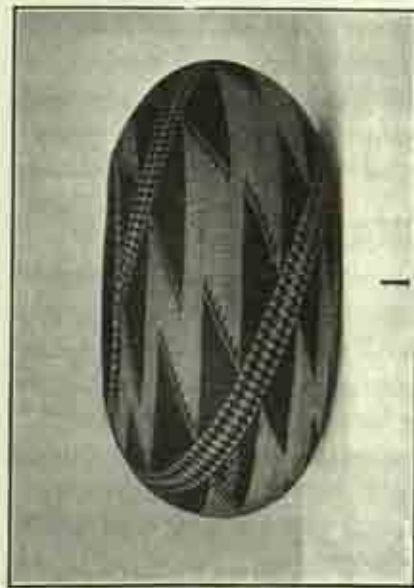
a combination of design elements is not that of one of the elements, nor is an entirely new name invented for each new combination. The term used is not so much a name as a descriptive phrase in which the principal constituent design elements are mentioned and their relations one to another are usually given.

Here again qualifying terms are needed, and we find an even greater variety of such qualifying terms than are used with the simple design elements. They cover all phases of design arrangement, direction, relative position, number, color, and quality. Those most commonly used are: banded, single one going around or running around, two going around or running around, vertical or straight up, spiral or slanting, crossing, scattered, placed anywhere, edge or border, middle or in the middle, on both sides, and or with, single or one, double or two, spotted, and bad. Thus the broad band about the middle of the basket shown in figure 6, plate xxxix, is called, by the people speaking one dialect, wild "potato" forehead zigzag on both sides arrowhead, while the lowest band of design in the same figure is called quail-plumes in the middle running striped water-snake. Also in plate xl, figure 4, the entire pattern which extends spirally from the bottom to the top of the basket is called design arrowhead in the middle zigzag, and the pattern of figure 1 is called design sharp points in the middle arrowheads on both sides.

A similar, though-much more limited, use of qualifying and descriptive terms seems to occur among the Yurok and Karok, and perhaps other Indians of northwestern California, where common design names modified by terms signifying form, size, design arrangement, and position are occasionally found.¹

Borrowing of designs or of names seems almost totally lacking among the Pomo, and invention of designs, as also of weaves and forms, is quite unknown. There are, it is true, certain patterns which have been recently introduced, but these can hardly be said to be due to invention. Informants maintain that they are copied from patterns on articles manufactured by whites. Furthermore these patterns are not given the names of any of the standard old

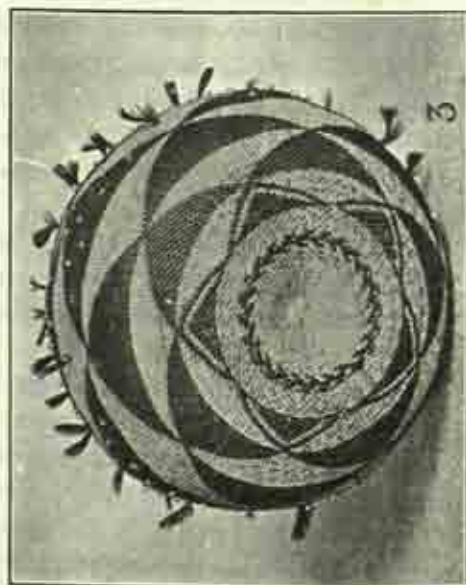
¹ Dr A. L. Kroeber, *Basket Designs of the Indians of Northwestern California*, Univ. Calif. Publ., Amer. Archeol. and Ethnol. II, 127, 133, 141, 1905.



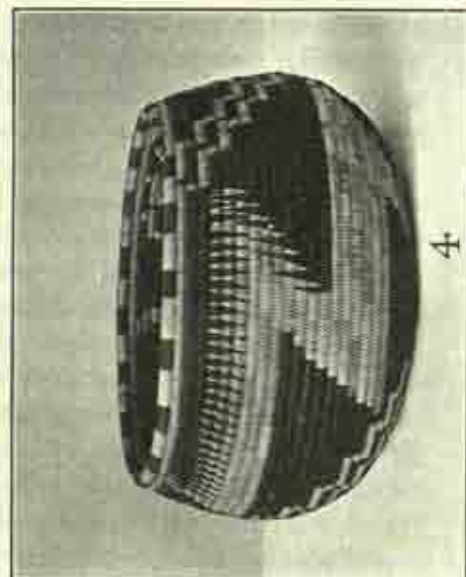
1



2



3



4

POMO BASKETS, SHOWING VARIATIONS OF ARROWHEAD DESIGN

designs, nor are new names invented for them; they are simply called "new style," "new fashioned," or "no name." However, this class constitutes such a small percentage of the patterns to be found in any Pomo collection that it is practically negligible. Comparatively all, then, of the patterns found among the Pomo are composed of standard old design elements and are given the same names and interpretations by all informants; due allowance, of course, being made for the differences due to the dialect spoken. A nearly total lack of individuality of interpretation by different informants is thus shown in connection with elemental names, although there is a limited amount of individuality in the use of qualifying terms.

The total known number of Pomo design names somewhat exceeds the numbers so far found among some other peoples: as the Hupa who have nineteen, and the Karok who have fourteen;¹ but on the other hand is much smaller than the number found among the Maidu, who have more than forty.² However, notwithstanding this seemingly comparatively small number of elemental names, the Pomo probably possess as great a number as any other Indians occupying a like area, and they are certainly able, by the use of their many and varied qualifying terms, to adequately differentiate the most complex patterns one from another, and further, these combinations of elemental names and qualifying terms produce pattern names which are so descriptive that it is possible for one acquainted with the subject to form, to a certain extent, a mental picture of the pattern from its name.

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¹ Dr A. L. Kroeber, *op. cit.*, p. 154. It seems very probable, however, that both the Hupa and the Karok will ultimately be found to have fully as many design names as the Yurok, who are of the same general culture, and who have more than thirty such names, though only about half of these are in common use, the others occurring quite rarely.

² Dr R. B. Dixon, *Basketry Designs of the Indians of Northern California*, Bull. Am. Mus. Nat. Hist., xvii, pt. 1, 23, 1902. The Maidu, however, occupy a much larger territory than the Hupa, the Karok, or the people of the three Pomo dialects in question, and should, therefore, be expected to possess a greater variety of design names than any one of these.

A NEW METHOD OF PRESERVING SPECIMENS OF SHELL AND OTHER PERISHABLE MATERIALS¹

By PHILIP MILLS JONES

While conducting some archeological researches for Mrs Phœbe A. Hearst, in behalf of the University of California, I visited Santa Rosa island off the coast of California at the vicinity of Santa Barbara, during the early months of 1901. Here the conditions of climate and food supply were particularly favorable to the struggle for existence, and the existing remains indicate not only a fairly large aboriginal population, but also a rather unusual dexterity in the fashioning of articles of adornment. A considerable variety of shell-fish furnished the raw material, but while some fifty varieties have been noted, the great majority of decorative objects were made from the shells of the very abundant abalone, or *Haliotis refusus*. The village sites and graveyards of Santa Rosa island were particularly rich in this shell material, and much of it exhibits a high degree of skill in shaping as well as in ornamentation.

Every collector has doubtless experienced the very disagreeable sensation of procuring some particularly prized shell specimens from a moist soil, only to see them disintegrate with the passage of time and the loss of the contained moisture. The long retention of the specimens in more or less wet soil results in the removal of practically all the cementing material that normally holds together the lamellæ of calcareous matter. As a result of this dehydration, when the specimens become dry the slightest touch brushes away particles, and even when untouched and in a glass case they not infrequently drop apart and eventually leave only a small heap of powder.

To counteract this effect two requirements are to be met by the collector: immediate preservation for transportation to the museum, and the permanent fixation at some subsequent time. The first of these I found well satisfied by allowing the specimens to remain, until

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 30.

nearly dry, in some of the soil in which they had been buried, and then packing them in plenty of cotton in comparatively small boxes, always refraining from unnecessary manipulation or attempts at cleaning.

To permanently preserve the objects, however, is a far more difficult matter. Two methods have previously been recommended, and, presumably, exclusively employed. Shellac has had rather the larger number of supporters, but it is not effectual, as it furnishes merely an outside skin and does not materially strengthen very weak specimens; moreover, it gives the specimen a glossy and refractive surface which imparts an unnatural appearance. Boiling in oil has been used by some, but this is out of the question when fragile specimens are to be preserved, and it has the disadvantage of the shellac in that it gives the shell an unnatural appearance.

On studying the problem it seemed evident that as an animal cementing substance had been removed from the entire mass of the shell, it should be replaced by a substance of similar character if the restoration of the specimen is to be effected. The following method was therefore devised, and by it several thousands of specimens were successfully treated. After two years the objects are as sound and strong as when first treated, and have all the appearance of perfectly natural shell.

A solution of clear gelatin, such as is used for bacteriologic cultures, of about three percent to four percent strength, is kept fluid over a sand bath and Bunsen burner. Into this the specimens are placed and allowed to remain until about one minute after all bubbles of air have ceased. While in the gelatin the specimens may be thoroughly cleaned with a camel's hair brush. They are then removed and placed in a vessel containing ordinary commercial formalin solution, or formaldehyde, where they are allowed to remain for a few moments, or at the convenience of the operator, and are then removed, drained, and allowed to dry slowly.

In this process the cementing material is furnished by the gelatin, and the formalin acts upon the gelatin, making "formalin-gelatin," an insoluble substance. Thus the shell is impregnated with an animal cementing material and at the same time protected by an absolutely insoluble coating.

SAN FRANCISCO,
CALIFORNIA.

SKETCH OF THE GRAMMAR OF THE LUISEÑO LANGUAGE OF CALIFORNIA¹

By P. S. SPARKMAN

The Luiseño Indians are of Shoshonean origin and are the most southwesterly tribe of that linguistic family in the United States. They number some 800 or 900 individuals, about two-thirds of whom live in the basin of San Luis Rey river, southern California.

There are no articles in the Luiseño language; instead of 'a . . . ' or 'the man is coming,' one says, 'man is coming,' or, occasionally, 'one man is coming.' Nor are there true comparatives; one cannot say 'this is good,' 'that is better,' 'that is best,' but 'this is a little good,' 'that is good,' 'that is very good.' There are also certain roundabout methods of expressing comparison.

With few exceptions no distinction is made between masculine and feminine gender, but a clear distinction is made between the gender of animate and inanimate objects.

Generic names are the exception. As a rule there are names for each species, but none for the genus; yet to this rule there are not a few exceptions.

Incorporation, generally considered to be one of the most characteristic features of Indian languages, exists to a very limited extent in Luiseño; and complete incorporation, in which the subject, verb, and object are formed into a single word, is wholly lacking. With some reservation Luiseño may be considered a semi-incorporative language.

In writing the language we have spoken of the changes that take place in the termination of words to express their changes of meaning as case-inflection. Our reason for regarding these changes as case-endings is that they are affixed to the word root or stem,

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 30.

and not to its nominative case, hence they appear to be as truly case-endings as are similar changes in Latin. Personal pronouns have no fewer than twelve such case-endings; but no noun has more than eight; many of them have only five, and the names of the cardinal points but three.

There are but five numerals in Luiseño, higher amounts being counted chiefly by means of the fingers and toes. 'All my hand finished,' meaning, of course, all the fingers of both hands, would signify ten; 'all my hand finished, and one my foot,' is fifteen; 'all my hand my foot finished,' twenty; 'five times all my hand my foot finished,' one hundred. There is no abstract word for any number exceeding five.

Plurals are somewhat irregular, but they are oftener formed by the addition of *-um* than in any other manner. In the inanimate gender it is not customary to use the plural except when necessary, the fact that a numeral, an adjective denoting plurality, a plural verb, or a plural demonstrative pronoun occurs in the sentence making the plurality of the noun understood. In the animate gender, however, plural nouns, as well as the numerals, adjectives, and demonstrative or possessive pronouns that may accompany them, are all inflected to indicate the plural.

Nouns are either primitive or derivative. There is no known compound noun in the language. Of the derived nouns nearly all are of verbal derivation; the exceptional few are derived from other nouns. Many nouns have no absolute form at all, and can be employed only with a conjunctive possessive pronoun prefixed to them. Among this class of nouns are those that denote terms of relationship, so that one cannot say simply 'father' or 'mother,' but 'my father,' 'our mother,' etc. The names of most parts of the body also have no absolute form; and there are also many other nouns that have only the possessive form.

In Luiseño, pronouns are independent words, but in some tenses of the subjunctive mode and in certain verb-forms their roots are prefixed to the verb in the same manner as they are prefixed to nouns of the inanimate gender and to relationship terms to indicate their possessive form. An objective pronoun is never incorporated with a verb.

Luiseno possessive pronouns differ according to gender. In the animate gender the absolute and conjunctive are the same: "my and mine," "thy and thine," would be the same in this gender, with the exception of terms of relationship. But in the inanimate the absolute and conjunctive differ, the latter being always attached to the noun: "my hat" would therefore be one word. And when a possessive pronoun is prefixed to a noun in this manner, the noun-ending invariably changes, generally being shortened, but sometimes lengthened: *yām'-pish*, 'hat,' would therefore be, *no-yām'-py*, 'my hat.' Such shortening of a noun when a possessive pronoun is prefixed to it seems to be rare in Indian languages generally, although it is characteristic of Nahuatl.

There are a great many adjectives in Luiseno, and they usually follow the words that they qualify, though in some forms of speech they may be placed before or after the noun at will. Some adjectives may be conjugated as verbs (as, 'I was thirsty') by using an adjective and an auxiliary verb as in English; or the same idea may be expressed by conjugating the adjective without using the auxiliary verb at all. With one exception adjectives are declined for case in the way that nouns are, and they agree with the nouns that they qualify in gender, and usually in number and case.

As in all Indian languages, the verbs in Luiseno are greatly complicated. They have a number of modes with no counterpart whatever in English or cognate languages; they may also have several different conjugations formed from the same root, each with its modes the same as the principal verb, that is, its simplest form.

The verbal root itself generally remains unchanged, and the corresponding tenses of the different modes and conjugations formed from the same root usually, though by no means always, have the same inflection, the changes being made by means of infixes. Hence a Luiseno tense consists usually of three parts, viz., the verbal root, the infix, and the inflection proper.

The change of a verb from the transitive is also effected by an internal change in the verb, not by inflection.

In the conjugation of verbs there is no instance of the three persons singular differing from each other, nor an instance of the three persons plural differing; and in most of the tenses all six persons are alike.

In what corresponds to the indicative mode in English there are no fewer than eleven tenses in Luiseño, several of which denote different degrees of remoteness of past time.

Many verbs differ for number, having both a singular and a plural form; some have several plural forms, while others have forms denoting different degrees of intensity. Some verbs also differ for gender, but this is not usual. Many verbs contain the object within themselves, being at once predicate and object, like the Spanish verb *lenar*, 'to get wood.'

Most Indian languages are said to have no verb 'to be,' but in Luiseño there are several, though none has the exact meaning of the English; they are more nearly equivalent to the Spanish verb *haber*, 'to have,' when used to express 'there to be.' They have also a partly adverbial meaning. One cannot use such verbs to say 'he is,' 'he was,' 'he will be,' but they may be used to express 'he is ill,' 'he was drunk,' 'he will be thirsty.' In the sentences 'is there thy grain?' (meaning 'have you grain?'), 'there is my grain,' *is there* and *there is* would be expressed by a verb *to be*. 'Was he there' and 'he was there' would also be expressed by a verb *to be*, only in these sentences the adverb 'there' may be used or not, at will. While the verb which would be employed in the last two sentences usually means 'to be . . . ' or 'to live in a place,' it may also mean simply 'to be' or 'to exist.' 'I am going to live (be) many years,' would be expressed by this verb.

Verbs 'to be' are used also to form the passive voice, as well as the periphrastic conjugation of both it and the active voice, in such sentences as 'I was paid,' 'I was going to be paid,' 'I was going to pay.' In all such sentences the verb 'to be' would be placed last, and the sentences expressed as 'I paid was,' 'I paid going to be was,' 'I going to pay was.'

In Luiseño a very important part is played by what we have termed article-pronouns — a class of suffixes that are oftener affixed to pronouns than to any other part of speech. Though often they may be affixed to any word of a sentence, they are used to denote meanings that in English and cognate languages are either left to be understood or are expressed by circumlocutory methods. Interrogation, quotation, doubt, certainty, and many other things are

expressed in Luiseño by affixing an article-pronoun to a word (usually the first) of a sentence, without changing the rest of the sentence to express the different meanings. As they differ for tense, as well as for person and number, personal pronouns are often dropped and article-pronouns affixed to a word of the sentence. Article-pronouns may be taken by any part of speech, and their use often renders the employment of personal pronouns unnecessary. Some article-pronouns are easy to understand, while others are not. They scarcely admit of English translation and may be regarded as the most difficult feature of Luiseño grammar. Some examples follow:

EXAMPLES OF ARTICLE PRONOUNS

1. Manuel is going to build a house, *Manuel-up kē'-cho-lut. (kēsh).*
2. Perhaps Manuel is going to build a house. *Manuel-sho-po kē'-cho-lut.*
3. Is Manuel going to build a house? *Manuel-sho kē'-cho-lut?*
4. And is Manuel going to build a house? *Manuel-shun kē'-cho-lut?*
5. So Manuel is going to build a house. *Manuel-shil kē'-cho-lut.*
6. It is said Manuel is going to build a house. *Manuel-kun kē'-cho-lut.*
7. Is it said Manuel is going to build a house? *Manuel-sho-kun kē'-cho-lut?*
8. And perhaps Manuel is going to build a house. *Manuel-shun-po kē'-cho-lut.*

The above sentences do not differ except in the article-pronouns that are affixed to the noun Manuel, yet each sentence has a different meaning, though in some of them the difference in the meaning is slight.

Sentence 1 makes a positive statement, something the speaker certainly knows. Sentence 2 expresses doubt: perhaps, possibly. Sentence 3 asks a direct question. The fourth sentence is also interrogative. Sentence 5 is semi-interrogative. Sentence 6 is quotative, something that one has heard stated. Sentence 7 is quotative-interrogative: one person asks another if he has heard something stated. The eighth sentence is, we think, fairly well translated.

An article pronoun may be affixed to the verb instead of to the noun. One may say *Kə'-cho-lut-up Manuel*, instead of *Manuel-up kə'-cho-lut*, and so on.

Kesh, the objective of *kə'-cha*, 'house,' may be used after the verb in any of the sentences given above; but this is not necessary, as the verb contains the object within itself.

Declension of *hū'-la*, 'an arrow,' or 'the arrow'

| Absolute form. | | Possessive form. |
|----------------|-------------------------|--------------------------|
| Nominative, | <i>hū'-la.</i> | <i>-hū.</i> |
| Objective, | <i>hūl.</i> | <i>-hū'-y.</i> |
| Accusative, | <i>hūyk.</i> | <i>-hūyk.</i> |
| Ablative, | <i>hūng-ȳ.</i> | <i>-hūng'-ȳ.</i> |
| Instrumental, | <i>hū'-tul.</i> | <i>-hū'-tul.</i> |
| Locative, | <i>hūng'-a.</i> | <i>-hūng'-a.</i> |
| Genitive, | <i>hūng'-a-wish.</i> | <i>-hūng'-a-wish.</i> |
| Conjunctive, | <i>hū'-man.</i> | <i>-hū'-man.</i> |
| Plural. | | |
| Nominative, | <i>hū'-lum</i> | <i>-hūm.</i> |
| Objective, | <i>hūl'-my.</i> | <i>-hū'-my.</i> |
| Genitive, | <i>hūng'-a-wich-um.</i> | <i>-hūng'-a-wich-um.</i> |

The other cases do not differ for the plural. The hyphen (-) indicates the possessive pronoun of whichever person might be prefixed to the noun. Thus, *no-hū'* 'my arrow,' *o-hū'* 'thy arrow,' *po-hū'* 'his arrow,' *chām-hū'* 'our arrow,' *om-hū'* 'your arrow,' *pom-hū'* 'their arrow.'

Kū'-ta-pish, 'a bow,' or 'the bow'

| Absolute form. | | Possessive form. |
|----------------|----------------------------|-----------------------------|
| Nominative, | <i>kū'-ta-pish.</i> | <i>-kū'-ta-py.</i> |
| Objective, | <i>kū'-ta-pish.</i> | <i>-kū'-ta-py.</i> |
| Accusative, | <i>kū'-ta-pik.</i> | <i>-kū'-ta-pik.</i> |
| Ablative, | <i>kū'-ta-ping-ȳ.</i> | <i>-kū'-ta-ping-ȳ.</i> |
| Instrumental, | <i>kū'-ta-pich-ul.</i> | <i>-kū'-ta-py-tul.</i> |
| Locative, | <i>kū'-ta-ping-a.</i> | <i>-kū'-ta-ping-a.</i> |
| Genitive, | <i>kū'-ta-ping-a-wish.</i> | <i>-kū'-ta-ping-a-wish.</i> |
| Conjunctive, | <i>kū'-ta-py-man.</i> | <i>-kū'-ta-py-man.</i> |

| | Plural. | |
|-------------|---|---------------------------------|
| Nominative, | <i>kū'-ta-pich-um</i> , or <i>kū'-tap-chum</i> . | <i>-kū'-ta-pim</i> . |
| Objective, | <i>kū'-ta-pish-my</i> . | <i>-kū'-ta-py-my</i> . |
| Genitive, | <i>kū'-ta-ping-a-wich-um</i> . | <i>-kū'-ta-ping-a-wich-um</i> . |

As usual, the other cases do not differ for the plural. As often happens, the objective case of this noun does not differ from the nominative in the singular, in either the absolute or the possessive form.

VALLEY CENTER,
CALIFORNIA.

THE SOCIAL ORGANIZATION OF AMERICAN TRIBES¹

By JOHN R. SWANTON

The majority of works published during the last thirty years that attempt to deal with the social organization of "primitive people" have been dominated by the totemic clan theory, i. e., the theory that in the earliest period of their development all tribes consisted of certain divisions or clans which practically took the place of families, and the members of each of which were compelled to marry into some other. This theory furthermore supposes that the offspring of such marriages always belonged to the clan of the mother, and that where we find the reverse condition it is a later development. An important adjunct of the clan is the totem — an animal, plant, or other object from which each clan derived its name and many of the members their personal names, and to which the members were supposed to stand in some mystic relation indicated usually by prohibitions or tabus.

It has been especially advocated by students who hold that the monogamous family was not a primitive institution but has been evolved from a stage in which sexual relations were more or less promiscuous, the line of ascent leading through stages in which a group of men were married to a group of women (group marriage), in which one woman was married to several men (polyandry), in which one man was married to several women (polygamy), in which one man and one woman paired for a certain period (the pairing family), until finally the true monogamous family was reached. But although this theory of marriage has been very successfully assailed by Westermarck² and later writers, the totemic clan theory itself has effected such a lodgment in popular favor that it is now

¹ Presented at the meeting of the American Anthropological Association, Berkeley, California, August 31.

² Westermarck, *History of Human Marriage*, 1891.

referred to casually as to one of the well-established principles of modern science. Constantly there are let fall such expressions as "traces of maternal descent," "relics of a previous maternal state of society," "customs showing the change from a maternal to a paternal condition," as if nothing were better recognized.

In the present paper I shall endeavor to determine how far the organization of American tribes north of Mexico, so far as we know it, bears out this theory, not pretending to pass final judgment on it as a whole. I am especially moved to this by the fact that the theory is thought to have been confirmed through material brought from this very quarter by an American ethnologist, Lewis H. Morgan,¹ and all the more that no specific objection to his conclusions has appeared in print. The material for such a paper is so readily available, however, that no special credit is involved in merely assembling it. It should be said in the first place, with reference to Mr Morgan's work, that data were so much more scanty in his time, especially from that very region which confirms the clan theory least, that his conclusions are not altogether surprising. Had he begun by studying western instead of eastern tribes they might have been different.

While seemingly simple, the question of the truth or falsity of the hypothesis under consideration is found to contain several subordinate questions, all of which need not be answered in the same way. Thus we can conceive of descent as reckoned through the mother without the existence of clans, of a clan system in which the clans are without totems, and of one in which, while totems exist, there are no special tabus, names, or rites accompanying them.

Conforming in some measure to the type of organization assumed in the maternal clan theory are the five tribes of the Iroquois confederacy,² the Tuscarora,³ Wyandot,⁴ Cherokee,⁵ Delaware,⁶ Mohe-

¹ Morgan, *Ancient Society*, 1878.

² Morgan, *League of the Iroquois*, 1878.

³ Powell in *First Rep. Bur. Ethnol.*, pp. 59-69.

⁴ Mooney in *Nineteenth Rep. Bur. Am. Ethnol.*, p. 212.

⁵ Morgan, *Ancient Society*, p. 171; Brinton, *The Lenape and their Legends*, pp. 36-40.

gan,¹ Tutelo,² the Muskogean tribes so far as known,³ Timucua,⁴ Yuchi,⁵ Natchez,⁶ Biloxi,⁷ tribes of the Caddoan confederacy,⁸ the Pueblos,⁹ Navaho,¹⁰ Apache,¹¹ Haida,¹² Tlingit,¹² Tsimshian,¹² Heiltsuk,¹² Takulli,¹³ Tahltan,¹⁴ Knaikhotana,¹⁵ and Kutchin.¹⁶

This number would probably be considerably increased if we had accurate information concerning many tribes which are now extinct. Thus it is a fair inference that the remaining Iroquoian tribes—the Erie, Neutral Nation, Susquehannock, and Nottoway—were organized like those that are known to us, and that the remaining eastern Siouan tribes were organized like the Tutelo. Our knowledge of the latter depends mainly on the statements of two or three survivors of the Tutelo interviewed by Hale and Dorsey, after the remnant of their tribe had been living for years with the Iroquois, whose strong clan system is well known. The main fact, however, is confirmed by Lederer in the following words:

"From four women, viz., Pash, Sepoy, Askarin and Maraskarin, they derive the race of mankind, which they, therefore, divide into four tribes,

¹ Morgan, *Ancient Society*, p. 173.

² Dorsey in *Fifteenth Rep. Bur. Am. Ethnol.*, p. 244.

³ Morgan, *Ancient Society*, pp. 160-163; Gatschet, *Creek Migration Legend*, 1, 1884, pp. 153, 156.

⁴ Gatschet in *Proc. Am. Philosophical Soc.*, xvii, no. 101, p. 490.

⁵ Gatschet, notes.

⁶ Du Pratz, *Histoire de la Louisiane*, II, pp. 393-405.

⁷ Dorsey in *Fifteenth Rep. Bur. Am. Ethnol.*, p. 243.

⁸ Mooney in *Fourteenth Rep. Bur. Am. Ethnol.*, p. 1093.

⁹ Morgan, *Ancient Society*, pp. 178-180; Fewkes in *Nineteenth Rep. Bur. Am. Ethnol.*; Matilda Coxe Stevenson in *Eleventh and Twenty-third Reps. Bur. Am. Ethnol.*

¹⁰ Matthews, *Navaho Legends*, pp. 29-33.

¹¹ Bourke in *Jour. Am. Folk-lore*, III, pp. 111-126. Hrdlicka, however, it should be noted, denies that the San Carlos Apache have clans. See *Am. Anthropologist*, VII, no. 3, p. 481.

¹² Boas in *Fifth, Tenth, and Twelfth Reports on N. W. Tribes of Can. for B. A. S.*, 1889, 1895, and 1898; Boas in *Rep. U. S. Nat. Mus. for 1895*, pp. 322, 323.

¹³ Morice in *Trans. Can. Inst. for 1892-93*, p. 203; *Proc. Can. Inst. for 1888-89*, pp. 118, 119.

¹⁴ Callbreath in *Ann. Rep. Geol. and Nat. Surv. Can.*, n. s., III, pt. 1, 1953; also Morice, op. cit.

¹⁵ Richardson, *Arctic Searching Exped.*, 1851, p. 406; quoted by Bourke in *Jour. Am. Folk-lore*, III, p. 122, 1890.

¹⁶ Hardesty in *Ann. Rep. Smithsonian Inst. for 1866*, p. 315; Petitot, *Traditions Indiennes du Canada Nord-ouest*, 1886, pp. 14, 15.

distinguished under those several names. They very religiously observe the degrees of marriage, which they limit not to distance of kindred, but difference of tribe, which are continued in the issue of the females: now for two of the same tribe to match, is abhorred as incest and punished with great severity."¹

At the same time it would seem as if totems were wanting.

On the authority of a Narraganset woman living in Kansas and the supposed relationship of the Narraganset to the Mohegan, Morgan² assumes that the tribes of southern New England were organized similarly; and from another single statement, attributed to Powhatan, regarding the descent of the chieftainship which he held, it is supposed that the same was true of the Algonquian tribes of eastern Virginia.³ These suppositions also have probability in their favor, but the small ground on which they stand should be kept in mind.

On the other hand the social organization of several of these tribes does not altogether square with the clan formula. Thus the Delaware consisted of three exogamic divisions called by Morgan Wolf, Turkey, and Turtle, but properly known as Munsee, Unami, and Unalachtigo, names which signify, respectively, "people of the stony country" or "mountaineers," "people down the river," and "people who live near the ocean." Commenting on this fact, Brinton says:

"These three divisions of the Lenape were neither 'gentes' nor 'phratries,' though Mr Morgan has endeavored to force them into his system by stating that they were 'of the nature of phratries.' Each was divided into twelve families bearing female names, and hence probably referring to some unexplained matriarchal system. They were, as I have called them, sub-tribes. In their own orations they referred to each other as 'playmates' (Heckewelder)."⁴

The twelve subdivisions of each major section in later years are said to have taken on the character of clans, but it is to be noted that they lack totemic names, and this fact, together with the geo-

¹ Lederer, *Discoveries*, 1672, p. 8.

² Morgan, *Ancient Society*, pp. 173, 174.

³ John Smith, *Works*, Arber ed., pp. 81, 376.

⁴ Brinton, *The Lenape and their Legends*, p. 40.

graphical character of the three main divisions, differentiates the tribe very strongly from the Iroquoians and Muskhogean. This same local character is noted by Matthews and Bourke for the clans of the Navaho and Apache, respectively, and by Boas and the writer regarding all the minor divisions of the Haida, Tlingit, and Tsimshian.

Du Pratz, our only authority on the Natchez, informs us that their exogamous divisions corresponding to clans were different social strata and therefore really castes, and they appear to have been without totemic names. An analogy to this state of affairs is furnished, very curiously, by an Athapascan tribe, the Kutchin, living on Yukon and Porcupine rivers, Alaska. They are said to consist of three exogamous bands or camps which occupy different sections of country and differ in rank, the children always belonging to the band of the mother; but the divisions lack totemic names. Of the other Athapascan tribes of the far north we have the very best authority, that of Morice, for the statement that the Carriers and Tahltan (or western Nahane) have adopted their clan systems from the coast, and the reported clan system of the Knaikhotana, from the description given of it, would seem to have arisen similarly. In the same way Boas indicates that the Heiltsuk, now in the maternal stage, have adopted their present organization from their northern neighbors. Even the three most pronounced maternal tribes of the north Pacific coast—the Haida, Tlingit, and Tsimshian—present anomalies in the fact that their larger totemic divisions extend into nearly all the towns occupied by each tribe and rather correspond to the phratries of other tribes than to clans proper, while the smaller divisions are, as I have said, rather to be considered as geographical groups.

Yet even among tribes which present this organization in its most typical form it would appear that the authority of the clan has been greatly exaggerated and the power and importance of the father's clan placed at a too low value. Thus, according to information kindly furnished by Mrs Matilda Coxe Stevenson, among the Zuñi land is owned by families, not by clans. With the same people a man is practically prohibited from marrying into his father's clan as well as into that of his mother; he is known as the

"child" of his father's clan, and certain offices are always held by the "child" of a special clan, thus bringing about a rude kind of paternal descent. The same abhorrence to marriage into the clan of one's father exists among the Navaho according to Matthews,¹ and among the Iroquois according to Hewitt.

Organized on the basis of gentes, i. e., exogamic divisions with descent through the father, are the Abnaki,² Ottawa,³ Potawatomi,⁴ Chippewa,⁵ Menominee,⁶ Sauk and Foxes,⁷ Miami,⁸ Shawnee,⁹ Kickapoo,¹⁰ Blackfeet,¹¹ Omaha,¹² Ponca,¹³ Winnebago,¹⁴ Iowa,¹⁵ Oto,¹⁶ Missouri,¹⁷ Osage,¹⁸ Kansa,¹⁹ Quapa,²⁰ Yuman tribes,²¹ and Kwakiutl.²² It has been asserted that traces of a previous maternal condition are found in many of these, especially the tribes of Algonquian lineage, and a change such as that implied is of course quite possible; but the arguments that Morgan adduces in proof are too fragmentary to be conclusive, and for the Siouan tribes it is a pure assumption. The only western Siouan tribes claimed as possessing clans with maternal descent are the Mandan, Hidatsa, and Crows, and I think that the real state of affairs among those tribes has been misunderstood. In the first place the subdivisions of these three tribes are not totemic and should evidently be regarded as bands rather than clans. Secondly, it was customary among very many American tribes, no matter how each was organized internally, for a man marrying outside to live with his wife's people, and in such cases his children would remain with her. At the same time he might equally well marry inside of his tribe or band and be succeeded by his son in whatever position he had attained. This

¹ *American Anthropologist*, vi, 758, 1904.

² Morgan, *Ancient Society*, p. 174.

³ *Ibid.*, p. 167; James in *Narrative of the Capture and Adventures of John Tanner*, 1830, pp. 313-316; Warren in *Minn. Hist. Soc. Coll.*, v, pp. 41-53.

⁴ Morgan, *Ancient Society*, p. 170; Hoffman in *Fourteenth Rep. Bur. Am. Ethnol.*, pp. 41-44. Hoffman states that the organization was formerly maternal, but quotes no authorities, native or white, except a very much qualified statement of Mr Sutherland in *Coll. Hist. Soc. Wisconsin*, x.

⁵ Morgan, *Ancient Society*, p. 170. ⁶ *Ibid.*, p. 168. ⁷ *Ibid.* ⁸ *Ibid.*, p. 170.

⁹ Grinnell, *Blackfoot Lodge Tales*, pp. 208-225.

¹⁰ Dorsey in *Fifteenth Rep. Bur. Am. Ethnol.*, pp. 226-241.

¹¹ Bourke in *Jour. Am. Folk-lore*, ii, pp. 180-181; Kroeber in *American Anthropologist*, iv, p. 278.

¹² Boas in *Rep. U. S. Nat. Mus. for 1895*, p. 334.

Hewitt ascertained from some Crow Indians to be the state of affairs in that tribe, and, since they have separated from the Hidatsa in comparatively modern times, it may be assumed for the latter also. Nor is there good reason for thinking that the organization of the Mandan was different. Through mistakes of this kind many tribes have been assigned to a clan or gentile stage when the subdivisions which they possess are neither clans nor gentes; and for this reason it is preferable to accept the authority of Mooney¹ regarding the social organization of the Cheyenne rather than that of Grinnell.² Of the subdivisions of this tribe only two present features at all suggestive of totemic clans, while one, the Sutayu, is known to have been formerly an independent tribe, and it would be absurd to suppose that it was then exogamic. In the case of the Blackfeet, Grinnell is our best authority, and I have followed him, but, inasmuch as he states that marriages now take place within the "gens," I am inclined to question whether they did not in ancient times as well. At all events these divisions are evidently not totemic, and the same is true of the Kwakiutl gentes, which are called after reputed ancestors or else by some grandiloquent term referring to their power and wealth.

In discussing the organization of the Mandan, Hidatsa, and Crows I have indicated a type of organization in which, while there may be tribal subdivisions, these are not exogamic, lack totems, and hence cannot be called either clans or gentes. In this type the family, although it may be a polygamous one, is the basis of the state, and property, authority, and emoluments either descend or tend to descend from father to son. In this category may be placed the Shoshonean,³ Salishan,⁴ and eastern Athapascan⁵ peoples, the

¹ Mooney in *Fourteenth Rep. Bur. Am. Ethnol.*, p. 956.

² Grinnell in *Proc. Internat. Cong. Americanists*, 13th sess., N. Y., 1902, pp. 135-146.

³ The Shoshonean organization has been referred to specifically by very few writers, but that it was of this type, omitting the Hopi of course, may be inferred from everything that can be learned about it. For the Comanche, however, see Mooney in *Fourteenth Rep. Bur. Am. Ethnol.*, p. 956.

⁴ Boas in *Reports on N. W. Tribes of Can. for B. A. A. S. for 1889, 1890, 1891, and 1893*; Hill-Tout in *Ethnol. Surv. Can. for B. A. A. S., 1899, 1900, and 1902*. Hill-Tout in *Jour. Anthropol. Inst.*, Jan.-June, 1904; Teit in *Memoirs Am. Mus. Nat. Hist.*, 11, pp. 289-296; Gibbs in *Cont. N. A. Ethnol.*, 1, pp. 184-186.

⁵ Morice in *Proc. Can. Inst. for 1888-89*, pp. 121, 126; *Trans. Roy. Soc. Can. for 1892*, sec. II, p. 117.

SOME FEATURES OF THE LANGUAGE AND CULTURE OF THE SALISH¹

By CHARLES HILL-TOUT

Of the three great bases of ethnic classification — the physical, the cultural, and the linguistic — no doubt, it seems to me, can remain in the mind of any student of anthropology in this country, of the practical superiority of the latter over the two former. While desiring in no way to disparage or lessen the value of the results obtained by physical and cultural investigation, my own field studies in these directions have convinced me that the only possible classification for American students in the present state of our knowledge is the linguistic.

In saying this I am perfectly well aware that a community of language does not necessarily involve a community of origin. But neither for the matter of that does community of culture, for that can be borrowed and adopted as well as language; and as for a community of physical characteristics I question very seriously if such a thing is possible at this stage of human history. The race that is commonly regarded as the purest in the world — the Hebraic — has been shown to be as physically heterogeneous as many other admittedly mixed races.

From the point of view, then, of homogeneity of race, the linguistic test is as good as the physical or the cultural, and as a practical working basis it is unquestionably the best at our disposal, and the one by which, I believe, the surest results will be obtained in the study of the native races of North America.

Perhaps nowhere on this continent can the correctness of this view be better illustrated than in the study of that diversified and extensive stock known to ethnologists as the Salishan. In their cultural elements and in their physical characteristics these Indians are as diverse as any race could well be, but throughout all this diversity

¹ Read at the meeting of the American Anthropological Association, San Francisco, August 29.

of culture and somatology there runs a clear and marked uniformity in the basal elements and in the morphological principles of their speech. Indeed this fundamental unity of their language forms one of the most interesting features in the study of this stock. This point becomes the more striking when we remember that the dialectal differences in their language are sometimes very great, greater than those existing in the Romance languages of Europe. But so strongly does this underlying unity manifest itself that when all the dialects of this family shall have been examined I am persuaded it will be possible to reconstruct the primitive Salish tongue as spoken by the original and undivided founders of this stock.

Before I proceed to invite your attention to some of the more interesting results of my studies of this people, I would like to remark incidentally that these primitive tongues are worthy of the highest regard and consideration of philologists and grammarians on account of the light their study incidentally throws on the evolution and development of the formative elements in speech. Being for the most part in an earlier, less developed, and less settled state than the cultivated tongues, they show us in actual operation the processes by which the original, plastic, inchoate elements of speech are converted into instruments of formal thought; how the "parts of speech" became differentiated and restricted in function; how the earlier demonstrative elements are changed into adverbs, prepositions, and pronouns; and how the modal, temporal, and declensional elements are evolved from radicals of independent force and import.

When I was a young man it was one of the axioms of philological science that the numeral and pronominal elements of a language were well-nigh immutable, and that on the similarity or dissimilarity of these might a group of tongues be judged to be or not to be related. But any one familiar with the dialectal differences of our larger linguistic stocks is now well aware of the fallibility of such a test as that which, if applied, for example, to the Salish tongues, would give us instead of one linguistic family or group at least half a dozen. Such tests, it is clear, are applicable only to languages like the Aryan, which reach a certain degree of definiteness in forms before their separation into distinct divisions

for instance, would pass over naturally into a clan system. This possibility ought to be reckoned with, however, in dealing with those "traces of a maternal stage" that we hear so much about. It might put quite a different interpretation on several conclusions arrived at by Morgan.

A thorough investigation of this problem demands an examination of certain tendencies among tribes in the last category. The relative proportion of cases in which a man goes to live with his wife's people to those in which a woman goes to live with those of her husband ought to be noted, also the attitude of the members of a band toward marriage within and marriage outside, and toward marriage among foreign tribes. The treatment of tribes or bands adopted into others or becoming allied to others ought also to be examined, as well as tendencies of a band or tribe to segregate, and the attitude of these parts toward each other and of other bands toward all.

The totemic side of the question, on the other hand, requires close investigation of the religious beliefs of primitive people and especially of the related phenomena presented by the personal manitu, the crest of the Northwest coast, the so-called "suliaism" of Salish tribes,¹ and the heraldry of the tribes of the plains. It appears to be rather a badge or "medicine" affixed to bands which have become differentiated regardless of it than an essential element of clan or gentile organization.

More care should be exercised by sociologists in picking out "vestigial characters." Doubtless such exist, but in determining what they are we must first be certain that they have no meaning or function for the present generation, and secondly that, instead of vestiges, they are not rather tendencies toward something still in the future. Thus the application of the term "wife" to a wife's sister, or of "husband" to a sister's husband is not a "vestigial character" as has been maintained, but indicates the potential relationship in which the parties stand, a man having a prior claim on his wife's sister in case of his wife's death. Other so-called "vestigial characters" are of much the same order.

While this field presents abundant opportunities for future

¹ Hill-Tout, *op. cit.*

investigation, it would seem to the writer, from the evidence already adduced, that the primitive nature of the maternal clan is not substantiated by a study of the American tribes north of Mexico, and can be proved only by presenting more abundant proof from other quarters of the globe.

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takes place. Similarity of lexical forms has been a very useful test in the mapping out of the different linguistic groups of this continent. Our ignorance of the morphology of the primitive languages of this hemisphere left us no other course; but no one who has given attention to the study of the structure of these languages can doubt that, as our knowledge of their organization advances, the number of stocks now recognized will be very materially decreased and that instead of some one hundred and fifty we shall ultimately recognize probably fewer than a fourth of that number. My own examination of these tongues has led me to the conclusion that the differences seen in the morphology of many groups are more superficial than radical, and that beneath an apparent dissimilarity in structure there is an underlying principle of unity running through many of them. For example, the Salish and Kwakiutl tongues are superficially different in their morphology, but when this difference is analyzed it is seen to be one of degree only, not of kind, and is exactly of the same nature as that existing between the various Salish dialects themselves, only in the Kwakiutl it has been carried further and been more deeply affected by foreign influences. And this applies in a greater or lesser degree in all the languages of the Pacific coast north of the Columbia, and I have no doubt that one day the majority of these stocks will be included in one linguistic family.

This however is by the way. It is not so much of language that I desire to speak at this time, though I cannot leave the subject without first calling attention to what has seemed to me a most interesting and suggestive feature of the Salish tongue. And first I would say that I regard the plasticity of these primitive languages as their most marked characteristic. It is a feature they all possess, and is clearly due to the independence and informal character of the elements of language in its earlier stages. A study of such tongues as the Salish would suggest to one that the vocables of primitive speech were very loosely and indefinitely applied; that a large part of their sense and meaning was conveyed not by the words themselves, but by those auxiliaries of early speech — tone and gesture; and that for a long period there was no fixed order or sentence in the words. The same terms according to their order or position were now nouns, now verbs, adverbs, adjectives, or other parts of

speech as the sense required. Most if not all cultivated languages still exhibit this characteristic in a greater or lesser degree. English still retains, or rather has recovered, the power of converting any word into a verb; and the Chinese, we know, has never gone beyond this early stage. There the function and sense of a word depends entirely on tone and position in the sentence.

The Salish in its present state of development has passed beyond this stage and has arrived at that point where differentiation of the formal parts of speech takes place; when terms begin to lose their original independence and plasticity of form and are given fixed outlines and functions; when subsidiary particles are evolved, a settled order and method of verbal synthesis arises, and the morphological principles of the language are firmly established.

But it is abundantly clear from a comparative theory of the numerous Salish dialects that prior to the separation and division of this stock the languages had not reached this stage. The pronominal forms vary radically, with one or two notable exceptions, in every dialect; and everywhere the forms commonly employed to indicate the third person have still an independent demonstrative force, and in most cases are used in other constructions as simple demonstratives, showing plainly and indisputably thereby the demonstrative origin of pronouns. For even with the other two persons the forms commonly employed have to take, in many instances, a regular demonstrative to give the full force and meaning.

Again, most of the numeral forms differ radically in each of the greater divisions of this stock, whereas in the divisions of the Aryan family the numeral roots are common throughout up to a hundred, I believe. I would not regard this diversity of form in the Salish dialects as indicating that the ancestors of the stock could or did not possess numerals before their separation, but rather as indicating the rudimental informal condition of their language at that time, when ideas of number, like ideas of person, were conveyed in a variety of ways, and when there were but few fixed forms.

Perhaps the most interesting and suggestive example of this unsettled inchoate state of the language before the separation is seen in the use of the temporal elements in verbal construction. These elements in the Salish dialects, unlike those in the classic tongues,

have still for the greater part an independent function. They are primarily locatives or demonstrative adverbs, and are used as such apart from the verb. One of the most constant of these is the term *ne*, and the interesting part about it is that a group of the interior British Columbia tribes employ it to mark future actions and states, while most of the coastal tribes use it to signify past actions and states.

Nothing could illustrate better the plastic, unsettled state of the language prior to the separation of the divisions of this stock than this double and contrary usage of the same radical; and in my earlier studies of this language it puzzled me not a little to account for it. But as soon as its identification with the corresponding demonstrative radix *ne* became clear, it ceased to be a puzzle, but became rather a suggestive illumining ray of light on the obscure processes of savage mentation. This term, as I have said, had and still has an independent locative significance such as is conveyed by our term "there," or "yonder." Now it is clear at once that the border line of time has a "there" on either side of it. The past and the future are, from the standpoint of the present, both *there* or *yonder*; consequently the same term could be employed to mark either a past or a future action or state. And that it was so used by the undivided Salish I have not the least doubt. To this day they regard actions and states as occurring in "place" rather than in "time." It is "here" or "there," not "now" and "then."

I do not venture to say on the strength of the Salish usage of locative elements that the temporal particles in verbal compounds in all language arose in this manner, though I think it highly probable that a great many did. Thus a study of these primitive tongues may, as I have said, throw much light on the development of the formative elements of cultivated languages, the origin of which has become lost or obscured by lapse of time and by the loss of their earlier independent status and function.

Passing now from language to culture, I would like to point out that my studies in this direction have resulted in disclosing an extraordinary diversity in the social institutions, customs, and beliefs of the different Salish tribes. And this diversity is not confined to the larger, more important features of their culture, but extends often-

times to the merest details in the minor issues of their lives. As an illustration of this I may cite the differences in their mortuary, marriage, puberty, birth, and naming customs. I have called attention to these differences from time to time in my reports on the Salish,¹ but I may mention one or two of them here. Thus one feature of the mortuary ceremony is the severing of the hair of the surviving relatives of the deceased. This is the conventional sign of mourning with them; and while all the tribes practise this not uncommon rite among primitive peoples, no two of them, so far as my observations go, treat or deal with the severed hair in the same manner. This may seem a small and unimportant point; but the difference of treatment reveals a fundamental difference in their conceptions and ideas which appears to me to be most interesting. Thus in one group they dispose of the hair by burning it so that it may not be used by an enemy to bewitch them; in another they take it away and bury it in some spot outside the camp where the vegetation is vigorous and dense, insuring thereby to the owners long life and strength; in another they put it away carefully to be buried with their corpses at death; in another it is cast into running water, and in still another it is taken into the forest and fastened on the branches of the mystic red-fir tree, always on its eastern side; and doubtless in other divisions they have still other practices.

It is the same in puberty rites. No two groups follow the same customs. The place and period of seclusion vary apparently in every tribe. Some build little cubicles within the dwellings over the general sleeping platform, wherein both boys and girls are separately secluded for a period of ten days; others construct special shelters outside, wherein only the girls are secluded for a period of time differing in each division; others again make their pubescent children retire to the forest, some for a short period and some for six months or a year. In some tribes the shamans play an important part in the rites; in others the elders take charge of the pubescents, instructing them generally in the various duties and responsibilities of manhood and womanhood. Among the interior tribes every pubescent boy and girl during his or her period of seclusion or training acquires a personal totem, but among the delta and coastal

¹ See the publications of the Ethnological Survey of Canada.

tribes girls do not customarily acquire totems at all; and only those youths who have a desire to excel in some special pursuit seek and acquire personal guardian spirits. These are but a few instances of the minor differences; numerous others may be found in my various reports on this stock.

Of the wider differences in their culture, some of the more important are those relating to their social institutions. With respect to these, if we may take simplicity of social forms as indicating the earlier stages in the cultural development of a people, then the simple organization of the interior tribes, of which the Thompson Indians afford a fair example, may be regarded as representing most nearly the earlier culture of the Salishan stock. From this point, as we approach the coastal tribes, we find an increasing complexity in social structure and an ever-widening divergence in customs, practices, and beliefs.

Many of these differences, both greater and minor, are doubtless due to difference in habitat. The interior tribes inhabit a dry region, those on the coast the very opposite, precipitation being frequent and often excessive with them. The climate here is also milder in winter than in the interior, and this fact alone would account for the main difference in their dress and dwellings. The wide variability in the physical characteristics of the race, however, show plainly, too, that some of their diversity of culture is due to race-admixture; doubtless some is also due to the influx of new ideas from contiguous stocks, but more I think is the result of spontaneous independent cultural development.

Among the interior tribes the office of chieftain is elective and the conduct of affairs is mainly in the hands of the elders of the tribe. When we reach the Lillooet and the Halkómá'lem divisions we find that this office, though still elective in theory, has become practically hereditary; and when we come to the coastal Salish we find that the chieftaincy descends regularly from father to son and has been held by the same family for as many generations as they have any record of.

The earlier, simpler forms of social organization show a state of democratic equality and independence existing which amounts to what one may denominate as pure anarchy. From this condition

of things to that obtaining among the coastal tribes is a far cry. Here we find the chiefs hereditary, a princely caste established, and the rest of the tribe divided into nobles and base folk, the former possessing and enjoying exclusive rights and privileges.

But the most important changes that have taken place in the culture of the delta and coastal tribes are those, in my opinion, relating to totemic ideas and conceptions. And here I shall make some little digression in order that I may the better illustrate the importance of my studies in this direction.

As most of us probably are aware, the subject of totemism does not loom so large in anthropological inquiry in this country as in Europe, and particularly in England. There, no question has of late years had so much attention given to it as totemism, and views are commonly held regarding its origin and import which are radically different from those generally held by students in this country. Our studies of the subject have led most of us to regard totemism as primarily a religious institution or manifestation, the inevitable outcome of savage man's attitude toward nature, the social aspects of which are something very secondary and incidental, and which attained such importance as they possess in savage regimentation because of their obvious convenience in classifying and distinguishing one kin-group from another.

But this is not the view taken by European students. Totemism with them is primarily and essentially a social institution originating in and properly belonging to the matriarchal state of society and constituting at once the cause and basis of clan organization. Furthermore, they commonly regard personal totemism—which to them is a contradiction in terms—as something distinct altogether from group totemism, or at most a later derivative phase of it.

Such a view of the matter is as perplexing to us as our views are to them. To us the personal totem precedes the group totem and is the source and origin of it. Moreover, we do not find that group totemism is a peculiarity of tribes organized on a matriarchal basis. It is as characteristic of the patriarchal and the village state as of the matriarchal in this country; and that it may originate in a state of society other than the matriarchal I think is clear beyond the shadow of a doubt from the evidence I have gathered among

the Salish, whose organization, as you are aware, is that of the village commune.

There is something equally common and equally essential to the totemism of the village Salish, the patrilineal Sioux, and the matrilineal Haida. This obviously is not its social characteristics, for these three stocks have different social organizations; but it is its religious character, for all three hold and share alike the common belief in tutelary spirits, which belief is seen to lie at the base of and to give life and meaning equally to the totemism of each. Ethnological study here has made it perfectly clear that totemism prevails in one form or another in all our American tribes; and it has further revealed the fact that its social aspects vary with the social organization of the different stocks or groups. Among all the personal or individual totem or tutelary spirit is in evidence. Indeed it is the very prevalence of the personal totem — the *nagual*, *manitou*, *sulia*, *snam*, *wahabe*, or whatever it may locally be called — that has led those of us who have made a first-hand study of the subject to regard group totemism as a natural extension and development under social requirements of personal totemism. And just here is where the totemism of the Salish becomes interesting and suggestive. Everywhere amongst them we find the personal totem in vogue; and the evidence I have been able to gather on this head makes it perfectly clear, in my judgment, that the group totemism we find among them is a development of their personal totemism. For in the tribes of the interior, where group totems, so far as we have been able to discover, are wholly unknown, *every* individual of both sexes is said to possess his or her personal totem; and it is only when we come to those divisions which possess group and hereditary totems — which are everywhere demonstrably later developments of the personal totem — that we find the personal totem less common and possessed by certain members of the tribe only. In those tribes where the kin or family totems are common, the personal totem is comparatively rare. This state of things points conclusively, to my mind, to the superseding of the personal totem by the kin or group totem because of the changes that have taken place in the social organization of these tribes. For among all the tribes possessing group or kin totems we find prevailing a social

system different from that obtaining among those tribes that possess the personal totem only. Wherever the group totems prevail we find hereditary chiefs and distinct castes, medicine and secret societies, family and kin crests, and such like social features, all or most of which find their support and have their rise in the group or fraternal totem.

A study of the kin or group totems of the delta and coastal Salish makes this very clear. As long as the totem is personal and personally acquired, it is always regarded as an ever-ready, active, ghostly helper to be called on in all emergencies; but when it becomes by inheritance a group or kin totem, we find it losing its active tutelary character and degenerating into what is little more than a family crest or symbol of kinship. And this is entirely in line with the nature of the kin or group totems of the Haida, Tsimshian, and other matrilineal peoples.

The totemism, then, of the Salish, besides being extremely interesting in itself, is of interest and value also in confirming the views commonly held by students of this country, and leaves no room for doubt that the group or kin totem is at any rate here a development of the earlier personal totem.

But there is another phase of the question, which is perhaps the most interesting of all, where Salish evidence is also helpful and suggestive. Students of totemism early saw that a deep and vital connection lay between the doctrine or institution of totemism and the system of savage names. In this country the late Director of the Bureau of American Ethnology went so far as to define totemism as the "doctrine of naming," being led to take this view of the matter by the close and intimate relation he perceived to exist between names of persons and groups and the names of the totem objects of these persons and groups. As he pointed out, and as Miss Alice C. Fletcher had pointed out earlier (and to her is, I think, due the credit of first recognizing the importance and the deep significance of names among the native races of this country), the names among primitive races are very different from names among sophisticated peoples. They are not with them, as customarily with us, mere labels or vocal tags to distinguish one person or group from another; they are rather terms of relation and affiliation having

a sacred and mystic import and are considered to be as much a part and parcel of the object bearing them as any portion or characteristic of the object itself; and I am aware of nothing more important, suggestive, and interesting in our studies of primitive culture than this same study of names. Indeed, so important have I been led by my own studies to regard this question that I have ventured to suggest in my last report that it be treated as a separate department of anthropological study under the term *nomenclology*; and nothing, I am convinced, will be found to be more profitable and instructive than inquiry along these lines.

I was unusually fortunate in my last year's field work in procuring from an elderly Indian a body of information bearing on the name systems of the Salish, which, while highly interesting in itself, helps us to understand how the primitive mind regards names generally. This information, which I have given in detail, will appear in my next report.

In the study of primitive man the greatest difficulty the sophisticated student has to contend with, I have found, is the essential difference of his own from his subject's plane of thought—in other words, the difficulty to see things from the native point of view. He can make no satisfactory advance till he has emptied his mind of all its preconceptions regarding primitive man, which more often than not are founded on early misconceptions and limited knowledge of his life and thought. We have been studying the savage more or less systematically for a quarter of a century now, yet I am convinced we are but just beginning to know and to understand him as he really is. Speaking for myself, I would like to say that I have found nothing so helpful to me in getting behind his eyes and beholding the universe from his view-point as the study of his names and name systems.

I may be permitted to observe here that it is a phase of his culture not confined to the primitive races of this continent, but to be met with, I believe, wherever unsophisticated man is to be found. This also is a point we have but just discovered. Until the publication of Spencer and Gillen's works on the tribes of central Australia we had no sure knowledge that the primitive races of other countries regarded their personal and group names in the same light

as do our own aborigines. In their work on the "Northern Tribes of Central Australia" Messrs Spencer and Gillen have devoted a chapter to names, and although the information they obtained on this subject is general rather than particular, it leaves no room for doubt that the Australian savage holds views on the "doctrine of naming" fundamentally identical with those held by our own Indians; and thus, when two peoples so physically dissimilar and so widely separated as the black fellows of Australia and the Indians of America are found holding practically identical views on this subject, we are not unjustified in assuming, I think, that we are dealing with some fundamental universal concept of the primitive mind, a concept that has entered deeply into both their religious and social life.

It may be of interest to remark here that while European students have recognized with ourselves the close connection that exists between primitive names and totemism, they do not view this connection from our point of view. Rejecting personal totemism as the basis and origin of group-totemism, they are debarred from looking for the origin of totem-group names in the personal totem names of some of the ancestors of the groups or kins as we are naturally led, and as the evidence directs us, to do. They have to account for these names in some other way. Within the last two years two different theories of the origin of totem-group names have been put forth by two eminent European anthropologists — one by Dr Haddon, the other by Mr Andrew Lang. Both theories suppose these names to come from without the groups bearing them; the former suggesting that they arose from the names of the characteristic foods of primitive human groups. Thus those living along the shores and those who lived in the jungle would subsist in the main on different foods, the one, say, on crabs and the other on sago. These staples of their larder they would sometimes exchange, and the one group would come in time to be spoken of as the "Crab-men" and the other as the "Sago-men." Presently each group would recognize the appropriateness of the term as applied to themselves and would adopt it as their group name. Later their descendants, when its true origin had been lost, would begin to look upon themselves as related to the animal or vegetable or other ob-

ject whose names they bore, and create myths to account for this relationship. Thus would arise both the group-totem and the group name. This, very briefly expressed, is Dr Haddon's theory. Mr Lang's is not greatly unlike it. He is not wedded to any particular view as to the manner in which the name arises, provided only that it comes from *without* the group bearing it. This is an essential feature of his theory. It may arise, as Dr Haddon suggests, from nicknames, or in any other way. On the whole he favors the nickname origin himself and offers some interesting information on the origin of village nicknames as found in England and on the continent of Europe. But, however it arises, those to whom it is applied come in time to adopt it and regard it as peculiarly their own. Later, as in Dr Haddon's theory, when the true origin of the name has been forgotten, a mythical origin is given to it and the object from which the name is taken is held to be related to the group and becomes the group totem and the source of the group name.

I have elsewhere recorded the objection which arises in my mind against these theories.¹ I will only say here that both these views of the origin of totem-group names wholly neglect to recognize the deep inner meaning names have in the mind of primitive man, and conflict with the data on this head which I have gathered from the Salish and which Messrs Spencer and Gillen obtained from the Australians.

We know beyond question that the source of personal names among many American tribes is the personal totem, and it would appear to be the same in Australia. Among the interior Salish tribes the personal totem is the commonest source of the personal name. We know, too, that the personal totem can be transmitted and become an hereditary family or kin totem. What, then, is more reasonable than to conclude that the totem-group name is the transmitted totem name of the founder, or of some other prominent ancestor, of the group, as the Indians themselves believe?

Whether my exposition of Salish culture, and particularly my presentation of the data bearing on totemism, will persuade our

¹ Totemism: A consideration of its Origin and Import; *Trans. Royal Society of Canada*, Second series, vol. IX, sec. II, 1903-04.

European colleagues to accept the American view, I cannot say; but I trust this short account of my studies has made it clear that the field of ethnological inquiry offered by the various divisions of the Salish is one of the most interesting and instructive to which we can devote attention.

ABBOTSFORD,
BRITISH COLUMBIA.

THE OBSIDIAN BLADES OF CALIFORNIA¹

By HORATIO N. RUST

During a canoe voyage on the Klamath and Trinity rivers in the northern part of California, in 1898, the author had occasion to visit many Indian villages and took the opportunity to make special inquiry for obsidian spears, knives, or swords, as they are commonly called. Ten in all were seen and five procured. They measure from seven to fifteen inches in length and from two to four inches in width, and are beautifully chipped to the edge from end to end. In color the obsidian is black, red, or gray.

In almost every instance the owners were reluctant to show these blades. All were carefully wrapped in redwood bark and carefully hidden away, sometimes under the floor of the lodge, oftener outside beyond the knowledge of any one except the owner. In one instance the owner could not be induced to get his blade until night-fall, in order that no one should learn of its hiding place. This habit of secreting valuable articles for safety no doubt accounts for such objects having been found at times in isolated places remote from dwellings or burial places. The owner having died or forgotten where he hid an object, it was lost until chance brought it to light again. It was learned from one family that an obsidian blade belonging to them had in this way been lost beyond recovery.

In nearly every instance the blade had a strip of cloth tied securely around it, the ends of the strip forming a loop designed to pass around the wrist to enable the owner to recover it from falling in case it slipped from his hand.

These obsidian blades pass from father to son, with hereditary rank, and are retained with pride as heirlooms; consequently it was only by much persuasion and considerable expenditure that they could be obtained. In several instances the Indians regarded the

¹ Read at the meeting of the American Anthropological Association, Berkeley, California, August 31.

blades as tribal property, and in one case I found it impossible to persuade the holder to part with the one in his possession at any price.

One old Indian, living alone in abject poverty, exacted a promise that I would not tell his neighbors that I had bought his blade. He said: "Now they call me rich. If they know I sell him, they say 'He poor Indian — no account.'" The promise was given and his reputation for wealth and honor saved.

Another piece was obtained from an Indian who had adopted the white man's dress and customs and cared no more for the Indian dance. He showed me a fine blade, and said: "My father he big chief. He have this one; I no sell him. My wife her father he big chief too; she got him sword; I sell you hers." Recognizing the husband's right to the wife's property I bought the implement.

When inquiries were made as to the use of these objects it was learned from all informants that they were for ceremonial purposes. They were carried in the dance as a wand or badge of distinction, indicating rank and wealth. They were used to mark time in the dance and to gesticulate in speaking.

From what was seen and learned among these Indians of northern California, it would appear that the larger so-called spearheads, which are well known from different parts of the country, may have been made and used for a similar purpose. Sometimes they were mounted on a short stick and used in a similar way. One such was obtained from a Klamath Indian, its stone head being about four inches and the stick or handle eighteen inches long. Subsequently a blade similar in size and form has been found by the author in use during an eagle dance of the Mission Indians of San Diego county. This was mounted on a handle of hard wood, which was ornamented with bits of abalone shell set in asphaltum and wound about with a strip of shell beads. This object was used in a manner similar to that of the obsidian blades of northern California. Similarly shaped implements of bone have often been found in grave deposits on the California coast.

SOUTH PASADENA,
CALIFORNIA.

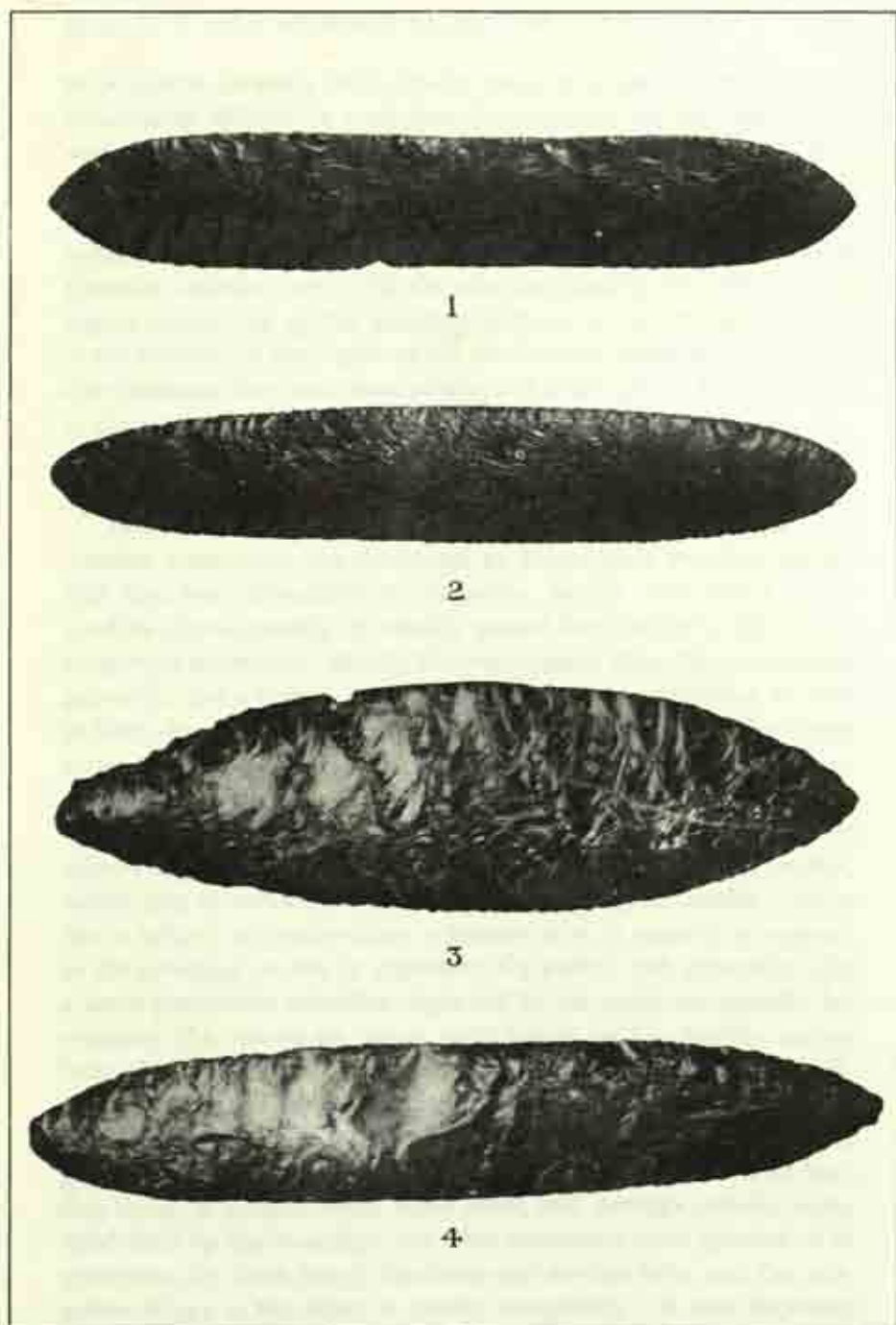
NOTES BY A. L. KROEBER

The Indians referred to in Mr Rust's paper are in or near northern Humboldt county and belong to the quite distinctly specialized north-western culture area of California. On the lower Trinity are the Hupa, and on the Klamath below the confluence of the Trinity, the Yurok. On the Klamath above the mouth of the Trinity are the Karok. Other tribes or groups in this region also possessed obsidian blades, attached a high value to them, and used them ceremonially, but it is only the three tribes mentioned that practised the white deerskin dance of which the use of these blades is particularly characteristic. The subject has been briefly written about by Stephen Powers¹ whose statements are in the main correct. Dr P. E. Goddard has also treated of the subject, with plates showing the implements in use.²

Two specimens in the Museum of the Department of Anthropology of the University of California are shown in the accompanying plate XLI. The larger (cat. no. 1-1327) is 13 inches long and of black obsidian. The smaller (cat. no. 1-1542) is 10 inches in length and of deep red obsidian. It shows the finer finish of the two, though this is not brought out in the illustration. The slight narrowing of this piece at the middle should be noted, being a feature found both in black and red specimens, though the unconstricted form of the larger black specimen is probably more common. Almost all the blades are of these two colors, though black specimens not infrequently show colorless almost transparent streaks or mottlings which by reflected light look gray. The value of the pieces lies chiefly in their length; secondarily in the degree of perfection of the material and finish. The black are usually considerably longer, but length for length the red are of greater value. They are also less common. A red blade 15 or 18 inches long is extremely rare and valuable, while there are black ones more than 30 inches long. Blades of a third material are also occasionally seen. These are made of a white flinty stone lacking both the luster and translucence of obsidian. This white material seems not

¹ *Tribes of California*, p. 52, 79.

² *University of California Publications, American Archaeology and Ethnology*, vol. 1, p. 83, 84, with plates 4 and 30.



OBSIDIAN BLADES OF NORTHERN CALIFORNIA AND MEXICO

1—Of deep red obsidian; length 40 in.; from the Yurok village of Weitchpec, at the confluence of Klamath and Trinity rivers, Cal. 2—Of black obsidian; length 13 in.; from Weitchpec. 3—From Teotihuacan, Mexico; length 7 in. 4—From Trinity river, Cal.; length 20 in. The first two specimens are in the Museum of the Department of Anthropology, University of California (cat. nos. 1-1342 and 1-1377); the other two (after photo by C. J. Crandall) are in possession of H. N. Rust, South Pasadena, Cal.

to be scarce, as many small blades made of it can be found; but it is probably difficult to work into larger pieces, for but few can be seen and these are very highly valued. At best the white flint blades lack the beautiful regularity of chipping which the obsidian so readily takes in the hands of an expert workman. The white blades are also usually much broader in proportion to their length than the obsidian ones. All the obsidian used by the tribes of this region comes from up the Klamath river and no doubt has its origin in the deposits in the region of the headwaters of this stream. Both the specimens illustrated were obtained at Weitchpec, a Yurok village at the confluence of the Klamath and Trinity rivers.

When in use at a dance the blades have a strip of cloth or buckskin tied around them, as described by Mr Rust.

Like most of the more valuable property of these Indians, the obsidian blades are not destroyed at the owner's death or buried with him, but transmitted to the heirs. Social rank, which is dependent almost entirely on wealth, passes from father to son only if property is inherited. Strictly the ownership of these blades is purely personal; but a certain claim or lien of persons possessing no title to them is recognized, as indicated by Mr Rust in his statements concerning tribal ownership. The chief opportunity for the display of wealth is at dances. The more important of these are held only at certain villages, but are always participated in by the people of other villages. The dances are performed by two or more parties, which aim to outdo one another in the display of wealth. At a dance held at a certain village a certain man is usually recognized as the principal person or organizer of a party; but generally only a small part of the valuables displayed by his party are actually his property, the remainder being contributed by his wealthy friends living in other villages. In return, when a dance is held at a village where one of his friends is looked upon as the principal man of a dancing party, he is expected by the latter to bring or send his property, and failure to do so is deeply resented. In this way families living in villages many miles apart, and perhaps entirely unrelated even by intermarriage, are often connected from generation to generation by close ties of friendship and mutual help, and the obligation of one to the other is clearly recognized. A man disposing

of a well-known blade would thus make himself liable not only to incur the ill will of such friends, but to forfeit their support when he most needed it to maintain his honor and station in life.

At the same time the blades, especially those not of the largest size, are not necessarily handed down in one family from generation to generation. On account of their high value they are not infrequently used commercially, as in the purchase of a wife or in the payment for murder. In such cases they pass completely out of the control of the family formerly possessing them.

The right of the husband to dispose of his wife's property would scarcely be recognized by these Indians. It is not uncommon that a woman personally inherits obsidian blades, woodpecker-scalp ornaments, dentalia, or other valuable property. In so far as this is of a kind available for ceremonial use, it is naturally put at her husband's disposal on occasion; but her ownership seems to be clearly established. It is probable that in the instance mentioned the man was either selling the blade with his wife's knowledge and consent and for her, or without her knowledge and contrary to right.

The use of the blades at dances is correctly stated by Mr Rust and has been described by Dr Goddard in the monograph cited, but may be amplified by a few statements. The recognized major dances of the Yurok, Karok, and Hupa are what are popularly known as the white deerskin dance and the woodpecker or jumping dance. In the latter of these the obsidian blades are not known to be used. In the white deerskin dance the performers stand in line holding the white and other deerskins for which the ceremony is named. In the middle of the line stands the singer. At both ends of the line are two men without deerskins. At certain stages of the song these advance toward each other, dancing in front of the line, and exchange places. As they do this, each carries a blade, extended forward and somewhat aloft, as if he would display it as conspicuously as possible. The two blades used at one time are matched as nearly as possible. At some stages of the dance red blades are carried, at others black ones. During the earlier songs the smaller and less valuable blades are always used; at the last song the largest of all. A red and a black blade would not be carried at the same time. It is by no means necessary that the two blades used together actually

form a pair or belong to the same man, though this is not infrequent. In fact the smaller blades quite commonly come in pairs, though in proportion as their size is greater this is more rare. The dancers carrying the blades—and this statement applies to other ceremonial objects of value as well—are not the owners. These are usually elderly men, who supervise and order the dance, but do not themselves take part in it, the dancers being young or sometimes middle-aged men.

A less elaborate and important ceremony than the white deer-skin and jumping dances is the brush or medicine dance, which differs in being held for an individual instead of the community or tribe; in being of shorter duration; and in being capable of being observed at any time or place. Less valuable paraphernalia are also used in connection with it, and this applies to the obsidian blades. The smaller or medium sized blades are sometimes brought out at this dance, though this does not seem to be a necessary rule or an established custom. The largest blades are not, however, used in connection with this dance, which would be considered too insignificant for such an act. On the other hand, the small blades of only a few inches in length, mentioned by Mr Rust, which are not of sufficient size to be carried by themselves, but are mounted on sticks, are used at the brush dance. These, on account of their small value, would not be displayed at the more important dances. Usually these small mounted blades, which may be of red or black obsidian or of white or colored flint, are decorated with a few feathers or bits of buckskin at the mounting. Plate 4 of the work of Dr Goddard referred to shows a Hupa holding such a small mounted blade. As a matter of fact the use of these small mounted blades seems to have been comparatively limited in purely aboriginal times. Many that are now found in the hands of the Indians, or have come into collections or museums, have been made for sale. Some of these small blades themselves are undoubtedly old, but the handles and mounting in almost all instances that have been seen are modern and gaudy, and in many cases the blades themselves have quite obviously been rudely chipped from splinters or masses of obsidian with so little attempt at finish or form that it may be doubted whether any Indian would not be ashamed to acknowledge their ownership

or exhibit them at a purely native dance. Often the small blades, which are generally from 4 to 5 or 6 inches long, differ from the large ones in being pointed only at one end, the butt being brought to a square edge for insertion in a handle.

Obsidian implements somewhat similar to these of the northwestern tribes have been found in most parts of California. Those from the Santa Barbara island and mainland region resemble those discussed in the present paper in their degree of finish and the regularity of their chipping. They differ from them in shape, however, being not double-ended, but with only one point, the opposite end being either convexly or concavely rounded. Such pieces may be found in many museums and have been well illustrated in volume VII of the Wheeler Survey. In most other parts of the state the obsidian blades are double-ended like those from the northwest, but are rarely more than from 6 to 12 inches long, and are on the whole very much rougher than those from the northwest. Even where they show a tolerably regular outline they lack the symmetry and beautifully retouched edge characteristic of the northwestern blades. As to their use, other than the one instance from southern California mentioned by Mr Rust, nothing appears to be actually known. That they were not used exactly like the blades of the northwestern tribes is certain, for the majority of the Indians of the state not only lacked the northwestern dances at which these blades were used, but conducted their dances in a generally quite different manner. On the other hand, it would appear from statements of the Indians of several parts of California that their use of such blades was primarily ceremonial, though rather with a personal function, in the nature of charms or shamanistic objects, than at public dances. Statements to this effect have been made to the author by the Yuki Indians of the northern Coast Range and by the Yokuts of the San Joaquin valley. The fact that the larger obsidian blades from the territory of these Indians and from adjacent regions are usually double-ended, seems also to be an argument corroborating their ceremonial rather than their technological use.

The blades from northwestern California are not particularly scarce in spite of their value, and many museums contain specimens. There is a large collection of them in the Peabody Museum. Al-

most all of those that have been secured are, however, black. An idea of the value of these blades among the Indians, and this value is not likely to have increased in the last fifty years, may be obtained from the fact that they are generally reckoned as worth a dollar per inch of length. This is, however only a rough approximation. Blades less than 6 or 8 inches long would be held at a lower ratio. Beginning with blades from 12 to 15 inches in length to those still larger the ratio rises. A good blade 20 inches long would rarely be parted with by its owner for fifty dollars, while one 30 inches in length is practically invaluable. Considerable allowance is made for the quality of material and workmanship, the red blades probably being considered at least half as valuable again as the black ones.

These obsidian blades of the Indians of northwestern California have been called, and in a measure are, sacred. Nevertheless the term can be applied to them only qualifiedly. They are primarily objects of wealth. Their display in important ceremonies, their preciousness, and the general disposition of these Indians to connect exhibitions of wealth and ceremonies, give to these objects certain associations of a religious nature. They do not, however, appear to be sacred in the same sense in which a small class of other objects, such as certain pipes, fire-sticks, and similar ceremonial paraphernalia, which are used in a purely ritualistic way and whose value lies entirely in this ritualistic and traditionary use, are sacred. Like the white deerskins and woodpecker-scalp ornaments, the obsidian blades are not used directly in connection with any of the sacred formulas around which the deeper religious life of these Indians clusters. There seems also to be very little and probably no sense of their being charms or objects with a fetish or medicine or animistic power. They are thus sacred in a very different sense from the objects belonging to an altar of the Pueblo Indians, or from the objects contained in a sacred bundle of the Plains Indians. Their general position in the ceremonies and social life of the Indians of northwestern California resembles more nearly that of the coppers of the Indians of the North Pacific coast.

BOOK REVIEWS

The Bontoc Igorot. By ALBERT ERNEST JENKS. Department of the Interior. Ethnological Survey Publications. Volume I. Manila: Bureau of Public Printing, 1905. 226 pp., 154 pl., 9 figs.

On July 17, 1905, Dr Albert Ernest Jenks, chief of the Ethnological Survey for the Philippines, tendered his resignation of that office, which he had occupied since October, 1903, having previously held subordinate positions, to the first of which he was appointed from the Bureau of American Ethnology in Washington. The cause of his retirement was ill health, making return to America imperative. The excellent work done by the Bureau was in evidence at the St Louis Exposition, where, besides the exhibit of living peoples of the Philippines, a collection of some 18,000 ethnological specimens was on display. The publications of the Bureau were planned to cover five volumes, as follows: Vol. I, *The Bontoc Igorot* (A. E. Jenks); vol. II, pt. I, *The Negritos of Zambales* (W. A. Reed); vol. II, pt. II, *The Nabloi Dialect* (O. Scheerer); vol. II, pt. III, *The Batak of Palawan* (E. Y. Miller); vol. III, *Augustinian Relations, Spanish Edition* (Father A. Perez); also English edition of same; vol. IV, pt. I, *Studies in (Maguindanao) Moro History, Law and Religion* (N. M. Saleeby); vol. IV, pt. II, *Studies in (Sulu) Moro History, etc.*; vol. V, pt. I, *The Tinglayan Igorot* (D. Folkmar); vol. V, pt. II, *The Subano People* (E. B. Christie). Judging by the monographs already published these volumes will add immensely to our knowledge of primitive peoples, their languages, social and political institutions, religion, and folk-lore.

The ten chapters of the initial volume on the Bontoc Igorot by Dr Jenks treat the following topics: The Igorot culture group, the Bontoc culture group, general social life, economic life, political life and control, war and head-hunting, esthetic life, religion, mental life, language. The illustrations (physical types, human activities, implements, ornaments, etc.) are from photographs and deserve high praise both from the artistic and from the ethnological point of view. The data here published were collected during investigations in 1902-03, lasting altogether some eight months, and give us a remarkably good idea of the Igorot as he now exists in Bontoc, "a typical primitive Malayan."

As in his previous writings, Dr Jenks holds (p. 81) that "grades of culture of primitive peoples may be determined by the economic standard better than by any other single standard," but, one may add, any single-standard test is of doubtful wisdom. The Bontoc Igorot of to-day could not live for two weeks by "natural production"; indeed, "it is doubtful whether at any time they could have depended for even as much as a day in a week on the natural foods of the Bontoc culture area." Their culture is fundamentally neither venatorial nor piscatorial, but agricultural — "in agriculture the Igorot has reached his highest development; on agriculture hangs his claim to the rank of barbarian — without it he would be a savage." Here thrives his religion also, for "all Bontoc agricultural labors, from the building of the sementera to the storing of the gathered harvest, are accompanied by religious ceremonials." Some of these are quite elaborate and "some occupy a week's time," but there is also "great absence of formalism in uttering ceremonies; scarcely two persons speak exactly the same words, though I believe the purport of each ceremony, as uttered by two people, to be the same." This "looseness," Dr Jenks thinks (p. 207), may be due in part to the "absence of a developed cult having the ceremonies in charge from generation to generation." The Bontoc have a sacred or rest day called *Tēng-aó*, "occurring on an average of about every ten days throughout the year, though there appears to be no definite regularity in its occurrence," and on this day work in the fields is forbidden. The importance of "head-hunting" among the Bontoc is revealed by the fact that *na-má-ka* (take heads) is a synonym of *en-fa-lak-nēt* (war) — Miss Margaretta Morris, in her studies of the Kayans and Dyaks of Borneo, has already called attention to the influence of war and agriculture on primitive religion, morals, and ethics in the case of peoples who both till the soil and practise war. It is in war as well as in toil and ceremonial that the Bontoc man "works off his superfluous and emotional energy," and "his head-hunting offers him the greatest game of skill and chance which primitive man has invented."

War was invented, the Bontoc say, by Lumawig, the highest figure in their mythology, whom Dr Jenks regards as a personification of the forces of nature — "the personification has become a single person, and to-day this person is one god, *Lu-má-wig*," over all and eternal. Lumawig resembles much the culture-heroes of the American aborigines, even as to certain silly or reprehensible actions, apparently. After his work was ended, Lumawig went up into the sky where he "is still the friendly god of the Igorot, and is the force in all the things with

which he originally had to do. Although in Bontoc pueblo "the thought of the return of Lumawig is laughed at," there is growing up in some of the western pueblos (Alap, Balili, etc.) a new faith, part of whose creed is a belief that Lumawig will return in the near future. Earlier than the idea of Lumawig is the democratic belief in spirits, according to which "each person or each household has the necessary power and knowledge to intercede with the *anito*"—the nearest approach to a priesthood in connection with spirit-worship is "the limited class of the dream-appointed *insupak* or *anito*-exorcists." Between the people and Lumawig to-day stand three classes of "religious intercessors" (rather than priests), whose offices are hereditary.

Head-hunting is responsible, according to Dr Jenks, for "the lack of 'color' and the monotony of everyday life" among the Igorot,—"its somber hue as compared with that of his more advanced neighbor, the Ilokano." The Bontoc Igorot is little given to dress (movable adornments of person)—his great permanent decoration is the tattoo—his musical implements are few and simple (many of the songs are wordless; dances are always to gong-music); the common pastimes and games of chance are absent (cock-fighting and head-hunting take their place); he "has almost no formalities ('etiquette,' 'form,' etc.)." In discussing the mental life of the Igorot, Dr Jenks remarks that, besides the "rude, shrewd sense," which Tylor attributes to primitive man, "he has more, he has practical wisdom." Another statement is rather surprising, and more extended study and investigation may somewhat diminish its force—"the paucity of the purely mental life of the Igorot is nowhere more clearly shown than in the scarcity of folk-tales." The Igorot story-tellers, too, generally "present the bare facts in a colorless and lifeless manner" (p. 221).

The government and control of the pueblo, with the exception of the Spanish-made "presidente" and "vice-presidente," are purely aboriginal and simply democratic, no man or group of men exercising real control—the *intugtukan*, or group of old men, "is a thoroughly democratic group of men, since it is composed of all the old men in the *ato*, no matter how wise or foolish, rich or poor—no matter what the man's social standing may be" (p. 167). This *intugtukan* "has no elective organization, no superiors or inferiors," and it perpetuates itself by calling to itself individuals for counsel. The wisdom of the *intugtukan* "is respected to the degree that it is regularly sought and is accepted as final judgment, being seldom ignored or dishonored." The chief crimes denounced by the Igorot are "theft, lying to shield oneself in some crim-

inal act, assault and battery, adultery, and murder." Various tests or ordeals (rice-chewing, hot-water, egg, blood) are in vogue.

In the economic life of the Igorot basketry and pottery play a prime rôle — "were basketry and pottery cut from the list of his productions, the Igorot's everyday labors would be performed with bare hands and crude sticks" (p. 114). Woman is potter here, man basket-maker. The Igorot has few and relatively simple weapons (the tiny bow is a toy for children, not a warrior's weapon). As to fire-making, the interesting fact is recorded (p. 133), "the oldest instrument for fire-making used by the Bontoc Igorot is now seldom found; however, practically all boys of a dozen years know how to make it and use it." The section on the division of labor, distribution of products, consumption of food, etc., ought to be of value to modern economical theorists; also the conclusion arrived at by Dr Jenks that: "The Igorot is not a communist, neither in any sense does he get the monopolist's share. He is living a life of such natural production that he enjoys the fruits of his labors in a fairer way than do many of the men beneath him or above him in culture" (p. 138). Upon the Igorot of Bontoc "the Spaniard left his impress in no realm probably more surely than in that of the appreciation of the real value of money." A universal medium of exchange, unique in the Philippines, according to Dr Jenks, is *palay* (unthreshed rice), but "the characteristic production of each community, in a narrow way, answers for the community the needs of a medium of exchange."

The Igorot, too, "has as clear a conception of the relative value of two things bartered as has the civilized man when he buys or sells for money." Even when the payment is in coin, the bargain is made on the basis of the *palay* value of the article bought or sold, the standard of value being "the *sin finge-é*, the Spanish 'manojó', a small bunch of *palay* tied up immediately below the fruit heads" (its multiples run to 1,000). The commercial activity of the Igorot Dr Jenks divides into two classes, one more primitive than the other, and both below the "market idea," viz., "irregular intrusive commerce," and "irregular invited commerce." The Igorot have a clear idea of property right (individual, marital, etc.). The Bontoc family with few exceptions is monogamous, with an average of about six children (of twins, one is thought to be the offspring of an *anito*; the breaking down of infanticide has begun). Birth feasts and ceremonies, cradles, definite systems of naming, etc., are not in vogue, and "the life of little girls is strangely devoid of games and playthings" (p. 64), — the boys "have at least two systematic games," both imitative of the combat of the adults. There are no feasts or rites to mark

puberty, but, as Dr Jenks observes, the institution of the *ôlâg*, or house of trial marriage, is "calculated to emphasize the fact and significance of puberty," for, while primarily the sleeping-place of all unmarried girls, "in the mind of the people it is, with startling consistency, the mating place of the young people of marriageable age." In spite of such a system, "a girl is almost invariably faithful to her temporary lover," and "though there is no such thing as virtue, in the modern sense of the word, among the young people after puberty, children before puberty are said to be virtuous, and the married woman is said always to be true to her husband." This institution deserves more detailed and careful study.

All diseases and ailments, from the least to the severest, are attributed to *anitos*, except toothache, which is said to be "caused by a small worm twisting and turning in the tooth." Death is taken neither very sorrowfully nor very passionately. Blindness, abnormal feet, and eruptions of the skin are the most common diseases and affections to which Igorot flesh is heir.

Taken altogether, the chief fundamental differences between Bontoc culture and that of the adjoining peoples are the absence of the "head-man" (the pueblo is a loose federation of smaller political groups), and the institution of the *ôlâg*, or system of "trial marriage."

Of the language of the Bontoc Igorot Dr Jenks informs us that it is sufficiently distinct from all others to be classed as a separate dialect, i. e., of the basal Malayan-Polynesian. More evidence, however, is needed before one can agree with the argument of Mr. H. B. Hulbert, cited on page 227, that the languages of Korea, Formosa, and the Bontoc Igorot belong together. In his Bontoc vocabulary Dr Jenks omits all "words which represent ideas borrowed of a modern culture" (i. e., terms for umbrella, shoe, chair, book, etc.), — it seems to the reviewer that the record of just such terms, as soon as possible after they appear, is of no little importance.

Physically the Bontoc Igorot have most of the characteristics of the primitive Malay; the men seem taller than they really are, are never corpulent and seldom "poor," and do not reach their "physical best" before 20 (but before 25); women mature at about 17 or 18. Both men and women tend to be mesaticephalic. In Bontoc, as elsewhere in the Malayan area, a few people have curly or wavy hair (tradition is against its Negrito origin).

Dr Jenk's account of the Bontoc Igorot emphasizes the necessity of employing in ethnologic research in the Philippines none but able sciën-

tific workers, — for there customs and institutions prevail whose investigation needs deep sympathy and clear insight into the common human mind, as well as unprejudiced perceptions and observations of its vagaries and individual as well as tribal and national idiosyncrasies. That the author of this book is one of such is quite apparent, even without his graceful tribute to the Igorot of Bontoc (p. 15) and his unqualified expression of belief in their future development; for they are men, even as we are men, lost neither in body nor in soul, but like enough to us to be some time part of our great human family in its associate and coöperative evolution.

ALEXANDER F. CHAMBERLAIN.

A Universidade e a Nação. Oração inaugural do anno lectivo de 1904-1905, recitada na sala grande dos actos da Universidade de Coimbra, no dia 16 de outubro de 1904. Por BERNARDINO MACHADO. Coimbra: Imprensa da Universidade, 1904. 19 pp.

The subject of Professor Machado's inaugural address at the University of Coimbra, October 16, 1904, was "The University and the Nation." Anthropologist, student of the child, ex-Minister of State, Dr Machado is peculiarly well-fitted to express the trend of the best educational ideas in Portugal. A patriotic man of science, he holds that a university ought to be, above all, a school of liberty — the fate of the nation and that of its highest and noblest institution of learning are one. But despotic education goes with despotic government. The teacher must not be a pontiff, the scholar must not be a catechumen. Passive obedience is no preparation for the duties of life. The freedom of school is crystallized in the pupil. We are in the world to learn the laws of the universe, not to execute at command spectacular prodigies of mental acrobatics, but to act as free men and not as manikins, by our will, through all we are. Nor must education be a new method of aristocratizing. Truth and knowledge are accessible to and belong to all. Citizens, not princes, are now to be educated. Truth is not to be a mystery, a monopoly, a privilege, an aristocracy, but something wherewith to enrich the common patrimony of all minds. Nor have the educated a right to be a parasitic caste. The university is a laboratory, a model workshop, where teachers and students, as true workmen and apprentices, are occupied not in consuming but in producing ideas. Teachers and scholars are not to live in palace or monastery, shut up from the rest of their fellows, not knowing, or caring, sometimes, how these live and move and have their being. All are more than men of science, they are citizens, and mem-

bers of that threefold city, religious, economic, and political, which began in the family, and now, constituting the nation, goes on its way triumphantly until it shall include all mankind. Teachers and pupils have a religion, — the great heart of man needs their sympathetic beat, and looks to them for comfort, consolation, hope. Science has no reason to be heartless. It delves too deep into the life of the universe to be that. Men of science have no right to hold themselves aloof from the duties of citizenship — workers themselves, they ought to strive to better the economic conditions of society; they ought to take their places in the ranks of those who are laboring for the amelioration of mankind. Their faithful coöperation in science ought also to be made manifest in society. Nor ought the university to regard politics as entirely subverted by germs of original sin, and shut its members up like monks in cynic elevation above the most ordinary and most needful activities of democratic liberty and life. For men of science to slink away from the thought of public life, of service to their fellow-citizens, is a base betrayal of their sacred mission. They are not called upon to be political adventurers; it is their duty to be servants of the people. To isolate the university, socially and politically, is to narrow its ideals, to constrict its movements, and to impoverish its brains and their expression, thereby making it less human and diminishing its real educative rôle. The sovereignty of knowledge belongs with the sovereignty of citizenship. Nor is there any call for the divorce of religion and science. Faith of the highest order is the greatest servant of them both. The moral sanity of mankind needs both for the perfection of the best ideals of the race. The university, as a great factor in the progress of man, needs to be above the pains of penury. It should be well-endowed and its members should be sufficiently recompensed to make them not fear the wolf that often lurks so near their doors. They should also have liberty to work as best fits their capacities and their genius. They ought not to be so burdened with routine labors that they have no time for consideration of, and participation in, the larger life of their community, of the nation. They must not be hopelessly in the toils of the monotonous repetition of the same work which hypnotizes and amputates the soul. Nor should they be victims of any depressing professional subordination, for every branch of science is homologous, for all are brothers. A true scientific fraternity means that each laborer shall in his own time reach the highest honor the institution can bestow, each, who begins at the lowest, reach the highest rung of the ladder. There is a democracy of science as well as one of culture. Portugal is not, as many suppose, hopelessly decadent, but awaits a brilliant renaissance. This

new birth is being made possible by the labors of such men as Dr Machado, whose ideas and ideals are of the noblest type. In 1904 Dr Machado published also a new and revised edition of his "Notes about Children by a Father" (*As crianças. Notas d'um Pai*, 2^a ed., Coimbra, 1904, 416 pp.), which very interesting volume was considered briefly in this journal (N. S., IV, 152, 1904), after it first appeared.

ALEXANDER F. CHAMBERLAIN.

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

- Adolf Bastian**, *Gedächtnisfeier am 11. März. 1905.* (Z. f. Ethn., Berlin, 1905, XXXVII, 233-255, 1 pl.) Text of addresses by Lissauer, von den Steinen, von Richthofen, and Waldeyer, treating of the life and labors of Bastian, the ethnologist and anthropological philosopher.
- Buchner (M.)** Das Bumerangwerfen. (Globus, Braunschwg., 1905, LXXVIII, 37-41, 63-66, 4 figs.) Discusses theory and practice of boomerang-throwing—gives results of author's own experiments with European-made implements. Experiments with such boomerangs have not solved the problem. Australian boomerangs are now made for the trade, — those genuine specimens in museums are not obtainable for use. It is not too late, perhaps, to seek from some old Australian the right knowledge.
- Diergart (Hr)** Ueber die Bedeutung gewisser Tontechniken der Naturvölker für die technische Beurteilung des antiken roten Terra sigillata Glanzes. (Z. f. Ethn., Berlin, 1905, XXXVII, 432-433.) Suggests the value of the study of the red-luster clay techniques of the modern Orient and allied techniques of certain primitive peoples (e. g. Central and South America) for the interpretation of the ancient red terra sigillata luster—some of the wares have now lasted nearly 200 years.
- Dodd (Isabel F.)** The Archeological Congress at Athens. (Rec. of Past, Wash., 1905, IV, 199-202, 2 figs.) Brief account of congress held in April, 1905, notices of chief papers, etc.
- Enslin (—)** Die Augenveränderungen beim Turmschädel, besonders die Sehnervenerkrankung. (A. f. Ophthalm., Berlin, 1904, LVIII, 151-201, 1 pl., 8 figs.) Gives results of observations and measurements of 16 cases of affections of the optic nerve, etc., conditioned by malformation of skull (acrocephaly caused by premature synostosis of the coronal suture). Boys are chiefly affected.
- Farabee (W. C.)** Inheritance of digital malformations in man. (Papers Peab. Mus. Amer. Arch. and Ethn., Cambr., Mass., 1905, III, 69-77, 5 pl.) Treats, with tables of measurements, etc.,—measurements, tracings, photographs, radiographs, plaster-casts, and complete genealogical tables were made,—of digital malformations observed in Pennsylvania, where "all the digits of all extremities of 37 persons are affected and the anomaly (short digits) is inherited in conformity with Mendel's law for five generations." The people are otherwise perfectly normal, though the abnormality seem to have shorter arms and shorter stature. The abnormality is inherited through both sexes (58 percent of all the descendants of males are abnormal and 42 percent of those of females). This paper is part of a thesis for Ph.D. in Anthropology (Harvard) on *Hereditary and Sexual Influences in Meristic Variation*.
- Fewkes (J. W.)** Climate and cult. (Trans. Eighth Intern. Geogr. Congr., Wash., 1905, 664-670.) Discusses the effect of humidity and aridity on the development of aboriginal culture, par-

ticularly the desert region of the S. W. United States. Compares the Pueblo region with the well-watered West Indies. — In both cases climate has stamped itself upon ritual. With the Pueblo Indians the sky god is a rain-god whose worship is dictated by the arid climate. The West Indian sky-god is a malevolent being (incarnation of the hurricane) who is besought for protection. Climate is responsible for likenesses and diversities in cults.

Gheorgov (J. A.) Die ersten Anfänge des sprachlichen Ausdrucks für das Selbstbewusstsein bei Kindern. (A. f. d. Ges. Psychol., Lpzg., 1905, v, 327-404.) Discusses at length the beginnings of the expression for self in language (Bulgarian) in the two sons of the author, a professor in Sofia. A valuable paper.

Gray (J.) Anthropometric identification: a new system of classifying the records. (Man, Lond., 1905, v, 84-86.) Author proposes "to make the limits of a compartment movable instead of fixed, as in the Bertillon system," and so "bring the dimensions of the card to be allocated always into the center of the limits of a compartment beyond the margins of uncertainty."

Gusinde (K.) Einiges über Rhythmus, Wort und Weise. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, IV, 9-22.) Treats of the nature and origin of rhythm, melody, tune and text of songs. Rhythm, the beginning of all poetical development, gradually disengaged itself from being merely an accompaniment of work, and later, after the musical had been developed the language proper was added. The melody of the minne-song blossomed out of the Gregorian church-song. The influence of dance-music and instrumental music is noted. In folk-song the melody is fixed, the text mutable.

Höfler (M.) Kröte und Gebärmutter. (Globus, Brnischwg., 1905, LXXXVIII, 25-27.) Author treats of the living toad as a soul-animal (one of the many forms which folk-thought assigns to the human soul), the body of the toad as a fetish-animal (its several immortal qualities, is reborn as human infant, etc.), the toad as symbol of the uterus, etc., and the beliefs connected with these in the folk-mind. The dead dried toad becomes an amulet, then the model of the toad, which is offered at altar or hung up in churches.

Karplus (J. P.) Ueber Familienähnlichkeiten an den Grosshirnfurchen des

Menschen. (Arb. a. d. Neurol. Inst. d. Wiener Univ., 1905, XII, 1-58, 20 pls.) Gives results of author's investigations of 86 hemispheres as to family resemblances in the sulci of the cerebrum. K. thinks that the problem may find an anatomical solution.

Koch-Heese (A.) Ein Beitrag zur Wachstumsphysiologie des Menschen, Nach statistischen Erhebungen an der Stöyischen Erziehungsanstalt in Jena. (Z. f. Schlagschiff., Hamburg, 1905, XVIII, 293-319, 400-415, 457-492.) Gives with some detail of tables, curves, etc., the results of the anthropometric investigation of some 886 pupils between 5 and 21 years of age. The relation of stature to age, relation of body-weight to age and stature, and the yearly growth of the individual pupil are specially discussed. As a general consideration concerning weight, Dr K.-H. concludes that evolution and differentiation go hand in hand; civilized men phylogenetically and ontogenetically are far different from their ancestors, adults widely different from children. Both in somatic and in psychic evolution the tendency of the growing individual to recapitulate the racial past is actively crossed by the influences of his own time. Acceleration of growth in the individual represents recapitulation of racial increase, retardation of growth recapitulation of racial diminution.

Lindsey (E.) The evolution of international law. (Amer. Law Rev., St. Louis, Mo., 1905, XXXIX, 658-674.) Author seeks to utilize for the development of legal ideas and institutions the data of anthropological research. The evolution of modern international law from primitive legal institutions is indicated. Contracts, war, arbitration, etc., are discussed; also the legal implications of primitive clans and confederacies. The beginnings of contract occur early in the personal conditions existing in social organizations founded on kinship, but "only comparatively late in legal history does the mental engagement become recognized as the essential element of contract as distinguished from the ceremonies of its declaration which are long the criterions of its binding force, as is still the case with contracts between nations in international law."

Lombroso (Paola) The diplomacy of children. (Grand Mag., Lond., 1905, II, 329-334.) Cites instances of the

- Hedda Gabler, Thérèse Humbert types and of deceitful astuteness in boys.
- Mantegazza (P.)** Commemorazione del Barone De Ujfalvy. (A. p. l'Antrop., Firenze, 1904, XXXIV, 442-446.) Brief account of life and scientific activities with list of publications 1870-1903.
- Monteiro (M.)** Pereira Caldas. (Portugalia, Porto, 1905, II, 128.) Brief sketch and list of chief works of Pereira Caldas (1818-1903), the Portuguese archaeologist and epigrapher.
- de Nadaillac (Vicomte)** Jean François Albert du Pouget, Marquis de Nadaillac. (Ann. Arch. Rep. 1904, Toronto, 1905, 113-117, 1 fig.) Brief sketch of life and scientific activities by his son.
- Nelson (Mabel L.)** The difference between men and women in the recognition of color and the perception of sound. (Psychol. Rev., N. Y., 1905, XII, 271-286.) Results of examination of 20 men and 20 women students in the University of California. As to color men are "clearly superior in the recognition of blue, women possibly in the recognition of yellow." As to sound, "men hear farther than women, and the right ear of both men and women is keener than the left."
- Peet (S. D.)** The constellations and their history. (Amer. Antiq., Chicago, 1905, XXVII, 17-32, 6 figs.) Discusses the questions of resemblances between the ideas of the constellations in Egypt and America, traces of totem system in ideas of constellations, shape and number of constellations, names of constellations, etc. No new data.
- Secret societies and sacred mysteries. (Ibid., 81-96, 6 figs.) General discussion; no new data. Refers to Babylonia, Egypt, Greece, Druids, American Indians (Ojibwa *midewiwin*, Dakota mysteries, Navaho, Oraibi, etc.).
- eli (G.)** La cavità glenoidea dell'osso temporale nei sani di mente, negli alienati e nei criminali. (R. Sperim. di Fren., Reggio, 1905, XXXI, 319-320.) Note on examination of 200 normal, 23 African, 284 abnormal (suicides, lunatics, criminals) skulls, with respect to presence, depth, etc., of the glenoid cavity, whose absence in man is considered a pithecoïd character. P. finds its normality decreases from the white to the black race, and from normal individuals to criminals.
- Puccioni (N.)** Delle deformazioni e mutilazioni artificiali etniche più in uso. (A. p. Antrop., Firenze, 1904, XXXIV, 355-402, 4 pl., 1 fig.) This valuable monograph treats of artificial ethnic deformations and mutilations still in use in various parts of the globe: Of the skin (tattooing, scarification); adipose tissue (artificial fattening); head (flattening, compressing, etc.); perforation of ears, septum of nose, lips, cheeks; filing and knocking out of teeth; thorax (women all over the world, corsets, etc.); genital organs (perforation of *glans*, sub-cutaneous insertion of stones, etc., artificial phimosis, circumcision, hypospadias, eviration, complete castration, removal of left testicle, deformation of mammae, infibulation); fingers; nails; polpacci; feet (compression and distortion); hair (removal, shaving, etc.). Among the causes of deformations and mutilations, sexual ornamentation of males to attract females, pubertal and virginal ideas, tribal and caste notions and customs have been of great importance; hygienic little. At pages 371-384 Dr P. discusses artificial cranial deformations and gives the chief measurements of one Pampan, two New Hebridian, three ancient Crimean and 40 Peruvian skulls (3 types), and concludes that compression and deformation occasion a greater development of the bone in which they occur, the development being, in general, in direct proportion to the compression.
- Quirnsfeld (E.)** Zur physischen und geistigen Entwicklung des Kindes während der ersten Schuljahre. (Z. f. Schlgelhtspfl., Hamburg, 1905, XVIII, 127-185.) Gives results, with tables and curves, of the anthropometric investigation (stature, chest-circumference, relation of chest-circumference to stature, vital lung-capacity, body-weight, musculature and nutrition, scoliosis, acuity of vision, ear-troubles, memory and apprehension, enlargement of the thyroid gland, other defects and diseases) of 1,014 children on entering school (6th year of life) and at the end of the fourth school year (= end of 10th year of life). Children of well-to-do parents grow faster than others, and the yearly increase of stature is greater, the older the child. Growth of stature and of chest-girth are in inverse relation. In growth of chest-girth girls lag behind boys. Of all the children 54.86 percent increased in weight, 20.71 percent decreased, 24.43 percent remained unchanged. Tall children

tend to have heavy body-weight. The taller the child, the fewer the diseased conditions—the number of healthy increases with increase of stature. The frequency of scoliosis decreases with increase of body-weight. Defects of memory and apprehension are more common in smaller children and decrease with increasing stature.

Read (C. H.) Hjalmar Stolpe. (Man, Lond., 1905, v, 53-54.) Brief biographical sketch of the eminent Swedish ethnographer (1841-1905), well-known through his *Studier i Amerikansk Ornamantik* (Ornamental Motives of the American Aborigines).

Richardson (E. E.) Cranial capacity of prehistoric vs. modern man. (G. Wash. Univ. Bull., Wash., 1905, iv, no. 3, 72-76.) Abstract of minor thesis for Ph.D. Dr R. concludes that "from the information now obtainable there has been no material change in the cranial capacity of man from prehistoric time to the present. The data considered were derived from prehistoric British crania," historic British, Roman, Roman-British, Anglo-Saxon, modern English, Scotch, Roman, American, etc.

Setälä (E. N.) Ivan Nikolaevič Smirnov. (Auz. d. Finn.-Ugr. Forsch., Helsingfors, 1904, iv, 85-89.) Sketch of life and activities of Smirnov (1856-1904), ethnographer of the South Slavs and the Finnic peoples.

— Karl Ujfalvy, 1842-1904. (Ibid., 89.) Brief sketch with list of chief works.

— Flórián Mátyás, 1818-1904. (Ibid., 90-91.) Brief sketch, with notice of philological writings, 1857-1871. M. was one of the first to call attention to the Aryan element in the Hungarian tongue.

Sieger (—) Ernst Friedrich's "Wirtschaftsgeographie." (Globus, Brnschw., 1905, LXXXVIII, 95-97.) Résumé and discussion of Friedrich's *Allgemeine und spezielle Wirtschaftsgeographie* (Leipzig, 1904), of which the key-note is the classification in accordance with the principle of "nature-compulsion" of economic progress into the stages of animal, instructive, traditional, and scientific.

Singer (H.) Hermann von Wissmann. (Globus, Brnschw., 1905, LXXXVIII, 81-82, 1 fig.) Sketch of life and scientific activities of H. von Wissmann (1853-1905), the African explorer.

His last work was *In den Wildnissen Afrikas und Asiens, Jagderlebnisse* (Berlin, 1901).

Zuccarelli (A.) Il terzo trocantere nell'uomo, sue forme, sue dimensioni, suo valore onto-filogenetico, etc. (R. Sperim. di Fren., Reggio, 1905, XXXI, 380-382.) The percentage in ancient femurs is very much higher than in modern; higher in degenerates than in normal individuals; more common unilaterally and dextrally.

— Intorno alla sutura metopica e al suo valore nella specie humana, etc. (Ibid., 382.) In first 500 skulls in the Della Porta collection in Naples 36 were "metopic." Metopism is sometimes a mark of superiority, sometimes a simple irregularity of development, sometimes, again, an arrest of development, a sign of inferiority, a pathological stigma.

EUROPE

Alves (C.) O casamento em terra de Miranda. (Portugalia, Porto, 1905, II, 100-102.) Describes marriage ceremonies and customs in the Miranda region of Portugal. In connection with the wedding there are races, games, etc. Sometimes on the wedding night bells are attached to the nuptial couch, plus are strewn in the bed, etc.

Andree (R.) Böhmische Sprachenkarten. Globus, Brnschw., 1905, LXXXVII, 350-351.) Briefly describes the various linguistic maps of Bohemia: Berghaus (in his *Atlas*, 1845), Hänfler (1847), v. Czoernig (1855), v. Le Monnier (1888), Langhans (1899), Zemmrich (1902), Rauchenberg, etc.

de Arenzadi (T.) Weihmachtliche Tonwerkzeuge in Madrid. (Ibid., 1905, LXXXVIII, 30, 3 figs.) Describes briefly the *zambomba*, *chickarra*, and bladder-bow, noise-making implements used at Christmas-time by adults as well as children in Madrid. They are not known to the Moriscos. The first resembles the Frisian "rummelpott," the second is like the German "Heupferdchen."

d'Azevedo (P.) Os tremendores em Portugal no século XVI. (Portugalia, Porto, 1905, II, 103-107.) Brief notes on the "tremblers" (cf. Quakers), one of the features of popular religion in Portugal in the 16th century. The texts of two letters of this period, written by a judge, are given. The originator of this dancing and trembling cult seems to have been a woman, nicknamed *Feia*, i. e.

- "Ugly," who afterward either feigned lunacy or became altogether mad.
- Baglioni (S.)** Beitrag zur Vorgeschichte des Picenum, Italien. (Z. f. Ethn., Berlin, 1905, XXXVII, 257-264, 42 figs.) Treats of neck-rings, arm-rings, fibulae, chains, ear-rings, belt-buckles, pendant ornaments (amulets), etc., from graves of the Hallstadt period (first iron age) near Belmonte-Piceno in the district of Fermo, not far from the Adriatic coast. Southern Picenum is rich in pendant ornaments. A large stone with an ancient Picenian inscription upon it was also discovered.
- Carroll (M.)** The site of ancient Phalerum. (G. Wash. Univ. Bull., Wash., 1905, III, No. 3, 82-90.) Argues that the pre-Themistoclean port town of Athens was "to the west of the bay at the eastern foot of the hill of Munychia."
- Colborne (G.)** Genius by counties. (Strand Mag., Lond., 1905, XXIX, 23-28, 12 maps.) Discusses distribution of British genius according to counties. According to this showing, Monmouth, Dorset, Rutland, Buckinghamshire, Westmoreland, and most of the Welsh counties have produced no geniuses. Yorkshire exhibits a catholicity in genius. The author's list of geniuses is made up of 200 persons, of whom he avers, "if these 200 names were expunged, British history for the past three or four hundred years would be little more than a blank."
- Dikarev (M.)** Narodni kalendar Valul'skogo pov. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905, IV, 113-204.) Detailed account of the folk-calendar of the district of Valui in the government of Voronezh, by months and days. Also carnival, easter-eggs and related costumes, the rite of the linden, the drowning of Marynka (doll), superstitions about animals, the weather. Among the Saints who figure are St George, St John, St Nicholas, and St Blaise.
- Dittrich (P.)** Amtliches aus dem 18. Jahrhundert. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, VI, 112-113.) Notes that in 1717 the profession of shepherd was declared honorable by an imperial decree, proclaimed in Silesia. In 1786, on account of the abuses (drunkenness, theft, etc.) connected therewith the "riding about" the cornfields (to ward off evil) was abolished. This old custom was formerly much in vogue in several villages of the principality of Nassau-Grottkau.
- Domanitski (V.)** Narodnya meditsina u Rovens'komu povitt na Volini. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905, IV, 100-107.) Treats of folk-medicine in the Rovno district of Volhynia: Divine punishment and evil will of men as causes of disease; practices of men and women "doctors"; personifications of disease; treatment of external and internal troubles; diseases of cattle and their treatment. Some specimens of incantations are given.
- Favreau (P.)** Neue Funde aus dem Diluvium in der Umgegend von Neuhal-densleben, insbesondere der Kiesgrube am Schlosspark von Hundsburg. (Z. f. Ethn., Berlin, 1905, XXXVII, 275-295, 5 figs.) Describes the new diluvial finds (bones of animals, flint implements from pronounced coliths to unmistakable paleoliths) in gravel-pits near Neuhal-densleben. In the discussion of this paper M. Blanckenhorn and Hr Wiegner took part at some length, the former treating of the whole colithic question in Germany, holding that most of the North German coliths are much later than those of France and Belgium.
- Finn (Hr)** Ueber einen grossen antiken Goldfund in Schweden. (Ibid., 365-366.) Note on the discovery in a gravel-pit near Sköfde, of a heavy gold chain, another gold chain and two gold bars, amounting in metal-value to 19,000 marks. The find belongs to the 10-11th century A. D. An old local legend had it that there was a treasure in the pit.
- Fortés (J.)** As fibulas do noroeste da peninsula. (Portugalia, Porto, 1905, II, 15-33, 38 figs.) F. distinguishes and describes 7 types of *fibula* from northeastern Portugal. These may be arranged under two exotic culture-streams (Gallic, Italian) and one (the annular *fibula*) representative of native Portuguese primitive industry.
- Thesouro de Viatodos. Da idade do bronze. (Ibid., 110-111, 1 fig.) Brief account of a find of 15 bronze axes, some fragments of metal, etc., made in the parish of Viatodos in the Barcellos region.
- Restos de uma villa lusitano romana, Povoa de Varzim. (Ibid., 113.) Note on the ruins of a Lusitanian-Roman town at Povoa de Varzim.
- Goby (P.)** Sur quelques meules à grains et un moulin ancien ressemblant au "trapetum" découvert dans l'arrondis-

sement de Grasse, A.-M. (Ann. Soc. d. Lettres, Sci. et Arts des Alpes-Maritimes, Nice, 1905, XIV, 95-120, 2 pl., 2 figs.) Describes various kinds of "mills" and mortars for crushing and grinding grains, seeds, etc.—the majority from Roman and Gallo-Roman "stations." They run all the way from simple stones on which the grain was ground by hand to turning mills with upper and nether parts, and others, like the one from the Quartier du Bois (discussed at some length) which resembles the *trapetum* described by Cato in his *De Re Rustica*, as used for crushing olives.

— et Guébhard (A.) Sur les enceintes préhistoriques des Préalpes Maritimes. (C.-r. de l'Ass. Franç. p. l'Av. d. Sci., 1904, XXXIII^e Ses., 1068-1109, map, 7 figs.) Lists and describes prehistoric stone enclosures ("camps," "castles") in the region of the Maritime pre-Alps. That of the Quartier du Bois du Romet, the Castellaras de Mauvans, that of Collet Assont or Castéon Vasson, are treated with some detail. These enclosures may be due to the Liguri, but more proof is needed. A plan for the investigation of these structures is outlined, pp. 1082-1091. Some of the enclosures are double or even triple. The exact period of their abandonment is uncertain.

Götz (W.) Bulgariens ungehobene Bodenschätze. (Globus, Brunschwg., 1905, LXXXVII, 373-376.) Points out the richness of Bulgaria (particularly the east with its thousands of unexplored *kurgans*) in uninvestigated archeological remains. The *mogili* G. considers to be grave monuments. The prehistoric (pre-Thracian) period, Thracian, Greek, Christian periods, are all represented. The need of scientific investigation is great.

Grosse (Hr) Ueber einen Grabfund von Sonnenwalde im Kreise Luckau. (Z. f. Ethn., Berlin, 1905, XXXVII, 367-369, 5 figs.) Describes a peculiarly ornamented lance-point, a spindle-whorl, and a "swallow-stone," found in a burial-place of the Hallstatt epoch, to judge from the numerous fragments of prehistoric pottery of the Niederlausitz type at its height. The finds in question are, however, not of the Hallstatt period, but due to a later burial.

Grosvenor (E. A.) The evolution of Russian government. (Nat. Geogr. Mag., Wash., 1905, XVI, 309-332, 14 figs.) General historico-political sketch

of people and rulers. Author notes how environment of plain "developed those traits of sluggish patience, of long endurance, of morbid self-sacrifice, which distinctly mark the Russian people to-day." Professor G. styles the Russian "a Slavic race, a stock distinct from every other European race." The most important word in the language is *mir*, "village and village assembly." In Russia the proverb has it, "two are everywhere, God and the Czar."

Guébhard (A.) Sur un trésor de deniers romains trouvé en 1901 aux environs de Nice. (Ann. Soc. d. Lettres, Sci. et Arts d. Alpes-Mar., Nice, 1904, XIX, 79-90, 2 pl.) Describes a find of 120 Roman coins, ranging A. D. c. 615-752, from the neighborhood of Nice.

Fouilles et glanes tumulaires aux environs de Saint-Ville-de-Thiery, Alpes-Maritimes. (Bull. Soc. Préhist. de France, Paris, 1904, I, 301-310, 4 figs.) Describes tumuli and contents at St. Christophe, Mauvans, etc. At St. Christophe were found bead necklaces (of dentalium), bronze objects, pot-sherds, flints, 28 human teeth, etc. At Mauvans a portion of a human lower jaw and 300 teeth—the dentitions of 11 individuals (3 children, 3 women, 5 men) were recognized. Dr G. appends to his article an unnumbered 3 page bibliography of his various publications.

von Hahn (C.) Die Taler der "Grossen Ljachwa" und der Ksanka (Ksan) und das südliche Ossetien. (Globus, Brunschwg., 1905, LXXXVIII, 21-25.) Pages 23-25 contain notes on the Ossetes (culture, two-wheeled cars, relics of nomadic life, influence of cattle-breeding, etc.,—land and other measures, ancestor-cult, grave-sacrifice of horse, etc.). V. H. seeks to connect the old Germanic and Frankish land-measure, *bonnaricus*, with Ossetic *bon* ("day," cf. German *Morgen*), and *lungen*. The northern Ossetes differ physically and otherwise from the southern. There exists much antipathy between the Ossetes and the Grusinians. Many old heathen customs survive. While recognizing the Indo-Germanic kinship in speech, customs, etc., of the Ossetes, v. H. agrees with Count Uvarov that the archeologic data of the country indicate that Ossetic culture has been very much influenced by Asiatic (e. g. Turkic) elements.

Hammer (S. C.) and Nyhuss (H.) The Viking ship found at Oseberg. (Century

- Mag., N. Y., 1905, LXX, 729-733, 5 figs.) Brief description of excavation of Oseberg ship in 1903-04.
- Hippe** (M.) Die Gräber der Wöchnerinnen. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, VI, 101-103.) Treats of the custom of burying women dying in child-bed apart from other bodies, and near the cemetery wall, etc. Documents of the city of Breslau in 1528 and 1713 are cited.
- Kallas** (O.) Spricht man in Livland noch livisch. (Ans. d. Finn.-Ugr. Forsch., Helsingfors, 1904, IV, 61-65.) Cites evidence to show that Livonian is not yet absolutely extinct as spoken language in Livonia.
- Karjalainen** (K. F.) Ueber M. A. Castrén's transkription des ostjakischen in seinen druck- und handschriften. (Finn.-Ugr. Forsch., Helsingfors, 1904, IV, 97-112.) Discusses the transliteration of Ostiak in the published works and mss. of Castrén, who in a letter of Nov. 13, 1845, announced the completion of the ms. of his "Sketch of an Ostiak Grammar, with Vocabulary." Had Castrén, as he intended, made another visit to the Ostiaks, his work would have been much modified.
- von Keussler** (F.) Lyndanise ein geschichtlicher Ortsname. (Stzgb. d. Ges. f. Gesch., etc., Riga, 1903 [1904], 124-127.) Discusses various etymologies suggested for this word, which now appears to be a historical place-name and not merely one due to misunderstanding. Hurt cites the Estonian folk-etymology "breast of Linda (consort of the hero Kalen)." It may be, as Arens suggests, identical with Swedish *Lindandä*, said to be a translation of Finnish *Keto*, "fallow-land point."
- Klapper** (J.) Alte Arzneibücher. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, VI, 22-29.) Gives extracts from three ms. medicine-books of the 14th and 15th centuries in Breslau.
- Zur Volkskunde aus dem Goldberg-Haynauer Kreise. (Ibid., 106-110.) Records customs and superstitions relating to domestic life, peasant usages, a children's game (Kaiser Karolius), charms, beliefs in ghosts, etc.
- Knopp** (O.) Aberglaube und Brauch aus der Provinz Posen. (Ibid., 43-57.) Enumerates from German and Polish Posen 85 folk-lore items relating to love, wooing, wedding, married life, etc.; 35 relating to mother and child.
- Kossinna** (G.) Ueber verzierte Eisenlänzenspitzen als Kennzeichen der Ostgermanen. (Z. f. Ethn., Berlin, 1905, XXXVII, 369-407, 3 figs.) Treats at length of ornamented iron lance-heads as characteristic of the East Teutonic peoples, who, according to K., arose ca. 750-700 B. C., through the migration of Scandinavian hordes, who imposed themselves upon a West Teutonic population. Between the two periods of occurrence of the lance-heads in question (the close of the La Tène period and the last 150-100 years B. C.) is a hiatus of some 200 years during which they do not appear. Ornament and technique differ in these two periods, — shields, fibulae, pottery, etc., are also compared. The lance-heads of Sonnewalde (see *Grosse*) are Eastern Teutonic and belong to the 3rd or 4th century A. D.
- Zum Goldfunde von Sköfde. (Ibid., 471-472.) Discusses the ornamentation of the gold neck-rings of Sköfde and points out analogies in other parts of the Scandinavian area. Argues that the find belongs to the beginning of the 6th century A. D. See *Finn*.
- Krohn** (K.) Die fundorte der epischen gesänge des Kalevala, mit einer karte. (Finn.-Ugr. Forsch., Helsingfors, 1904, IV, 112-118.) Discusses the localities from which the epic songs of the Kalevala have been obtained. There are two chief sources, one in the south (Esthonia) and one in the north (Finnish and Russian Karelia), both of which have their subdivisions. The most important section is Wierland (Virumaa). Wandering of the songs is clearly indicated. Of Esthonian origin are the creation song, a great part of the Ainorune, search for vessel-wood, first wooing of Ilmarinen, forging of the goldmaidens, voyage (partly) with harp-playing, and the judgment of Marjatta's son. Westfinnish are the song-contest of Wäinämöinen and Joukahainen, blood-stream from W.'s knee-wound, journey to Tuonela, voyage (partly) and freeing of the sun. In Ingermanland arose Kullervo's departure; and also (after a Russian ballad) Ilmarinen's second wooing.
- Wäinämöinen's richterspruch und abschied. (Ibid., 118-134.) Discusses the judgment-song and leave-taking of Wäinämöinen in the Kalevala. The Marjatta-song is of Esthonian origin (Marketta = Marjetta), and some 20 ver-

sions of it have been found in that region. Catholic influence is evident.

- Kühnau (Dr.)** Hexen und Hexenzauber, nebst einem Anhang über Zauberer und Hexenmeister. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, vi, 82-98.) Treats of witches, their form (cats, toads, straw, whirl-wind, night-mare), favorite times (Christmas, St John's eve, May eve, etc.), dancing and music, cursing, etc. Also the witches' magic, charms, etc. (the witch-book, the little blue stone), ways of injuring people and property, protection against witch-magic and charm-breaking, power of witch over grass-growing. Charmers and witch-masters are not so evil as witches and sometimes even do good. Magic powers are attributed to the gypsies, to doctors and other learned men.

- Leite de Vasconcellos (J.)** Crioulos portugueses. Ligeia e litteratura 1899-1901. (Rom. Jahresh., Erlangen, 1904, vi, 1, 405-408.) Brief notes on publications relating to the language and literature of the Portuguese outside of Europe. The chief works have been Marqués de Barro's studies of the language, folk-lore, etc., of the Portuguese creoles of West Africa (1899-1900), Dalgado's study of the Portuguese dialects of Goa and Ceylon (1900), Negreiros' *Ile de San-Thomé* (1901), and the author's *Esquisse d'une dialectologie portugaise* (1901).

- Lissauer (A.)** Drei Slavische Schlafenringe. (Z. f. Ethn., Berlin, 1905, xxxvii, 366, 2 figs.) Note on three Slavonic head-rings (one of bronze-wire, two, hollow, of silver plate, and ornamented). The two latter are from a burial place near Kaldus, West Prussia. The field of these hollow rings is limited, and those with conventionalized animal ornaments are very rare.

- Litvinova-Bartosch (Mrs P.)** Offinitzra u seli Zemlyantel Gluchova kogo povitu na Tchernigivstshin. (Mater. Ukr.-Rus'k. Ethnol., Lviv, 1905, iv, 83-88, 11 figs.) Treats of oil-making in the village of Zemlianka in the government of Tchernigiv. Times of manufacture, preparation of seeds, oilery, and processes of oil-making are described. The crusher is quite primitive. See *Shishkevitch*.

- Lowack (A.)** Die älteste Probe schlesischen Volksdialekts im Drama. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, vi, 58-63.) Cites, with linguistic and explanatory notes, passages from a drama

in the Silesian dialect, George Gübel's *Die fahrt Jacobs des Heiligen Patriarchens* (Budissin, 1586), believed to contain the earliest example of this dialect in the drama.

- de Magalhães (L.)** Os barcos da ria de Aveiro. (Portugalia, Porto, 1905, ii, 49-62, 1 pl., 9 figs.) Describes the region of the Ria de Aveiro (formerly a branch of the sea, now a salt-lake or lagoon) in the Beira region of Portugal and the boats in use upon its waters. There is a particular type of boat corresponding to each of the chief aquatic labors of the *ria*, viz.: for salt-making, *salteiro*; for obtaining sea-weed and grass, *moliceiro*; for river transport of maritime fishing, *bateira mercantil*; for fluvial fishing, *martogeira* or *labrega* and *bateira de llhovo*. There is also the *caçadeira*, a little boat used in hunting waterfowl, etc. The prows and poops of some of the *moliceiros* are much ornamented.

- Masner (K.)** Neue Aufgaben der schlesischen Volkskunde. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, vi, 1-9.) Indicates as most important tasks of museum (institute) and folk-lore societies the collection of old folk-products in industry and manufacture and the gathering together and preservation of art products and examples of handiwork, etc. The Silesian Museum, since its foundation in 1899, paid special attention to the collection of "peasant antiquities." The Silesian Folk-Lore Society is not so narrow as to exclude folk-art from the field of its activities. Aid can come from the man of science, the artisan, the photographer (pictures of houses, furniture, tools, etc., are valuable), etc.

- de Mattos (M.)** As chaminés Alemtejanas. (Portugalia, Porto, 1905, ii, 79-84, 13 figs.) Describes the chimneys, often quite ornamental, of the houses in the Sado region of Alemtejo. There are three types—pyramidal, cylindrical, prismatic. In Ferreira occurs a curious type of double chimney.

- Mertens (Dr.)** Ein Fischepfer aus der Gegend von Fürstenberg i. M. (Z. f. Ethn., Berlin, 1905, xxxvii, 445-447, 7 figs.) Describes an 11-pronged iron fish-spear. Hr Krause adds an account of some similar fish-spears taken from Brandenburg fish-pirates. The "fish-fork" is known from the cave-men of paleolithic France.

- Mettig (K.)** Ueber die Wirksamkeit des Westfälischen Fehmgerichts in Riga.

- (Stzgh. d. Ges. f. Gesch., etc., Riga, 1903 [1904], 14-18.) Cites evidence to show that in spite of the declarations of the civil authorities and the archbishop, the influence of the Westphalian *Fehme* extended to Riga and its power was respected there.
- Ueber den Danziger Artushof und seine Bruderschaften. (Ibid., 22-26.) Resumes the recent work of Dr Paul Simon published in 1900 on the famous Artus inn and its *cameraderies*.
- Der Freiherr Bengt Horn als Ältester der Kompanie der Schwarzen Häupter in Riga. (Ibid., 44-55.) Gives an account of life and activities of Bengt Horn (b. 1675) in connection with the "Company of Black Heads," now some 500 years old.
- Neumann (W.)** Die mittelalterlichen Holzschnitzereien am Gestühl des Rathauses und der Heil. Geistkirche zu Revel. (Ibid., 5-14, 3 pl.) Describes the medieval wood-carvings (scene from Tristan and Isolde, Samson and the lion, Goliath and David, Samson and Delilah, scene from Vergil) on the seats in the town hall of Revel.
- Olbrich (K.)** Ein Freund und Förderer der Schlesischen Volkskunde vor hundert Jahren und seine Zeitschrift. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, vi, 30-43.) Treats of Georg Gustav Fülleborn (1769-1803) and his journal the *Breslauer Erzähler*, which he edited 1800-1803. Indications of the contents of this periodical relating to dialect, proverbs, folk-songs (F. had a ms. collection), superstitions, tales and legends, habits and customs, dress, domestic life, etc., are given.
- Peixoto (R.)** Sobre a vida da primitiva roda de oleiro em Portugal. (Portugalia, Porto, 1905, ii, 74-78, 5 figs.) Notes the survival of a primitive potter's wheel in various localities in the regions of Amarante and Baixo, where still exist "paneiros," as the rustic ceramic artists are popularly called, — these potters constitute "corporations" almost exclusively devoted to the fabrication of black ware. Nature of material, method of manufacture, etc., are briefly described. The wooden wheel used is of the type which possibly preceded the lathe in Europe, and goes back as far as ancient Thebes and Memphis at least.
- "Prisões" de gado. (Ibid., 78-79, 3 figs.) Note on "cattle prisons" — rings of stone embedded in the walls of buildings, to which cattle, horses, etc., are tied.
- O museu municipal de Bragança. (Ibid., 120.) Brief account of the municipal museum of Bragança and its contents (the specialty is lapidary epigraphy). The museum dates its initiation to the labors of A. dos Santos Pereira Lopo in 1896.
- Museus episcopais. (Ibid., 120-122.) Notes on the episcopal museums of Beja (founded in the last quarter of the 15th century), transferred afterward in part to Évora and Coimbra, diocesan expositions, etc.
- Excavações archeologicas. (Ibid., 122-123.) Notes on the labors of Manuel da Gama Xara and the Sociedade Archeologica Lusitana, Henriques Penheiro, Santos Rocha, etc.
- Iluminação popular. (Ibid., 35-48, 36 figs.) Treats of popular lamps and other devices for illumination from early times down to the present in Portugal. After torches came lamps, — one of the very earliest was a shell to contain the burning substance, which form later lamps imitated in clay, etc. Wicks came with the popularization of oil, and fancy and fashion modified and ornamented the receptacle, till lamps in Roman times exhibited an exuberance of decoration, which was increased during the subsequent Christian ages.
- Physical deterioration.** (Man, Lond., 1905, v, 83-84.) Text of memorial of Anthropological Institute to the Lord President of the Council, praying for the establishment of an anthropometric survey, a register of sickness, and an advisory council, as recommended by the Inter-Departmental Committee on Physical Deterioration.
- Pinho (J.)** Ethnographia Amarantina. A caça. (Portugalia, Porto, 1905, ii, 84-100, 40 figs.) Treats of hunting and trapping in the Amarante region of Portugal. A list of instruments and implements employed by the people is given, and they are described with more or less detail. Snares with and without bait (many varieties from simple to complicated); lying-in-wait (with and without decoys) and kindred devices; hunting proper (*busca*); beating, etc., are all considered. The favorite weapon of boys is the catapult (*figa*).
- Radakov (Mr. H.)** Zolotarstvo u Starobil'skomu povitt u Charkivschini. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905,

- iv, 108-113, 7 figs.) Treats of folk-jewelry (Ukrainian and Great Russian ear-rings, etc.) in the Starobilsk district of the government of Charkov, the process of manufacture, implements used, etc.
- Reindl (J.)** Die ehemaligen Weinkulturen bei Neuburg an der Donau. (Globus, Brunschwg., 1905, LXXXVII, 384-387.) Notes on former vineyards at Leithelm, Neuburg, and other places where the settlement of monks and the founding of monasteries led to the cultivation of the grape. Of the wine of Neuburg, Balde sang that "the grapes naturally weep vinegar." Viticulture flourished in this region during the Roman period. The second viticultural epoch of the Danube valley belongs with the period of the erection of monasteries.
- Rusov (M.)** Goutzarstvo u seli Oposhnf, u Poltavstchinn. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905, iv, 41-59, 12 figs.) Treats of the making of pottery in the village of Oposhnia, government of Poltava. The nature of the clay used, the various stages of manufacture (cleaning, kneading, turning, and firing), instruments used, products, etc., are described.
- Virobi z dereva s. Grunf u Poltavstchinn. (Ibid., 60-73, 9 figs.) Treats of manufacturing wooden implements (wheels, spades, barrels, and boxes) in the village of Grune, government of Poltava.
- Grebinnitzto u seli Grunf u Poltavstchinn. (Ibid., 74-81, 6 figs.) Treats of the manufacture of horn combs (processes, implements, etc.) in the village of Grune.
- Salminen (V.)** Die bedeutung D. E. D. Europeus in der geschichte der einsammlung finnischer volkspoesie. Finn.-Ugr. Forsch., Helsingfors, 1905, iv, 134-150.) Outlines the activity of Europeus (b. 1820), whose great merit is to have collected, for the new Kalevala, songs from almost every rune-locality and to have inspired the youth of the land with the same ardor and zeal for collection. His work began in the parish of Ilomantsi and in five journeys he procured for Lönnrot a folk-lore mass of ca. 2,500 songs and charms,—the totality of his collections amounted to over 3,000 songs.
- Schliiz (A.)** Künstlich deformirte Schädel in germanischen Reihengräbern. (Corr.-Bl. d. Deutschen Ges. f. Anthrop., München, 1904, XXXIV, 104-

106.) Discusses artificially deformed crania from Teutonic "Reihengräber." Most of these skulls are female and their origin may be connected with long-hairedness, according to S.—possibly due to forehead bands and other like constrictions, not for intentional deformation of the skull but for hair arrangement. Binding the child's head to a cradle-board may also have been a factor in some deformations.

Schoetensack (O.) Ueber neolithische Tongefässchen des Perm-livländischen Typus und über Kieselartefakte von Palkino, russ. Gouvernement Perm. (Z. f. Ethn., Berlin, 1905, XXXVII, 357-362, 35 figs.) Describes fragments of pottery (neolithic in technique and ornament) from Palkino (Perm) in Russia, which remarkably resemble pottery fragments from a shell-heap in Levenia, 2,000 km. distant. Also a number of flint arrowheads, etc., some rare neolithic in form.

Setälä (E. N.) Karelisches alphabet und karelische schrift aus dem 16. Jahrhundert. (Anz. d. Finn.-Ugr. Forsch., Helsingfors, 1904, LV, 55-57.) Notes an account by Simon von Salingen (ca. 1591), a Dutch merchant, of the first attempt to reduce the Karelian language to writing. This description was first published in 1773 in the *Magazin für die neue Historie und Geographie* (Halle).

— Zur lappischen bibliographie. (Ibid., 58-60.) Points out that the "Mr Orloff," minister at Piteå, was Olaus Graan, author in 1667 of several Lapp works; the "Mr Orloff" of Ume was Olaus Stephani Graan (d. 1690).

— und **Karjalainen (K. F.)** Statistische Angaben über die finnen und lappen in Norwegen. (Ibid., 65-71.) Résumés and discusses statistics of Finns and Lapps. According to the Norwegian census of 1900, there was 2,548 Norwegian-speaking Finns and 4,053 Norwegian-speaking Lapps; the Norwegian-speaking Finns were 4,766, Lapps, 14,589. Of the Lapps 1,202 were nomads. Mixed marriages are common. The Finns seem to be losing in number more than the Lapps, but the number of nomad Lapps has decreased.

Severo (R.) Os braceletes d'ouro de Amozella. (Portugalia, Porto, 1905, II, 63-71, 1 pl. 12 figs.) Treats of 20 gold bracelets (three ornamented) from the parish of Amozella and compares

them with similar objects found elsewhere. They are probably of Iberian origin, or perhaps partly Celtic.

— Os torques de Almoester. (Ibid., 72-74, 1 fig.) Describes the gold collars (torques) from Almoester, now in the Portuguese Ethnological Museum, probably belonging to the bronze age. The form is quite primitive.

— Novas descobertas de ourivesaria proto-histórica. (Ibid., 109-110.) Describes briefly the *torques* of Serrazes, the bracelet of Telões, both specimens of proto-historic gold-work, representing pre-Roman art.

— O cemitério romano do Monte do Peneco, Rio Tinto. (Ibid., 111-113, 3 figs.) Brief account of the Roman burial-place and its contents (some clay vessels, a glass vase, a bronze whorl, etc.), discovered in January, 1905.

Severo (R.) Les dolmens de Villa-Pouca d'Aguar, Trás-os-Montes. Questions d'authenticité. (Ibid., 113-117.) Cites opinions of European archeologists as to the character and importance of the finds of Villa-Pouca-d'Aguar, the genuineness of which some authorities (Reinach, Cartailhac) have doubted. Others (Astley) have recognized parallels with similar discoveries in Scotland. S. holds that these finds represent a genuine Iberic culture.

— Museu municipal "Azuaga." (Ibid., 117-119, 1 fig.) Brief account of contents of new municipal museum at Gaya, named after the zealous collector of archeological objects (presented to it), Marciano Aguaga. A description of the silver *torques* of Cortinhas (S. Mamede de Riba Tua) is added. The *torques* are of a type that survived in Roman Hispania.

— O thesouro de Lebução. (Ibid., 1-14, 2 pl., 5 figs.) Describes an ornamented gold-leaf bracelet, some fragments of a wristlet, pieces of two *torques*, etc., found in the parish of Lebução, 4 leagues from Nascent de Chaves, as a result of excavating in a vineyard. These objects, probably the work of one metallurgist, may belong to the 5-4th century B. C., or to a period anterior to that, but more likely they come within the Roman period proper.

Shishkevitch (M.) Virih oliya na Volini v Galitchini. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905, IV, 94-99, 3 figs.) Describes the making of oil in Galician Volhynia, — preparation of seeds, grind-

ing, roasting, extraction of oil, apparatus. See *Litornova-Bartosh*.

Siebs (T.) Schlesische Flurnamen. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, VI, 113-115.) Gives examples of village-field names from Seidorf and neighborhood. Important data for folklore.

Stäsche (T.) Sagen vom Alp und der weissen Frau. (Ibid., 99-101.) Gives brief legends and stories relating to the night-mare and the "white woman" from Schebitz, Klein-Ellguth, Mühlitz, Erdsdorf, Rabitor, Tarnowitz, etc., in Silesia.

Teixeira (T.) Folk-lore transmontano. (Portugalia, Porto, 1905, II, 107-108.) Gives specimens of folk-songs and poetry from Braganza, Macores, etc.

Tetzer (F.) Zur Volkskunde der Slowaken. Globus, Brunschwig, 1905, LXXXVII, 376-380, 10 figs.) Treats of the Slovaks — the southernmost section of the Czech-Moravian-Slovak stock — their dress, houses and furniture, farm-arrangements, grave-ornaments, etc. Not many of the old customs now survive (weddings retain a few), contact with their German neighbors has abolished much.

Thomaz (P. F.) Folk-lore Beirao. (Portugalia, Porto, 1905, II, 108.) Gives texts of prayers and religious poems from Beira Alta, among them a "little Pater Noster," "little Ave Maria," "little Credo," etc.

Thon (J.) Die jüdischen Gemeinden in Deutschland. (Z. f. Demogr. u. Stat. d. Juden, Berlin, 1905, I, Hft. 9, 1-9.) Contains religious statistics. The best attention to religious services is paid by the Jews of Alsace-Lorraine, Bavaria and the other South-German states; of the Prussian provinces, Hesse-Nassau, Posen and Silesia.

Verelotenik (A.) Olini u rivnichno-schidni Galitchini. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905, VI, 89-93, 4 figs.) Describes oil-making (hemp and flax) in north-eastern Galicia. A mortar worked by foot is used, — the old press was by wedges, the modern by screw. The "flour" is roasted, put in a bag and pressed.

Volkov (T.) Virobi peredmikensikovo tiru u neolitichnich stanovistchach na Ukraini. (Ibid., (1)-(27), map.) Lists, with notes and map, 45 neolithic "stations" in the Ukraine. An abstract of

- this article was reviewed in the *American Anthropologist*, 1902, N. S., 778.
- vom Walde (P.)** Lock- und Scheuchnamen für Haustiere. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, VI, 110-112.) Lists names used to call and drive away domestic animals in Silesia, — geese, ducks, hens, doves, horses, cows, calves, goats, sheep, swine, dogs, cats.
- Werner (Hr.)** Ueber primitives Handwerkszeug. (Z. f. Ethn., Berlin, 1905, XXXVII, 355-357, 3 figs.) Describes "skin bones" of animals used by butcher in skinning dead animals; part of tongue-bone of cow used by butchers in cleansing tripe; bone used by saddlers in imposing pieces of leather one upon another; bone used for smoothing by hand-weavers; a hair-ball from the stomach of a cow, used by a carpenter to polish wood; a small stone ax found in a field by a peasant who added a wooden handle and used it for several years.
- Zubritzki (M.)** Godivlya kurno i prodazh ovets' u Mshantel starosamburs' kovo povitu. (Mater. Ukr.-Rus'k. Etnol., Lviv, 1905, IV, 1-40, 5 figs.) Treats of sheep raising and selling in the village of Mshantel, district of Staro-Samvir in Galicia. Winter, summer, and autumn care of flocks; housing up of shepherds and sheep; bringing up of lambs; milking and disposal of milk products; use of wool, etc.; property marks.

AFRICA

- Ankermann (B.)** Kulturkreise und Kulturschichten in Afrika. (Z. f. Ethn., Berlin, 1905, XXXVII, 54-90, 5 maps.) Discusses culture-areas and culture-strata with respect to distribution of house-forms, weapons (spear, bow, arrow, club, sword, sling, shield, etc.), clothing and ornament, mutilation, circumcision, musical instruments, "pillow," basketry, social organization, iron smelting. The following culture-areas are recognized: West African (against which may be set off all the rest of the continent except Madagascar, south of the Sahara, in some respects), South Africa (to the Zambesi and the Kunene), East African (from the Zambesi to the Tana), the eastern horn (with Abyssinia) the upper Nile region, the rest of the Sudan (with a western and eastern province). The culture-strata distinguished are: Nigritian (partly pan-African,

partly local), corresponding to the oldest Australian stratum; West African, corresponding to the east Papuan, and probably originating from Indonesia; a stratum (of Indonesian origin) corresponding to the west Papuan; a stratum (finding analogies in Hindustan) represented chiefly in the western Sudan; a Hamitic, or old Semitic, stratum in the Sudan, East and South Africa; a modern Semitic (Arabic) in the same regions as the last. The cultural dependence of Africa upon Asia, is, according to A., very marked, both for the western and the southern regions of that continent. A. does not attribute the origin of iron-smelting to the negro. The Sudan culture had both western and eastern factors. Important for culture in the south African area is the foreign (south Arabian) people of the gold country between Zambesi and the Limpopo.

- Elmendorf (D. L.)** The edge of the desert. (Scribner's Mag., N. Y., 1905, XXXVIII, 319-330, 16 figs.) Treats of El Djem, the Roman Thysdrus or Thysdrutana Colonia, its great amphitheater, etc., and Tingad (ancient Thangudi) now being excavated by the French government.

- Hail (R. R.)** Paleolithic implements from the Thebaid. (Man, Lond., 1905, V, 33-37, 1 pl. 2 figs.) Discusses briefly views of Beadnell, Schweinfurth, Blanckenhorn, etc., and describes flints (obtained in 1904 by author and Mr E. R. Ayerton) in comparison with British paleoliths. H. finds evidence of water-erosion at Thebes. The desert surface where the best implements were found was "evidently very ancient and undisturbed, everything, limestone as well as flints, being black with weathering." At p. 72 H. has another brief note on the subject.

— The early occurrence of iron in Egypt. (Ibid., 69-71.) H. holds that "worked iron was known to the Egyptians as early as the days of the Old Empire." Also that the Great Pyramid fragment of iron is contemporaneous with the pyramid itself. The word *As* ("metal," originally) was used also at an early period in the sense of "iron." It is not inherently improbable that iron was occasionally used in Egypt at an early period, far earlier than in Europe. Many negro tribes have worked iron from time immemorial and have never passed through a copper age. The knowledge

- of worked iron may have reached Egypt from inner Africa.
- Hobley** (C. W.) Further notes on the El Dorobo or Oggiek. (*Ibid.*, 39-44.) Brief notes on tribes, list of clans, comparative vocabularies of some 140 words in several dialects. Also vocabulary of 50 words (Neuman) from the isolated Mogogodo. The Dorobo, seen by the author in 1891, are forest hunters — the Digiri clan are bearded and have a female chief.
- Hollis** (A. C.) Masai ear-ring of stone. (*Ibid.*, 22, 1 fig.) Describes stone ear-ring used by Masai boy of 14 to distend ear-lobe. The ear-lobes are considered right when they meet on top of the head.
- Hosfeld** (C.) Ein Beitrag zur ostafrikanischen Lyrik. *Globus*, Brnshwg., 1905, LXXXVIII, 82-83.) Gives texts, music, and translations of four brief songs (slave, girl, young man, child) of the Wanyamwezi of eastern Africa.
- Joyce** (T. A.) Steatite figures from West Africa in the British Museum. (*Man*, Lond., 1905, V, 97-100, 1 pl., 2 figs.) Describes two recently acquired soap-stone figures from Mendiland, "one of which is not only an unusually well-finished example, but in design, as far as I am aware unique" — the human figure is recumbent on an oblong plinth. Another unique figure (seated native) from Mendiland is also described. These images, called *nomori*, or "farm devils," have some connection with the agricultural rites and beliefs. They are probably due to a local and indigenous art. J. thinks that "many small points of correspondence between civilized Egypt and savage Africa may be explained by this very natural assumption of a common ethnographical element, indigenous in character."
- Kyle** (M. G.) Egyptian antiquities in the Free Museum of Science and Art of the University of Pennsylvania. (*Rec. of Past*, Wash., 1905, IV, 259-266, 10 figs.) Treats of the Mena tablet of ebony (one of the oldest wood-carvings in the world), the stele of Qa-Sen (first dynasty), a large alabaster vase of Kha-Sekhenn (second dynasty), a fragment of burnt ivory with inscription, early burial cases, an ancient door-socket, painted pottery, portrait panels from early Christian coffins, etc.
- Lang** (A.) The religion of the Fana. (*Man*, Lond., 1905, V, 54-55.) Résumé and critique of article on same topic by E. Allégret in the *Revue de l'Histoire des Religions* for Sept.-Oct., 1904, which "tends to confirm my own ideas about early religion." L. believes that "everywhere we find traces of the All-Father belief yielding, among the Kaitish, to the Alcheringa and evolutionary hypothesis; among the Fana, to ancestor worship, and apparently extinct among the Arunta and other northern tribes." The African Fana and the Australian Kaitish are held by L. to support his views.
- Mochi** (A.) Lo scheletro di un Dancalo di Assab. (*A. p. l'Anthrop.*, Firenze, 1904, XXXIV, 403-428, 1 pl.) Describes, with details of measurements, skull, long-bones, pelvis, etc.; development of muscular system, etc., of an adult Danakil (skeleton found in 1882 near Assab). The stature (estimated) is 1745 mm., limbs long, skull mesocephalic (78.9), capacity 1475 c.c. Dr M. considers that negro admixture is not present, — the race is relatively purely represented.
- Mullen** (B. H.) Fetishes from Landana, South-west Africa. (*Ibid.*, 102-104, 2 figs.) Brief account of *mangaka* (wood male figure), a men's fetish, and *kawa* (wood figure of dog with head at each end), a woman's fetish. The preparation and use of fetishes are described.
- Nevinson** (H. W.) The new slave trade. (*Harper's Mo. Mag.*, N. Y., 1905, CXI, 341-350, 535-544, 16 figs.) First two sections (down the west coast, West African plantation life to-day) of article giving results of author's investigation of the slave trade still existing in Africa.
- Oestliche** (Die) Elfenbeinküste. (*Globus*, Brnshwg., 1905, LXXXVII, 387-393, 6 figs.) Contains notes on the Attié of Alepe, Mope, etc., whose funeral customs are described. The Attié make a soap from the ashes of banana-skins and palm-oil. Every village has a blacksmith. The white men are believed to live under water, where they have no women and the natives fear they may lose theirs.
- Thomson** (A.) Composite photographs of early Egyptian skulls. (*Man*, 1905, V, 65-67, 1 pl.) Notes on composite photographs of 12 negroid males; 26 non-negroid males; 11 negroid females; 16 non-negroid females, from the ancient Thebaid. Non-homogeneity of population seems clearly indicated by the characteristic differences in the facial features.

- Note on Dr. Keith's review of "The Ancient Races of the Thebaid." (*Ibid.*, 101-102.) T. reasserts his belief in the racial heterogeneity (negroid, non-negroid) of the skulls in question.

ASIA

- Austin** (O. P.) The commercial prize of the Orient. (*Nat. Geogr. Mag.*, Wash., 1905, xvi, 399-423, 19 figs.) Calls attention to the "extraordinary physical difficulties which have attended efforts of the Occident to cultivate commerce between these two great sections of the world, and the difficulties which still exist in the Orient itself, but which are likely to be overcome in the near future." Without transportation there can be no commerce.
- Biasutti** (R.) Il Tibet secondo una vecchia relazione italiana. (A. p. l'Antrop., Firenze, 1904, xxxiv, 453-459.) Résumés and discusses C. Piumi's recent publication *Il Tibet (geografia, storia, religione, costumi) secondo la relazione del viaggio del P. Ippolito Desideri, 1815-1721* (Roma, 1904).
- Blaukenhorn** (D. M.) Ueber die Steinzeit und die Feuersteinartefakte in Syrien-Palästina. (*Z. f. Ethn.*, Berlin, 1905, xxxvii, 447-471, 17 figs.) Treats of the stone age and flint artefacts in Syria-Palestine. Five modes of occurrence are noted: Surface of plateaus or sides of mountains (older paleolithic, but partially also genuine eolithic); coastal plain (half paleolithic, half neolithic); valleys (mostly late paleolithic, or even later); caves or grottos (paleolithic and neolithic); beneath surface at places of fixed settlement (neolithic to iron age). A sixth category (beginning with the bronze age) might be added for those coming from certain graves, e. g., in Samaria. These various types are discussed with some detail and the particular localities of their occurrence indicated. B. recognizes 10 different periods in the history of man in Syria up to the Christian era: Eolithic, older paleolithic (Chelléan), middle paleolithic (Mousterian and lower Solutrean or Eburnean), late paleolithic (Magdalenian), early neolithic (ca. 10,000-5,000 B. C.), late neolithic (ca. 5,000-2,000 B. C.), bronze age (2,000-1,250 B. C.), beginning of iron age (1,250-1,050 B. C.), period of Israelitic kingdom (1050-600 B. C.), period of foreign rules and of the Mac-
- cabae (600 B. C. to Christian era). The characteristics of each age are briefly given.
- Braithwaite** (E. E.) The Semitic Museum of Harvard University. (*Rec. of Past*, 1905, iv, 243-251, 6 figs.) Brief account of museum and contents (library, Assyrian room, oldest material, Biblical material, miscellaneous, Palestinian room). — "a magnificent collection of Semitic material so finely housed and so splendidly arranged."
- Brown** (J. B.) The Great Wall of China. (*Proc. Delaware Co. Inst. Sci.*, Media, Pa., 1905, i, 2-7.) General description. Author visited it near Shan Hai Quan on the Pechellee gulf, 27 years ago.
- Cordel** (Hr.) Ueber die Ausstellung der von der Turfan-Expedition mitgebrachten Sammlung. (*Z. f. Ethn.*, Berlin, 1905, xxxvii, 412-414.) Brief notes on the collection of Prof. Grünwedel and Dr. Huth from Turfan, — reprinted from the *Vossische Zeitung* of Feb. 21, 1905.
- Deutschen** (Die) Grabungen in Babylon und Assur. (*Globus*, Brunschwg., 1905, lxxxviii, 124-126.) Résumés Andrae's report on his excavations in Assur (graves, building-technique and material, sculpture, metallurgy, tiling, etc.), published in the *Mitteilungen der Deutschen Oriental-Gesellschaft*.
- Easter** (J.) Archeological discoveries as related to the Bible. (*Rec. of Past*, Wash., 1905, iv, 234-241.) Treats of identification of places, facts explanatory and confirmatory of Bible statements, intelligence of the ancients, etc.
- Elwin** (A.) Ancestral worship. (*J. of Trans. Victoria Inst.*, Lond., 1904, xxxvi, 67-84.) Treats of ancestral worship as the religion of the Chinese, from the Christian point of view.
- Gilbert** (O.) Die Kelischin-Stele und ihre chaldäisch-assyrischen Keilschriften. (*Globus*, Brunschwg., 1905, lxxxviii, 31.) Résumés article by Dr W. Beick in *Anatole* (Vol. I, Hft. 1), a new journal devoted to the scientific investigation of the Orient. The inscription in question is purely religious, relating to the god Chaldi.
- Giovannozzi** (U.) Crani arabi del Museo Antropologico di Firenze. (A. p. l'Antrop., Firenze, 1904, xxxiv, 333-353, 1 fig.) Describes, with measurements, 3 male and 3 female crania, from the Sinai peninsula, collected by de Langier and presented to the Museum in 1894-96. Of these skulls 3 are brachy-

- cephals and 3 dolichocephals, indicating that the Arabs of this region are not an unmixed race.
- Hawe's** *Wanderungen auf Sachalin*. (Globus, Brunschwig, 1905, LXXXVIII, 59-62, 7 figs.) Résumés the facts relating to Saghalin in the German translation (*Im Aussersten Osten*, Berlin, 1905) of C. H. Hawe's recent book of travels from Korea to Saghalin.
- Huntington** (E.) Climate and history of eastern Persia and Sistan. (Rec. of Past, Wash., 1905, IV, 205-219, 4 figs.) Treats of ancient climate, Alexander's march, desiccation of ancient ruins (Neh, Merv, Balkuwi, Anau), cause of depopulation of Iran, legends, etc. Reprinted from the author's *Explorations in Turkestan*.
- K.** (W.) Eine chinesische Badenstalt in Kautschou. (Globus, Brunschwig, 1905, LXXXVIII, 27-29, 5 figs.) Describes a Chinese bathing establishment in Kautschou. Author thinks Chinese less uncleanly than is commonly believed.
- Lauffer** (B.) Chinesische Altertümer in der römischen Epoche der Rheinlande. (Ibid., 45-49, 2 figs.) Treats of seemingly Chinese vases, etc., from finds of the Roman period in various parts of the Rhine country (four vessels found near the Porta in 1829; an ornamented vase found near Harzheim in 1846, containing a small bronze figure of Hindu origin). L. considers these to have reached the Occident in the way of commerce rather than to have come with some Asiatic legion.
- Lissauer** (A.) Die Schädel aus Turfan. (Z. f. Ethn., Berlin, 1905, XXXVII, 421-432, 11 figs.) Describes, with measurements, three (skulls, two adult, one child) from burial-places in Idikutshari, Chinese Turkestan. One of the skulls belongs to the Uigurs — the others in all probability also are of this Turkish type — and represents this people in its primitive home. The cephalic indices are respectively 90.6, 90.1, 80.1.
- Martin** (W. A. P.) An ancient tablet at Wuchang. (Record of Past, Wash., 1905, IV, 275-276, 1 fig.) Brief account of stone tablet with inscription in honor of Yu Wong, whose engineering exploits are said to have been achieved *ca.* 2300 B. C. The monument is not genuine, but goes back to 1000 B. C.
- Müller** (F. W. K.) Eine chinesische Weltkarte. (Z. f. Ethn., Berlin, 1905, XXXVII, 366.) Note on a Chinese map of the world (now in the Berlin Museum für Völkerkunde), dating from 1674 A. D., found in 1900 in the Peking Observatory.
- Ueber die kultur- und sprachgeschichtliche Bedeutung eines Teiles der Turfan Handschriften. (Ibid., 414-415.) Enumerates the chief types of MSS. in the Grünwedel — Huth collection from Turfan: 1. Chinese texts (Buddhist sutras from the T'ang period 6-9 century B. C.). 2. The remarkable writing (beginning of 11th century A. D.) of the Si-Hia or Tangut. 3. The rune-like writing of the Kōk-Turkish fragments. 4. Fragments in Pags-pa writing (variety of Tibetan during Mongol lordship). 5. Fragments in Uigur writing, partly in an Iranian language. 6. Ms. in Mongolian writing (derived from Uigur). 7. Fragments in the common Tibetan writing. 8. Fragments in Syrian-Nestorian writing, proof of the existence of Christian colonies in Turkestan. 9. Fragments in a modification of the Syrian *Estrangelo* writing in three different languages Pehlevi, Sogdianian, and old Turkish.
- Offord** (J.) Recent discoveries in western Asia. (Amer. Antiq., Chicago, 1905, XVII, 1-5.) Notes on investigations and publications of Toscanne (statues of Gudea), Fossey (Assyrian magical texts), King (records of Tukulti Ninib), de Morgan, van Brauteghem (Elamite statues), Johns, Hilprecht, and Clay (Assyrian deeds, business documents, etc.).
- The omen and portent tablets of the Assyrians and Babylonians. (Ibid., 69-72.) Résumés data on animal omens (forecasts), auguries from fire, dreams, changing colors of water, etc., in A. Bos-sier's recent *Choix de textes relatifs à la divination Assyro-babylonienne*.
- Oppert** (G.) Die Gottheiten der Indier. (Z. f. Ethn., Berlin, 1905, XXXVII, 296-353.) First part of an elaborate and detailed description and discussion of the deities of the Hindus and their chief characteristics. After an introductory chapter on the peoples of India, Dr O. treats the Vedic theogony of the Aryans in India, each deity being taken up, with more or less detail, by name and title. In very early prehistoric times non-Aryan ideas seem to have influenced the thought of the Hindus, — the effect, *e. g.*, is seen in the figure of the goddess Aditi.
- Proctor** (H.) Elohim: The object of primeval worship. (Amer. Antiq.,

- Chicago, 1905, XXVII, 33-34.) P. argues that the term *Elohim* expresses a "compound unity" of the Godhead, not an absolute unity, — "the Christian idea of the Godhead is far nearer to that taught by Moses, and in the whole Hebrew Tanach, than the Jewish conception of the present day."
- The Hebrew alphabet. (*Ibid.*, 97-98.) Argues that the Hebrew sacred square characters did not descend from the Phœnician alphabet, but were "directly derived from hieroglyphic objects, the names of which they still bear."
- Schmidt (H.)** Eine kleine silberne Schale. (*Z. f. Ethn.*, Berlin, 1905, XXXVII, 438.) Describes a small silver vessel from Bokhara, ornamented with figures from Greco-Roman mythology. The vessel must have reached central Asia from the Occident about the time of the early Roman empire.
- Starr (F.)** Ainu terms of relationship. (*Amer. Antiq.*, Chicago, 1905, XXVII, 99-101.) Gives 56 terms (father . . . great-great-granddaughter) of relationship obtained in 1904 from the Ainu at the St Louis exposition. Compares these with Morgan's Ganowanian and Turanian classification. S. observes "the Ainu system is not a good example of the Turanian classificatory form, although it presents two of its most striking indicative features, the eighth and tenth."
- Stöner (Hr)** Ueber die kultur- und sprachgeschichtliche Bedeutung der Brāhmītexte in den Turfan-Handschriften. (*Z. f. Ethn.*, Berlin, 1905, XXXVII, 415-420.) These Brāhmī texts (used for Sanskrit writings 350 A. C. to 350 A. D.), written in alphabets, the precursors of the so-called "northern alphabets," to which goes back the later Nāgarī, the form of writing most commonly used for Sanskrit, are of great importance for the history of Buddhism. Among the fragments in question is a Sanskrit canon of the Turkestan Buddhists. These fragmentary mss. also prove the existence of an "Old Turkish" language. The block-prints are likewise valuable and interesting.
- Thompson (R. C.)** A note on Sinaitic antiquities. (*Man*, Lond., 1905, V, 87-91, 6 figs.) Describes the ruins of the Egyptian temple to Hator, near the turquoise mines at Sarābit el-Khadm, explored as early as 1845 by the Lepsius expedition. The number of monumental stelæ is large, — some still stand in their original positions. T. disputes Petrie's view that the temple was Semitic. An instance of modern Arabic "fire-jumping" is noted. The "heart-plant" of Assyrian incantations, the *Hyatycamus muticus*, still grows in the northern part of the peninsula.
- Von Hanoi nach Longtscheu.** (Globus, Brnschw., 1905, LXXXVIII, 120-124, 5 figs.) Résumés account by Henri Turot of a journey from Hanoi to Longtscheu, published in the *Tour du Monde*. Contains some notes on the Muong, etc.
- W. (R.)** Zur Anthropologie der Mongolen. (*Ibid.*, 49.) Résumés Birkner's paper with this title noticed in the *American Anthropologist*, 1905, N. S., VII.

INDONESIA, AUSTRALASIA, POLYNESIA

- Balfour (H.)** Bird and human designs from the Solomon islands, illustrating the influence of one design over another. (*Man*, Lond., 1905, V, 81-83, 1 pl.) B. produces evidence to show that "the extreme prognathism which prevails so much in representations of the human form among the coastal peoples of the Solomon islands, is due to the influence of the bird designs upon them, which has had the effect of causing an unnatural projection of the facial region in correspondence with the prominent beak of the frigate bird." Native drawings show a like influence. The well-known "canoe-prow gods" exhibit extreme prognathism of frigate-bird origin.
- Bolk (L.)** Das Gehirn eines Papua von Neu-Guinea. (*Petr. Camp.*, Nedrl. Bijdr. Anat., Amstd., 1905, d. II, 347-366, 12 figs.) Detailed description of the (preserved) brain of a Papuan (died of pneumonia) from the southern coast of German New Guinea. The brain was rather poor in convolutions, but exhibited no marked peculiarities *sui generis* — combinations of individual characters rather than individual characters themselves, make up the "foreign" aspect.
- Costenoble (H. H. L. W.)** Die Marianen. (Globus, Brnschw., 1905, LXXXVIII, 4-9, 72-81, 92-93, 10 figs.) Treats of physical features of the islands; flora and fauna; population (as evidences of a former pre-Chamorroan people the stone blocks and columns and "skull caves" are cited), now a mixed race

called Chamorros (Spanish-Chamorro-Kanaka-Tagal-Chinese-Japanese-German, etc.)—there are besides 10 pure blood Spaniards, 100 Germans, 200 Americans; language; religion; manners and customs (effect of Americanization, etc.); house-building; agriculture and agricultural implements; clothing; festivals and dances (the Carolinians are more socialistic than the Chamorros); trade and commerce; future of the islands (a new régime is needed). The Carolinians are in many ways more primitive than the Chamorros.

Edge-Partington (J.) Note on a forged ethnographical specimen from the New Hebrides. (*Man*, Lond., 1905, v, 71-72, 1 fig.) Describes a "sort of hybrid between a pig-killing club and a shell adze," carved in New Hebridean style. Such objects are made by natives "for the trade."

Gannett (H.) The peoples of the Philippines. (*Trans. Eighth Intern. Geogr. Congr.*, Wash., 1905, 671-975, map.) Gives results of Dr D. P. Barrows' investigations for U. S. Census. G. agrees with Dr B. in styling all Filipinos (except Negritos, Chinese, and other immigrants) Malays. There are 8 civilized and not more than 16 "wild" peoples; the number of "tribes" and "peoples" has been exaggerated both by travelers and men of science. Indeed, "in the ordinary acceptance of the word there is absolutely no tribal organization either among the civilized or wild people." The most numerous people are the Visayans. The Negritos count 23,000, the Igorots 200,000.

Gräbner (F.) Kulturkreise und Kulturschichten in Ozeanien. (*Z. f. Ethnol.*, Berlin, 1905, xxxvii, 28-53, 6 sm. maps.) Author distinguishes five culture areas and strata: 1. Nigritian (Australia and part of Melanesia.) 2. West Papuan. 3. East Papuan. 4. Melanesian. 5. Polynesian. The chief characteristics of each are given. The oldest culture-stratum is that represented by the Tasmanians; next comes the earliest Australian culture besides which the west and east Papuan have left their mark on the continent, all later ones have merely touched the northern coast). The Melanesian appears essentially as a land culture. The historic period of Oceania begins, in a way, with the Polynesian culture, when for the first time appears a pronounced, unitary culture

with a strongly developed political element. The Polynesians came originally from Asia; the Melanesians find their nearest analogues in the culture of some of the natives of the Philippines (perhaps also the eastern Himalaya lands); the Nigritic and East Papuan suggest relation with Africa. In southern Asia "lies the key for ethnic connections between Oceania and Africa." The characteristics of the various culture-areas, etc., are briefly indicated.

Grosvenor (G. H.) A revelation of the Filipinos. (*Nat. Geogr. Mag.*, Wash., 1905, xvi, 139-192, 130 figs.) Summarizes U. S. census report of March, 1903. Population is given as 7,635,426, of which 6,987,686 "enjoyed a considerable degree of civilization," the remainder, 647,740, being "wild people." Except the Negritos all the natives are Malay. The amount of literacy is "surprising." There are 13,400 *barrios* or villages averaging 500 people each. The Ilocos are most migratory.

Haddon (E. B.) Note on the people of Borneo. (*Man*, Lond., 1905, v, 22-25.) Compares Dr A. C. Haddon's studies of the natives of Sarawak with the Kohlbrügge-Nieuwenhuis data from Dutch Borneo. The ethnographic conditions are simpler in the latter region.

— Studies in Bornean decorative art: I. Patterns derived from the roots of the fig-tree. (*Ibid.*, 67-69, 4 figs.) Describes patterns on bamboo thread-holder derived from the roots of the parasitic fig-tree (*Urostigma* sp.), which seem to have appealed much to the native mind. Dr H. notes that "the men usually affect patterns derived from plants, whereas the designs employed by the women to decorate their cloths are mainly animal derivatives." Moreover, "not only are the majority of the motives employed by the one sex entirely different from those in favor with the other, but the treatment of the motives is also quite different."

— Tattooing at Hula, British New Guinea. (*Ibid.*, 86-87, 2 figs.) Describes briefly the *alo* tattooing (photographed by the late A. Wilkin). Among the Motu women are richly tattooed, men less so. The designs are painted on the skin, then pricked in. In the Rigo district tattooing on either side of the vulva is necessary for wifehood.

Morris (Margaretta) The influence of war and of agriculture upon the religion of Kayans and Sea Dyaks of Borneo.

(J. Amer. Orient. Soc., N. Y., 1904, XXV, 231-247.) The conflict in religion of the tutelary spirits of war and of agriculture represents a conflict in economic pursuits. The author illustrates from the religion of these two native tribes how war and rice-culture, as means of livelihood, necessarily "require different manner of life, different laws and customs, different organization of society, and different personal qualifications." In both tribes both activities are well developed. Head-worship originated in conquest and its growth parallels an increasing economic importance of war. The war-path leads to the domination of the fighting men, agriculture favors the women who do most of the farm work. In Sea Dyak religion feminine ideals are far more conspicuous; with the Kayans the legendary heroes and gods are characteristically virile. With the former the part taken by women in ritual is also much greater. With the Kayans conquest preceded cultivation; the Sea Dyaks, from peaceful agriculturists, were taught by the Malay to be also seafarers and pirates.

Parkinson (R.) St. Matthias und die Inseln Keruë und Tench. (Globus, Brunschwg., 1905, LXXXVIII, 69-72.) Notes of a visit in April, 1905 (P. was the first white man to reach Keruë and Tench). Clothing, weapons, houses, fishing-gear, canoes, ornaments, traffic, weaving, language, etc., are briefly treated. The people of Tench are very primitive and much isolated—they do not understand the language of St Matthias. The Emirau (of Keruë), like the people of St Matthias, show more signs of Micronesian admixture than is the case in the Admiralty islands.

Schellong (O.) Einige Bemerkungen über die Fahrzeuge (Kanus) der Papuas von Kaiser-Wilhelmsland (Neu-Guinea) und dem Bismarck-Archipel. (Int. A. f. Ethnogr., Leiden, 1904, XVI, 176-179, 5 fgs.) Describes the canoes of the natives of the N. E. coast of New Guinea (Finschhafen), the Duke of York group, and New Ireland (New Mecklenburg). The boats of the Tami islanders are very fine. In the village of Lassuck Dr S. met with the simplest kind of a boat—three tree trunks bound together.

Schmeltz (J. D. E.) Geklopte boom-schors als kleedingsstof op Midden-Celebes. Anvullingen en verbeteringen.

(Ibid., 180-193.) Additional data (and correction) to those in Adriani and Kruijt article on the same subject in vol. XIV. Comparative notes on the ethnology of beaten bark clothing. See *American Anthropologist*, 1902, N. S., IV, 175.

— Die Stämme und der Südküste von Niederländisch Neu-Guinea. (Ibid., 194-242, 6 pl., 3 fgs.) After a historical introduction, Dr S. treats of the Tugeri and Toro, etc. (position of woman—slaves, clothing and ornament, dwellings and furniture, food, weapons, traffic, canoes, disease, music, dance, etc.). Pages 211-223 are occupied by a description of the collections (foods and narcotics, and objects used in connection therewith; clothing and ornament; house-ornament and furniture; objects concerned in transportation; weapons and tokens of peace and their ornamentation; music) of H. W. Bauer and E. F. T. Bik; and 226-241, by a Dutch-German-S. O. New Guinea and S. O. New Guinea-Dutch-German vocabulary. A brief Dutch-German-Tugeri vocabulary is also given, and on page 241 a brief comparative word-list by S. H. Ray in 10 New Guinea languages.

Schmidt (P. W.) Die Bainingssprache, eine zweite Papuasprache auf Neupommern. (Globus, Brunschwg., 1905, LXXXVII, 357-358.) From peculiarities of personal and possessive pronouns, noun (grammatical gender, etc.), adjective, numerals, verb, S. argues that the Baining language, spoken in the mountains of the interior of the Gazelle peninsula in New Pomerania is of Papuan stock. There is a very interesting class of diminutives and augmentatives in Baining. Its formations are rich and complicated.

Schootensack (O.) Tasmanische Steininstrumente. (Z. f. Ethn., Berlin, 1905, XXXVII, 362-365, 6 fgs.) Describes briefly six stone implements near Hobart, Tasmania, now in possession of Prof. G. Boehm of Freiburg i. B., their manufacture and use, etc. The Tasmanian "knives" had no handles, and S. thinks that the adaptation of these rude implements made it possible to develop the rich musculature of the hand and the forearm, so as to permit the technical and artistic achievements of paleolithic man of the glyptic period and of certain modern primitive peoples.

Schultz (Dr) Eine Geheimsprache auf Samoa. (Globus, Brunschwg., 1905,

LXXXVIII, 17.) Note, with specimens, on a secret language, called *gagana liliu* ("turned round speech") in use chiefly among the youth of Samoa.

Seidel (H.) *Ueber Religion und Sprache der Tobiansulaner*. (Ibid., 14-16.) Discussion of data concerning "temple," priests, burial customs, language of the two islands of Sonsol and Tobu, — based chiefly on Kubary's *Ethnographische Beiträge zur Kenntnis der Karolinen-Archipels* (Leiden, 1895). A comparative vocabulary of twenty words is given. The chief deity of Tobu is Yarris. Traces of American-Hawaiian influences are suggested by Kubary.

Seligmann (C. G.) Note on a skull prepared for purposes of sorcery, from the Mekeo district, British New Guinea. (Man, Lond., 1905, v, 49, 1 pl.) Describes briefly young adult skull with cane frame-work and lashings, to which are fastened two boar's tusks, fringe of human hair, tufts of feathers, bunches of herbs, quartz pebbles, and other charms, etc. The purpose of the skull is said to be to procure the death of an enemy (previous to its use the skull must have lain a long time in the jungle, to judge from its condition).

— Further note on the progress of the Cook-Daniels expedition to New Guinea. (Ibid., 52-53.) Notes that the natives of the Trobriands and their "outliers" (the little visited Marshall-Bennett-group) are totemic, with well-defined system of chiefship. The Marshall-Bennett islanders are probably identical with the natives of Murua. The stone-adz quarry at Sologa was visited. At Waga waga extremely ceremonial cannibalism exists.

Thomas (N. W.) Baiaime and the bell-bird. (Ibid., 49-52.) Discusses data from Henderson, Macarthur, Günther, etc., to show that Tylor's theory of the missionary origin of Baiaime between 1830 and 1840 is "entirely untenable." It is a question "whether Baiaime is a sublimated bell-bird, or the bell-bird a decayed Baiaime." Among the Ura-buuna the Willyaru ceremony commemorates the victory of the bell-bird (*Oreocitta cristata*) over the eagle-hawk.

Wotherspoon (A. S.) A curious belief. (J. Amer. Folk-Lore, Boston, 1905, XVIII, 157.) Brief account of the Filipino belief in the "Assvan" and the "Tic-Tic," his servant, cannibal creatures who live in the roots of the big mango-trees.

AMERICA

Amateca (The) tribe in Mexico. (Amer. Antiq., Chicago, 1905, XXVII, 38-39.) Notes on the legends concerning the Amatecas, whose descendants still live in Amatlan de los Reyes in the State of Vera Cruz.

Barry (P.) Traditional ballads in New England. I. (J. Amer. Folk-Lore, Boston, 1905, XVIII, 123-138.) Gives various versions (text and music) from New England of: The golden vanity, Lord Thomas and fair Annett, The two sisters, Lady Isabel and the Elf-knight, the George Aloe and the Sweepstake, Henry Martin, the mermaid, Captain Ward and the Rainbow. Of the versions collected by B., "the best of them, those whose antiquity is most clearly attested, come from Vermont; the greater number are from Massachusetts." In two years the author has met with "66 versions of 14 of the ballads represented in Professor Child's volumes."

Bierbower (Mrs. S.) Among the cliff and cave dwellings of New Mexico. (Rec. of Past, Wash., 1905, IV, 227-233, 6 figs.) Extracts from diary, June 16-29, 1900, of a general character, relating to Santa Cruz, Santa Clara, and Pulvadera cañon.

Blakiston (A. H.) Prehistoric ruins of northern Mexico. (Amer. Antiq., Chicago, 1905, XXVII, 65-69.) Brief account of the adobe ruins of Casas Grandes, on the western bank of the Piedras Verdes river in Chihuahua, visited by Bartlett in 1854. Pottery, metates, etc., besides many skeletons have been found. These ruins are attributed to the Aztecs.

Boyle (D.) Canadian Indians in 1904. (Man, Lond., 1905, v, 55-58.) Gives statistics from Report of Department of Indian Affairs for 1904, — in 1903 Indians numbered 108,233, in 1904, 107,978, and the Supt. of Indian Affairs calls in question the belief that they are "a dying race." (B. thinks that, while they may be holding their own, "miscegenation as well as disease is slowly doing its work.") In Ontario, Quebec, and Nova Scotia a slight increase in population is noted; the highest death-rate is in British Columbia. The farming of the Six Nations and Mississaugas, in some cases, shows results as good as those of the whites. The Indian still prefer living in communities of their own.

— Notes on some specimens. (Ann. Arch. Rep. 1904, Toronto, 1905, 17-39, 52 figs.) Describes stone pestle or hammer from Rideau valley, rubbing-stones from Brantford and Blenheim townships, unfinished "woman's knife" from Scarborough township, stone "file" from Wentworth co., bear and beaver-tooth tools from Balsam lake, stone axes from Arizona and Lincoln co. (Ontario), chisels or club spikes, stone gouges from various parts of Ontario, stone and clay pipes (among them "the largest, and in some respects the most remarkable effigy stone pipe, or pipe-bowl ever found in Ontario", — a surface find from the township of Tiny), bone "feather (or quill) holders" and buttons (rather than "whistles"), a bone arrow from North Orillia, bone combs (with a note from W. F. Petrie on Egyptian analogues, etc.). Of the six Canadian combs illustrated only one shows anything suggestive of file-marks. A metal-saw-made comb is figured.

— Notes, etc. (Ibid., 43-71, 76, 86-89, 101-103, 23 figs.) Describes stone and tortoise-shell pendants, shell objects (gorgets, etc.), wampum strings, bird-amulet (all such objects are surface finds or mined up by the plough, in Ontario), copper tools, European in appearance, pottery (finds of native made pottery generally indicate a period anterior to white contact, — the substitution of the brass-kettle was rapid), picture-writing (Blackfoot deerskin record, — interpretation not yet known), porcupine-quill work (a copy, by an Ojibwa, of rock painting on Lake Couchiching, now no longer existing), husk false faces (Pagan Iroquois of Six Nation reservation); Winona stone (from Winona, Ont.; bears date 1776 and carved head, — white not Indian in origin); Mexican marble mask from San Juan Teotihuacan; Oneida mounds (existence of several large mounds reported, no investigation as yet); the "house of the devil" (reports search for the *Manitow wigwam*, "devil's house," as the Mississaugas called it in 1792, near the west end of Lake Ontario); an old dam on the Grand River (not Indian); village sites and occupations; anthropology at the World's Fair, St. Louis; an example of primitive persistence (neolithic fashion of hammer-head attachment); the coming of the Ojibwas (gives tradition of Ojibwa-Mohawk contact); Lake St. George (brief account of investigation

of embankment on this lakelet, north near Lake Couchiching, — no opinion arrived at as to nature and origin); Cahokia mound (notes of recent visit); a museum or a musée?

Bushnell (D. L.). Partial excavation of the N. D. McEvers mound. (Rec. of Past, Wash., 1905, IV, 202-205, 2 figs.) Describes excavation in May, 1905. After depth of 26 feet a burial crib or cist of war was met and in the enclosure were a skeleton, some skulls and other human remains, two fine bone awls, a large number of pearl and shell beads, and 1,195 novaculite blades.

Chamberlain (A. F.). Mythology of Indian stocks north of Mexico. (J. Amer. Folk-Lore, Boston, 1905, XVIII, 111-122.) Enumerates, with brief notes, the chief mythological and folklore literature of the Kulanapan, Mariposan, Moquelumnan, Palaihnihan, Piman, Quoratean, Shuhaptian, Uchean, Weit-spekan, Wishoskan, Vakonan, Yanan, Yuman, Caddoan, Chinookan, Copehan, Eskimoan, Kiowan, Kitunahan, Koluschan, Lutuamian, Pajunan, Skittagetan (Haidan), Tsimshian (Chimmesyan), Wakashan (Kwakwaka'Nootka) stocks.

Dieseldorff (Hr). Ueber Jadeit — und anderen Schmuck der Mayavölker. (Z. f. Ethn., Berlin, 1905, XXXVII, 408-411, 12 figs.) Describes briefly jadeite plate and objects from Chamà, Ulpànà, Canaséc, and Arenal in Alta Vera Paz and from Copan; also similar objects of shell from Arenal and Zacapà. According to the chemical examination of Prof. Max Baet two of the pieces of jadeite contain some zircon, another some mica — further proofs of the non-Asiatic origin of American jade. The granulation of the latter is coarser.

D'Olier (J. G.). Indian graves in Monroe Co., New York. (Ann. Arch. Rep. 1904, Toronto, 1905, 103-104.) Notes on a number of graves (Seneca village of Totiacton, 2½ miles south of the older village) on Spring creek, opened by the author in 1898, and their contents (bears' teeth, pipes, bullets, lead bar, skeletons, seeds of a species of *Rubus*, etc.) — the man in question had probably died from an over-dose of this fruit.

Falsche Vorstellungen über nordamerikanische Indianer. (Globus, Braunschweig, 1905, LXXXVIII, 111-112.) Résumés Henshaw's article in *American Anthropologist*, 1905, N. S., VII, 104-113.

Förstemann (E.) Die Millionenzahlen im Dresdensis. (Ibid., 126-128.) Discusses the three groups of numerals for between one and two millions in the Codex Dresdensis. The first group covers a number of 77,220 days, the second 84,620, the third, 58,334. All the 12 numbers of the second group lie in the tenth cycle, the first group in the ninth, the third in the eleventh. The position of the gaps before and after the second group indicate that here, as in most Mayan inscriptions, the tenth cycle is the present time.

— Zwei Hieroglyphenreihen in der Dresdener Mayahandschrift. (Z. f. Ethn., Berlin, 1905, XXXVII, 265-274, 20 figs.) Discusses the hieroglyphic series on pages 51-58 and 71-93 of the Codex Dresdensis, and their resemblances. The first series consists of 69 groups of two, the second of 28 groups of the three hieroglyphs.

Geddes (J.) Canadian French, 1900-1901. (Rom. Jahrbuch., Erlangen, 1904, VI, 408-429.) Nos. 251-329 of bibliography of literature in and relating to Canadian French, embracing the years 1900-1901, under the heads of biographical, education, French production, historical, legal, literary, language, miscellaneous, poetry, political, religious, science, sociology, English writings, dealing with French Canada, travels, etc. This continues Dr G.'s valuable annotated bibliography for the decade 1890-1900.

Gilbert (J. J.) Some notes on the Fox Island passes. (Nat. Geogr. Mag., Wash., 1905, XVI, 427-429.) Author says population of Aleutian islands "is very meager, and is decreasing every year." — 3,000 are said to have died of measles in 1900, and tuberculosis is common. Many villages are "abandoned trading posts established by the Russians previous to 1867." Remains of old villages indicate a considerable population in the past.

Hammond (J. H.) The Ojibwas of Lakes Huron and Simcoe. (Ann. Arch. Rep. 1904, Toronto, 1905, 71-73.) Brief historical and ethnographic notes. The Ojibwas "at present own and occupy the reserve in the township of Rama, consisting of 1,600 acres, Snake and Machego islands in Lake Simcoe, and the smaller islands in Lake Couchiching, together with the Christian islands in the Georgian Bay." Their chief bane is the whiskey

supplied by the whites. Few, apparently, are of pure blood. They are all keen canoeists and hunters, and "at their own work of canoeing or on the portage, they easily outdo the most hardy white."

— Cahigue. (Ibid., 74-76.) Argues that the site of the Huron village of Cahigue was at Mt Slaven, near the town of Orillia, and not, as Mr Hunter maintains, at Buchanan's. Ease of communication, proximity of food supply, permanent water supply, sheltered and easily defended position, ease of escape by land and water, etc., favor the Mt Slaven site.

— North and South Orillia. (Ibid., 77-86, 8 figs.) Brief notes on sites of Huron and Algonkin villages prior to final raid of Iroquois in 1649. Some 6 new sites in South and 5 in North Orillia are indicated. Certain articles attributed in a former Report to Chief's Island in Lake Simcoe, are really from Horse Island, the former being "sacred ground" to the Indians.

Hoopes (H. E.) and Broomall (H. L.) Photographs of some of the [Spanish] inscriptions on El Morro, New Mexico, with translations and notes (Proc. Delaware Co. Inst. Sci., Media, Pa., 1905, I, 13-24, 10 pl.) Reproduces photographs taken in August, 1904. Adds much to the transliterations and translations of previous investigators and writers (Simpson in 1849, Lummis, Bandelier, Coates, etc.). Among the personages referred to in the inscriptions are Gen. Hurtado (1736), Father Letrado (1632), Gov. de Silva Nieto (1629), Gov. Martinez (1716), the Bishop of Durango (1737).

Koch-Grönberg (T.) Abschluss meiner Reisen in den Flussgebieten des Rio Negro und Yapurá. (Globus, Braunschwg., 1905, LXXXVIII, 86-91, 7 figs.) Contains notes on the Tsóloa, Palánoa, Makuna, Yahuná, Yabahána, Buháana, Imihita, Uítoto, Yuri, and other Indian tribes and peoples. The communal house (*malóka* in the Ligoa goral) of the Tsóloa and Palánoa is noteworthy; also the masks used by the Opaina in their dances. Dr K.-G. obtained much linguistic material from the so-called Uítoto. The Yuri seem allophyllic in language. The large signal drums of the Uaupés-Indians are found also on the Upper Yapurá and its tributaries and among the Uítoto of the Upper Iça.

von Koenigswald (G.) Die indianischen Muschelberge in Südbrasilien. (Ibid., 1905, LXXXVII, 341-347, 36 figs.) Describes location, nature, contents, etc., of the *sambaquis*, *sernamby*, *ostreiras*, *berbigueiras*, *casqueiros*, as the shell-heaps of the Brazilian coast are variously termed. The results in the 16th, 17th, and part of the 18th centuries procured lime from these shells, which were employed for that purpose not only along the coast, but also in the highland towns. Some of the *sambaquis* are very high (Cananéia, 20 m.), others of colossal extent (e. g. Villa Nova on Comprida island). Some of them were inhabited at the time of the coming of Europeans and after. Some, however, are prehistoric, and all are apparently of human origin. In some of the *sambaquis* of Paraná and Sta. Catharina, bones of horses, pieces of iron, crosses worn by missionaries, etc., have been found. The lower strata yield rude stone axes, primitive stone implements, arrowheads (rare), etc.; the upper finely worked and polished stone implements, pottery, etc. These last may represent a culture that utilized these shell heaps after the first possessors had been driven away. Bolas and lip ornaments have been found. In the interior occur little *sambaquis* different from the large ones on the coast.

Kroeber (A. L.) Wishok myths. (J. Amer. Folk-Lore, Boston, 1905, XVIII, 85-107.) Gives English texts of 25 myths from the Wishok Indians of the coast of Humboldt co., in northwestern California (creation origin, animal, — salmon, spider, otter, frog, mole, coyote, dog, blue-ray, sea-lion, grizzly bear, crow, eagle, porpoise, raven, pelican, skunk, elk). The mythology of the Wishok "occupies a place between the mythologies of central and those of northwestern California, sharing with one a considerable development of creation myth and animal tales, and with the other especially certain episodes of a specific culture-hero cycle." In general character and underlying conceptions it is more akin to that of central California than that of the distinctly northwestern tribes. The rôle of Gudatrigawitl ("Above-old-man") is important.

Large (R. W.) Mortuary customs in British Columbia. (Ann. Arch. Rep. 1904, Toronto, 1905, 100-101.) Notes on the burial customs of the Indians

about Bella-bella, with whom at present "the dead are rolled in blankets, coverlids and the like and placed in boxes made after the pattern of the white man's coffin." They are mostly put in grave houses, which are "diminutive buildings containing besides the remains of the various members of the family, the children's toys, and dishes, clocks, lamps, articles of furniture, and other belongings of the departed." Burnings of certain property take place at stated intervals near the grave-houses. Some of the dried bodies are utilized in the "man-eating dance."

Lehmann (W.) Ueber Tarasische Bilderschriften. (Globus, Braunschwg., 1905, LXXXVII, 410-413, 3 figs.) Enumerates and describes 13 documents containing picture-writings of the Tarascan Indians of Mexico, an ancient people of somewhat advanced culture. Among these are the *Relacion de Michoacan*, the chronicle of Father Beaumont, several genealogies, the Lienzo de Cucutácat and several other similar documents. Others may be yet discovered.

Lehmann-Nitsche (R.) Die dunkeln Geburtsflecke in Argentinien und Brasilien. (Ibid., 1905, LXXXVIII, 112.) Additional data to those previously recorded (see *Amer. Anthropol.*, 1904, N. S., VI, 739) concerning the occurrence of "Mongolian spots" in Brazil (very common, especially in Rio Grande do Sul) and the Argentine (Province of Santiago del Estero, — a curious folk-custom exists of cutting out on the bark of a tree the footprint of a child and letting it be grown over; the "spot" resembles in some way a footprint).

— Nachtrag zur Erklärung der Bregmanarben an alten Schädeln von Tenerife. (Z. f. Ethn., Berlin, 1905, XXXVII, 436-437.) Cites passage from an Andalusian Franciscan, Galindo (whose MS. of 1652 was published in English by Glass in 1764), concerning the scarification of the skull with flints for medical purposes by the natives of the Canary islands.

Lewis (J. H.) The effects of tropical climates upon the teeth of Americans. (G. Wash. Univ. Bull., Wash., 1904, III, No. 3, 76-81.) Notes effect of change of food, dengue, "sprue," etc. — soldiers, naval men, and civilians (men and women) are all affected in the Philippines, etc.

Neuhaus (J.) Zur ethnographischen und archäologischen Untersuchung der Mea-

kitokúsie. (Globus, Brunschwig, 1905, LXXXVIII, 91-92. Discusses plans very briefly. No data.

Nordenskiöld (E.) Ueber Quichua sprechende Indianer an den Ostabhängen der Anden im Grenzgebiet zwischen Peru und Bolivia. (Ibid., 101-108, 9 figs.) Treats of the Quichua-speaking tribes of the eastern slopes of the Andes on the border between Peru and Bolivia, their agricultural and cattle-breeding pursuits, etc. Also relations with the whites. The Quichua has always been and is now a conquering speech, — in Apolo and the region about it has suppressed the Lapachu; the Leco likewise and the Tacana is yielding. The children, where one parent is Quichuan speak Quichua. In the higher mountain valleys (Queara, Saqui, Sina, Ollachea, etc.) the Indians now speak Quichua. Interesting are the representations of the sun and moon in feathers and paper, carried in dances, festivals of the church, etc. The Indians are morally better than the whites.

Potts (J.) The Eskimo a hundred and fifty years ago. (Ann. Arch. Rep. 1904, Toronto, 1905, 104-112.) Text of a letter of Jno. Potts, dated Richmond Fort, 15 March, 1754, to the commanders-in-chief of Moose and Albany Forts. Describes character and behavior of the "Eusquemays", dealings with whites, trading, etc.

Records of Iroquois songs. (Amer. Antiq., Chicago, 1905, XXVII, 103-105.) Lists 12 songs sung to phonograph by Jesse Lyon, an Onondaga, and now procurable in open market at regular prices.

Rice (J. A.) The totem mounds of Wisconsin. (Ibid., 56.) Brief general note. No data.

Sadleir (C. A.) and **Thomas** (N. W.) Animal superstitions among the Araucanians. (Man, Lond., 1905, V, 104-105.) Enumerates 29 items (obtained in response to questionnaire), about eagle, *chucuo*, snakes (valued by medicine women), lizard, rooster, *kong kong*, owl, cattle, lamb, fox, horse, rams, etc.

Seler (E.) Drei Gegenstände aus Mexiko. (Z. f. Ethn., Berlin, 1905, XXXVII, 441-444, 3 figs.) Describes a clay flute (ornamented with a human head in relief) from Chalco; a clay vessel (with a head of the god Macuilxochitl on the lower front) probably from the Calle de Escalerillas; and a crescent of copper plate from Tanganciaro in the State of Michoacan.

Starr (F.) Anthropology at the St. Louis Exposition. (Amer. Antiq., Chicago, 1905, XXVII, 40-42.) Brief notes on ethnological, Indian school, archeological exhibits.

— The Cornplanter medal. (Ibid., 42-43.) Describes medal for Iroquois research, "founded from sales of a series of zinc-etched reproductions of pen-and-ink drawings by a Seneca Indian boy, named Jesse Cornplanter." The first award (June 8, 1904) was to Gen. J. S. Clark of Auburn, N. Y.

von den Steinen (K.) Ein peruanisches Zweigorakel. (Z. f. Ethn., Berlin, 1905, XXXVII, 439-440, 1 fig.) Describes a knotted twig oracle (from the *Euphorbia*) found near Huariamasga, in the Puccha valley, province of Huari. The Indians are said to test the virtue of their wives, when on long journeys, by the way in which the exceedingly flexible twigs of the euphorbia dry.

Stewart (J.) Rupert's Land Indians in the olden time. (Ann. Arch. Rep. 1904, Toronto, 1905, 89-100.) Describes religion, superstitions, and social habits of the uncivilized "Bungays" (Cree-Ojibwa) around the north shores of Lake Winnipeg, as they were about 40 years ago (the paper was written some 20-30 years ago, the author having been in the service of the Hudson's Bay Co.). Geechee and Matche Manitou, Wesse-ke-jack (at some length, with the legends of the release of the sun, the making of man, the convention of the animals, the deluge, etc.), the nature and rites of the "*metawin*, or feast of long life" (in which the rattle-snake figures prominently) are considered. The origin legend of the last is given and the ceremonies indicated with some detail. This paper is an interesting contribution to the literature of Algonquian mythology.

Swanton (J. R.) Explanation of the Seattle totem pole. (J. Amer. Folk-Lore, Boston, 1905, XVIII, 108-110, 2 pl.) Gives, after Mr George Hunt and Mrs Robert Hunt (the former owner), mythological explanations of the carvings on the totem-pole, which once belonged to the Ganaxádl, one of the principal Tlingit families of the Raven clan, and is now set up in the main square of Seattle, Wash. Comparison is made with a briefer explanation by Mr Kininnook, a Tlingit Indian.

Swindlehurst (F.) Folk-lore of the Cree Indians. (Ibid., 139-143.) Gives English texts of 7 brief legends (creation, birth of Lake Mistassini, the painted canoe, a big perch, the story of Katonao, the fisherman, the bitter bit) from the Crees of the James Bay-Mistassini region. To tell tales during winter or summer is unlucky—narration in the fall (the proper season) brings good fortune. The custom of story-telling in autumn is kept up by only a few of the older men, the young Indians not taking the trouble to learn them. The author has had "seven years' intimate association with Cree Indians."

Thompson (A. H.) Ruins of the Mesa Verde. (Amer. Antiq., Chicago, 1905, XXVII, 6-8.) Brief account of recent visit to the ruins known as "Spruce-tree House," "Balcony House," "Cliff Palace." No new data.

Wake (C. S.) Mythology of the Plains Indians. (Ibid., 9-16.) Discusses "animism",—according to W., "humanism, rather than animism, would be the proper term to apply to the earliest stage of man's religious development" (the native mind has an innate tendency to humanize nature), and mythology in a restricted sense. Nature-myths are imaginations often, not true explanations; subjective, not objective. Though most

of the stories are native, some of them are certainly quite modern, and others are borrowed.

— Mythology of the Plains Indians. II, Nature-deities. (Ibid., 73-80.) Treats of the Caddo Nesaru, Pawnee Tirawa, Wichita Kinnecassus, the star-gods, etc. Of all the Plains tribes the Caddoan stock shows "the nearest approach to a supreme creative deity." The star-gods are very important. Lore of the number 4 is also abundant.

Wintemberg (W. J.) Relics of the Attiwandarons. (Rec. of Past, Wash., 1905, IV, 266-275, 50 figs.) Describes briefly fragments of pottery, tobacco-pipes (mostly clay, seldom stone), sometimes incised, bone awls, stone axes, chisels, etc., gorgets, copper articles (rare), bone beads, ornaments and shells from village-sites of the Attiwandarons or Neutrals (Iroquoian stock), the earliest historical inhabitants of western Ontario.

— Are the perforated bone needles prehistoric? (Ann. Arch. Rep., 1904, Toronto, 1905, 39-42, 2 figs.) Author doubts whether the eyed bone needles found in Ontario and New York state are of Indian (Iroquoian) invention. In a brief note Dr Boyle sees no reason for attributing a European origin to these implements, whatever their use may have been.

ANTHROPOLOGIC MISCELLANEA

American Anthropological Association. — The annual meeting of the American Anthropological Association will be held at Ithaca, N. Y., December 26-29, 1905. (The Archaeological Institute of America, the American Folk-Lore Society, and the American Philological Association will meet at the same time and place.)

Reduced rates of a fare and one third, on the certificate plan, have been secured from the Trunk Line Association, the New England Passenger Association, the Central Passenger Association, and the Eastern Canadian Passenger Association. In applying for certificates from ticket agents, mention the *Archaeological Institute of America* instead of the American Anthropological Association.

In consulting time tables, it should be remembered that East Ithaca is the Ithaca station of the Elmira and Cortland branch of the Lehigh Valley Railroad. Cars meet all trains at this station and all cars pass the hotels.

The University authorities invite all members of the Association to luncheon in Sage College, as their guests, at one o'clock on Wednesday, Thursday, and Friday, December 27, 28, and 29. In view of this arrangement, the Ithaca Hotel has reduced its rates to \$1.50, \$2.00, and \$2.50 per day; the Clinton House to \$1.50 and \$2.00 per day. These are the best hotels and are both conducted on the American plan.

The various sessions of the Association will be held in Stimson Hall, which may be reached by all cars passing the hotels mentioned as well as by the Eddy street line, a somewhat shorter route.

All members and prospective members are cordially invited to present papers. Those intending to do so are requested to send titles of communications to Dr George Grant MacCurdy, 237 Church Street, New Haven, Conn., at an early date.

In addition to the list of papers to be announced later, the program will include:

1. Meeting of the Council of the American Anthropological Association, Tuesday evening at the Ithaca Hotel, and Wednesday, 9.30 A. M., in Stimson Hall.

2. Address of welcome by President Schurman at 8 P. M., Wednesday, the 27th, followed by a reception at his residence on the campus.

3. Joint meeting of the three societies at 3 P. M., Thursday, with addresses by Hon. Andrew D. White, first president of Cornell University, and by two members from each society.

4. Meeting of the Committee on the Preservation of the Ruins of American Antiquity, Prof. Thomas Day Seymour, Chairman, at 8 P. M. on Thursday.

The Town and Gown Club of Ithaca have very kindly offered the freedom of their Club House (504 Stewart Avenue), to all visiting members during the three days, December 27, 28, and 29, with a special invitation to a smoker on Thursday evening.

For further information relative to local arrangements, address Prof. H. C. Elmer, Chairman of the Local Committee, Cornell University, Ithaca, N. Y. For information regarding the American Anthropological Association, communicate with Dr George Grant MacCurdy at the address above given.

International Congress of Americanists. — As previously announced in these pages the Fifteenth International Congress of Americanists will meet at Quebec, September 10-16, 1906. The Committee on Program consists of Prof. Franz Boas of the American Museum of Natural History and Columbia University, New York, and Dr David Boyle of the Department of Education, Toronto. President Putnam of the American Anthropological Association has appointed a committee to coöperate with the committee of the Congress. This subcommittee is composed of the following members of the Association: Dr George Grant MacCurdy, chairman, Yale University; Dr Roland B. Dixon, Harvard University; Dr George A. Dorsey, Field Columbian Museum; Dr George Byron Gordon, University of Pennsylvania; Mr F. W. Hodge, Bureau of American Ethnology; Dr A. L. Kroeber, University of California; Dr W J McGee, St Louis Public Museum; Prof. Marshall H. Saville, American Museum of Natural History and Columbia University.

Members and prospective members of the Association who intend to present papers at Quebec are invited to send titles of their communications to Dr MacCurdy, chairman of the subcommittee.

Congrès International d' Anthropologie et d' Archéologie Préhistoriques. — The formal announcement of the thirteenth session of the Congrès International d' Anthropologie et d' Archéologie Préhistoriques has been made by the committee of organization, of which Dr E. T. Hamy, director of the Musée d' Ethnographie, is president. As previously announced the next session of the Congrès will be held at Monaco, under

the patronage of Prince Albert I, from April 16 to 21 inclusive. It is expected that the meeting will be largely attended and will prove of unusual interest. Special attention will be devoted to the archeology of the Monaco region and will include an excursion to the celebrated grottoes of Baoussé-Roussé. Among the fêtes that have been planned are a reception by Prince Albert to the members of the Congrès at the Palais de Monaco, a pyrotechnic display in the harbor, and an entertainment in the theater of the Casino de Monte Carlo. All American students of the prehistoric are invited to become members of the Congrès and to contribute papers, the titles of which should be sent at once in order that they may be included in the final program. Under the rules papers not thus listed cannot be read. The membership fee, which is 15 fr. (\$3.00), should be sent to the treasurer, M. Henri Hubert, 74 rue Claude-Barnard, Paris. Communications respecting papers and requesting information should be addressed to the secretary, Dr R. Verneau, Laboratoire d' Anthropologie du Muséum, 61 rue de Buffon, Paris.

Jay feathers in Cora Ceremony. — The Cora Indians of Mexico employ for ceremonial purposes a small bunch of the fine long tail-feathers of the native jay. These plumes are attached to a short handle, and when not in use are carefully kept in a tube, more than a yard in length, made from one of the smaller straight limbs of the pitaya tree and provided with a stopper at each end. In every Cora household at least one of these bunches of feathers, which are called *mū-ve-e-li*, may be seen. In ceremonies they are often stuck into the sides of a crown-like head-dress of reed worn by the participants.

A. HRDLICKA.

NEWS OF THE DEATH of Mr Stephen Salisbury, at Worcester, Mass., November 16th, has been received with deep regret. The public press announces that Mr Salisbury's large fortune has been bequeathed chiefly to educational institutions, the American Antiquarian Society, of which Mr Salisbury was president at the time of his death, being one of the beneficiaries.

THE THIRD MEETING of the California Branch of the American Folk-Lore Society, held at San Francisco, October 30, was devoted to topics connected with popular beliefs of the Japanese, and the meetings of November 14 and December 5 were devoted respectively to Chinese and Hebrew folk-lore. Lectures and conferences on Polynesian, Japanese, and American Indian folk-lore are planned for subsequent meetings.

THE DEATH of Dr Ferdinand von Richthofen, on October 29, 1905, has been announced. Dr Richthofen was a member of the Academy of Sciences, professor of geography and director of the Geographical Institute in the University of Berlin, and president of the German Geological Society.

THE OFFICE of Indian Affairs at Washington has wisely seen the importance of making a study of Indian music and has appointed Mr Harold A. Loring to undertake that work. Mr Loring is now prosecuting investigations among the Sioux.

A NEW bimonthly magazine, with the title *Revue Préhistorique illustrée de l'Est de la France: Bourgogne, Champagne, Franche-Comté, Lorraine*, made its appearance at Dijon in July-August. It is a well-illustrated octavo of 32 pages. The subscription price is 10 francs.

IT HAS BEEN announced that the celebrated Hubert Howe Bancroft library, so rich in the history and ethnology of the Pacific states and Mexico, has been acquired by the University of California.

MR WILLIAM H. HOLMES, chief of the Bureau of American Ethnology, has been elected a member of the American Antiquarian Society.

PROCEEDINGS OF THE CALIFORNIA MEETING OF THE
AMERICAN ANTHROPOLOGICAL ASSOCIATION,
AUGUST 29-SEPTEMBER 2, 1905

MINUTES OF THE MEETINGS OF THE COUNCIL, AUGUST 29-31

Meetings of August 29

A meeting of the Council was held in the Department of Anthropology at the Affiliated Colleges of the University of California, San Francisco, Tuesday, August 29, at 9:30 A. M. President Putnam in the chair; other members present: Dr A. L. Kroeber and Dr R. B. Dixon, with Dr Charles Peabody, who was elected Secretary *pro tempore* in the place of Dr George Grant MacCurdy, absent. The minutes of the meeting of the Council held April 15, 1905, in New York, were read and approved.

The President stated to the Council that a vote had been taken by a circular sent to all of its members, and by this it had been decided to substitute San Francisco for Portland, Oregon, as the place of meeting for the summer of 1905.

New members were elected as follows: Mr S. A. Barrett, Mrs T. B. Bishop, Mr Herbert Brown, Mr D. I. Bushnell, Jr, Dr Mary G. Campbell, Dr A. C. Connor, Dr N. B. Emerson, Prof. J. Fryer, Mr H. H. Harrison, Mrs R. C. Harrison, Mrs R. F. Herrick, Mr E. W. Heusinger, Mr Charles Hill-Tout, Dr W. Hurst, Dr G. L. Knapp, Mrs M. L. LaMoreaux, Mr C. P. Mackie, Dr C. Hart Merriam, Rev. A. G. Morice, O.M.I., Miss E. D. Putnam, Miss H. Rucker, Mr C. E. Rumsey, Mr H. N. Rust, Dr A. E. Taylor, Dr J. H. Woods, Prof. J. H. Wright. Twenty-six in all.

Moved: That the amendments to the constitution as recommended by the Council at its last meetings in Philadelphia in December, 1904, and in New York in April, 1905, be presented at the meeting to come of the Association. Carried.

Moved: That the annual meeting be held at Ithaca, New York, in December, 1905. Carried.

Adjourned.

A meeting of the Council was called by the President at 3:30 P. M., Tuesday, August 29, 1905, at the Affiliated Colleges.

New members were elected as follows: Mrs H. H. Bancroft, Mrs J. Fessenden Clark, Mrs F. H. Green, Miss Catherine W. Hittell, Mrs E. S. Howard, Mr E. L. McLeod, Miss Elizabeth Mills.

Adjourned.

Meeting of August 30

A meeting of the Council was called by the President at the Hotel St Francis, San Francisco, Wednesday, August 30, 1905, at 2 P. M.

New members were elected as follows: Mrs J. H. Beatty, Mrs E. B. Power, Mrs H. L. Ryan, Mrs Dorcas L. Spencer.

Adjourned.

Meeting of August 31

A meeting of the Council was held at the University of California, Berkeley, on Thursday, August 31, 1905, at 3 P. M.

New members were elected as follows: Miss Ada M. Field, Mr Fredrick Monsen, Mrs James S. Peck.

Adjourned.

MINUTES OF THE MEETING OF THE ASSOCIATION, AUGUST 29-31

Sessions of August 29

A session of the Association was held in the Department of Anthropology at the Affiliated Colleges of the University of California, San Francisco, Tuesday, August 29, 1905, at 10:30 A. M. President Putnam in the chair.

Dr Charles Peabody was elected Secretary *pro tempore* in the absence of Dr George Grant MacCurdy.

The President gave an address of welcome, and explained the scope of anthropology in general and the work and needs of the science in particular on the Pacific coast. The President said in part:

Members of the American Anthropological Association.

Ladies and Gentlemen: This is the first time the American Anthropological Association has met on the Pacific coast, and in my official capacity in connection with the University of California I welcome you here most heartily. This Association is American in the broadest sense. We have members in South America, in Mexico, and in the Dominion of Canada, so that we cover the whole continent of America. We also have foreign members. At least two of our members from Canada are present at this meeting, but, unfortunately, our members in southern lands and in Europe are represented only by letters of regret. Next year there will be a large gathering of anthropologists from many parts of the world at the International Congress of Americanists to be held in Quebec, and that is the chief reason why many of our members are absent today.

The objects of our Association should be considered at each meeting, and in order to impress them upon you I will read the second article of our constitution, as follows:

"The objects of the Association are to promote the science of Anthropology; to stimulate the efforts of American anthropologists; to coördinate Anthropology with other sciences; to foster local and other societies devoted to Anthropology; to serve as a bond of union among American anthropologists and American anthropological organizations present and prospective; and to publish and encourage the publication of matters pertaining to Anthropology."

As we all know, anthropology begins with the effort to ascertain when man first appeared upon the earth — the geological history of man. It then considers the distribution of man over the earth; the thoughts of man as expressed through the medium of his hands; the institutions which man has established, the social organizations, the various means by which man has gradually secured the best interests of the different peoples. Our science is the study of man, and all that man has done physically and mentally. It is thus a broad study, and it has its bearings upon many sciences. Geology, astronomy, zoölogy, and botany all come into play in our researches, so that an anthropologist must have at least a general knowledge of these sciences or he cannot be an all-round anthropologist. Linguistics is a special branch of our science which requires special training and special adaptability, but it also requires a general knowledge of ethnology. A student of native languages must have some knowledge of the native peoples in order to get into close contact with them and thus obtain the most accurate results from his investigations.

Our Association welcomes to its membership all who are interested in this great study. We wish to have every educated man and woman a member of the Association. They should be with us. They should be engaged in aiding this work, because the study of the beginning of things leads us to a better understanding of our present condition. Many a blunder would have been avoided if we had taken up primitive ideas and studied their development instead of beginning along other lines in our endeavor toward human advancement. There is where we have made a mistake. There is where governments are making many mistakes in dealing with primitive peoples. We tread upon aboriginal customs and we outrage their aboriginal beliefs and superstitions, and then we wonder why the people arise and refuse to accept the laws and the supposed humane treatment that is offered to them. Governments do not take the advice of those who could teach the proper methods of dealing with alien races. It is the trained anthropologist who should guide and direct such work.

As one of the means to this end we must encourage the publication of the results of anthropological research. During the few years of its existence this Association has done much in that line. Our journal, the *American An-*

thropologist (New Series), is published quarterly, and is now in its seventh volume. There are eleven volumes of the first series published by the Anthropological Society of Washington. Each member is entitled to the publications of the Association, beginning with the year of membership. We hope many new members will be added to the Association and help it to carry on the good work.

I should like to call your attention to what is being done in anthropology the world over, and particularly in the United States, where there are several centers of active research and great museums devoted entirely or in part to anthropology; but as the time will not permit of such an extended review I can refer only to the important work that is being done at Washington, New York, Chicago, Philadelphia, Pittsburg, Cambridge, New Haven, Salem, Andover, and many other places.

Here in California there have come into existence two centers of research—one in the south at Los Angeles, the other here in San Francisco and Berkeley. Here a Department of Anthropology has been created through the interest and generosity of one of the regents of the University, Mrs Phoebe A. Hearst. The collections temporarily arranged in this building and in the building at Berkeley, together with the publications of the department, will give you some idea of what already has been accomplished through the interest of Mrs Hearst in the Department of Anthropology of the University of California. Lack of time forbids a detailed account of the origin and growth of the department; I will simply call your attention to the pamphlet prepared especially for this meeting, copies of which await your acceptance. This gift from Mrs Hearst to the University can but be an incentive to others, patrons and students, to aid in making a great anthropological center here on the Pacific coast.

I now have the pleasure of inviting you all to remain, after the morning session, as the guests of Mrs Hearst, who will be pleased to meet you in the adjoining hall where luncheon will be served. After the luncheon we will make an examination of the collections in the several halls of this building. Then we will reassemble for the reading of papers.

Dr A. L. Kroeber, Secretary of the Committee on Program and Arrangements, and President Putnam gave an outline of the events, scientific and social, proposed for the week.

The list of new members elected by the Council was read; there were twenty-six elections.

The amendments to the constitution as recommended by the Council at its meetings in Philadelphia, in December 1904, and in New York in April 1905, were read to the Association and adopted.

The announcement of the meeting of the International Congress of Americanists at Quebec in September 1906 was made.

Letters of regret from W. D. Alexander, Honolulu; Julius Gette, S. J., Nulato, Alaska; W. E. Roth, Brisbane, Queensland; Charles F. Lummis, Los Angeles; T. M. Hocken, New Zealand; George Grant MacCurdy, New Haven; Karl von den Steinen, Steglitz-Berlin; N. León, Mexico; L. Lejeal, and The Anthropological Society of Bombay were laid before the members. Letters of regret were also received from H. Brown, Yuma; David Boyle, Toronto; W. T. Brigham, Honolulu; F. V. Coville, Washington; G. A. Dorsey, Chicago; N. B. Emerson, Honolulu; Miss Alice C. Fletcher, Washington; J. Walter Fewkes, Washington; George Bird Grinnell, New York; J. W. Hastings, Cambridge; F. W. Hodge, Washington; E. L. Hewett, Washington; A. Hrdlicka, Washington; H. W. Henshaw, Washington; B. Talbot B. Hyde, New York; J. W. Hudson, Chicago; Carl Purdy, Ukiah, California; A. B. Jones, Richmond; W. S. Kahnweiler, New York; James Mooney, Washington; G. H. Pepper, New York; L. van Panhuys, The Hague; C. E. Rumsey, Riverside, California; P. S. Sparkman, Valley Center, California; H. S. Symmes, Idyllwild, California; Alvin Seale, Stanford University, California; C. Wissler, New York; H. I. Smith, New York; A. M. Tozzer, Cambridge; A. C. Vroman, Pasadena; E. P. Vining, San Francisco; H. R. Voth, Newton, Kansas; Miss J. E. Wier, Reno, Nevada; W. H. Holmes, Washington; R. Etheridge, Sydney, N. S. W.

The Association proceeded to the presentation and discussion of papers.

President Putnam, representing Mrs Hearst, extended an invitation to luncheon at the Affiliated Colleges following adjournment.

Adjourned at 1:15 P. M.

A session was held at the Affiliated Colleges on Tuesday, August 29, at 3:40 P. M. President Putnam in the chair.

The list of additional new members elected by the Council was read; there were seven elections.

The meeting proceeded to the presentation and discussion of papers.

Adjourned 5:45 P. M.

Sessions of August 30

Sessions of the Association were held on Wednesday, August 30, 1905, at the California Academy of Sciences, San Francisco, at 10:15 A. M. and 2:15 P. M. President Putnam in the chair.

Opening the session of the morning, Mr Loomis, Director of the California Academy of Sciences, welcomed the Association to the hospitality of the Academy; later an invitation to luncheon at the Hotel

St Francis was extended by Mr Alpheus Bull, First Vice-President of the Academy. During the opening remarks of President Putnam reference was made to the final adjudication of the difficulties in the way of making peace between Japan and Russia.

Papers were read and discussed at both sessions.

On motion of Dr C. Peabody, seconded by Mr C. Hill-Tout, at the morning session, the Association voted that a committee be appointed by the President to report at the next regular meeting for the investigation of the question whether an improvement or a readjustment of the names used in American archeology be feasible. At the afternoon session the President announced the appointment of that committee, as follows: Dr C. Peabody, chairman; Prof. John H. Wright, Mr W. K. Moorehead, Mr F. W. Hodge, Mr J. D. McGuire.

The names of four additional new members elected by the Council were read.

Adjournment of the morning session was at 12 M. and of the afternoon session at 5:15 P. M.

Sessions of August 31

In conjunction with the California Branch of the American Folklore Society, sessions of the Association were held at the University of California, Berkeley, California, on Thursday morning at South Hall and in the afternoon at the building of the Department of Anthropology, August 31, 1905.

Papers were read and discussed at both sessions.

After an abstract of Dr Kroeber's paper on "Systematic Nomenclature in American Ethnology" had been presented, a recommendation of Mr F. W. Hodge, of Washington, was quoted favoring the appointment of a committee to consider the subject. Dr Dixon moved that a committee of seven or eight members be appointed by the President to report at the next regular meeting of the Association on the most desirable nomenclature for Indian linguistic families north of Mexico. Seconded by Dr Peabody, the motion was carried.

Before adjournment of the morning session, President Putnam, representing Mrs Hearst, extended an invitation to the members to luncheon at the building of the Department of Anthropology of the University of California.

At the afternoon session the list of three additional new members elected by the Council was read.

Resolutions as follows were unanimously passed by the Association: Resolutions expressing appreciation of the courtesy and hospitality of

Mrs Phoebe A. Hearst, of the Academy of Sciences and of Vice-President Bull and Director Loomis, of the University of California and President Wheeler, of Mr Luther Burbank, and of the Leland Stanford Junior University; also expressing appreciation of the successful energy and direction of President Putnam, of the Association, and of Dr Kroeber, the Secretary of the Committee on Program and Arrangements; also by the visiting members expressing their appreciation of the hospitality of the resident members. Remarks were made by Mr Hill-Tout and Mr Keeler.

The President announced the Committee on Nomenclature of Indian Linguistic Families, as follows: F. W. Hodge, chairman; Franz Boas, R. B. Dixon, G. A. Dorsey, W. H. Holmes, A. L. Kroeber, James Mooney.

At the end of the session papers by C. P. Mackie, George Grant MacCurdy, C. Hart Merriam, Albert Ernest Jenks, A. L. Kroeber, Miss Jeanne Elizabeth Wier, N. B. Emerson, Mrs Zelia Nuttall, Alvin Seale, Miss Alice C. Fletcher, James Mooney, J. R. Swanton, and W. H. Holmes, were read by title.

President Putnam announced that the next meeting of the Association would be held in Ithaca, New York, in December 1905.

Adjourned at 4:30 P. M.

C. PEABODY, *Secretary pro tempore*.

EXCURSIONS AND ENTERTAINMENTS

On Tuesday, August 29, luncheon was tendered the Association by Mrs Phoebe A. Hearst in the Department of Anthropology at the Affiliated Colleges of the University of California in San Francisco. In the afternoon an exhibition of the collections of the Department was held, the officers of the Department conducting the members of the Association through the building and explaining the collections.

On Wednesday, August 30, a luncheon was tendered the Association by the California Academy of Sciences at the St Francis Hotel, Vice-President Alpheus Bull making an address of welcome. In the evening a dinner was given the visiting members of the Association by the resident members, at the St Francis Hotel.

On Thursday, August 31, before the opening of the morning session, Prof. J. C. Merriam conducted a party to the Emeryville Shellmound, explaining the excavations made in the mound by himself and Dr Max Uhle. On the same day luncheon was tendered the Association by Mrs Phoebe A. Hearst in the building of the Department of Anthropology of

the University of California at Berkeley. After luncheon the collection of plaster casts illustrative of ancient art was exhibited as arranged in this building.

On Friday, September 1, an excursion was made to Mr Luther Burbank's home in Santa Rosa. This excursion was arranged through the courtesy of Mr Burbank, the California Promotion Committee, and the California Northwestern Railway. Thirty-four members took part.

On Saturday, September 2, an excursion was made to Leland Stanford Junior University. The buildings and grounds were shown the party and luncheon was tendered by officers of the University. Twenty members took part in this excursion.

PAPERS READ¹

Sessions of August 29

Dr Frederic Ward Putnam, Director of the Museum of Anthropology of the University of California, and Curator of the Peabody Museum of Harvard University: *Exhibition of Bones, Possibly Showing the Work of Man, from Quaternary Caves of California*. Discussed by Mrs Herrick, Hill-Tout, J. C. Merriam.

Mr Charles Hill-Tout, Ethnological Survey of Canada: *Some Features of the Language and Culture of the Salish*.* Discussed by Dixon, Goddard, C. Hart Merriam, Kroeber, Barrett.

Dr C. Hart Merriam, Chief of the Biological Survey, Washington, D. C.: *The Indian Population of California*.* Discussed by Mrs Herrick, McLeod, Barrett.

Dr R. B. Dixon, Harvard University: *The Mythology of the Shasta-Achomawi*.* Discussed by Hill-Tout, C. H. Merriam.

Miss Constance Goddard DuBois, Waterbury, Connecticut: *Religious Ceremonies and Myths of the Mission Indians*.* (Illustrated with phonograph records.) Discussed by C. H. Merriam, Peabody.

Sessions of August 30

Mrs R. F. Herrick, Eureka, California: *The Indians of Humboldt Bay*. Discussed by Hill-Tout, Keeler, Rust.

Dr J. C. Merriam, University of California: *The Exploration of Quaternary Caves in California*. Illustrated with lantern slides. Discussed by Peabody.

¹ The papers marked with an asterisk (*) are published in this number of the *American Anthropologist*.

- Dr A. Hrdlička, Assistant Curator, Physical Anthropology, U. S. National Museum: *A Contribution to the Physical Anthropology of California*.¹
- Mr S. A. Barrett, University of California: *Presentation of a Map Showing the Territory, Division, Villages, and Camp-Sites of the Pomo Indians of California*.¹ Discussed by C. H. Merriam, Dixon.
- Dr C. Hart Merriam, Washington, D. C.: *The Chieftain of the Tongva, a Mortuary Ceremony*. Discussed by Miss DuBois, Dixon, Hill-Tout.
- Mr P. S. Sparkman, Valley-Center, California: *The Grammar of the Luiseño Language of Southern California*.^{*} Discussed by Hill-Tout.
- Dr Philip Mills Jones, Secretary and Editor of the Medical Society of the State of California: *A New Method of Preserving Specimens of Shell and other Perishable Materials*.^{*} Discussed by Putnam.
- Dr Charles Peabody and Mr Warren K. Moorehead, Archeological Museum of Phillips Academy, Andover, Massachusetts: *The Naming of Specimens in American Archeology*.² Discussed by Hill-Tout.
- Dr J. C. Merriam, University of California: *The Excavations at Emeryville Shellmound*. (Illustrated with lantern slides.) Discussed by Dixon, Hill-Tout, Putnam.
- Mr H. N. Rust, South Pasadena: *A Puberty Ceremony of the Mission Indians*.² Discussed by Kroeber, Miss DuBois, Hill-Tout, Putnam.
- Dr A. L. Kroeber, University of California: *Exhibition of a Basket, now in the Californian Academy of Sciences, from the Extinct Indians of San Nicolas Island, California*. Discussed by McLeod, Rust.
- Mr F. I. Monsen, San Francisco: *Explorations in Northern Arizona and New Mexico*. Discussed by Putnam.

Sessions of August 31

- Dr A. L. Kroeber, Secretary of the Department of Anthropology, University of California: *Systematic Nomenclature in Ethnology*.² Discussed by J. C. Merriam, C. H. Merriam, Hill-Tout, Dixon, Peabody.
- Dr C. Hart Merriam, Washington, D. C.: *Basket Cave Burial in California*. Discussed by McLeod, Putnam.
- Mr H. N. Rust, South Pasadena: *The Obsidian Blades of California*.¹ Discussed by Putnam.
- Mr S. A. Barrett, University of California: *Basket Designs of the Pomo Indians*.^{*} Discussed by C. H. Merriam.

¹To be published by the University of California.

^{*}To be published in the next issue of the *American Anthropologist*.

- Dr P. E. Goddard, Department of Anthropology, University of California: *Mechanical Aids to the Study and Recording of Language*.* Discussed by Putnam.
- Dr J. C. Merriam, University of California: *Some Suggestions Concerning the Origin of the Calaveras Skull*. (Illustrated with lantern slides.) Discussed by Hill-Tout.
- Mr Charles Keeler, Berkeley: *Creation Myths and Folk-tales of the Manua Islands, Samoa*. Discussed by Dixon.
- Mr J. T. Goodman, Alameda: *Maya Dates*.* Discussed by Putnam.
- Mr C. C. Willoughby, Assistant Curator, Peabody Museum of Harvard University: *A Few Ethnological Specimens Collected by Lewis and Clark*.*
- Mr H. N. Rust, South Pasadena: *Exhibition of Implements from San Miguel Island used for Cutting and Working Shell Ornaments*.
- Prof. Howard Swan, Imperial College, Peking: *A Systematic Arrangement for Recording Dialects*.
- Prof. W. H. Holmes, Chief of the Bureau of American Ethnology, Washington, D. C.: *Antiquity of Man in North America*. Discussed by Putnam, Peabody, and Swan.
- Dr C. F. Newcombe, Victoria, B. C.: *Exhibition of Northwestern Indian Designs*. Discussed by Hill-Tout.

Papers Read by Title

- Mr Charles F. Lummis, Secretary of the Southwest Society of the Archaeological Institute of America, Los Angeles: *Old Indian and Spanish Folk Songs of the Southwest*. (Illustrated with phonograph records.)
- Mr C. P. Mackie, Englewood, New Jersey: *A Plea for the More Critical Use of History in Anthropological Research*.
- Dr George Grant MacCurdy, Yale University: *Eoliths from England and Belgium*.
- Dr C. Hart Merriam, Washington, D. C.: *Basketry of California Indians*.
- Dr Albert Ernest Jenks, Director of the Ethnological Survey for the Philippine Islands, Manila: *The Peopling of the Philippines*.
- Dr A. L. Kroeber, University of California: *Indian Systems of Consanguinity in California*.
- Miss Jeanne Elizabeth Wier, Nevada State University: *The Washoe Indians of Nevada*.
- Dr N. B. Emerson, Honolulu: *Introduction to "Unwritten Literature of Hawaii."*

- Mrs Zelia Nuttall, Director of the Crocker Researches in Mexico for the Department of Anthropology of the University of California: *The Earliest Historical Communications between Japan and Mexico, from Original Documents Preserved in the Archives of Japan, Recently Brought to Light by a Mexican Diplomat.*¹
- Mr Alvin Seale, Leland Stanford Junior University: *Ceremonies Relating to Sickness and Death in the Solomon Islands.*
- Miss Alice C. Fletcher, Washington, D. C.: *The Earth Lodge and Its Migrations.*
- Mr James Mooney, Washington, D. C.: *The Cheyenne Indians.*
- Mr James Mooney, Washington, D. C.: *The Caloosa Tribe of Florida.*
- Dr J. R. Swanton, Washington, D. C.: *The Social Organization of American Tribes.**
- Prof. W. H. Holmes, Washington, D. C.: *Architecture of the Aborigines of North America.*
- Prof. W. H. Holmes, Washington, D. C.: *Use of Copper by the Aborigines of North America.*
- Prof. W. H. Holmes, Washington, D. C.: *Problematical Objects in the Prehistoric Archeology of North America.*

LETTERS OF ACKNOWLEDGMENT

MRS PHOEBE A. HEARST,

Pleasanton, California.

SAN FRANCISCO,

September 5, 1905.

My dear Madam: At the meeting of the American Anthropological Association held at Berkeley, August 31, 1905, the following resolution was unanimously adopted: *Resolved:* That the Association desires to express its appreciation of the courtesy of Mrs Phoebe A. Hearst in extending to the Association the very cordial invitation to luncheon at the Affiliated Colleges, San Francisco, on Tuesday, August 29th, and at Berkeley, August 31st. The Association having held its meetings in the buildings of the Department of Anthropology of the University of California both in San Francisco and in Berkeley, a Department owing its initiation and its prosperity to her inspiration and care, deeply feels the obligation which the science of anthropology has to Mrs Hearst and takes this means of tendering to her its cordial recognition of her important achievements. I am, dear Madam,

Yours respectfully,

C. PRABODY, *Secretary pro tempore.*

SAN FRANCISCO,

September 5, 1905.

E. J. MOLERA, ESQ.,

President of the California Academy of Sciences, San Francisco.

My dear Sir: At a meeting of the American Anthropological Association held August 31st, the following resolution was unanimously adopted:

¹ To be published by the University of California.

Resolved: That the Association desires to express its appreciation of the courtesy of the California Academy of Sciences, tendered by Vice-President Bull and Director Loomis, in extending to the Association the hospitality of its building, the very cordial invitation to luncheon at the Hotel St Francis, and the welcome personally given by its officers on Wednesday, August 30, 1905.

Respectfully yours,

C. PEABODY, *Secretary pro tempore.*

SAN FRANCISCO,

September 5, 1905.

PRESIDENT BENJAMIN IDE WHEELER,

University of California, Berkeley, California.

My dear Sir: At a meeting of the American Anthropological Association held August 31st, at Berkeley, the following resolution was unanimously adopted:

Resolved: That the Association desires to express its appreciation of the courtesy of the University of California as tendered by President Wheeler in his cordial greeting of August 31st.

Respectfully yours,

C. PEABODY, *Secretary pro tempore.*

SAN FRANCISCO,

September 5, 1905.

ACTING PRESIDENT J. C. BRANNER,

Leland Stanford Junior University, Palo Alto, California.

My dear Sir: At a meeting of the American Anthropological Association held at Berkeley, August 31st, the following resolution was unanimously adopted:

Resolved: That the Association desires to express its appreciation of the courtesy of Leland Stanford Junior University in extending to the Association the very cordial invitation to visit the University and to luncheon on Saturday, September 2d.

Respectfully yours,

C. PEABODY, *Secretary pro tempore.*

SAN FRANCISCO,

September 5, 1905.

MR LUTHER BURBANK,

Santa Rosa, California.

My dear Sir: At a meeting of the American Anthropological Association held at Berkeley, August 31st, the following resolution was unanimously adopted:

Resolved: That the Association desires to express its appreciation of the courtesy of Mr Luther Burbank in extending to the Association the very cordial invitation to visit his estate at Santa Rosa on September 1st.

Cordially yours,

C. PEABODY, *Secretary pro tempore.*

SAN FRANCISCO,

September 7, 1905.

DR CHARLES PEABODY,

Cambridge, Massachusetts.

Dear Sir: At a meeting of the Council of the American Anthropological Association, held in San Francisco, September 5, 1905, the following resolution was unanimously adopted:

Resolved: That the Council expresses its appreciation of the ability and self-sacrificing fidelity of Dr Charles Peabody in his capacity of Secretary *pro tempore* of the San Francisco meeting of the Association.

Respectfully,

A. L. KROEBER,

Secretary, Committee of Program and Arrangements.

SAN FRANCISCO,

September 7, 1905.

MR A. W. FOSTER,

President, California Northwestern Railway,

Mutual Life Building, San Francisco.

Dear Sir: At a meeting of the Council of the American Anthropological Association, held in San Francisco, September 5, 1905, the following resolution was unanimously adopted:

Resolved: That the Council of the Association desires to express its appreciation of the courtesy of the California Northwestern Railway in tendering the use of a special car to the Association for its excursion to Mr Luther Burbank in Santa Rosa, September 1.

Respectfully,

A. L. KROEBER,

Secretary, Committee of Program and Arrangements.

SAN FRANCISCO,

September 7, 1905.

MR RUFUS P. JENNINGS,

California Promotion Committee,

25 New Montgomery St., San Francisco.

Dear Sir: At a meeting of the Council of the American Anthropological Association, held in San Francisco, September 5, 1905, the following resolution was unanimously adopted:

Resolved: That the Council of the Association desires to express its appreciation of the courtesies and efforts extended by the California Promotion Committee on behalf of the Association, in connection with the meeting and excursions of the Association in San Francisco, August 29th to September 2d.

Respectfully,

C. PEABODY, *Secretary pro tempore.*

CONSTITUTION (OR BY-LAWS¹)

AS AMENDED AUGUST 29, 1905.

ARTICLE I. — *Name.*

The name of this body corporate is the AMERICAN ANTHROPOLOGICAL ASSOCIATION.

ARTICLE II. — *Objects.*

The objects of the Association are to promote the science of Anthropology ; to stimulate the efforts of American anthropologists ; to coördinate anthropology with other sciences ; to foster local and other societies devoted to Anthropology ; to serve as a bond of union among American anthropologists and American anthropological organizations present and prospective ; and to publish and encourage the publication of matter pertaining to Anthropology.

ARTICLE III. — *Membership.*

SECTION 1. The Association may include four classes of membership, viz., members, life members, honorary members, and patrons.

SEC. 2. Persons interested in Anthropology may be elected on nomination of three members of the Association, and on payment of dues shall become Members of the corporation, with full rights of voting and holding office.

SEC. 3. Any member may become a Life Member on payment of \$100 at one time.

SEC. 4. Persons who have obtained eminence through the promotion of anthropology may be elected as Honorary Members ; they shall be entitled to vote and hold office, shall receive the publications of the Association, and shall be exempt from dues.

SEC. 5. Persons interested in Anthropology who may at one time contribute \$1,000 or more to the Association may be elected as Patrons ; they shall be eligible as Members or Honorary Members, shall receive the publications of the Association, and shall be exempt from dues.

SEC. 6. All elections to membership shall be by the Council of the Association.

ARTICLE IV. — *Affiliations.*

The Association may affiliate with other organizations.

¹ Under the laws of the District of Columbia an act of incorporation is equivalent to a constitution, and the more detailed regulations become by-laws.

ARTICLE V.—*Officers.*

SECTION 1. The officers of the Association shall comprise a President, four Vice-Presidents, a Secretary, a Treasurer, an Editor, and twenty-four Councilors. These, with the ex-presidents, shall constitute a board of managers to be known as the Council.

SEC. 2. The President, Secretary, Treasurer, and Editor shall be elected annually to serve for one year, or until their successors are elected and installed. One Vice-President and six Councilors shall be elected annually to serve for four years or until their successors are elected.

SEC. 3. The administration of the Association, including the filling of vacancies, the nomination of officers, and the arrangement of affiliations, shall be entrusted to the Council. Five shall constitute a quorum.

SEC. 4. The President shall preside at the meetings of the Association and of the Council, or may delegate this duty; the President and Secretary shall sign all written contracts and obligations authorized by the Council.

SEC. 5. In the absence or incapacity of the President his duties shall devolve on the Vice-Presidents in the order of their seniority in service.

SEC. 6. The Secretary shall record the proceedings of the Association and of the Council, conduct correspondence, make an annual report, and have general charge of executive matters under the direction of the President of the Council.

SEC. 7. The Treasurer shall have charge of the funds and other property of the Association under regulations fixed by the Council, shall make collections and disbursements, and shall render an annual report; he may be required to give bond; and his accounts shall be audited annually and at such other times as the Council may direct, by a committee of three members of the Association.

SEC. 8. The Editor shall act as Secretary of the Committee on Publication and perform other duties as directed by the President or Council.

SEC. 9. The officers of the Association shall be elected by majority ballot of the members present at regular annual meetings after open nomination, including the nominations submitted by the Council.

ARTICLE VI.—*Meetings.*

SECTION 1. A regular meeting of the Association and of the Council shall be held annually in December or January; this shall be the annual meeting for the election of officers and the transaction of general business.

SEC. 2. Special meetings of the Association or of the Council may be held on vote of the Council. Special meetings of the Council may be

called by the President with the concurrence of two Vice-Presidents; and the President shall call a special meeting of the Council at any time and place on the written demand of ten members of the Council.

SEC. 3. Notices of regular meetings shall be published three months in advance, and printed notices of meetings, with preliminary programs of the scientific proceedings, shall be sent to all members at least a week in advance.

SEC. 4. Twenty members shall constitute a quorum of the Association.

ARTICLE VII.—*Committees.*

SECTION 1. There shall be standing committees on Program, Finance, and Publication. These committees shall be appointed at the annual meeting by the incoming President, to serve until their successors are designated. The Committee on Publication shall form an editorial board in charge of the publications of the Association.

SEC. 2. All committees of the Association and of the Council shall be designated by the President, except when otherwise provided; and the President shall be chairman *ex officio* of every committee, except when otherwise provided.

ARTICLE VIII.—*Publications.*

The Association may publish a periodical journal and occasional memoirs, and the periodical journal shall be sent to all members not in arrears, and to life members, honorary members, and patrons, and may be sold by subscription or otherwise.

ARTICLE IX.—*Finances and Property.*

SECTION 1. The Association may acquire, hold, and convey property, both personal and real.

SEC. 2. The fiscal year of the Society shall begin on the first day of January.

SEC. 3. The annual dues of members shall be \$6.00; for members of the American Association for the Advancement of Science and of the American Folk-Lore Society the annual dues shall be \$5.00; for members of local affiliated societies that subscribe for the *American Anthropologist* for each of their members and which have adopted the *American Anthropologist* as their official organ, the annual dues shall be \$1.00.

SEC. 4. Annual dues shall be payable in January; members one year in arrears shall not be entitled to vote or to receive the journal, and members two years in arrears shall, after formal notification, be regarded as withdrawn from the Association.

SEC. 5. The income from life membership and such other moneys as may from time to time become available shall be regarded as a permanent fund, which may be invested in the interests of the Association. The income from annual dues, patrons' payments, interest on investments, and other sources may be regarded as a working fund, available for publication and other current expenses; but any surplus of this fund beyond current needs shall be added to the permanent fund.

SEC. 6. No financial obligation in excess of available funds in the treasury shall be assumed by the Council except by authority of a two-thirds' vote of the members present at a regular annual meeting; *provided*, that for the purpose of this section annual dues and subscriptions for the current year may be reckoned as available funds.

ARTICLE X. — *Amendments.*

SECTION 1. Amendments to this Constitution proposed by any three members in writing shall be referred to the Council, and notice thereof shall be given in the announcement of the next meeting; they shall be brought up at this meeting, and if approved by the Council may be adopted by a majority vote of the members present, but if disapproved by the Council shall not be adopted without a two-thirds' vote of the members present.

SEC. 2. Amendments shall go into effect immediately on adoption.

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